Deneba Software

7400 Southwest 87th Avenue

Miami, Florida 33173

August 12, 1992

Deneba Software

7400 Southwest 87th Avenue

Miami, Florida 33173

August 12, 1992

Software License Agreement

Please read this license agreement carefully and be sure you accept its terms before you open the sealed disk envelope. By opening the disk envelope you signify that you consent to be bound by the terms and conditions of this agreement.

Deneba Software grants to you, and you accept a license to use the programs and the related materials delivered with this agreement.

The manual and the software are copyrighted with all rights reserved. Your rights of ownership are subject to the limitations and restrictions imposed by copyright laws. Under the copyright laws, you may not copy the manual or software, in whole or in part, without the written consent of Deneba Software, except in the normal use of the software or to make a backup copy.

It is illegal to copy, reproduce, or transmit any part of the manual or the software in any form or by any means (including translation to another language, computer language, or format) except as permitted by the Copyright Act of the United States (Title 17, United States Code). You are permitted to write the contents of the software into the machine memory of your computer so that the software can be executed. The software may be associated with one computer and may be used by more than one person on that computer, or may be associated with one person and used by that person on more than one computer. However, in no event shall two or more persons use the software at the same time.

You may not rent or lease the software, but you may transfer the software and accompanying written materials on a permanent basis provided you retain no copies and the recipient agrees to the terms of this agreement. You may not reverse engineer, decompile, or disassemble the software.

Deneba Software warrants that if you discover physical defects in the media on which this software is distributed, or in the manual distributed with the software, Deneba Software will replace the media or manual at no charge to you, provided you return the defective items, postage prepaid and with proof of purchase, within ninety days of the date of purchase.

Deneba Software reserves the right to revise this software and manual without obligation to notify any person of such revision. In no event will Deneba Software be liable for loss of profits or goodwill or other indirect, special, incidental, or consequential damages resulting from any defect in the software, media, or manual. Deneba Software's liability for damages to you or others will in no event exceed the total amount paid by you for the software. In particular, Deneba Software shall have no liability for any data stored in or used with Deneba Software's products, including the costs of recovering such data.

Except as specifically stated above, Deneba Software makes no other warranties, expressed or implied, with respect to the software, media, or manual, including (but not limited to) implied warranties of merchantability and fitness for a particular purpose. The warranty and remedies set forth above are exclusive and in lieu of all others, oral or written, expressed or implied. No Deneba Software dealer, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

Some states do not allow limitations on the length of an implied warranty or the exclusion or limitation of implied warranties or liability for incidental or consequential damages; therefore, the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

PANTONE®* Computer Video simulations used in this product may not match PANTONE-identified solid color standards. Use current PANTONE Color Reference Manuals for accurate color. *PANTONE Color Computer Graphics© Pantone, Inc. 1986, 1988. Pantone, Inc. is the copyright owner of PANTONE Color Computer Graphics and Software which are licensed to DENEBA SOFTWARE to distribute for use only in combination with Canvas. PANTONE Color Computer Graphics and Software shall not be copied onto another diskette or into memory unless as part of the execution of Canvas. ITC Garamond and Bauhaus are registered trademarks of International Typeface Corporation.

Adobe and PostScript are registered trademarks of Adobe Systems Incorporated. Adobe Illustrator and and Adobe Illustrator 88 are trademarks of Adobe Systems Incorporated.

Finder, MultiFinder, and QuickDraw are trademarks of Apple Computer, Inc. Apple, Macintosh, ImageWriter, and LaserWriter are registered trademarks of Apple Computer, Inc.

MacWrite, MacDraw, and MacPaint are registered trademarks of Claris Corporation.

AutoCAD is registered in the U.S. Patent and Trademark Office by AutoDesk, Inc.

Merriam-Webster is a registered trademark of Merriam-Webster Inc.

Table of Contents

Section One - Getting Started

Welcome

Preface Read me first xix

What's included in the package xix

- Application disks xix
- Documentation xix
- Damaged disks xx

Registering your copy of Canvas xx

- Registration card xx
- Change of address xx

Backing up your master disks xx

Minimum system configuration xxi

Installing Canvas xxi

Setting the Macintosh environment xxii

Personalizing your copy of Canvas xxii

How to use this manual xxiv

If you need assistance xxv

- On-line help xxv
- Technical Support xx5

What's new in Canvas 3.0 xxvi

- Text handling xxvi
- Design graphics xxvii
- Technical illustration xxvii
- Expanded import/export facilities xxvii
- Support of Apple's new System 7.0 software features xxviii
- Open Architecture xxviii

Section Two - Learning Canvas

Chapter 1 The fundamentals 1-1

What you will learn 1-1

Starting Canvas 1-2

Overview of the Canvas Window 1-3

Working with multiple documents 1-3

Closing documents 1-7

Viewing documents in the Canvas Window 1-8

- Scrolling around the document 1-8
- Zooming a document in and out 1-10
- The Views command 1-14

Saving documents 1-17

Printing a Canvas document 1-18

Quitting Canvas 1-20

Where to go from here 1-20

Chapter 2 The basics of drawing 2-1

What you will learn 2-1

Opening the Floor Plan document 2-2

Adding a front door 2-2

- Drawing lines 2-2
- Repositioning objects 2-4
- Editing lines 2-6
- Choosing a pen size 2-7

Adding an area rug 2-9

- Drawing rectangles 2-9
- Setting patterns 2-11
- Changing the stacking order of objects 2-14

Adding a couch 2-15

- Drawing rounded rectangles 2-15

The Object Specifications dialog box 2-16
Duplicating objects 2-18
Creating object groups 2-22
Aligning objects 2-23
Adding a potted plant 2-26
Using the Oval tool 2-26
Using the Spray Can tool 2-27
Finishing the front door 2-30
Drawing arcs 2-30
Saving your work 2-36
Where to go from here 2-36

Chapter 3 Building on the basics 3-1
What you will learn 3-1
Restarting the tutorial 3-1
MacrObjects 3-2
Adding Macintosh II computers to the floor plan 3-2
Opening a macro set file 3-2
Editing MacrObjects in a document 3-5
Adding Macintosh Classic computers 3-7
Using the Polygon tool 3-8
Adding MacrObjects to a macro set 3-13
Rotating objects 3-16
Adjusting the speakers in the Music Room 3-17
Some more chairs 3-18
The Free Rotate command 3-20
Completing the spiral staircase 3-22
Using the Duplication command 3-24
Editing polygons 3-27
Saving your work 3-30
Where to go from here 3-30

Chapter 4 Advanced drawing 4-1

What you will learn 4-1

Going upstairs 4-2

Switching between layers 4-3

Adding a second desk 4-5

Paint objects 4-6

Auto tracing paint objects 4-6

Flipping objects 4-8

Measuring the table 4-9

The Information Manager 4-10

Creating dimension lines 4-13

Smart Mouse 4-13

Dimension arrows 4-14

Adding dimensioning information to the first floor 4-19

Using the Layer palette icon 4-19

Using tear-off palettes 4-20

Configuring the Dimensioning tool 4-22

Drawing dimension objects 4-24

Editing dimension objects 4-28

The First Dimensions layer 4-30

Landscaping 4-33

Adding a fire hydrant 4-34

Saving the finished plan 4-37

Printing specific layers 4-37

Where to go from here 4-38

Chapter 5 Canvas text 5-1

What you will learn 5-1

Starting from scratch 5-1

A framework for the ad's layout 5-2

Adding guides to your document 5-4

Adding a border to the page 5-6
Adding a headline 5-8
The Bézier Curve tool 5-8
Typing text 5-11
Setting text properties 5-11
Binding text to curves 5-13
Converting text to Bézier curves 5-14
The store's name 5-15
Using the Type Specifications dialog box 5-15
Adding special effects to objects 5-17
A slogan for the store 5-19
Creating the text 5-19
Using the Point Rotate tool 5-21
Adding some graphics to the page 5-23
Adding the ad's copy 5-25
Creating paragraph text 5-25
Wrapping text 5-27
Spell checking text in Canvas 5-29
Price list 5-31
Adding tab stops 5-32
Centering it all on the page 5-36
Printing the finished ad 5-37
Learning more about Canvas 5-38

Section Three - Using Canvas

Chapter 6 The Canvas Window 6-1
Standard Macintosh window elements 6-2
The title bar 6-2
The close box 6-3
The zoom box 6-3

The size box 6-3
The scroll bars, scroll boxes, and scroll arrows 6-4
Window elements unique to Canvas 6-4
The illustration area 6-4
The Sideboard 6-5
The Information Manager 6-5
The Layer palette icon 6-6
The Tool Box 6-6
Types of Canvas tools 6-7
Using the ToolPicker 6-7
Settings 6-8
Tool Sets 6-9
Launching Canvas from the ToolPicker 6-10
Tool Information 6-11
Where external tools appear 6-11
Styles of Canvas icons 6-14
Basic icons 6-14
Multiplex icons 6-15
Palette icons 6-16
The Canvas menu bar 6-17
The menu 6-18
The File menu 6-18
The Edit menu 6-18
The Text menu 6-18
The Object menu 6-18
The Layout menu 6-18
The Effects menu 6-19
The Macro menu 6-19
The Windows menu 6-19
Using the menus 6-19
Combination keystrokes 6-19

Hierarchical menus 6-20
Toggle menu options 6-20
Scrolling submenus 6-21
Dialog boxes 6-22
Moving around the Canvas Window 6-24
The Zoom In/Zoom Out palette icon 6-24
The Magnifying Glass tool 6-25
The Hand tool 6-26
The scroll bars, scroll boxes, and scroll arrows 6-27
The Views submenu 6-27
Using the Arrow tool 6-28
Selecting a single object with the Arrow tool 6-28
Selecting multiple objects with the Arrow tool 6-29
Selecting obscured objects with the Arrow tool 6-30
Selecting objects on other layers 6-30
Deselecting objects using the Arrow tool 6-31
Moving a selection using the Arrow tool 6-31
Resizing objects with the Arrow tool 6-32

Chapter 7 Document setup 7-1

Using the New command 7-1
Using the Open command 7-1
Settings 7-2
Opening a file 7-5
Using the Place command 7-5
Changing the drawing size 7-6
Canvas default settings 7-9
Using the Preferences dialog box 7-12
Settings 7-12
Using the Preferences dialog box 7-17
Setting the default properties for creating objects 7-18

Changing the default pen size 7-18
Changing the default pen pattern 7-21
Changing the default fill pattern 7-22
Changing the default foreground or background color 7-24
Changing the default dash type 7-25
Changing the default arrow type 7-28
Changing the pen mode 7-31
Setting up the Ruler Specifications 7-33
Choosing a ruler 7-33
Customizing a ruler 7-34
Changing the zero point 7-35
Peel-away rulers 7-36
Setting up the autogrid 7-37
Customizing the autogrid 7-37
Turning on the autogrid with the Snap To Grid command 7-38
Using the Guides command 7-38
Adding guides to the Canvas Window 7-39
Removing guides from the Canvas Window 7-39
Using the Show/Hide submenu 7-39
Grid 7-40
Info Manager 7-40
Rulers 7-41
Page Breaks 7-41
Size 7-42
Publisher Borders and Subscriber Borders 7-42
Creating a Canvas Prefs file 7-43
Using a customized Canvas Prefs file 7-44
Saving a document 7-44
The Save command 7-45

The Save As command 7-45
Saving a document 7-48
Reverting to the last saved version 7-49
Quitting Canvas 7-49

Chapter 8 The basic drawing tools 8-1
How to use a basic drawing tool 8-1
Using the Line tool 8-2
Changing a line's specifications 8-2
Using the Rectangle tool 8-8
Changing a shape's specifications 8-9
Using the Rounded Rectangle tool 8-10
Editing the roundness of corners 8-11
Using the Oval tool 8-11
Using the Arc tool 8-12
Changing the angle of an arc segment 8-13

Chapter 9 Advanced drawing tools 9-1
Using the Freehand tool 9-1
Choosing an object type to create 9-1
Drawing objects with the Freehand tool 9-2
Editing freehand objects 9-3
Using the Polygon tool 9-3
Drawing with the Polygon tool 9-3
Using the Polygon tool in the old style 9-5
Using the Smooth and Unsmooth options 9-5
Using the Bézier curve tool 9-6
Drawing with the Bézier curve tool 9-7
Resizing objects 9-8
Repositioning objects 9-9
Placing objects in the Edit mode 9-10

Editing a single point 9-11
Editing a single segment 9-12
Editing multiple points and segments 9-13
Advanced Bézier curve editing capabilities 9-15
Using the multiplex options of the Polygon and Bézier Curve tools 9-16
Closing and opening objects 9-19
Adding cusps to objects 9-20
Adding cusps to smooth polygons and polygons 9-20
Adding cusps to Bézier curves 9-21
Converting other objects to polygons or Bézier curves 9-23
Converting other objects to polygons 9-23
Converting other objects to Bézier curves 9-24

Chapter 10 Working with text 10-1
Setting text properties 10-1
Setting the font for your text 10-1
Setting the size for your text 10-1
Setting the style for your text 10-2
Setting the justification for your text 10-3
Setting the leading for your text 10-3
Setting the kerning for your text 10-4
Using the Text tool's multiplex options 10-5
Using the Type command 10-6
Settings 10-6
Using the Type Specifications dialog box 10-8
Creating text objects 10-8
Creating caption text 10-9
Creating paragraph text 10-9
Editing text 10-10
Selecting text 10-11

Scaling text 10-12
Changing the background pattern 10-13
Changing the foreground and background color 10-13
Changing the color of individual characters 10-14
Adding effects to text 10-15
Editing text to which effects have been applied 10-16
Copying and pasting text 10-16
Deleting a text object 10-17
Deleting a portion of a text object 10-17
Using the Text Ruler 10-17
Settings 10-18
Placing a tab stop 10-19
Removing a tab stop 10-21
Using the Tab Specifications dialog box 10-21
Setting the leading 10-22
Setting the justification 10-23
Using the Spell Check submenu 10-23
Suggest Spelling 10-24
Using Spell Check interactively 10-25
Checking an entire document 10-25
Checking selected text 10-26
Continuing an interrupted spelling check 10-26
Viewing user-added words 10-26
Using the Search & Replace command 10-27
Settings 10-28
Using the Search & Replace dialog box 10-28
Using the Wrap submenu 10-29
Inside Shape 10-29
Outside Shape 10-30
Slant Margin 10-31
Remove Wrap 10-32

Using the Bind Text command 10-32
Binding text 10-32
Using the Create Béziers submenu 10-33

Chapter 11 Technical illustration 11-1
Using the Smart Mouse 11-1
The Smart Mouse command 11-1
How Smart Mouse works 11-1
The Smart Mouse Manager 11-2
Working with the Smart Mouse window 11-11
Using the Dimensioning tool 11-12
The Dimensioning tool 11-12
The Dimensioning options 11-14
The Dimensioning Manager 11-18
The Dimensioning Standards dialog box 11-25
Using Hatch Patterns 11-29
The Hatch Patterns submenu 11-29
The Hatch Manager 11-30
Using the Parallel Lines tool 11-35
Line Segment option 11-36
Using the polygon and smooth polygon options 11-37
Using the Parallel Lines Manager 11-38
Editing parallel-line objects 11-43

Chapter 12 MacrObject sets 12-1
Adding MacrObjects 12-1
Saving a macro set file 12-2
Loading a macro set file 12-3
Using a MacrObject 12-4
Deleting a MacrObject 12-4
Closing a macro set 12-5

Switching between macro set files 12-6

Chapter 13 Editing your drawings 13-1

Using the Undo command 13-1

Using the Again command 13-1

Using the Cut command 13-2

Modifier key Cut commands 13-2

Using the Copy command 13-3

Modifier key Copy commands 13-3

Using the Paste command 13-4

Modifier key Paste commands 13-5

Using the Clear command 13-6

Using the Edit Special submenu 13-7

Paste In Front, Paste In Back 13-7

Paste Picture Object 13-8

Paste Scaled 13-8

Copy At 2X, Copy at 4X, Copy at 8X 13-8

Copy With EPS 13-9

Using Publishers and Subscribers 13-9

The Create Publisher command 13-9

The Subscribe To command 13-10

The Edition Options submenu 13-12

Using the Object Specs command 13-18

The Object Specifications dialog box 13-18

Using the Group Specs command 13-22

The Group Specifications dialog box 13-23

Using the Convert To submenu 13-24

Using the Selection command 13-25

Settings 13-26

Creating selection sets 13-28

Using the Information Manager 13-28

Using the Information Manager data display 13-29
The Information Manager pop-up menu 13-29
Using the Duplication command 13-30
Settings 13-31
Using the Duplication Specifications dialog box 13-33
Using the Scale command 13-33
Settings 13-34
Using the Scaling Specifications dialog box 13-35
Using the Alignment features 13-36
The Align command 13-36
Align tool 13-39
Using multiple layers in a document 13-40
The Layer Specs command 13-41
The Layer palette icon 13-44
The Layers submenu 13-46
Saving layers 13-47
Using the Arrange submenu 13-48
Arranging objects 13-50
Using the Mover tool 13-50
Using the Group command 13-51
Ungrouping objects 13-52
Using the Lock command 13-52
Using the Display submenu 13-53
Using views in Canvas 13-55
Using the New View command 13-55
Using the Views submenu 13-55

Chapter 14 Design Graphics features 14-1
Using the Blend command 14-1
Using the Split tool 14-5
Joining objects 14-6

Using the Combine command 14-8
Using the Cube tool 14-11
Cube tool modifiers 14-12
Editing a cube 14-13
Using the GridMaker tool 14-14
GridMaker tool modifiers 14-14
The GridMaker Manager 14-15
Using the Multigon tool 14-16
Multigon tool modifiers 14-16
The Multigon Manager 14-17
Using the Star tool 14-18
The Star Manager 14-19

Chapter 15 Painting in Canvas 15-1

Paint object properties 15-1
Resolution 15-1
Depth 15-2
The Paint tools 15-3
Paint object modes 15-5
Selected paint objects 15-5
Active paint objects 15-5
Creating paint objects 15-6
Using the Paint Options: Auto-Create Paint Objects preference 15-6
Using the Object Specs and Group Specs commands 15-6
Using the Paint Object Creator tool 15-7
Using the Paint Brush tool 15-8
Changing the brush shape 15-9
The Brush Manager 15-9
Changing the brush pattern 15-11
Using the Spray Can tool 15-11

Changing the nozzle shape 15-12
The Spray Manager 15-12
Changing the spray pattern 15-14
Using the Pencil tool 15-14
Painting freehand lines with the Pencil tool 15-14
Editing paint objects with the Pencil tool 15-15
Using the Paint Bucket tool 15-16
Using the Eraser tool 15-17
Using the paint selection tools 15-18
Using the Lasso tool 15-18
Using the Marquee tool 15-19
Moving a selected paint area 15-20
Deselecting a selected paint area 15-20
Constraining the paint tools 15-21

Chapter 16 Adding effects 16-1
Using the rotate commands 16-1
Rotating by a predefined angle 16-2
Using the Free Rotate command 16-3
Using the Point Rotate tool 16-4
Using the flip commands 16-5
Using the Image Effects submenu 16-7
Pattern Fill 16-7
Invert 16-7
Crop Image 16-8
Trace Edges 16-8
Using the Auto Trace To submenu 16-9
The Auto Trace Manager 16-11
Using the Special Effects submenu 16-14
Bind Group 16-15
Perspective 16-16

Stretch 16-18
Skew 16-18
Distort 16-19
Using the Remove Effects command 16-19

Chapter 17 Going to press 17-1
Using the Page Setup command 17-1
Settings 17-2
Using the Slides command 17-3
Settings 17-4
Configuring a slide show 17-4
The slide edit mode 17-5
Using the Print command 17-5
Using the Print Special options 17-7
Layer... 17-7
Selection... 17-8
PostScript... 17-9
Separation Setup... 17-9
Separations... 17-16
Slides... 17-18
Using the Overprint option for selected objects 17-18
Using the Registration Marks tool 17-19

Chapter 18 Using color in Canvas 18-1
Assigning colors by palette colors 18-2
Understanding the properties of color 18-2
Using the RGB Color Manager 18-4
Settings 18-5
Working with one color 18-6
Working with multiple colors 18-6
Changing color palettes 18-7

Saving a color palette 18-8
Using the Color Picker 18-8
Settings 18-9
Editing a color 18-10
Using the Color Info Manager 18-10
Settings 18-11
Using the Color Info Manager 18-13
Using the PANTONE® Colors window 18-14
Settings 18-14
Changing the default foreground or background color 18-18
Using gradient fills 18-18
Using the Gradient command 18-18
Using the Gradient Fill Manager 18-20
Using the Tint Objects option 18-23
Settings 18-24
Using the Tint Specifications dialog box 18-25
Using the Dropper tool 18-25

Section Four - Reference

Chapter 19 Reference 19-1

Section Five - Appendices

Appendix A Glossary A-1

Appendix B Keyboard Shortcuts B-1

Appendix C Error Codes C-1

Section Six - Index

Section One

Getting Started

Welcome

Dear Canvas™ customer:

Congratulations on your purchase of Canvas 3.0, the most complete graphics environment for the Apple® Macintosh®. Canvas is ideally suited for applications such as business graphics, technical illustrations, desktop presentations, graphic design, desktop publishing, engineering, and architecture. Canvas streamlines the creative process and increases productivity with tools never before available. And Canvas does all this through an easy-to-learn, intuitive interface.

Those of you who are new to Canvas won't believe how much power Canvas puts at your fingertips. Those of you who are veteran Canvas users will be amazed at how much has been added to the program, yet how seamlessly the new features have been integrated.

Canvas 3.0 contains a set of features not found in other packages, enabling you to take your work from start to finish in a single step without having to constantly switch between programs. You can create any design and technical graphics you need, lay out text, and create presentations all in one program. With Canvas, you no longer need several applications to complete a project.

Sincerely,

Deneba Software

Read me first

Before you begin working with Canvas, please read this chapter completely. It describes the package contents, how to start the application, how to personalize your copy of the program, what to do if you want assistance, and what's new in Canvas 3.0.

If you need to:	See:
Install Canvas	"Installing Canvas" on page xxii
Read about new features	"What's new in Canvas 3.0" on page xxvi
Work through the tutorial	Section Two: *Learning Canvas*
Get quick help with Canvas basics	"On-line help" on page xxv
Learn how to perform a particular task	Section Three: *Using Canvas*
Read about a specific command or tool	Section Four: *Reference*
Find the definition for a specific term	Appendix A: *Glossary*
Learn how to execute menu commands from the keyboard	Appendix B: *Keyboard Shortcuts*
Find the meaning of an error code	Appendix C: *Error Codes*

What's included in the package

Check to see that your package contents are complete. If any of the following items are missing or damaged, please contact the software reseller from whom you purchased Canvas.

Application disks

Canvas comes on 800K disks labeled Install 1, Install 2, and so on.

Documentation

Your Canvas documentation package should contain the Canvas binder, Canvas manual, and Canvas tab set.

Damaged disks

Deneba will replace defective disks for U.S. and Canadian customers free of charge during the 90-day Limited Warranty. After the warranty expires a $10 fee is required. Use the Disk Replacement form at the end of this section to request a replacement disk. You must have your Software Registration Card on file with Deneba Software in order to receive a replacement disk.

Registering your copy of Canvas

Your Software Registration Card is contained on the flap of your disk packet. Take a moment now to completely fill it out and mail it.

Registration card

After you mail your registration card, you will be a registered Canvas user. As a registered user in the U.S. or Canada, you are entitled to unlimited free technical support. You are eligible for special offers and promotions, new upgrade programs, and first notice of future Canvas products and services. You will also receive *The Deneba News*, a newsletter highlighting product tips and techniques.

Change of address

If your address changes after you mail in your Software Registration Card, fill out and mail in the Change of Address form at the end of this section. By keeping Deneba Software informed of your current address, you will continue to receive notice of product updates and new information.

Backing up your master disks

You should make one backup copy of each Canvas disk included with your package, as permitted by your Software License Agreement. This way, if a disk is lost or damaged, you will have a replacement copy. When you finish making the backup copies, put the original Canvas disks in a safe place. If you need assistance copying your disks, refer to your *Macintosh System Software User's Guide* for instructions.

Minimum system configuration

In order to fully utilize all of Canvas's features, the following minimum system configuration is required:

- A Macintosh Plus or later computer
- 2MB of random access memory (RAM)

  It is possible to run Canvas on a Macintosh with 1MB of RAM when running System 6.0 without MultiFinder and using fewer external tools, but this configuration is not recommended.
- A hard disk drive and an 800K floppy disk drive

  It is possible to run Canvas using two 1.4MB SuperDrives, but you will not be able to use all of Canvas's external tools.
- System software version 6.0 or later

  If you are using a version of the System software older than version 6.0, contact your local Macintosh dealer or user group for a copy of the latest release.
- Any Macintosh-compatible printer

  If you use a PostScript® laser printer, such as Apple's LaserWriter® or Personal LaserWriter®, you will find that Canvas takes full advantage of the printer's capabilities for more power and versatility. Canvas can also generate high-quality output and impressive special effects using an Apple ImageWriter® or a compatible non-PostScript printer such as Apple's LaserWriter SC®, LaserWriter LS®, and StyleWriter® and Hewlett-Packard's LaserJet® printers.

Installing Canvas

To install Canvas, you need to run the Canvas Installer program included on the first program disk. To do so:

1. **Start your Macintosh.**
2. **Insert the disk Install 1 and double-click its icon to display its contents.**
3. **Double-click the icon of the Canvas Installer script.**

   The Installer startup screen appears.
4. **Click OK.**

The Easy Install dialog box appears.

5. **Click Switch Disk or Eject Disk if the disk you want to install Canvas on is not named in the Easy Install dialog box.**

6. **Click Install or Customize to install all or part of the Canvas package.**

   To install the complete Canvas package, click Install.

   To choose which elements to install, click Customize; a second dialog box appears.

   - Click to select the files you want to install; hold down the Shift key and click to select multiple files.
   - Click Switch Disk to choose a different disk to install the files on.
   - Click Easy Install to begin installation.

The Installer tells you which disks to insert. When the installation is complete you return to the Easy Install dialog box. Click Quit to close the dialog box.

Setting the Macintosh environment

There are several ways to configure your system to enjoy the best possible Canvas performance on your Macintosh.

- If you have only 1M of RAM installed in your Macintosh, use the Finder™, not MultiFinder™, and use the ToolPicker to select which tools you want to load.
- Always set the RAM cache in the General Control Panel to at least 64K. If frequent disk activity is slowing performance, set the RAM cache higher.
- The Canvas Application Memory Size comes set at 2,000K. If you run out of memory when using MultiFinder, select the Canvas 3.0 icon in the Finder and choose Get Info from the File menu. Type a larger value in the Application Memory Size text box. Canvas cannot be running when you do this. Increasing the Application Memory Size is especially useful when opening large TIFF files.
- If you are using Adobe Type Manager™ and text draws slowly as you scroll the Canvas Window, increase the ATM font cache in the Control Panel to more than 96K.

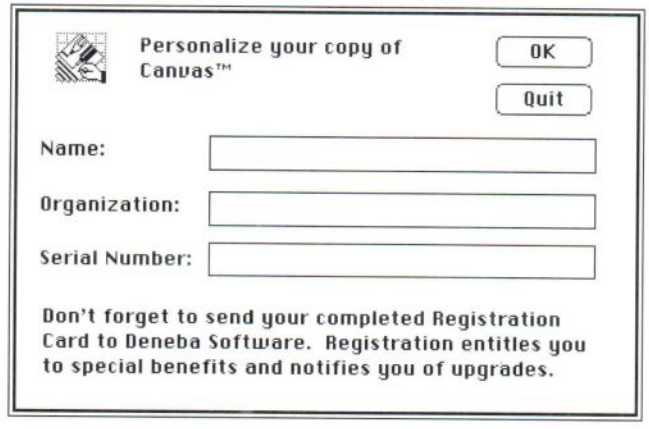
Personalizing your copy of Canvas

The first time you use Canvas, you are asked to personalize the application. This process distinguishes your copy of Canvas from one being used by another person. To personalize your copy of Canvas:

1. **Double-click the Canvas 3.0 icon to launch the application.**

Canvas 3.0 icon

Canvas displays the personalization screen. A blinking insertion point appears in the text box labeled *Name*.



2. **Type your name.**

   You must type at least three characters in the Name text box. Make sure your name is correct because you can only personalize Canvas once. If you make a mistake, press the Delete or Backspace key and retype.

3. **Press the Tab key to move the insertion point to the Organization text box.**

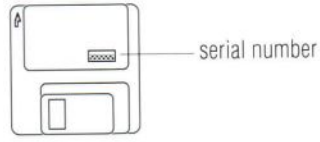
4. **Type the name of your organization.**

   This information is optional; you may leave this text box empty.

5. **Press the Tab key again to move the insertion point to the Serial Number text box.**

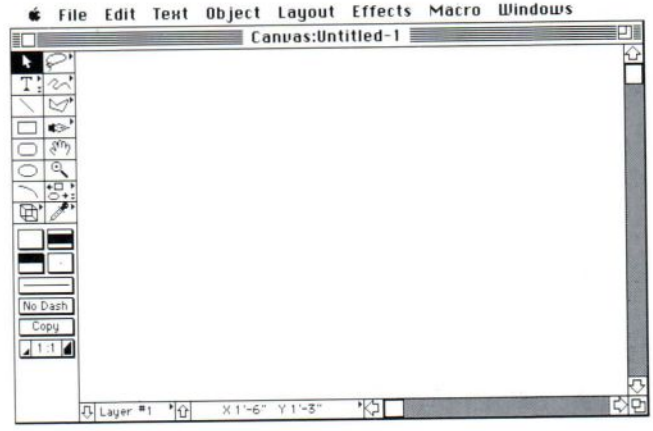
6. **Type your serial number.**

   Your serial number is on the face of Disk 1.



7. **Click OK.**

   After a few moments, the Canvas Window appears.



How to use this manual

The manual contains detailed descriptions and procedures for using the tools and commands in Canvas. Its contents are divided as follows:

This section:	Contains:
Section One: Getting Started	An introduction to Canvas
Section Two: Learning Canvas	A hands-on tutorial which introduces you to many of the tasks you can perform with Canvas, from basic elements of the graphics environment to advanced drawing features

Section Three: Using Canvas	Procedures to guide you through each of Canvas's features and capabilities, including configuring Canvas to suit your needs, drawing basic shapes, painting, working with text, integrating special effects, adding color to your documents, and printing
Section Four: Reference	An alphabetical listing of all of the tools and commands in Canvas
Section Five: Appendices	A glossary of terms used in this manual, a list of keyboard shortcuts, and a list of error codes you may encounter when working with Canvas
Section Six: Index	

If you need assistance

In addition to the documentation included in the Canvas package, Deneba Software provides two other means of assisting you with the program: Canvas's Help command and Deneba's Technical Support department.

On-line help

Canvas's on-line help is always available as you use Canvas. It is contained in a HyperCard®-like window—you can get information on any tool or command by clicking its icon in this window. You can activate the help system in any of three ways:

- Choose the Help command from the Apple ( ) menu
- Type ⌘-? (hold down the Command key and type "?")
- Press the Help key if you have an Extended keyboard

For more information on Canvas's on-line help, see "Help" in the *Reference* section of this manual.

Technical Support

Deneba Software provides unlimited free technical support to all registered Canvas users. For technical assistance, call (305) 596-5644. Tech-

nical support representatives are available Monday through Friday between 9:00 AM and 8:00 PM Eastern time.

To get the most out of your call, place the phone near your Macintosh and try to set up the situation that leads to the problem so that you can recreate it while speaking to the technical support staff member.

Have the following information available:

- Product name
- Serial number
- Version number
- Operating system version
- Hardware configuration
- Amount of memory (RAM)
- Startup documents (INITS) and Control Panel devices (CDEV's) located in your System folder
- Canvas manual
- Printer model and driver version if you are experiencing a printer-related problem

Writing to Deneba's Technical Support department

Customers worldwide may write to Deneba's Technical Support department. Please contact them at:

Deneba Software

Technical Support Department

7400 Southwest 87th Avenue

Miami, Florida 33173

What's new in Canvas 3.0

With Canvas now in use in a wide range of disciplines, the ability for users to customize Canvas for their own specific needs has become an imperative. Canvas 3.0 was developed with the strong belief that it is the responsibility of a graphics package to facilitate creative expression, not restrict it. All new features have been designed with this

directive in mind, and existing features have been updated to incorporate it as well.

The major areas of enhancement are:

- text handling
- design graphics
- technical illustration
- import/export capabilities
- support of Apple's new System 7.0 software features
- open architecture

Text handling

The handling of text has been expanded to include tab support (right, left, center, and decimal); full justification; character-by-character text scaling; subscript, superscript, and small caps styles; and fractional leading and kerning. New graphic features have been added for text including **Bézier Text**, which lets you create Bézier curves from TrueType™ and PostScript® Type-1 fonts; the **Bind Text** command, which binds text to an object; and the **Wrap** command, which lets you wrap text around the outside of an object, encrust text within a shape, or slant text margins.

Design graphics

Many new features have been added in the area of design graphics, while existing features have been expanded, such as the addition of centerline auto tracing and the enhancement of Bézier curve editing capabilities. New features include the **Blend** command, which lets you generate a blend of objects from two or more objects, and the **Combine** command, which creates new objects from existing objects by adding, subtracting, outlining, slicing, or intersecting them. You can assign user-definable **Gradient Fills** and **PANTONE®** colors to objects. The **Separations** utility has been fully integrated into the Canvas application and you can assign overprinting on an object-by-object basis. **Slides** lets you create and print on screen slide presentations. Selecting has been expanded to let you select across layers, and the **Selection** command lets you specify selection criteria so you can easily make global changes to your documents.

Technical illustration

New technical illustration features include a **Smart Mouse** drafting aid, extensive **Dimensioning** capabilities, user-definable **Hatch Patterns** and **Parallel Lines**, and custom dashed lines, curves, and objects. You can now rotate objects around any point.

Expanded import/export facilities

Canvas 3.0 has increased import and export capabilities. Technical illustrations can be imported and exported in the **CGM**, **DXF**, and **IGES** formats. Design graphics can be saved or opened in **Illustrator 88**™ and **Illustrator 1.1**™ formats. You can also save files in Encapsulated PostScript® using the **EPSF** format and import files created in **MacDraw I**™ and **MacDraw II**™.

Support of Apple's new System 7.0 software features

New Canvas features which support Apple's System 7.0 software include several Edit menu commands: **Create Publisher**, **Subscribe To**, and the **Edition Options** submenu. These commands let users publish and subscribe to editions and control sending and getting editions. In addition, **Balloon Help** and Apple's **TrueType** fonts are fully supported.

Open Architecture

Canvas 3.0 was developed using Deneba's Open Architecture design. Open Architecture allows for the addition of extensions to Canvas, which can be turned on or off each time you launch the program. These extensions, known as **external tools**, are shipped in the Canvas Tools folder. The **ToolPicker**, available when you launch Canvas, lets you choose which tools to load with the application.

Change of Address form

Please mail this form to Deneba Software to notify us if you change your address or name. We need this information so we can continue to send you information about updates, new products, and enhancements.

Please Check One:

Address Change_____ **Name Change** _____

First Name _____ Last Name_____

Previous Last Name _____

Current or New Street Address (Please Do Not Use P.O. Box)

_____

City _____ State/Province _____

Postal Code _____ Country_____

Telephone (Include Area Code)_____

Registered Deneba Products You Own (Check All That Apply)

Canvas_____ UltraPaint_____Spelling Coach Professional_____

BigThesaurus_____ Comment_____

Mail Form To:

Deneba Software

7400 S.W. 87th Ave.

Miami, FL 33173

Disk Replacement form

For U.S. and Canadian Customers

If your disk becomes unusable after your 90-Day Limited Warranty expires, send it to Deneba Software along with this form and your credit card number or a check or money order for $10 in U.S. funds. We will send you a replacement disk immediately. You must be a registered user to receive a replacement disk. If you have not returned your Software Registration Card, please return it with this Disk Replacement form. NOTE: During the 90-Day Limited Warranty period, replacement disks are free; send the defective disk to Deneba along with this form to receive a new disk.

First Name_____ Last Name_____

Street Address (Please Do Not Use P.O. Box)

_____

City_____ State/Province _____

Zip Code_____ Country _____

Telephone (Include Area Code)_____

Indicate Which Disk Is Defective (Check All That Apply):

Product	Disk Name & Disk # (if any)	Serial Number
Canvas	_____	_____
UltraPaint	_____	_____
Coach Pro	_____	_____
Big Thesaurus	_____	_____
Comment	_____	_____

Form Of Payment

Credit Card: VISA ____ MasterCard ____ American Express ____

Card No. _____ Expiration Date_____

Signature _____

Check: Check Number _____ Amount (U.S. Funds)_____
(Make Check Payable To Deneba Software)

Money Order: Amount (U.S. Funds)_____

Send Completed Form To:

Deneba Software
3305 N.W. 74th Ave.
Miami, FL 33122

Section Two

Learning Canvas

Chapter 1

The fundamentals

Welcome to *Learning Canvas*, the Canvas Tutorial. This section of the manual has been designed for an individual who has little or no experience in Macintosh graphics, or someone who likes to learn by doing. Don't worry if you are not a technical illustrator or an artist. By following easy instructions you will be creating your own Canvas illustrations in no time. The emphasis throughout these chapters is on doing; as you follow along in the text you will be performing all of the steps necessary to create the finished illustrations.

Once you have gone through the tutorial, you should read the remaining chapters of this manual to explore the additional features and capabilities of Canvas.

What you will learn

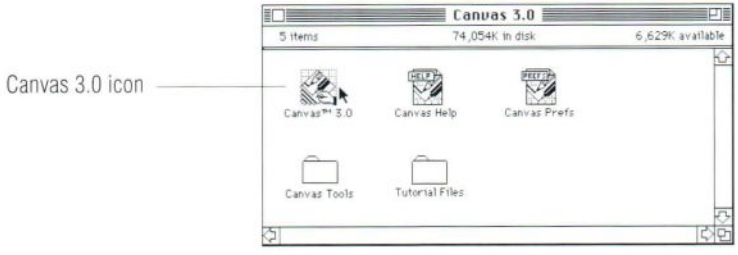
Chapter 1 introduces Canvas. After completing it, you will be able to:

- Start Canvas
- Open a document
- Identify the parts of the Canvas Window
- Scroll around a Canvas document
- Zoom the Canvas Window in and out
- Select and use tools from the Tool Box
- Choose commands from the menu bar
- Work with multiple documents
- Save a document
- Print a document
- Quit Canvas

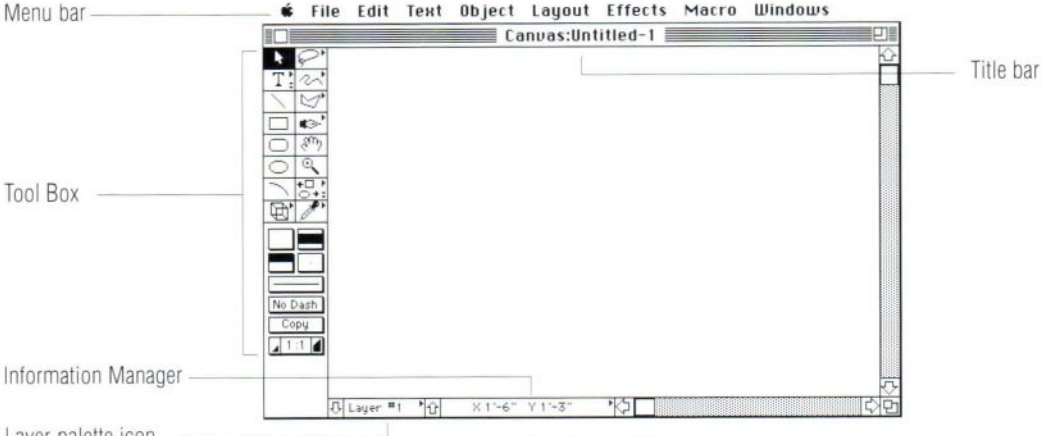
> **Important:** This tutorial assumes that you are familiar with the basic functions of your Macintosh computer. Before beginning this exercise, read the *Preface*, which describes the procedures for backing up and personalizing your copy of Canvas. If you haven't already done so, do so now.

Starting Canvas

You start Canvas just like you would start any other Macintosh application. To start Canvas, double-click the Canvas 3.0 icon inside the Canvas 3.0 folder on your hard drive.



The Canvas startup screen appears, followed by the Canvas Window.



Parts of the Canvas Window

User Tip: Depending on the size of your screen, your view of the Canvas Window may differ from the illustrations in this manual.

Overview of the Canvas Window

You should already be familiar with the Macintosh interface and standard Macintosh actions (such as clicking and dragging) and commands (such as Cut, Copy, Paste, and Quit). You should also be familiar with some of the elements of the Canvas Window common to all Macintosh software, such as the close, zoom, and size boxes, and the scroll bars. If you are unsure how to use these items, you should review them in your *Macintosh System Software User's Guide*.

When you open Canvas, a new, untitled Canvas document appears. This is the Canvas Window. All drawing in Canvas takes place within the Canvas Window, your compact, electronic illustration board. It contains the drawing area where you create illustrations and all the necessary tools and commands for doing so. The Canvas Window contains all of the standard Macintosh window elements: title bar, close box, size box, zoom box, and scroll bars. It also provides several features unique to Canvas, including the Tool Box, the Layer palette icon and the Information Manager. The menu bar and commands are also unique to Canvas.

Working with multiple documents

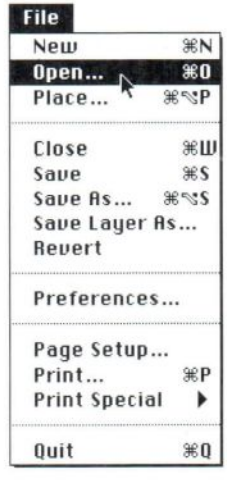
When you launch Canvas, you open a blank document called *Untitled–1*. Canvas names additional new documents you create *Untitled-2*, *Untitled-3*, and so on. You can open as many documents as your computer's memory configuration allows.

To open an existing Canvas document.

1. **Hold down the pointer on the word *File* in the menu bar.**

The File menu appears.

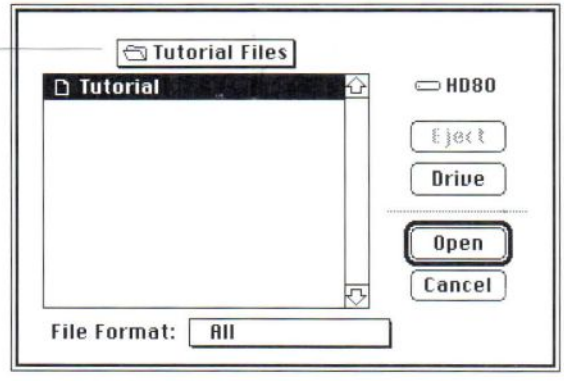
2. Drag through the menu until the Open command is highlighted.



3. Release the mouse button.

Canvas displays the standard Macintosh Open dialog box. If you are unfamiliar with the Open dialog box, refer to your *Macintosh System Software User's Guide.*

The file you want is in the folder called Tutorial Files

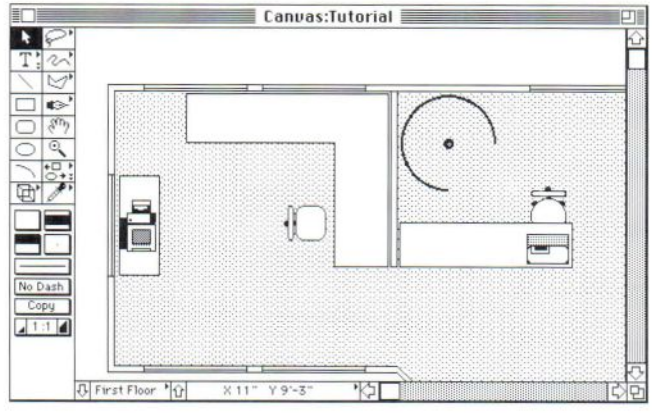


4. Locate and open the folder named Tutorial Files.

This folder contains all of the files you will be using throughout the Tutorial. It should be located inside the Canvas 3.0 folder on your hard drive.

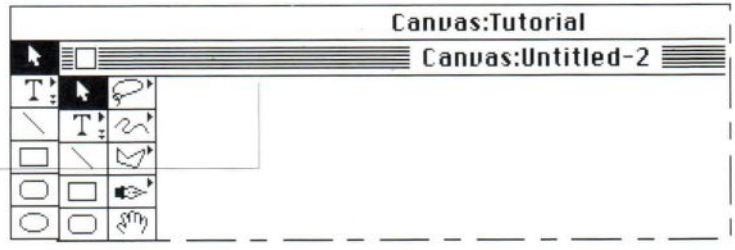
5. Locate and open the file called *Tutorial*.

Canvas closes the Canvas:Untitled-1 window and opens the *Tutorial* document, displaying it in a new Canvas Window.



6. **Hold down the pointer on the File menu and drag through the menu to choose the New command.**

Canvas creates a new document called *Untitled-2*. This document is now active. When more than one Canvas document is open, the currently active one is topmost and has stripes in its title bar.



Canvas, like most Macintosh applications, lets you activate a window by clicking it.

7. **Click the title bar of the Canvas:Tutorial window to make it active again.**

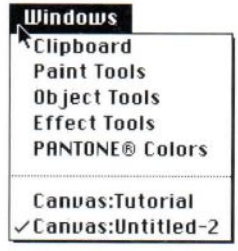
Canvas brings it to the front and draws stripes in its title bar.

If a document is hidden by other documents, as *Untitled-2* is now, you won't be able to click it. You can bring it forward without clicking it by choosing its name from the Windows menu.

To do so:

1. **Hold down the pointer on the Windows menu.**
2. **Drag to highlight *Canvas:Untitled-2* and release the mouse button.**

The Canvas:Untitled-2 window moves forward and becomes active. The active document is indicated in the Windows menu by a check mark in front of its name. Hold down the pointer on the Windows menu again to see this.

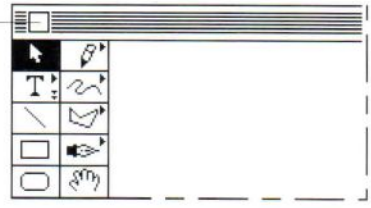


Check mark indicates active document

Closing documents

You close a Canvas document like you close other Macintosh documents. To close the *Untitled-2* document, click the close box in its title bar.

Close box



Canvas closes the document and makes *Tutorial* the active document.

Viewing documents in the Canvas Window

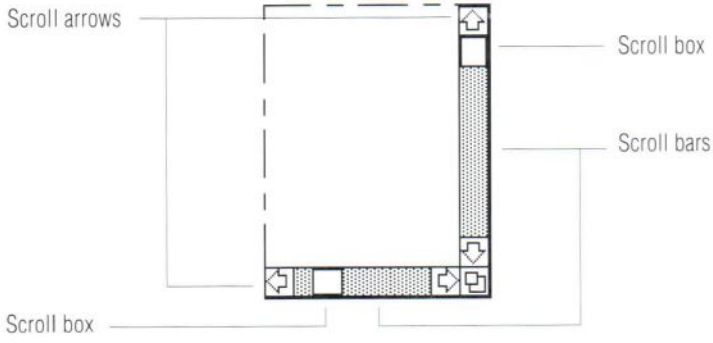
One of the first things that you will notice about the *Tutorial* document is that you can see only part of the illustration. The document is larger than the screen size, but there are ways you can alter your view of the document; you can scroll to different portions of it and you can change the magnification level used to view the document.

Scrolling around the document

Canvas provides two ways for you to scroll through your documents: using the scroll bars located in the Canvas Window and using the Hand tool.

Using the scroll bars

The scroll bars in the Canvas Window work like those in any standard Macintosh application. The scroll bar on the right side of the Canvas Window scrolls through the illustration vertically while the one on the bottom of the Canvas Window scrolls horizontally.



1. **Click the right scroll arrow in the horizontal scroll bar.**

   The document scrolls, making its right side visible.

2. **Hold down the pointer on the bottom scroll arrow in the vertical scroll bar.**

   Canvas scrolls continuously downward until either you release the mouse button or Canvas reaches the bottom of the document.

3. **Drag the vertical scroll box to a point one-third of the way down.**

Canvas scrolls to a point one-third of the way down the document.

Dragging a scroll box lets you scroll directly to the part of the illustration you want to see. The distance Canvas scrolls the document is proportional to the distance you drag the scroll box. For example, if you drag the scroll box to the center of the scroll bar, you will see the center portion of the document.

4. Click the gray region of the vertical scroll bar below the scroll box.

Canvas scrolls the document down one screenful. (Depending on the size of your screen, this may be to the bottom of the document.)

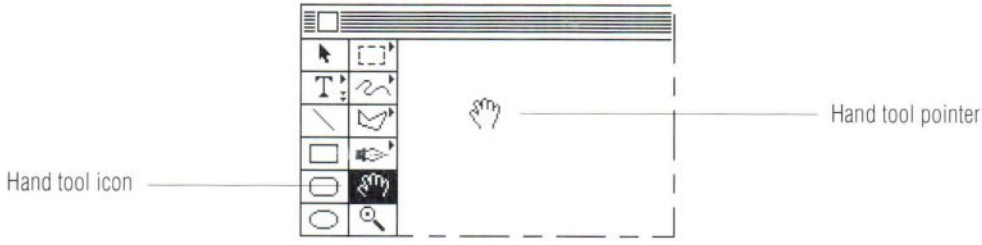
Using the Hand tool

The Hand tool also lets you scroll around an illustration. It is located in the Tool Box on the left side of the Canvas Window.

To use the Hand tool, you must first select it from the Tool Box.

1. Position the pointer over the Hand tool icon in the Tool Box and click once.

The icon highlights to show that the Hand tool is active. When you move the pointer into the document portion of the Canvas Window, it changes to look like a hand.



2. Position the hand pointer anywhere over the document.

3. Drag the pointer in any direction.

As you drag, the document scrolls with you. The scroll boxes in the scroll bars reflect your movement.

4. Release the mouse button to stop scrolling.

Scrolling a document with the Hand tool is analogous to using your hand to slide a piece of paper around a desktop.

Zooming a document in and out

You can change the magnification level at which you see a document in two ways: using the Zoom In/Zoom Out palette icon and using the Magnifying Glass tool.

Changing the magnification or reduction level of your document only affects the way you see it in the Canvas Window. The actual contents of your document are not changed in any way.

Using the Zoom In/Zoom Out palette icon

The Zoom In/Zoom Out palette icon contains three parts: The Zoom In and Zoom Out icons and the Magnification Level indicator. The Zoom In and Zoom Out icons let you increase or reduce the magnification level at which you see your illustration.

1. **Click the Zoom In icon.**

   Canvas increases the magnification level from 1:1 (actual size) to 2:1 (twice actual size). The illustration appears to be twice as large. Canvas displays the current level of magnification as a ratio in the Zoom In/Zoom Out palette icon.

2. **Click the Zoom Out icon.**

   Your view of the document returns to actual size.

3. **Click the Zoom Out icon again.**

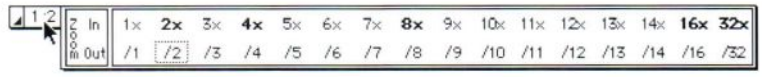
   The document's magnification level is now 1:2 (50% of actual size) and the Zoom In/Zoom Out palette icon now reads "1:2."

The Zoom In/Zoom Out palette icon provides another way to quickly specify a magnification level, using the Zoom In/Zoom Out palette.

1. **Position the pointer over the Magnification Level indicator portion of the Zoom In/Zoom Out palette icon.**

2. **Hold down the mouse button.**

   A palette of magnification and reduction levels pops-up.



3. **Drag through the palette.**

   As you drag through the palette, a small rectangle known as the selection box follows the pointer, enclosing each option you pass.

Selection box encloses 4x option

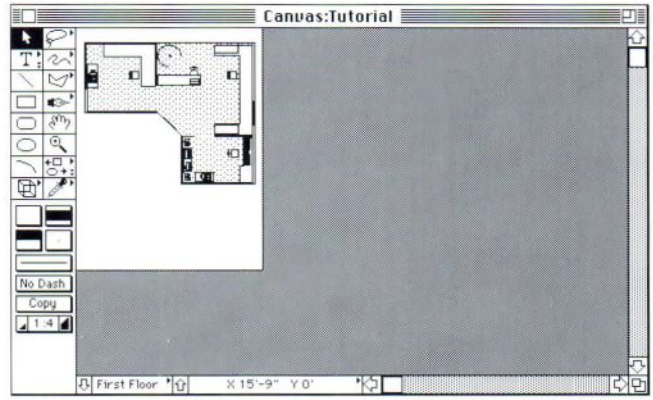
Dashed rectangle indicates current level

4. **Choose the 4x option by positioning the pointer so that the selection box encloses it, and releasing the mouse button.**

   The document is now displayed at four times its actual size.

5. **Repeat Steps 1-4, this time choosing the /4 option.**

   Canvas displays your document at a reduction level of 1:4, or one-fourth its actual size.



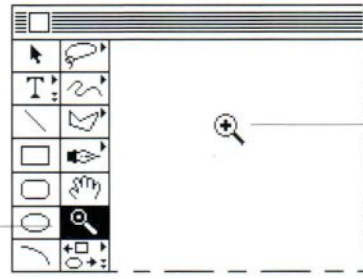
Using the Zoom In/Zoom Out palette icon, you can set the magnification or reduction level of the Canvas Window to anything between 32 times actual size and 1/32 actual size.

Using the Magnifying Glass tool

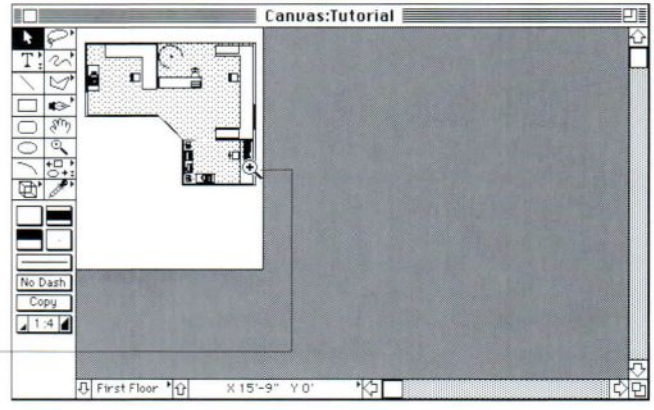
The Magnifying Glass tool lets you zoom in on or out from a selected area of your document, allowing you to work in detail on a particular object or get an overall view of the illustration.

1. **Select the Magnifying Glass tool from the Tool Box by clicking its icon once.**

   The icon highlights and the pointer changes to look like a magnifying glass when it is moved into the document portion of the Canvas Window. The plus sign inside the magnifying glass indicates that the tool will increase the magnification level of the document.



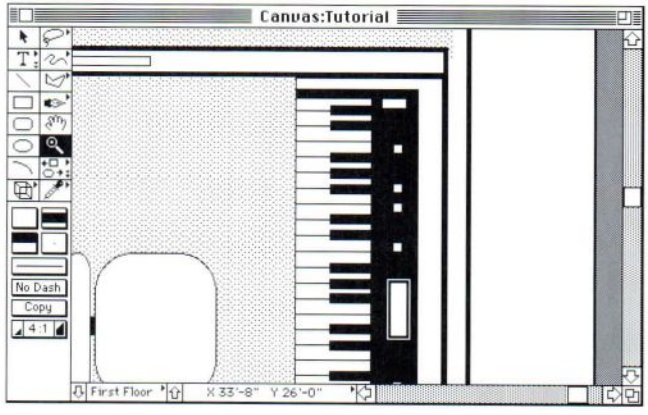
2. **Position the Magnifying Glass tool over the electronic keyboard in the illustration and click once.**



The view of the illustration increases from 1:4 to 1:2. Using the Magnification Glass tool always increases the magnification level to the next multiple of two.

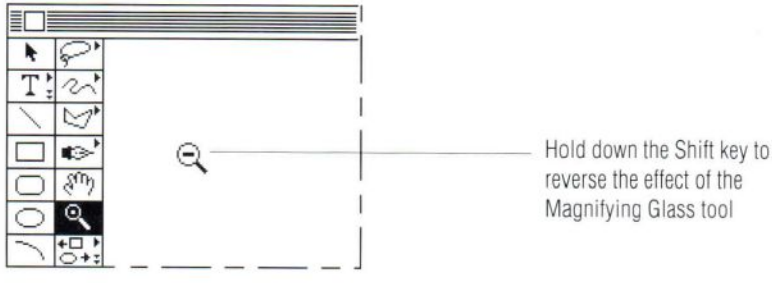
3. **Click the keyboard three more times to view it at a 4:1 magnification level.**

   When you use the Magnifying Glass tool to increase the document's magnification, Canvas centers the magnified view around the point where you click.



4. **Position the Magnifying Glass pointer over the document and hold down the Shift key.**

   The plus sign inside the Magnifying Glass tool changes to a minus sign. When you use the Magnifying Glass tool with the Shift key, you reduce the magnification level.



5. **Continue holding down the Shift key and click the keyboard once.**

Your view of the illustration is now at twice actual size and the Zoom In/Zoom Out palette icon displays "2:1."

The Views submenu

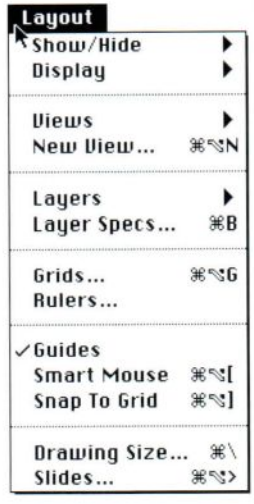
The Views submenu in the Layout menu also lets you change your view of the active document. A view is a combination of your position in a document and your magnification or reduction level. All Canvas documents contain two preset views: Home View and Reduce To Fit. You can also add your own custom views to a document.

Home View

The Home View option lets you easily view the top left corner of the document at actual size.

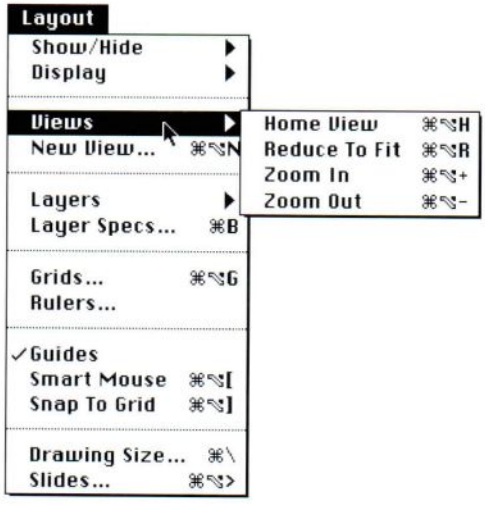
1. **Hold down the pointer on the word *Layout* in the menu bar.**

   Canvas displays the Layout menu.

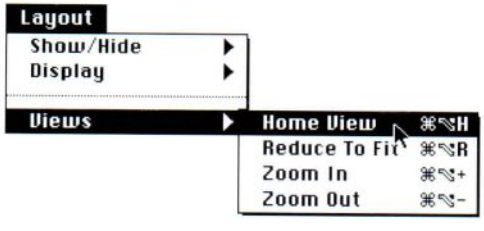


2. **Drag to highlight the word *Views*.**

When you highlight the word *Views*, a submenu appears which lets you specify an option.

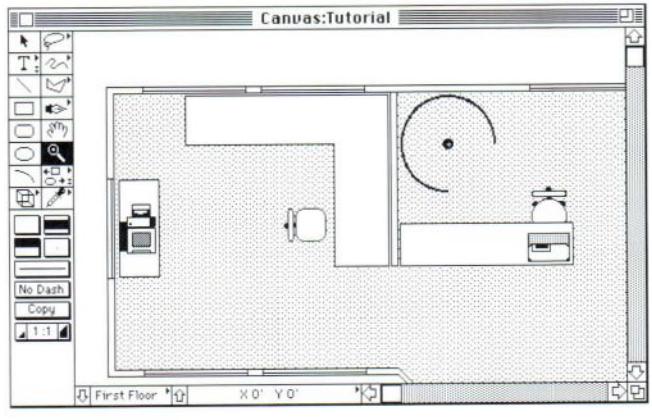


3. **Drag through the submenu to highlight the Home View option.**



4. **Release the mouse button.**

Canvas displays the top left corner of the document and adjusts the magnification level to actual size. This is the way documents appear when first opened.

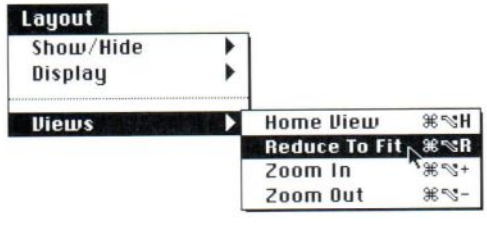


Reduce To Fit

The Reduce To Fit option of the Views submenu makes the entire document visible in the Canvas Window. It positions the document so that the top left corner is visible in the top left corner of the window and adjusts the magnification level so that the entire document is visible.

1. **Pull down the Layout menu and drag to highlight the Views submenu.**

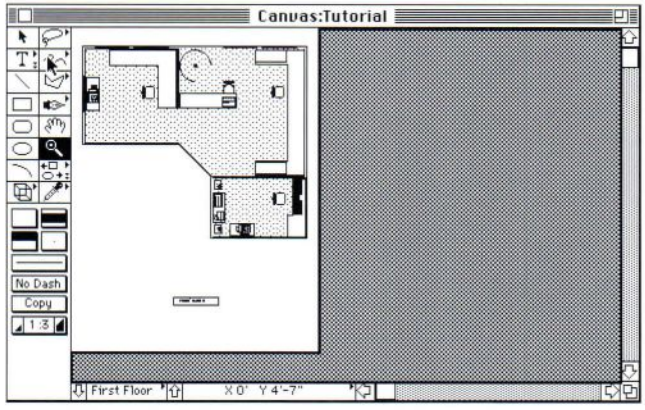
   Canvas displays the Views submenu.



2. **Drag through the submenu to highlight the Reduce To Fit option and release the mouse button.**

   The document is reduced to fit within the window. The Zoom In/Zoom Out palette icon tells you what reduction level Canvas has set

in order to fit it in the window. The reduction level will vary depending on the size of your Canvas Window.



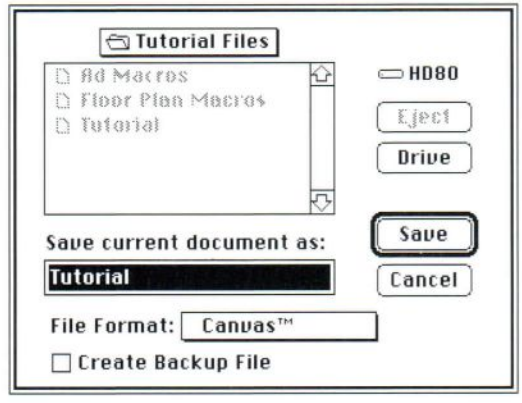
Saving documents

Before continuing with the tutorial, you should save a copy of the *Tutorial* file under a different name so that the original document won't be affected by the changes you make. To do this, you'll use the Save As command.

1. Pull down the File menu.

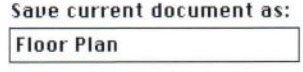
2. **Drag through the menu to choose the Save As command.**

   Canvas displays the Save As dialog box.



3. **Type "Floor Plan."**

   The new name replaces *Tutorial* in the text box.



4. **Click Save.**

   The Save As dialog box closes and Canvas saves the document as a new file with the name *Floor Plan*. Notice that the document's title bar has changed to read "Canvas:Floor Plan."

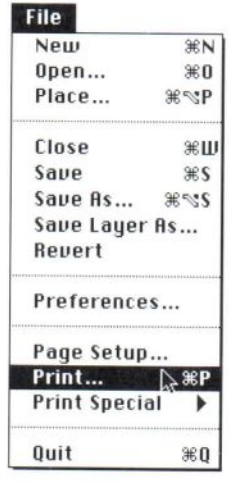
Printing a Canvas document

Before you attempt to print the floor plan, make sure your system is set up to print and that *Floor Plan* is the active document.

> **User Tip:** You may need to specify the proper printer by using the Chooser desk accessory (see your *Macintosh System Software User's Guide* for information regarding the Chooser). If you change the active printer, you will need to choose the Page Setup command before printing. Simply choose Page Setup from the File menu and click OK when the Page Setup dialog box appears.

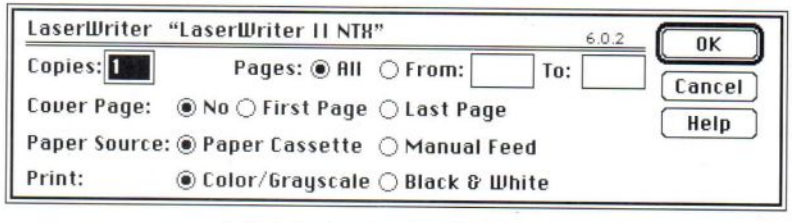
To print the floor plan:

1. **Pull down the File menu.**

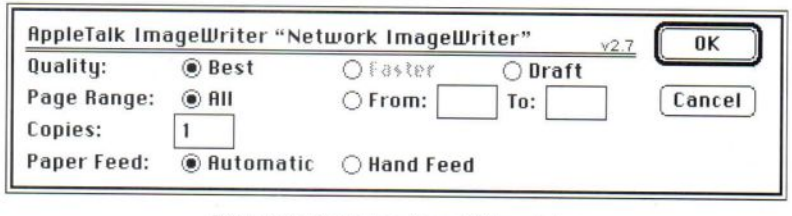


2. **Drag through it to choose the Print command.**

   Canvas displays the Print dialog box. The appearance of the Print dialog box depends on the type of printer you are using.



Print dialog box for a LaserWriter printer



Print dialog box for an ImageWriter printer

The settings in the Print dialog box should already be correct for printing a single copy of the *Floor Plan* document.

3. **Click OK (or Print if using System 7.0 or later) to print the floor plan.**

   Canvas sends the document to the printer.

Quitting Canvas

When you have finished working with Canvas and want to end your work session, you quit the program. Quit Canvas now by choosing the Quit command from the File menu. Canvas closes the *Floor Plan* document and returns you to the Finder desktop (or, if you are using MultiFinder, to the next open application).

Where to go from here

So far, you have learned about the Canvas Window and some of the basic functions needed to create Canvas documents. In the chapters which follow, you will create and manipulate the various types of objects which make up illustrations. At this point you may either continue with the tutorial by going on to Chapter 2, "The basics of drawing," or you may choose to come back to the tutorial at another time.

Chapter 2

The basics of drawing

You are now ready to begin creating objects. You'll use Canvas's basic drawing tools to add details to the *Floor Plan* document you created in Chapter 1.

What you will learn

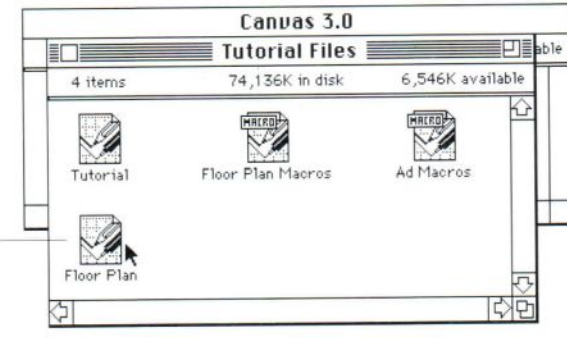
Chapter 2 will teach you the basics of creating computer graphics. After completing this chapter, you will be able to:

- Draw lines
- Draw rectangles
- Draw rectangles with rounded corners
- Draw circles
- Draw arcs
- Change an object's properties
- Reposition objects
- Eliminate unwanted objects
- Duplicate objects
- Change the stacking order of objects
- Align objects
- Create groups from individual objects

Opening the Floor Plan document

To start this session of the tutorial, you need to open both Canvas and the document named *Floor Plan*, which you created in Chapter 1.

1. **In the Finder, locate the icon for the document named *Floor Plan* in the Tutorial Files folder.**



2. **Double-click the icon.**

   The Finder launches Canvas and opens the *Floor Plan* document.

In Chapters 2, 3, and 4, you will put the finishing touches on this floor plan, which is for a computer store. It seems there are some minor (and some not so minor) details which the architect has left out. As you complete the tutorial, you will learn to use many of Canvas's drawing features, from the most basic to the most advanced.

Adding a front door

One of the details the architect has left out of the floor plan is a front door. Your first exercise will be to add one.

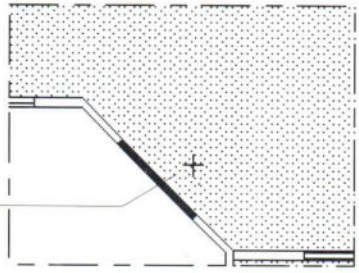
Drawing lines

The front door is simply a line. To draw it:

1. **Click the Line tool icon in the Tool Box to select it.**

The icon highlights, indicating that it is active and the pointer changes to a crosshair when you position it over the document.

2. Position the crosshair pointer near the store's entrance.

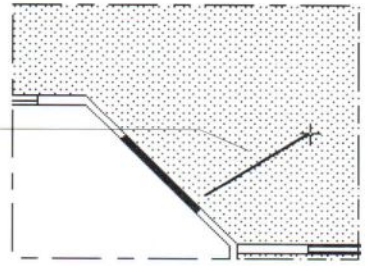


3. Drag the pointer diagonally up and to the right to create a line.

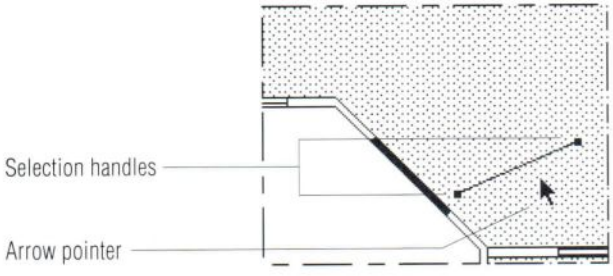
As you drag, a line follows the pointer from the point where you started dragging to the current position of the pointer.

4. When the line is similar to the one in the following illustration, release the mouse button.

Don't worry about the exact position of the line. Once you've finished drawing it, you'll adjust its length and angle.



A small black square is displayed at each end of the line. These are selection handles, which indicate that the line is selected. Whenever you finish drawing an object, Canvas selects it and selects the Arrow tool from the Tool Box.



The Arrow tool is used to easily edit objects you have created as well as to select objects (many of Canvas's commands can only be applied to objects which have been selected). In the following steps, you'll use the Arrow tool to reposition and edit the line.

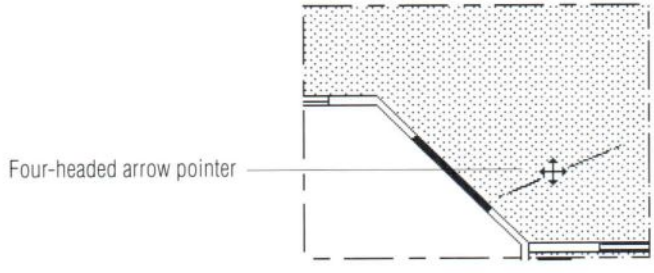
Repositioning objects

To move an object, simply drag it with the Arrow tool. The Arrow tool should already be selected. If not, select it by clicking its icon in the Tool Box. The pointer looks like an arrow when positioned over the document.

1. **Position the pointer so that the tip of the arrow is at a point along the line's length, but not over either selection handle.**

2. **Press the mouse button.**

   The pointer changes to a four-headed arrow.

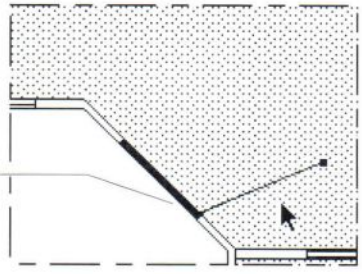


3. **Drag the pointer toward the doorway.**

   As you drag, the line follows the pointer's movement. This is the basic technique for moving objects around a Canvas document.

4. **Drag the line so that its lower left endpoint is at the lower right side of the doorway, as shown in the following illustration, and release the mouse button.**

   The line has been repositioned. It remains selected and the pointer changes back to an arrow.



Don't worry if you can't position it exactly. Canvas makes it easy to fine tune an object's position.

The line should still be selected. If it isn't, select it by clicking anywhere along its length using the Arrow tool. When it is selected, selection handles appear at its endpoints.

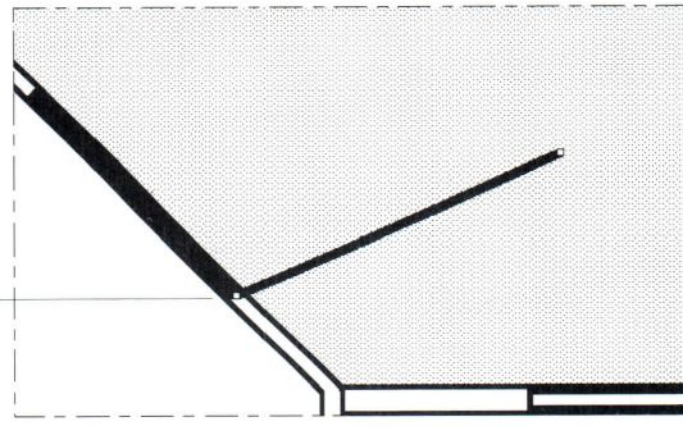
1. **Hold down the pointer on the Zoom In/Zoom Out palette icon.**

2. **Drag through the palette to choose the 4x option.**

   Canvas magnifies your view of the line.

3. **Use the arrow keys on your keyboard to adjust the position of the line so that the lower left endpoint is centered on the wall at the right side of the doorway.**

   The Up, Down, Left, and Right Arrow keys move selected objects one screen pixel (1/72") in each direction.



Editing lines

Now that the lower endpoint of the line is positioned, you need to position the other end. This too, is easily accomplished in Canvas.

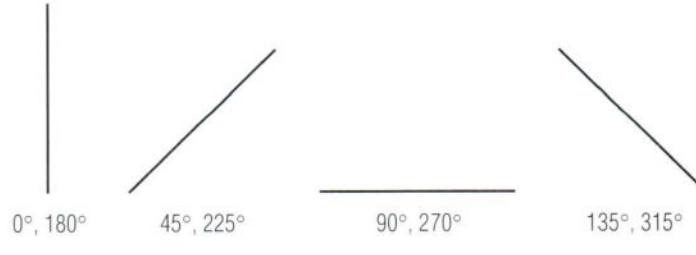
Be sure the line is still selected. Select it with the Arrow tool if it is not.

1. **Position the pointer over the handle at the line's upper right endpoint.**

   When the pointer is properly positioned over the handle, it changes from an arrow to a small crosshair (+).

2. **Press and hold down the Shift key and begin dragging the top right handle.**

   Canvas constrains the angle of the line to one of the multiples of 45° illustrated below.



As you drag the handle, you'll notice that the display in the Information Manager (the box displayed along the bottom of the Canvas Window) changes to display the angle and length of the line.

3. **Continue to drag the handle, still pressing the Shift key, until the Information Manager indicates that the line is 3 feet, 9 inches long and its angle is 45°.**

4. **Release the mouse button.**

   You have finished positioning the door.

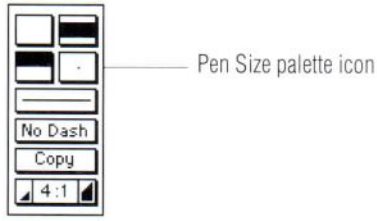
Choosing a pen size

You are almost finished. The last step is to change the pen size of the line to make it thicker. To do so:

1. **Be sure the line is still selected. Select it with the Arrow tool if it is not.**

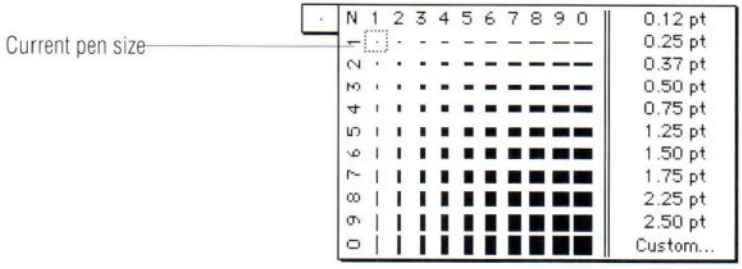
   While an object is selected, you can easily change its properties.

2. **Position the pointer over the Pen Size palette icon in the Tool Box.**



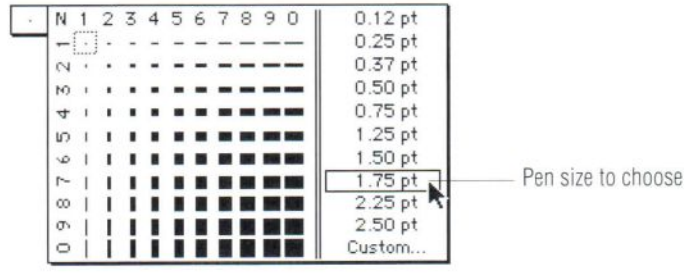
3. **Press the mouse button.**

   The Pen Size palette "pops-up" from the icon, displaying pen sizes. The line's current pen size is indicated by a dashed rectangle. You'll notice that it appears around the 1x1 option.



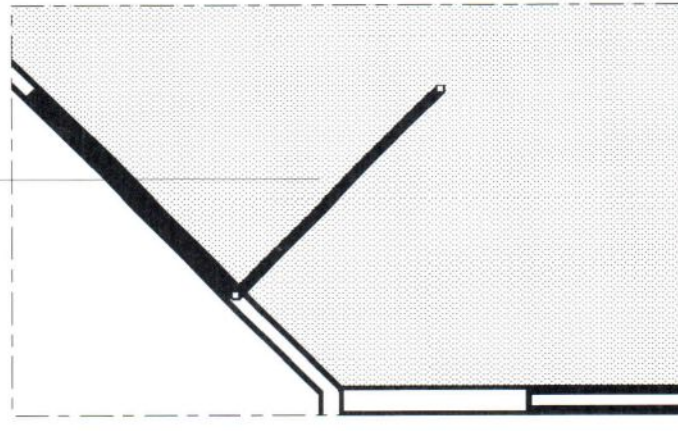
You will change this to the 1.75 point pen size:

4. **Drag the pointer across the choices contained in the palette so that the selection box encloses the 1.75 pt size, as in the following illustration.**



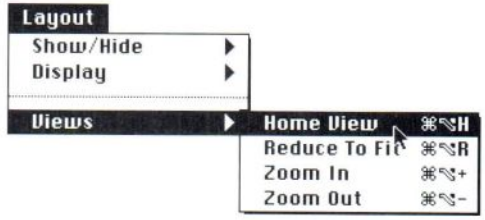
5. **Release the mouse button.**

When you release the mouse button, the line is redrawn at the width you have chosen.



If you again hold down the pointer on the Pen Size palette icon, the palette displays a dashed rectangle around the 1.75 point size.

6. **Choose the Home View option of the Views submenu from the Layout menu.**



The document returns to actual size.

Adding an area rug

Now that the store has a front door, it needs some furnishings. In the steps that follow, you'll add an area rug to the floor in the left section of the store.

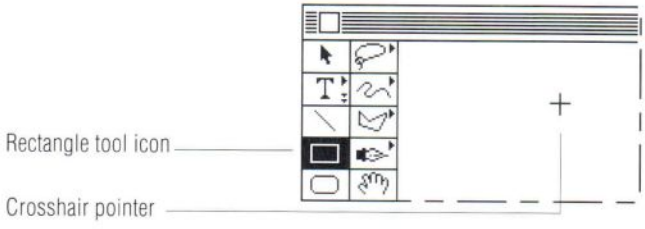
Drawing rectangles

Drawing rectangles is no more difficult than drawing lines. All of Canvas's object creation tools are just as simple to use: you select the appropriate tool from the Tool Box, position the pointer in the document, and drag to create the shape.

To draw a rectangle:

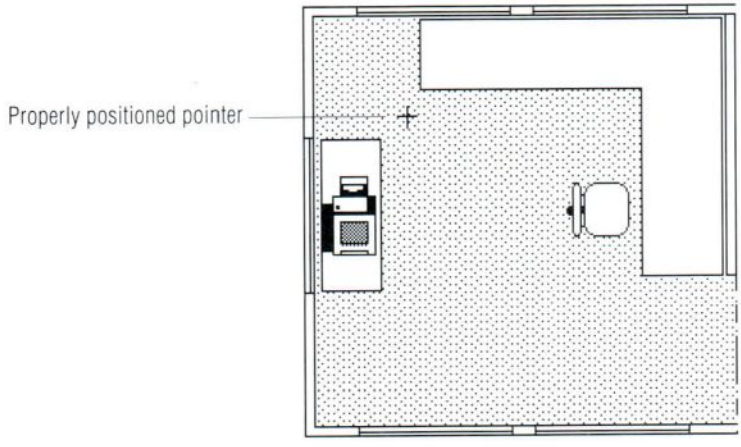
1. **Click the Rectangle tool icon in the Tool Box to select it.**

   The tool's icon highlights and the pointer changes to a crosshair when positioned in the illustration.



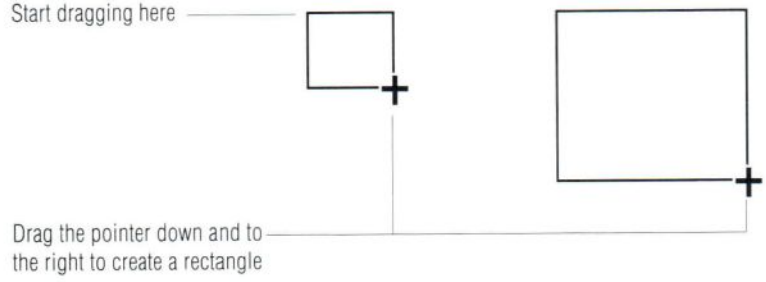
2. **Position the pointer near the top left corner of the illustration, as shown.**

Don't worry about exact positioning, you can adjust that later.



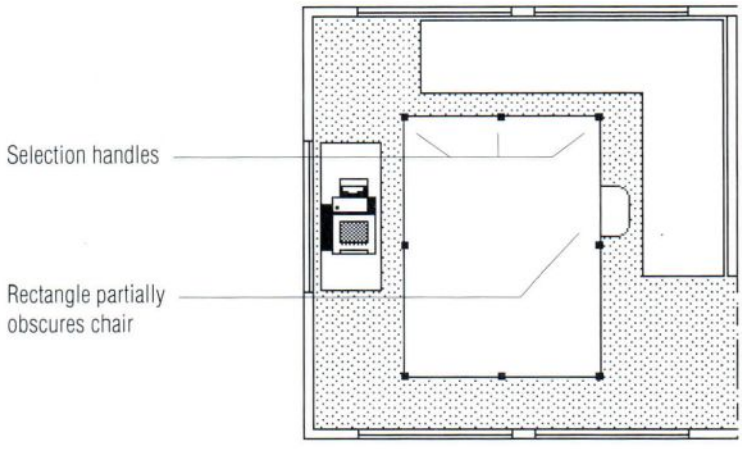
3. Drag the pointer diagonally down and to the right.

Canvas draws a rectangle with its top left corner at the point where you started dragging. The opposite corner follows the movement of the pointer.

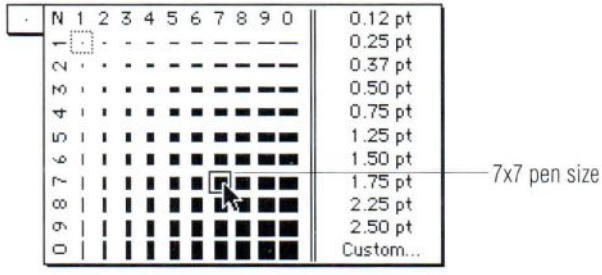


4. Continue dragging until the rectangle partially obscures the chair, as shown in the following illustration, and then release the mouse button.

The rectangle is selected. Eight square selection handles surround it, one at each corner and one at the center of each side.



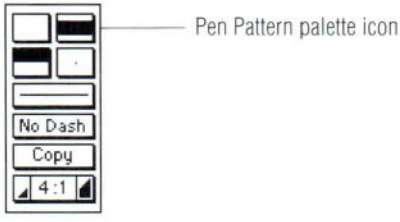
5. Choose a pen size of 7x7 for the rectangle.



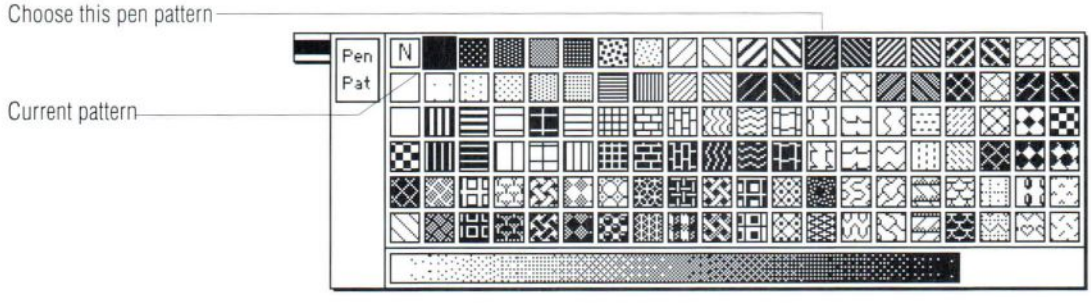
Setting patterns

Objects have two patterns: a pen pattern and a fill pattern. The pen pattern affects the border of the object while the fill pattern affects the area inside the object's border. To specify the rug's patterns:

1. Hold down the pointer on the Pen Pattern palette icon.

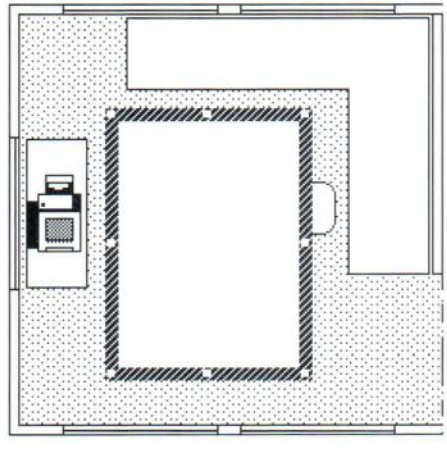


The Pen Pattern palette appears. The heavier outline around the solid black square indicates that it is the current pen pattern.



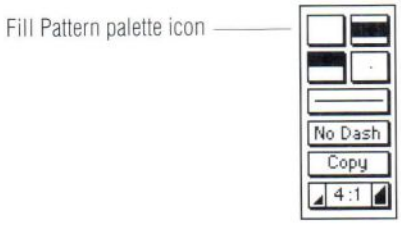
2. Drag through the palette to choose the striped pattern indicated above.

When you release the mouse button, the pattern of the rug's outline changes to the one you have chosen.

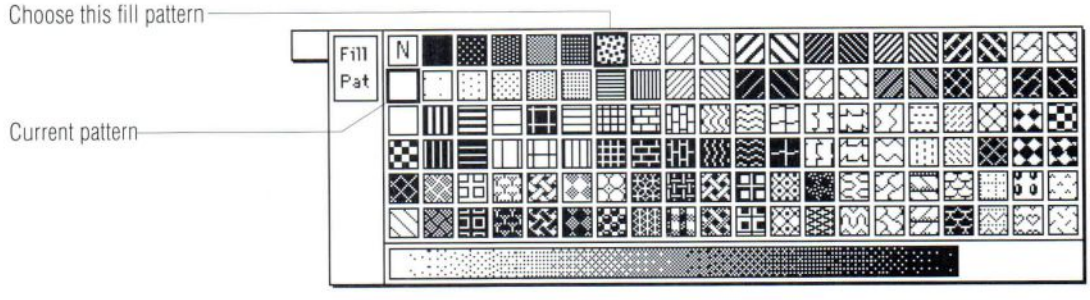


You choose a fill pattern the same way:

3. Hold down the pointer on the Fill Pattern palette icon.

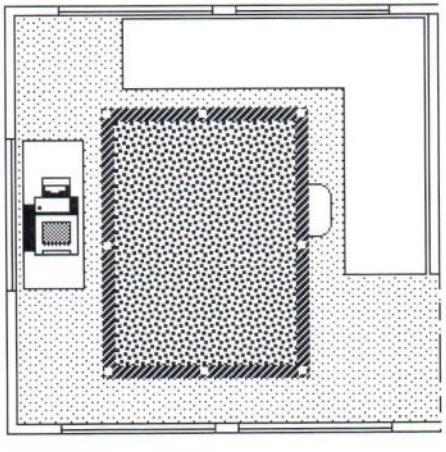


The Fill Pattern palette appears. It contains the same patterns as the Pen Pattern palette.



4. Drag through the palette to choose the pattern indicated in the previous illustration and release the mouse button.

The area in the center of the rug changes to the pattern you have chosen.



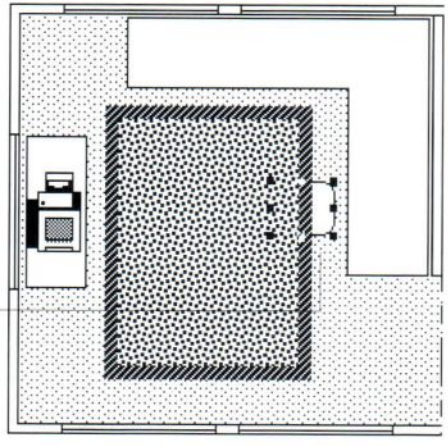
Changing the stacking order of objects

The area rug now needs to be moved so that it is under the chair. Generally, Canvas orders objects from bottom to top in the order in which they were drawn. You may, however, want to change this order, as in the case of the rug and the chair.

In the example that follows, you'll reorder the chair and the rug so that the chair is on top.

1. **Click the visible portion of the chair to select it.**

   The chair is selected. Note that although you can only see a portion of the chair, all eight selection handles are visible.



The partially hidden chair is selected

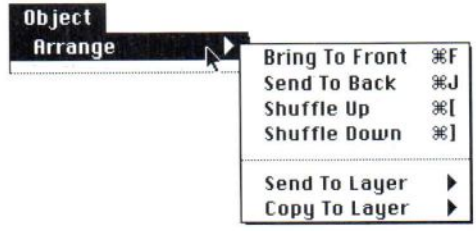
When an object is selected, you can use menu commands to change its appearance. Most commands are applicable only when certain types of objects are selected. Commands which cannot be applied are dimmed—they appear in the menu in gray letters.

2. **Pull down the Object menu.**

   The Object menu appears. Notice that some commands, such as Group and Unlock, are dimmed while others are enabled.

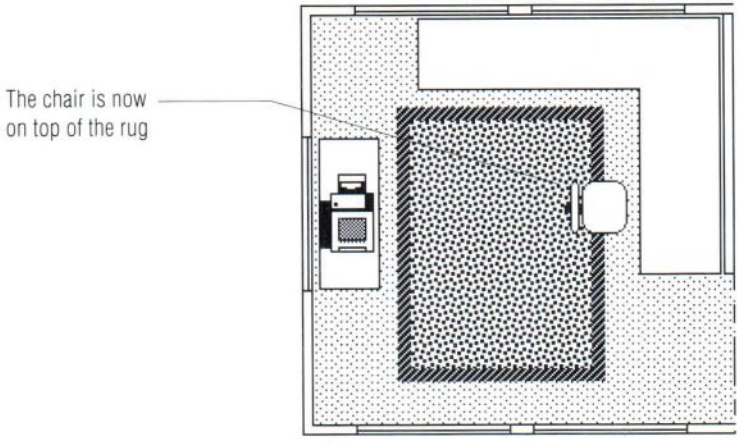
3. **Drag through the menu to highlight Arrange.**

A submenu appears, listing options for arranging objects.



4. **Drag through the Arrange submenu and choose the Bring To Front option.**

Canvas brings the chair in front of the rug.



Adding a couch

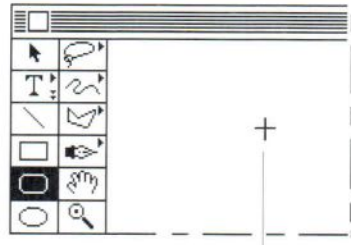
You will now add a couch to the same room.

Drawing rounded rectangles

Canvas allows you to create rectangles with rounded corners as well as angled corners. You create them using the Rounded Rectangle tool. A rounded rectangle will be the basic component in the couch.

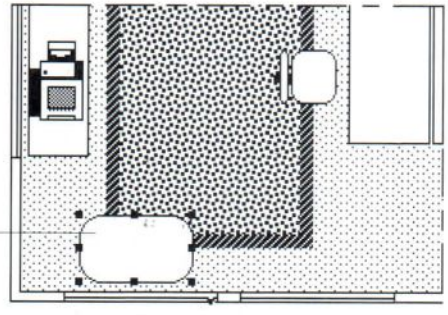
1. **Select the Rounded Rectangle tool from the Tool Box by clicking its icon.**

The icon highlights and the pointer changes to a crosshair when placed over the illustration.



2. **Position the pointer near the bottom edge of the rug and drag to draw a rounded rectangle, releasing the mouse button when done.**

   Don't worry about its exact size and position for now.



The Object Specifications dialog box

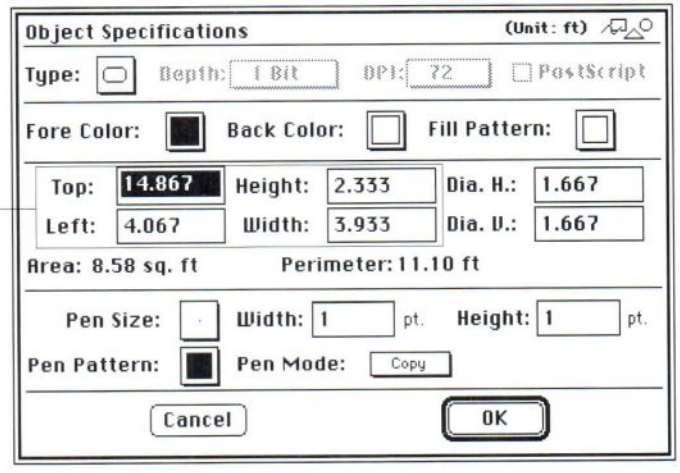
The Object Specifications dialog box gives you information about and lets you make changes to a selected object's properties.

If the rounded rectangle is not still selected, select it now.

1. **Choose the Object Specs command from the Object menu.**

The Object Specifications dialog box appears, showing the current values for each of the rounded rectangle's properties.

You will change the values in these text boxes



You are now going to change the position and size of the rounded rectangle.

2. **Type 14.33 in the text box labeled *Top*.**

   The contents of the Top text box are already highlighted. Simply type the new value.

3. **Press the Tab key.**

   Canvas highlights the contents of the Left text box.

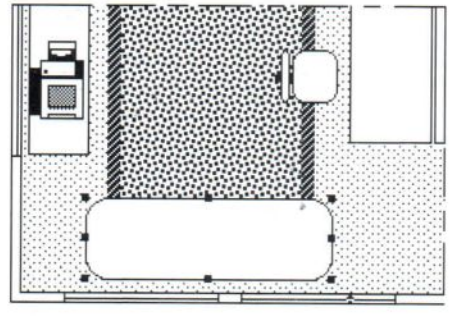
4. **Type 4.33.**

5. **Press the Tab key again and type 2.8 in the Height text box.**

6. **Press the Tab key once more and type 8.5 in the Width text box.**

7. **Click OK once you have entered the above data.**

The Object Specifications dialog box closes and the location and dimensions of the rounded rectangle change to reflect the data you entered; the result looks like the following illustration.



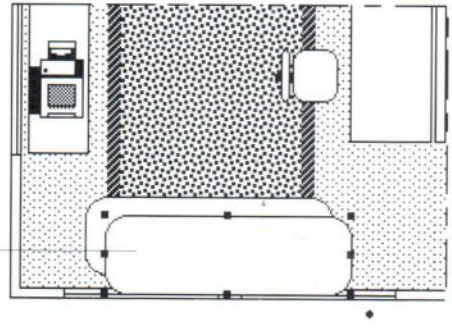
If the pen size or pattern, or the fill pattern of your rounded rectangle is different than the ones shown here, you will need to adjust them using the palette icons as you did for the rug. (The fill pattern should be solid white, the pen pattern solid black, and the pen size 1x1.)

Duplicating objects

Canvas offers an easy way to duplicate objects. Each copy has the same properties as the original, but is offset below and to the right.

1. **Select the rounded rectangle with the Arrow tool if it isn't still selected.**
2. **Choose the Duplicate command from the Edit menu.**

   Canvas creates a copy of the rounded rectangle, and places it slightly below and to the right of the original. The copy is now selected.



The duplicate is offset below and to the right of the original

3. **Choose the Object Specs command from the Object menu.**

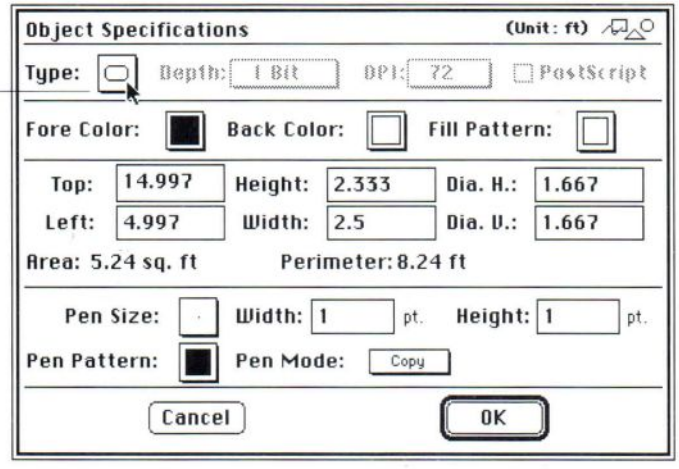
   The Object Specifications dialog box appears.

4. **Use the Tab key to move to the Height text box and type 2.333.**

5. **Press the Tab key again and type 2.5 in the Width text box.**

6. **Hold down the pointer on the Type pop-up box as shown in the following illustration.**

Position the pointer here to display the pop-up menu



A pop-up menu of Canvas object types appears.

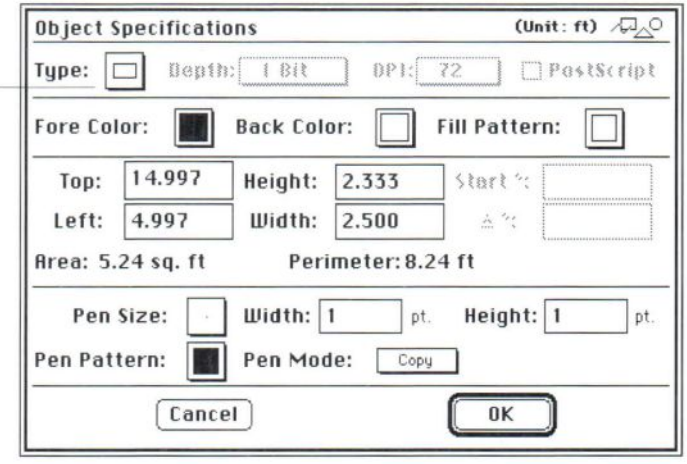
7. **Drag through the pop-up menu to enclose the rectangle icon in the selection box.**

Drag to choose the rectangle icon

Current object type

8. **Release the mouse button.**

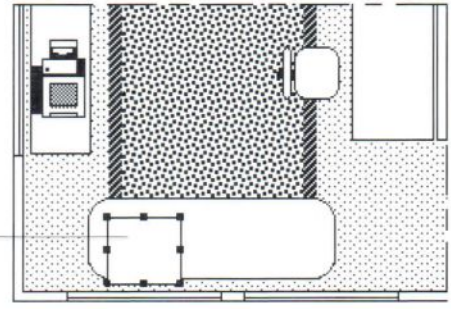
The rectangle icon is now displayed in the Type pop-up box.



The object is now a rectangle

9. Click OK to accept the changes you have made.

The dialog box closes and the selected rounded rectangle becomes a rectangle. This rectangle is the first cushion for the couch.



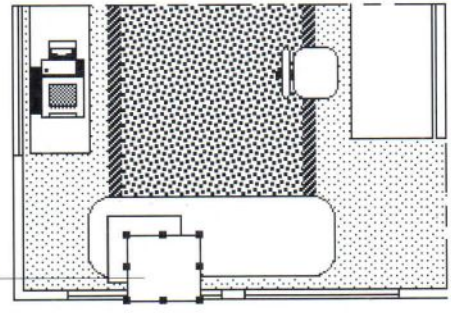
Resulting rectangle

You need to create two additional cushions for the couch. To do so, use the Duplicate command in the Edit menu.

1. Select the rectangle with the Arrow tool if it isn't already selected.

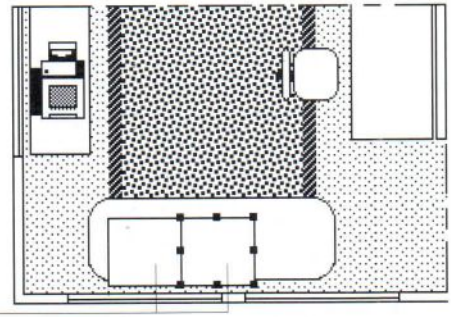
2. Choose the Duplicate command from the Edit menu.

A second rectangle appears below and to the right of the first.



3. **Hold down the pointer on the second rectangle and drag it to the right side of the first one.**
4. **Adjust its location precisely using the arrow keys on the keyboard.**

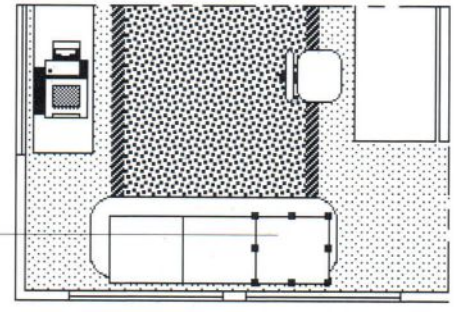
   It should look like the one in the following illustration.



5. **Choose the Duplicate command from the Edit menu once more.**

   This time, Canvas not only duplicates the second rectangle but also places the copy adjacent to the original as shown in the following illustration. (If you have accidentally deselected the second rectan-

gle Canvas will no longer remember how you repositioned it and you will have to position the third one yourself.)

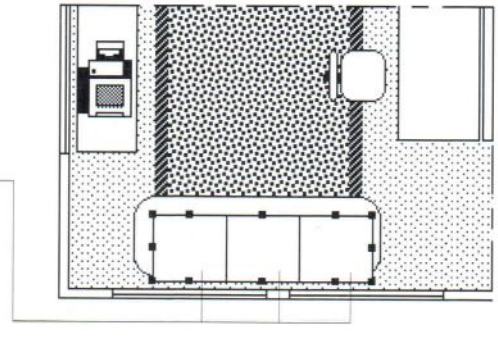


Creating object groups

Illustrations containing many objects can be cumbersome to work with. To facilitate working with complex drawings, Canvas lets you create groups out of multiple objects, which behave as single objects.

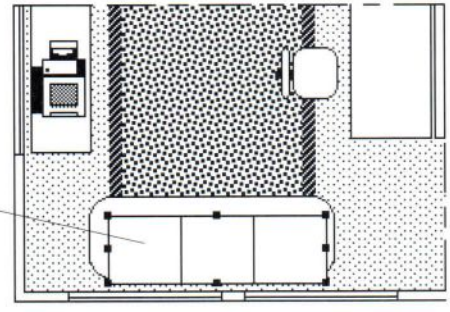
1. **Hold down the Shift key and click the first and second rectangles.**

   All three rectangles are now selected. When you hold down the Shift key and click an object, Canvas adds it to the current selection.



2. **Choose the Group command from the Object menu.**

The selected rectangles are combined into a group, and the group is selected. You can now position the three rectangles simultaneously.



Aligning objects

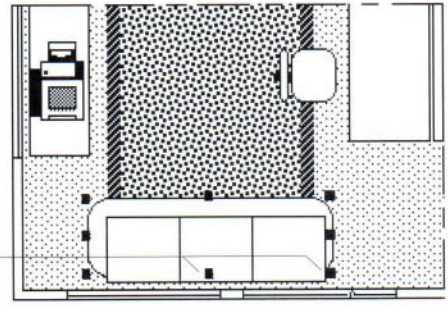
Canvas offers an easy way to align objects to each other using the Alignment Specifications dialog box. Here you'll use it to properly position the cushions on the couch; it's a lot more accurate than trying to position them with the Arrow tool or the arrow keys.

1. **Select the rounded rectangle by clicking it once with the Arrow tool.**

   Handles appear around it to indicate that it is selected.

2. **Choose the Lock command from the Object menu.**

   The rounded rectangle's selection handles change from black to gray, indicating that it is locked—you can't alter it while it's locked.



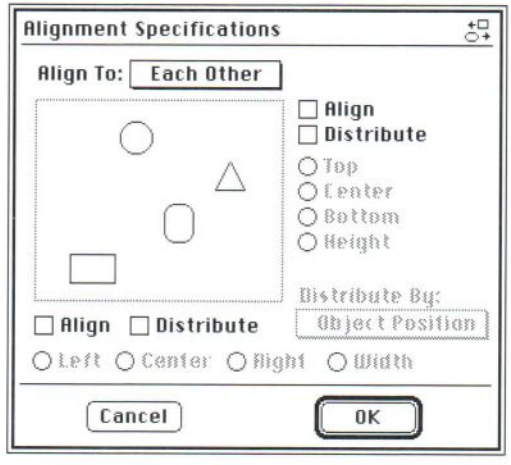
Locking an object which you are going to align with other objects ensures that the other objects are aligned to the locked object, and not the other way around.

3. **Hold down the Shift key and click the group of rectangles to select it.**

   The group of rectangles is added to the selection.

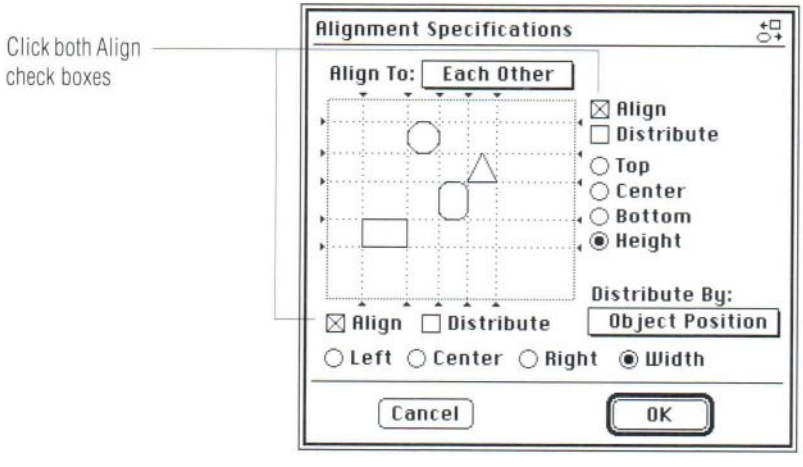
4. **Choose the Align command from the Object menu.**

   The Alignment Specifications dialog box appears.



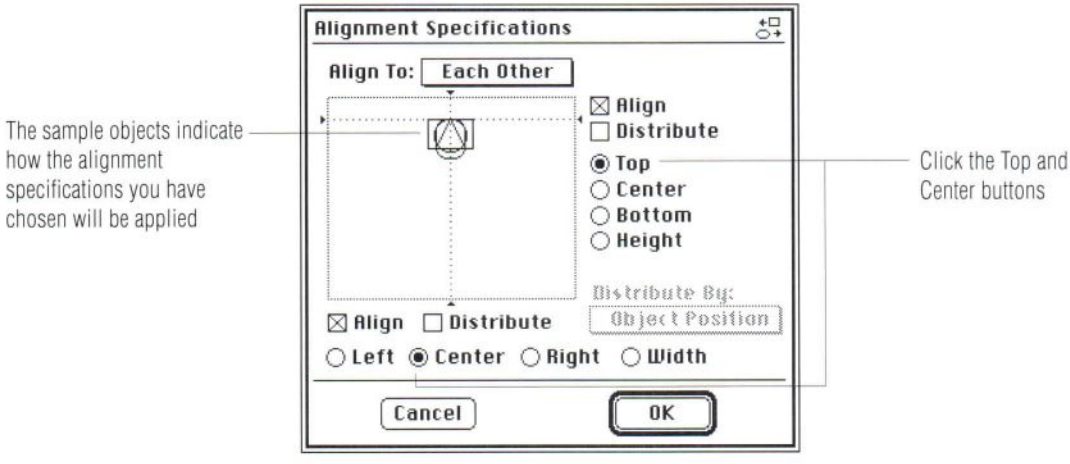
5. **Click both check boxes labeled Align.**

   The horizontal and vertical alignment options are enabled.



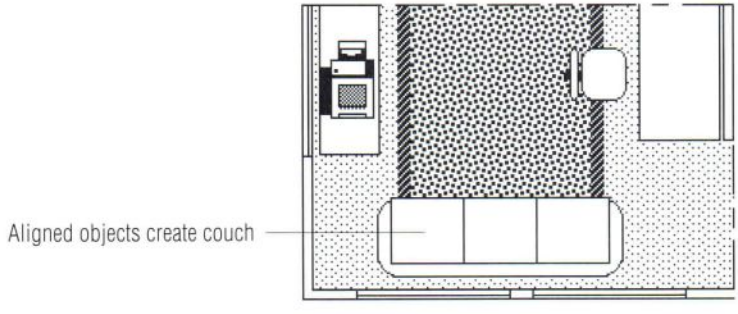
6. **Click the Center button in the bottom group and the Top button in the right group.**

   The objects in the preview window align themselves according to your specifications.



7. **Click OK to align the objects you have selected.**

   The dialog box closes and the group of rectangles is aligned to the center of the top side of the rounded rectangle.



You will now group the cushions with the couch so their alignment can't be altered accidently.

8. **Choose the Unlock command from the Object menu.**

The rounded rectangle's selection handles change from gray to black, indicating that it is no longer locked. You must unlock it before you can group it with the rectangles.

9. **Choose the Group command in the Object menu.**

   The couch and cushions are grouped into a single object. Selection handles appear around the group.

Adding a potted plant

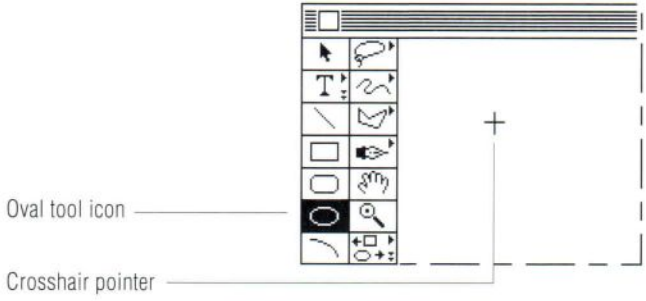
As an extra detail, you'll add a potted plant in the corner of the same room. Once you have created a circle for the planter, you'll use one of Canvas's paint tools to create the foliage.

Using the Oval tool

The Oval tool can be used to create perfect circles. To do so:

1. **Select the Oval tool from the Tool Box.**

   The tool's icon becomes highlighted and the pointer changes to a crosshair when positioned over the illustration.



2. **Position the pointer in the upper left corner of the office.**
3. **Hold down the Shift key and drag the pointer diagonally down and to the right.**

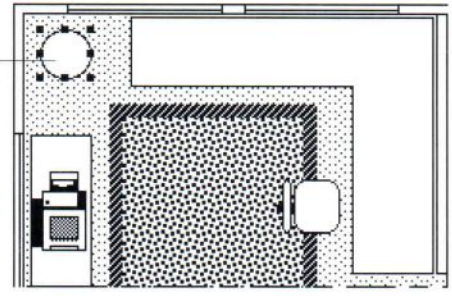
When you use the Shift key with the Oval tool, you can draw only perfect circles, and not ellipses.

Shape drawn without Shift key

Shape drawn with Shift key

4. **Release the mouse button when the circle is approximately the same size as the one in the following illustration.**

   The circle is selected, and handles appear around it. If you need to drag the finished circle into place, hold down the pointer on its center and drag it so it is in the same position as the one illustrated. Now you're all ready to add the plant.



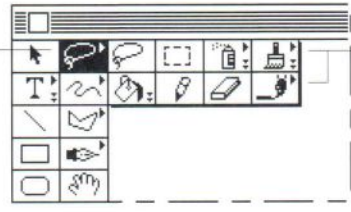
Using the Spray Can tool

You will use the Spray Can tool to paint the plant's foliage. The Spray Can tool, one of Canvas's paint tools, creates paint objects. Paint objects differ from other Canvas objects in that they are defined by an array of individual pixels (points on the screen) rather than by a mathematical formula. As such, they are more limited in the way you can manipulate them. However, they allow you to create effects that would be difficult to achieve using other types of objects.

To create the plant's foliage:

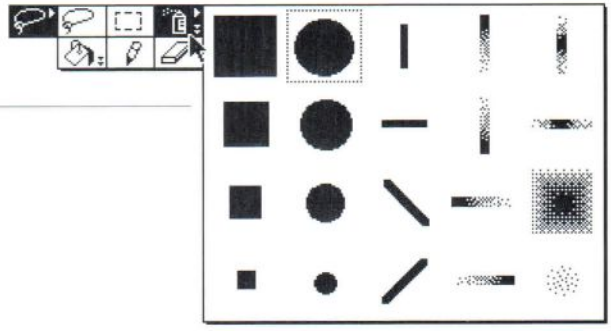
1. **Position the pointer over the Paint Tools palette icon and press the mouse button.**

The Paint Tools pop-up palette appears.



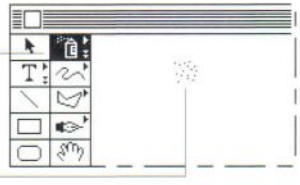
2. Drag through the palette and highlight the Spray Can tool icon.

If you hold down the pointer on the Spray Can tool icon, a second palette appears. This palette lets you choose different spray can nozzles; for the moment you can simply ignore it.



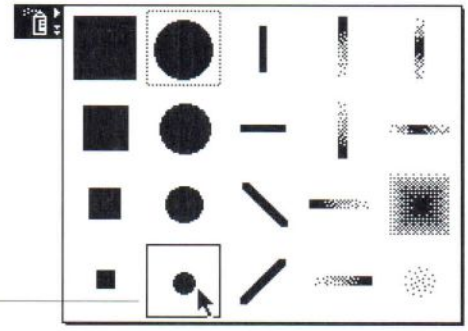
3. Release the mouse button.

The Spray Can Nozzle palette and the Paint Tools palette close. The Paint Tools palette icon now displays the highlighted icon for the Spray Can tool. When the pointer is positioned over the document, it becomes a cluster of dots.



4. **Position the pointer over the Paint Tools palette icon, hold down the Option key, and press the mouse button.**

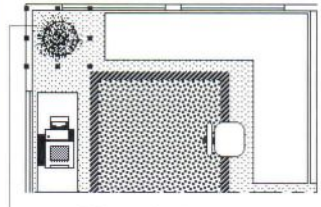
   The Spray Can Nozzle palette you saw before appears. When you hold down the pointer on the Paint Tools palette icon with the Option key held down, the currently selected tool's option palette appears, rather than the Paint Tools palette itself.

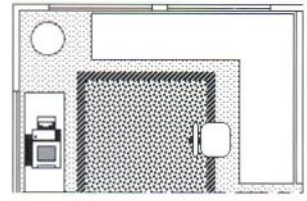


5. **Drag through the palette to select the smallest circular nozzle, indicated in the previous illustration, by enclosing it in the selection box.**
6. **Position the pointer over the circle you drew earlier.**
7. **Press the mouse button and drag the pointer around.**

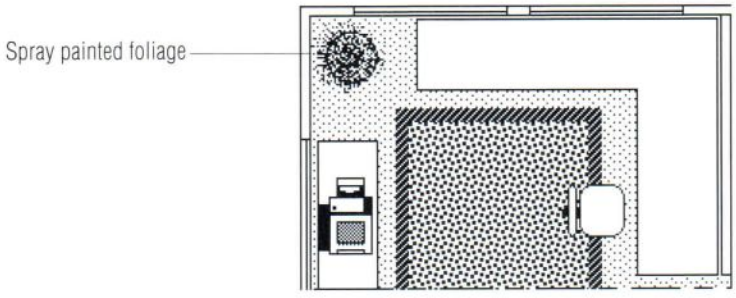
   As you drag, the Spray Can tool leaves a trail of black dots. The more slowly you drag the pointer, the "thicker" the coat of paint is.

User Tip: At any point, you can completely erase the spray painted area and begin painting it again. To do so, select the Arrow tool by clicking its icon in the Tool Box. The spray painted area becomes selected. Press the Delete key to delete the spray paint. Then, simply select the Spray Can tool again and resume painting.





8. **Press the Enter key to deselect the painted foliage.**



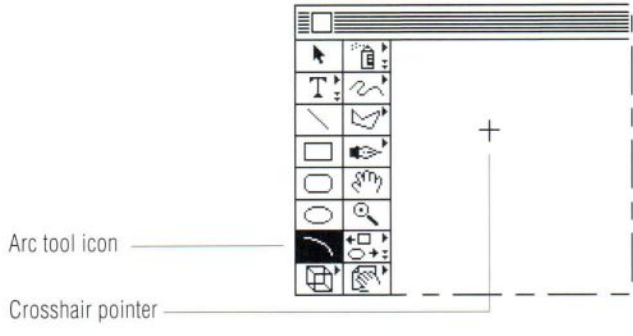
Finishing the front door

You still need to draw an arc at the front door to indicate that it swings open. To draw it, you'll use the last of Canvas's basic drawing tools, the Arc tool.

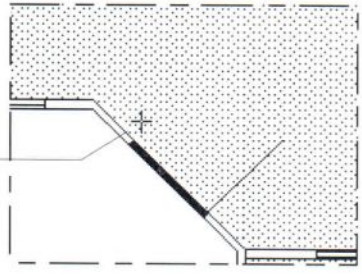
Drawing arcs

1. **Select the Arc tool by clicking its icon in the Tool Box.**

   The icon becomes highlighted and the pointer changes to a crosshair when inside the drawing area.

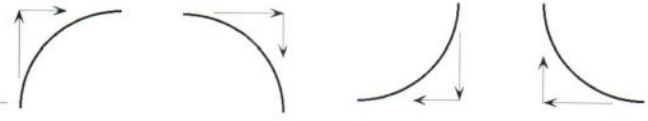


2. **Position the pointer near the door you created earlier.**



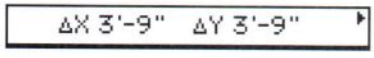
3. **Hold down the Shift key and drag the pointer up and to the right.**

   As you drag, you create an arc which represents the top left quarter of a circle.



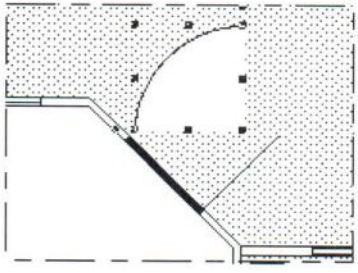
Four possible arcs:
drag in the directions indicated to draw them

4. **Continue dragging until the Information Manager display indicates that ΔX = 3'-9" and ΔY = 3'-9".**

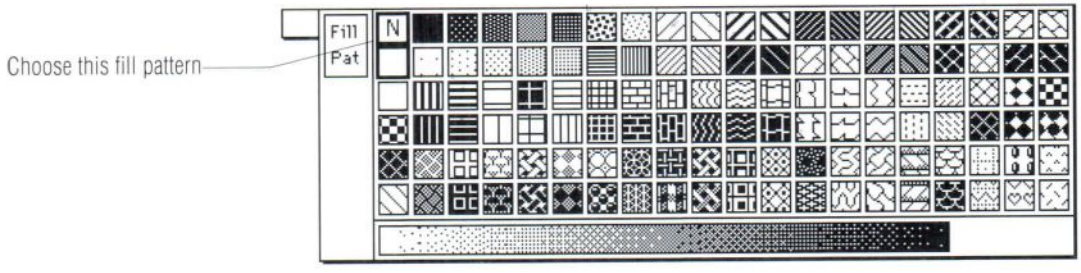


5. **Release the mouse button.**

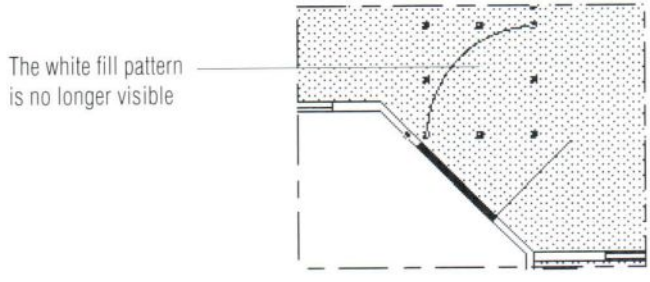
   The arc is selected.



6. **Hold down the pointer on the Fill Pattern palette icon to display its palette.**
7. **Drag to set the arc's fill pattern to "N."**

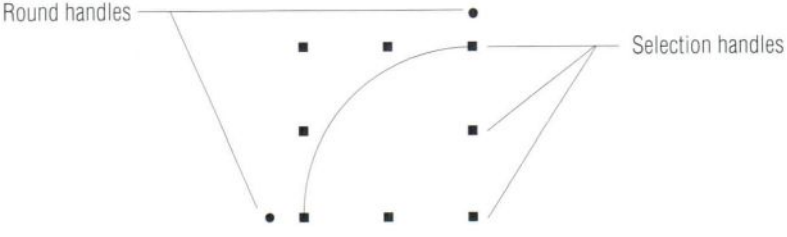


When an object's fill pattern is set to "N" (none), only the object's outline is drawn.



If you look at the selected arc, you'll notice that there are two round handles in addition to the eight square selection handles. These are used to adjust the length of the arc. You want the arc to start at 315° (the edge of the doorway) and extend to 45° (the end of the door). To adjust the arc's length:

1. **Position the pointer over the round handle near the top right end of the arc.**



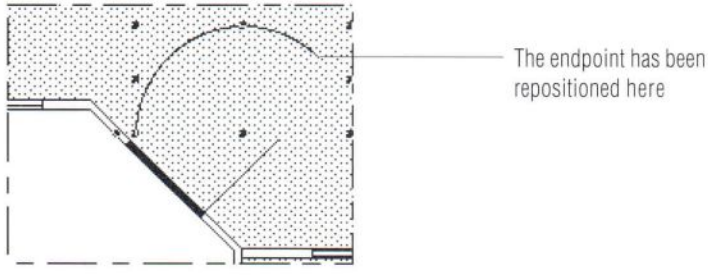
The pointer changes from an arrow to a small crosshair.

2. **Press the mouse button and drag the pointer down and to the right.**

   The Information Manager changes to display the position of the endpoint in degrees, as well as the arc's length, also in degrees.

3. **Drag the handle until the Information Manager indicates that the position of the endpoint is 45° and the length of the arc is 135°.**

   The arc should look like the following illustration.

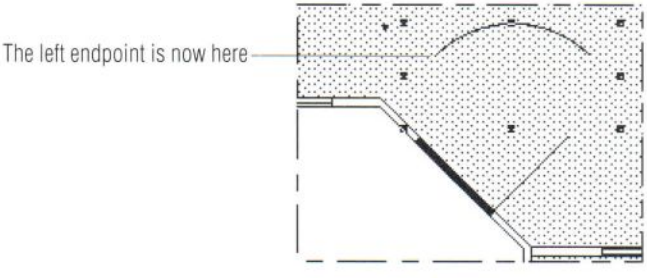


If you hold down the Shift key as you drag one of an arc's round handles, Canvas constrains the endpoint's position to multiples of 45°.

4. **Hold down the Shift key and drag the other round handle upwards.**

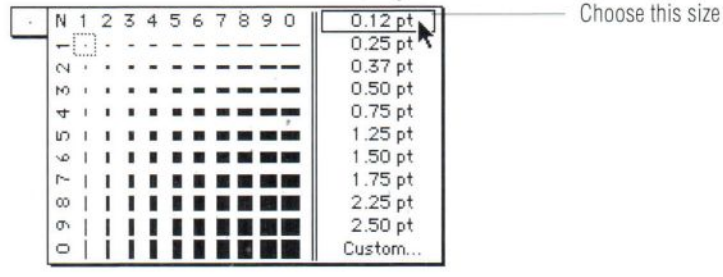
5. **When the Information Manager indicates that the pointer is positioned at 315° and that the length of the arc is 90°, release the mouse button.**

   The arc should look like this:



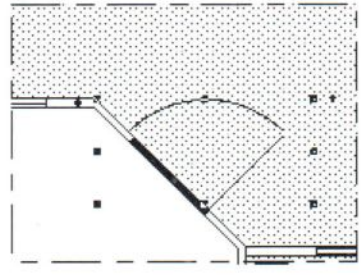
The arc is still selected. Now you will make it thinner and position it in the doorway.

1. **Hold down the pointer on the Pen Size palette icon and drag through the palette to choose the 0.12 pt size.**

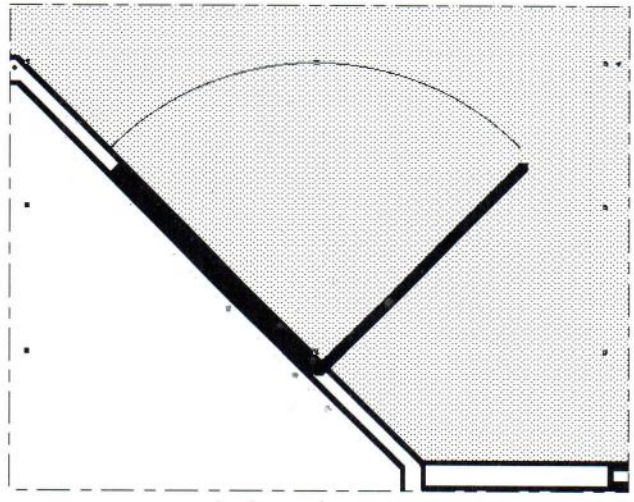


When you release the mouse button, the palette closes and the arc is redrawn with the new pen size. You won't see a difference on your screen since it can't display lines thinner than one point. You will, however see it when you print the document, or when you view the arc at a higher resolution.

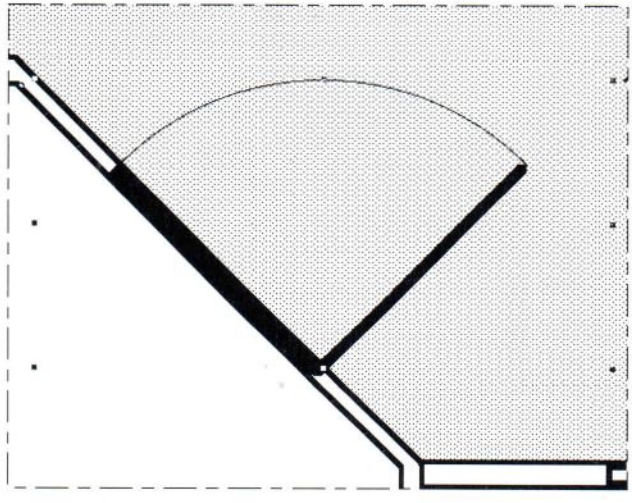
2. **Drag the arc to position it in the doorway as shown.**



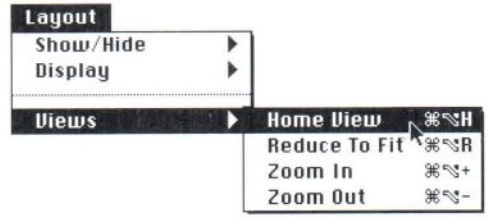
3. **Hold down the pointer on the Zoom In/Zoom Out palette icon and drag through the palette to choose the 4x magnification level.**



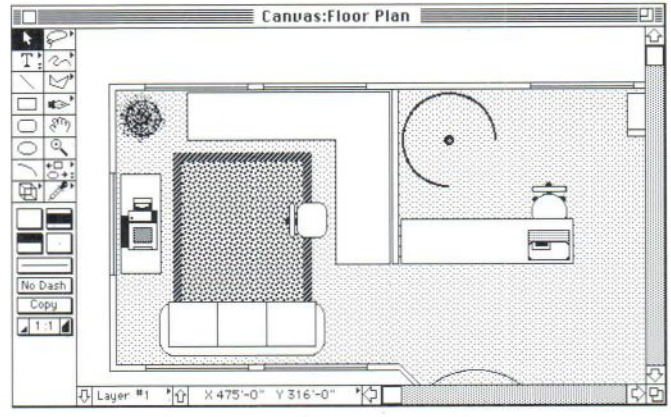
4. **Use the arrow keys on the keyboard to position the arc more precisely, as shown in the following illustration.**



5. **Choose the Home View option of the Views submenu in the Layout menu.**



The drawing returns to its actual size.



Saving your work

At the end of Chapter 1 you used the Save As command to save a copy of the *Tutorial* document with the name *Floor Plan*. Now, you only need to update the document's file on your disk. To do so, pull down the File menu and choose the Save command. Canvas updates the document's disk file.

Where to go from here

At this point you can continue with Chapter 3, "Building on the basics." If you choose not to continue now, exit Canvas by choosing the Quit command from the File menu.

Chapter

3

Building on the basics

Chapter 3 continues where Chapter 2 left off. You'll use some of Canvas's more advanced features to further embellish the computer store's floor plan.

What you will learn

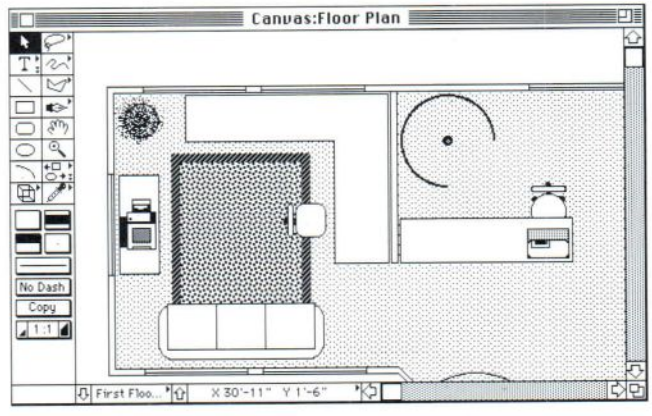
When you complete Chapter 3, you will be able to:

- Use MacrObjects in your documents
- Create custom MacrObjects
- Use macro sets
- Use Canvas's commands to rotate objects
- Draw polygons
- Edit polygons
- Smooth polygons
- Rotate objects
- Use the Duplication command to create multiple copies of objects

Restarting the tutorial

If you took a break after Chapter 2, launch Canvas and open the document labeled Floor Plan. You can do both at once by double-clicking

the document's icon in the Finder. When the document opens, the Canvas Window looks like this.



MacrObjects

One of Canvas's most important and useful features is MacrObjects. You can save objects you use often as MacrObjects. You can then include these MacrObjects in your illustrations. They are drawn in much the same way as objects such as ovals and rectangles. They are especially useful for drawing items used often in more than one document, such as furniture and trees in architectural illustrations. In this chapter, you will use MacrObjects to add a number of details to the floor plan quickly and easily.

Adding Macintosh II computers to the floor plan

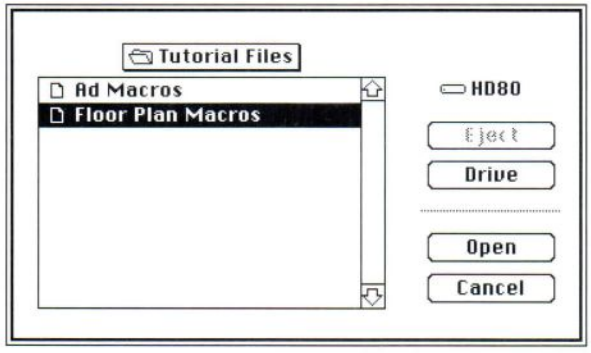
The first thing that you would expect to see in a computer store is a variety of computers. You will now add several to the floor plan.

Opening a macro set file

In the tutorial folder included with the Canvas program, there is a macro set file which contains the MacrObjects you will use in this chapter. To access it:

1. **Choose the Load Set command from the Macro menu.**

An Open dialog box appears.



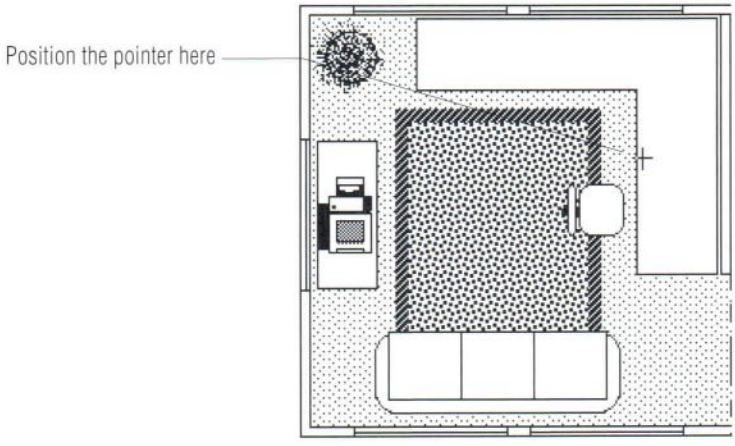
2. **Locate and open the folder named Tutorial Files.**
3. **Within Tutorial Files, locate and open the file called *Floor Plan Macros*.**

   If you pull down the Macro menu, the MacrObjects you loaded are now displayed in its lower section.

4. **Choose the MacrObject called Macintosh II from the menu (you choose MacrObjects in the same way you choose menu commands).**

   The pointer changes to a crosshair.
5. **Position the pointer where you want to place the MacrObject.**

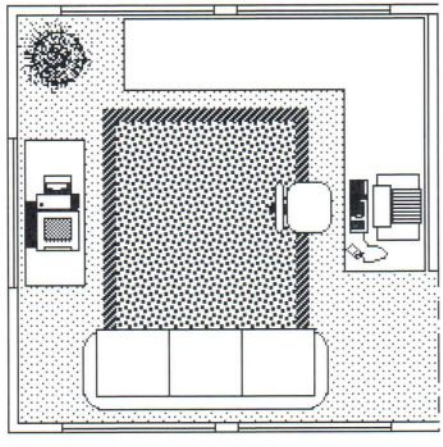
You'll position the first computer on the desk in front of the chair in the room on the left.



6. Click the mouse button.

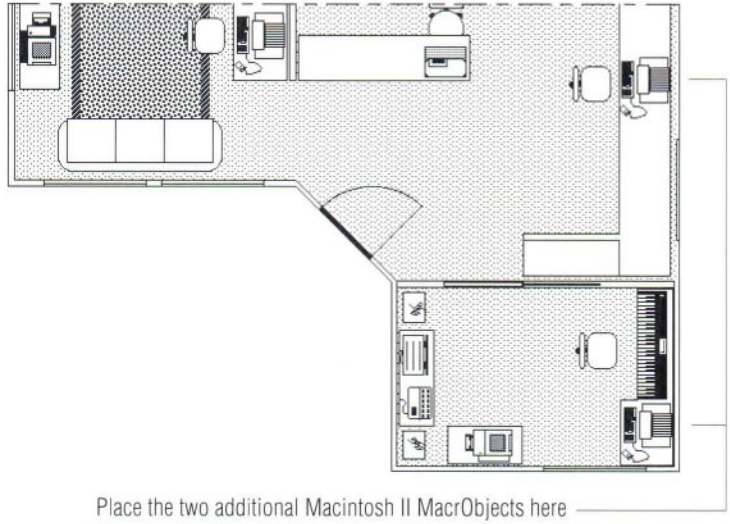
Canvas draws the MacrObject, placing its upper left corner at the location of the pointer.

7. Use the arrow keys to position the computer on the desk in front of the chair.



You are now going to place two additional computers in the document using the same MacrObject.

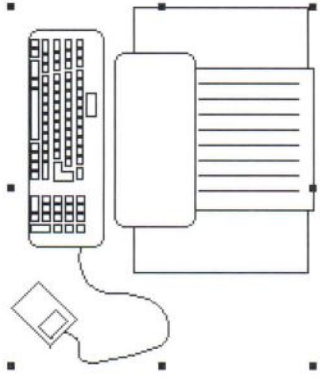
8. **Repeat Steps 4 through 7 to add them as shown in the following illustration, scrolling the document if necessary.**



Editing MacrObjects in a document

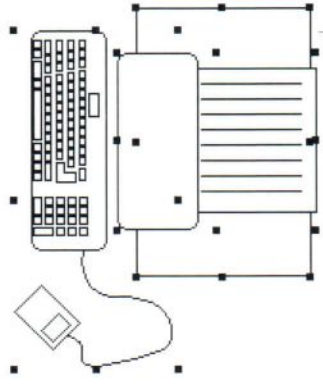
Once you have added a MacrObject to a document, you can edit it like any other object. The Macintosh II that you drew in the music room should actually be a Macintosh IIcx. You need to delete the rectangle representing the computer itself since the monitor totally hides it.

1. **Select the computer that you added next to the keyboard in the Music Room.**



2. **Choose the Ungroup command from the Object menu.**

   The computer is split into its component objects, each of which is selected.

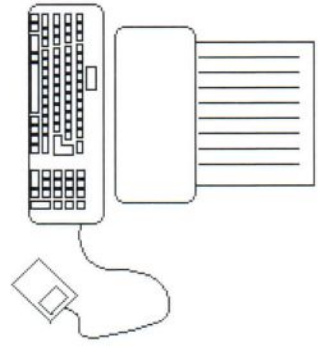


3. **Press the Enter key twice.**

   This deselects the components of the computer.

4. **Click the rectangle representing the computer to select it.**

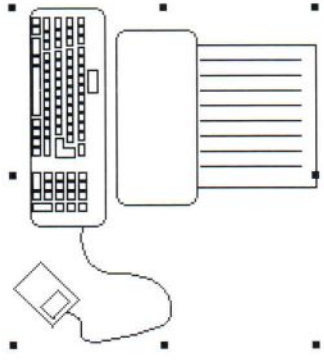
5. **Choose the Clear command from the Edit menu to delete it.**



6. **Holding the Shift key down, use the Arrow tool to select the Macintosh II's components (the mouse and keyboard have been grouped together; select them and the monitor).**

7. **Choose the Group command from the Object menu to group the components into a single object.**

You now have a Macintosh IIcx.



Adding Macintosh Classic computers

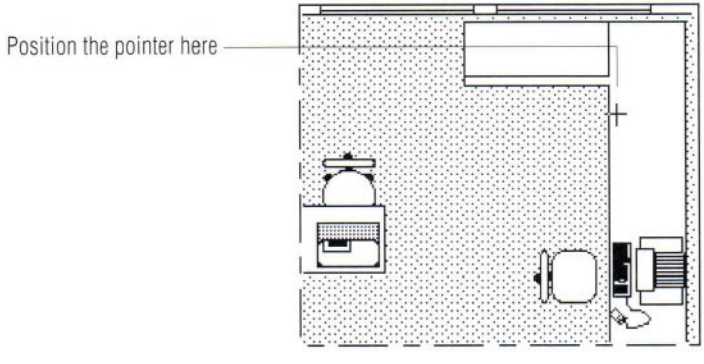
You can use the Macintosh Classic MacrObject to add some more computers to the floor plan.

1. **Select the Macintosh Classic MacrObject from the Macro menu.**

   The pointer changes to a crosshair.

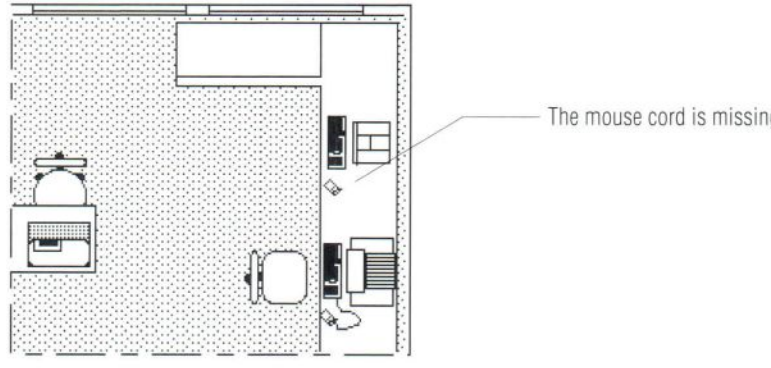
2. **Position the pointer on the right side of the office, as shown in the following illustration.**

   Again, scroll the document if necessary.



3. **Click to place the MacrObject.**

A Macintosh Classic appears, but its mouse cord is missing. If the computer isn't completely on the desk, drag it into position as shown in the following illustration.



Using the Polygon tool

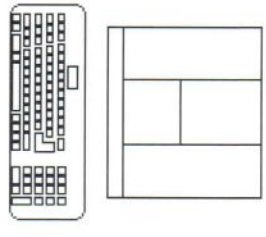
You can draw a cord for the mouse using Canvas's Polygon tool.

1. **Click the Magnifying Glass tool's icon in the Tool Box to select it.**

   The icon highlights and the pointer changes to a magnifying glass.

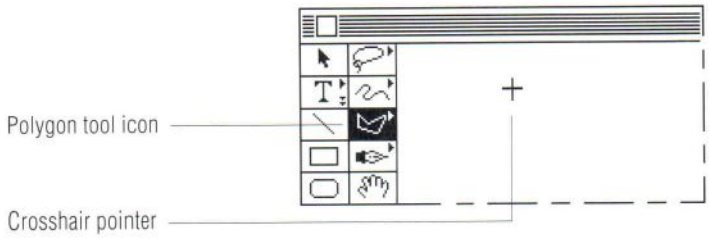
2. **Click the Macintosh Classic MacrObject twice.**

   The magnification level increases to 400%.



3. **Select the Polygon tool by clicking its icon in the Tool Box.**

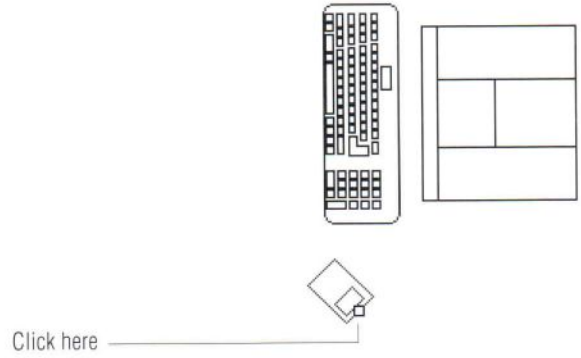
The icon highlights and the pointer changes to a crosshair when positioned in the document.



4. **Position the pointer so that the crosshair is at the center of the mouse, near the button, as shown in the following illustration.**

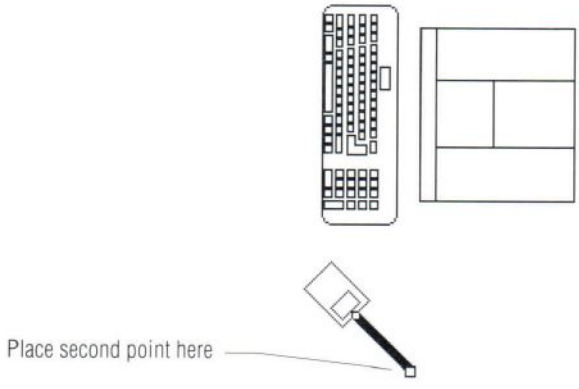
5. **Click once.**

   The first point of the polygon appears, indicated by a hollow square handle.

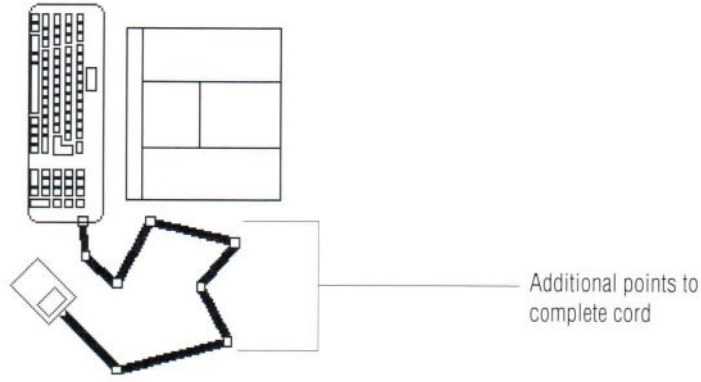


6. **Move the pointer down and to the right and click to place the second point, as shown in the following illustration.**

The second point appears, as does a line connecting the two points.

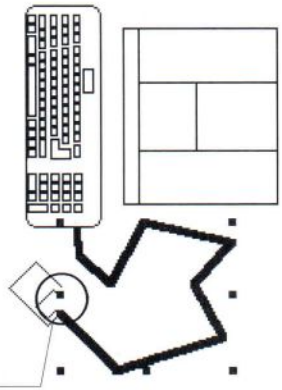


7. **Continue to add points to the polygon, eventually connecting it to the keyboard as shown in the following illustration.**

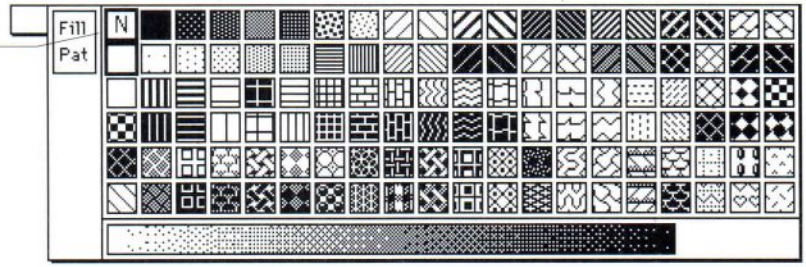


8. **Press the Enter key when you have added the last point.**

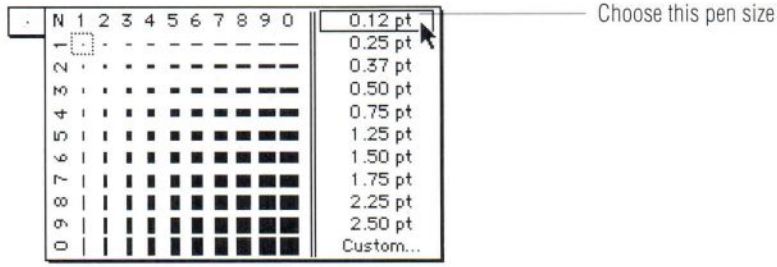
The polygon's fill pattern (which is set to the white default pattern) obscures part of the mouse.



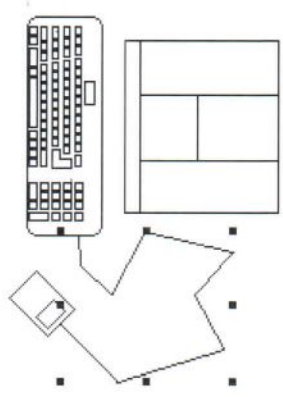
9. Hold down the pointer on the Fill Pattern palette icon and drag to choose "N" as the pattern for the polygon.



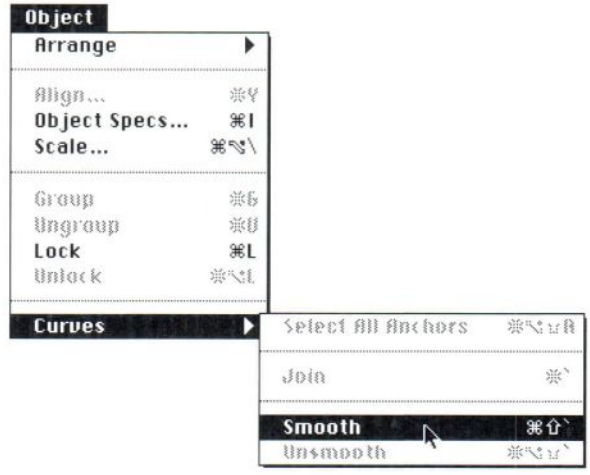
10. Hold down the pointer on the Pen Size palette icon and drag to choose the 0.12 pt pen size.



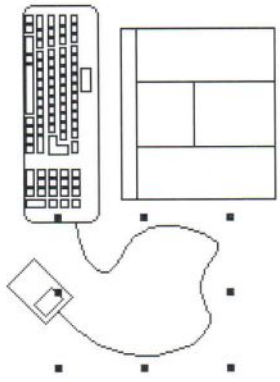
The mouse is once again visible and the polygon segments are redrawn with the thinner pen size.



11. Choose the Smooth option of the Curves submenu in the Object menu.



The angles of the polygon are smoothed, resulting in a curved line.

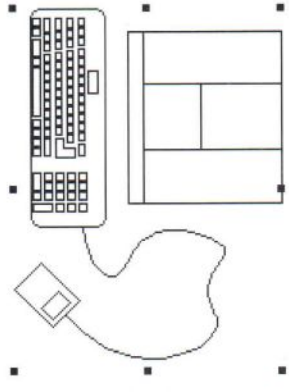


12. Holding down the Shift key, click the Macintosh Classic MacrObject to add it to the selection.

Selection handles now appear around both the MacrObject and the polygon.

13. Choose the Group command from the Object menu to combine them into a single object.

The Macintosh Classic, along with its new mouse cord, is selected.



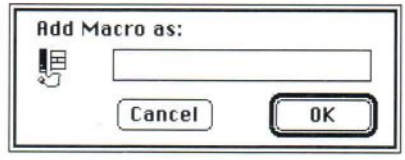
Adding MacrObjects to a macro set

Creating the cord for the mouse was fairly easy, but you don't want to have to repeat the procedure for each Macintosh Classic you draw.

You'll now replace the existing Macintosh Classic MacrObject with the revised version you just created.

1. **Choose the Add Macro command from the Macro menu.**

   Canvas presents the following dialog box.



2. **Type "Macintosh Classic" and click OK.**

   Canvas adds the new MacrObject to the Macro menu. Note that there are now two MacrObjects named Macintosh Classic.

The new MacrObject appears at the end of the menu

3. **Choose the old Macintosh Classic MacrObject from the Macro menu.**

   It should be the second MacrObject in the menu—the one without a mouse cord.

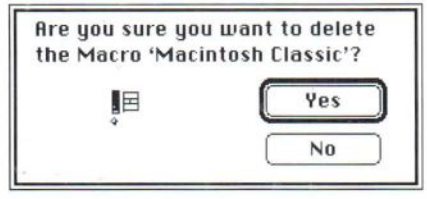
4. **Pull down the Macro menu again.**

You'll notice that there is a check mark to the left of the icon for the MacrObject you selected.

A check mark indicates the currently selected MacrObject

5. **Drag through the menu to choose the Delete Macro command.**

   Canvas presents the following dialog box.



6. **Click Yes to delete the MacrObject.**

7. **Choose the 1x option from the Zoom In/Zoom Out palette.**

   Your view of the document returns to actual size.

Now you will use the new Macintosh Classic MacrObject to draw two additional computers on the floor plan.

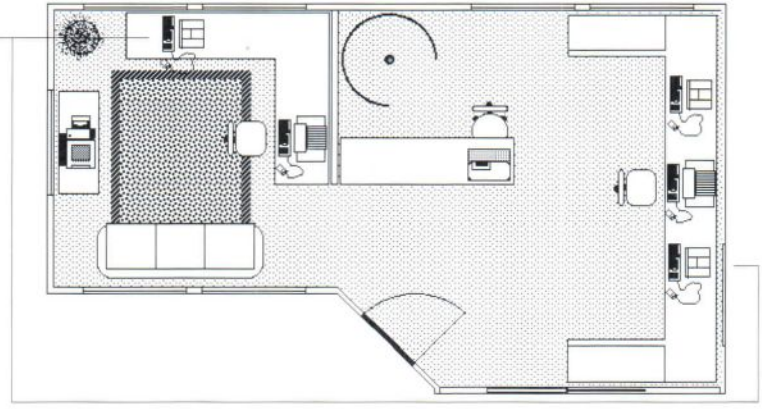
8. **Choose the Macintosh Classic MacrObject from the Macro menu and click to place it along the same wall as the first one, as shown in the following illustration.**

Drag the MacrObject or use the arrow keys to position it.

9. **Add a third computer along the top of the floor plan, in the room where you added the rug in Chapter 2.**

   This computer will be facing the wrong way. Don't worry about this now, you'll fix it in a moment.

Two additional computers



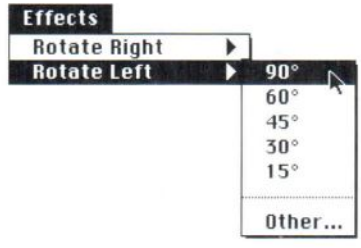
Rotating objects

The Macintosh Classic you just drew needs to be turned to face the front of the desk. Canvas provides several ways of rotating objects. You'll use an option of the Rotate Left submenu to rotate the computer.

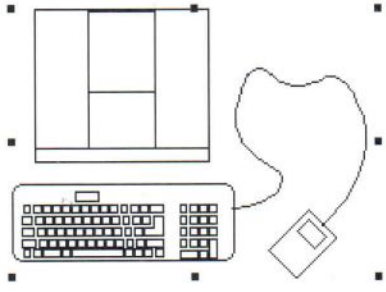
1. **Select the Macintosh Classic with the Arrow tool.**

   Selection handles appear around its bounding rectangle.

2. **Choose the 90° option of the Rotate Left submenu in the Effects menu.**



Canvas rotates the computer 90° counterclockwise.

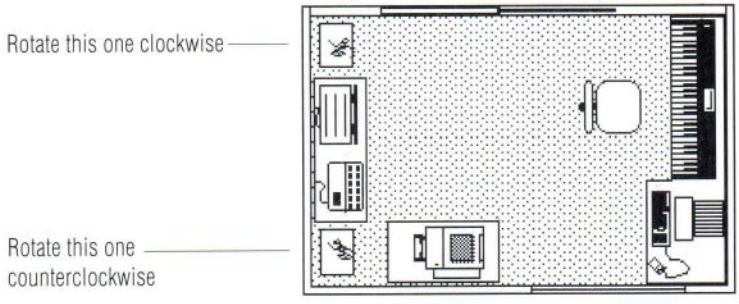


3. **Drag the MacrObject or use the arrow keys to position it on the desk.**

Adjusting the speakers in the Music Room

Now you'll use the rotation commands to turn the speakers in the music room.

1. **Scroll through the illustration so that the Music Room is visible.**



Speakers

2. **Select the top speaker with the Arrow tool.**

   Selection handles appear around it.

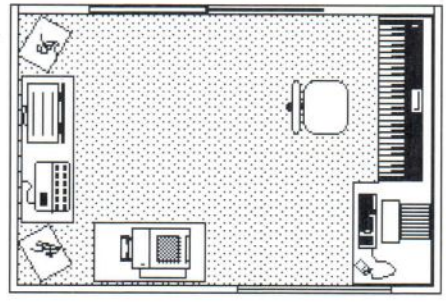
3. **Choose the 30° option of the Rotate Right submenu in the Effects menu.**

   Canvas rotates the speaker 30° clockwise.

4. **Select the other speaker.**

5. **Choose the 30° option of the Rotate Left submenu in the Effects menu.**

Canvas rotates the speaker 30° counterclockwise.

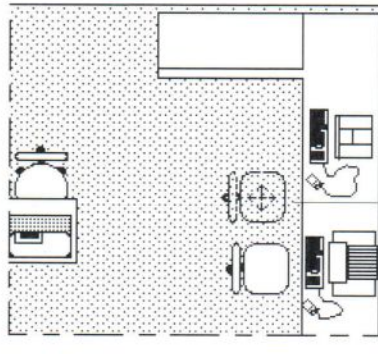


Some more chairs

Now that you've added so many computers, you need more chairs.

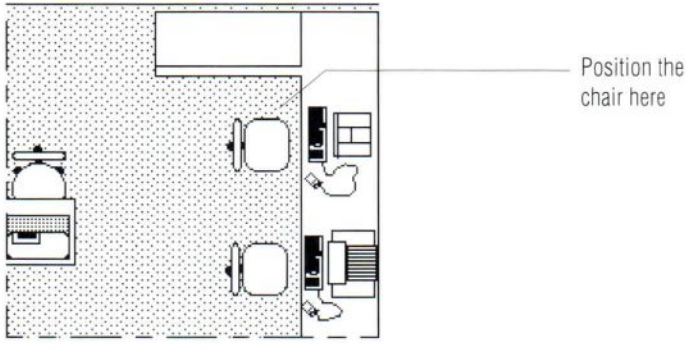
1. **Scroll the document so that you can see the upper right corner of the store.**
2. **Position the pointer over the chair in front of the Macintosh II.**
3. **Hold down the Option key and drag the chair as indicated in the following illustration.**

   The pointer changes to a four-headed arrow. As you drag, only a copy of the chair follows the pointer; the original remains in place.



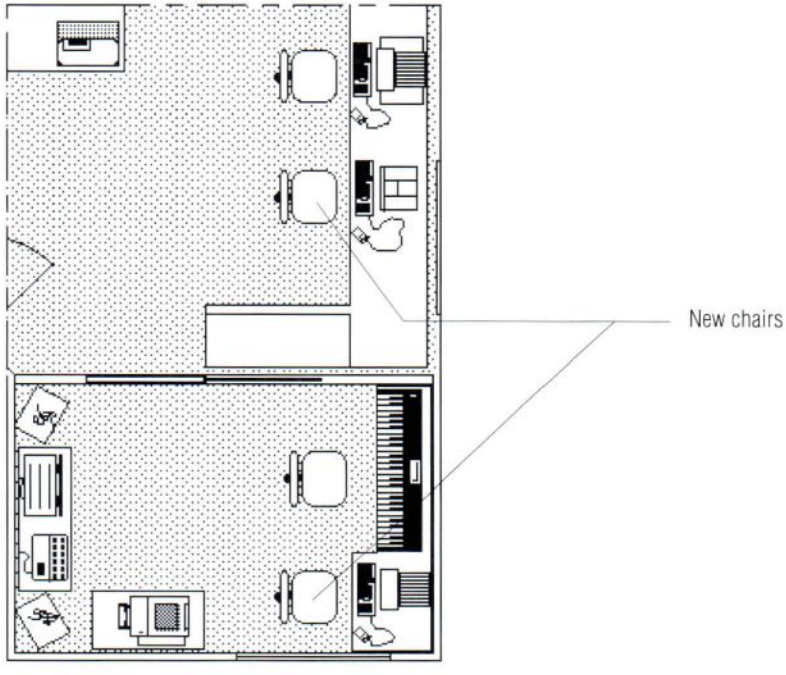
4. **Position the copy in front of the Macintosh Classic, along the same wall.**

It should be more or less centered in front of the computer.



5. **Repeat this procedure to add chairs in front of the other Macintosh Classic and the Macintosh IIcx in the Music Room.**

Your illustration should look like the one below.

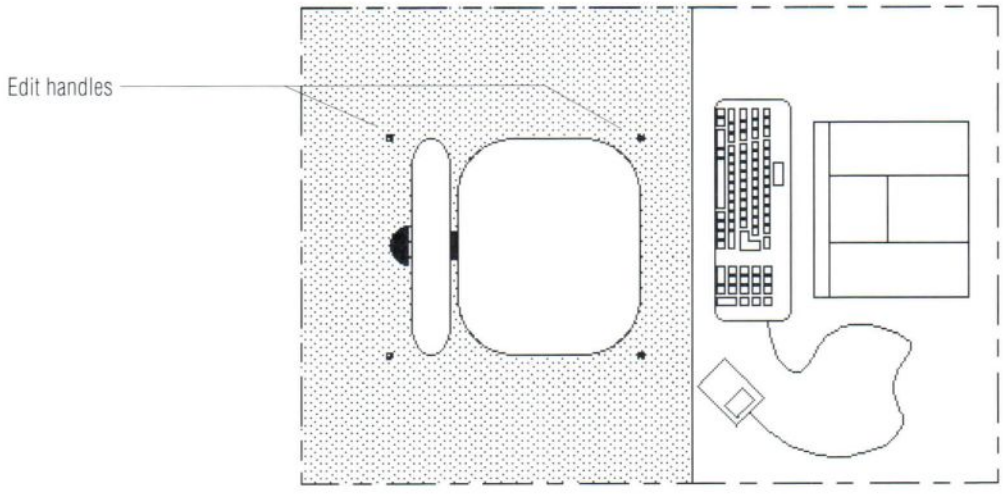


The Free Rotate command

Now you'll use the Free Rotate command to adjust some of the chairs to various angles.

1. **Select one of the chairs you just added.**
2. **Choose the Free Rotate command from the Effects menu.**

   The chair's eight selection handles are replaced by four edit handles, one at each corner of its bounding rectangle.

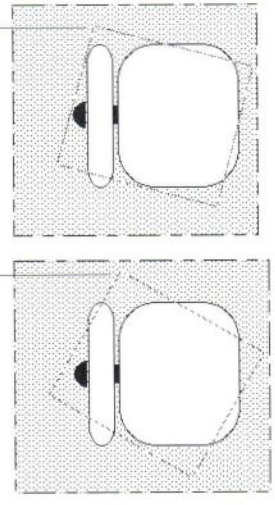


3. **Position the pointer over one of these handles.**

   When the pointer is properly positioned, it changes from an arrow to a small crosshair.

4. **Press the mouse button and drag the handle.**

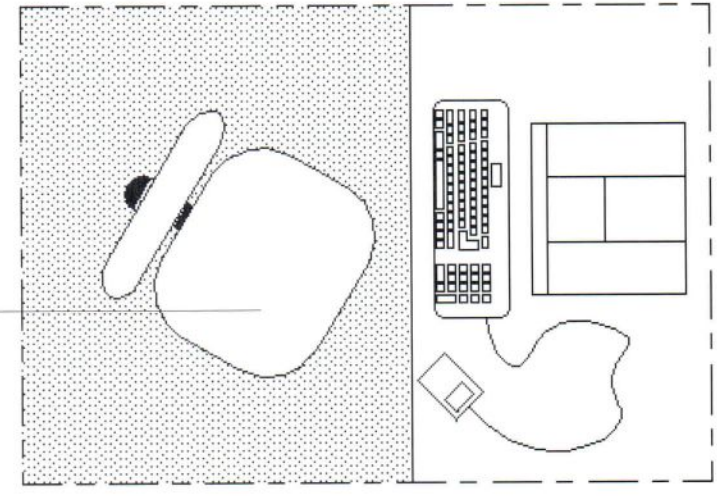
As you drag, a rectangular outline of the chair follows your movement, rotating around its center.



5. **Release the mouse button when the chair is where you want it to be.**

   The chair is redrawn at the orientation you have specified.

6. **Press the Enter key to deselect the chair.**



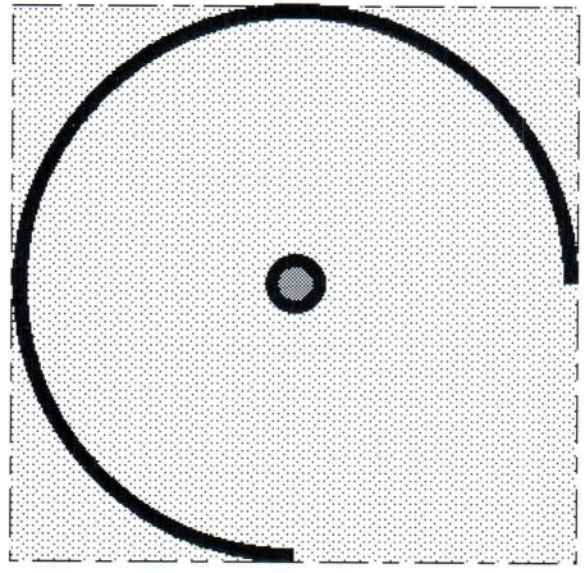
7. **Use the Free Rotate command on some of the other chairs in the store, until you are satisfied with the appearance of the floor plan.**

Completing the spiral staircase

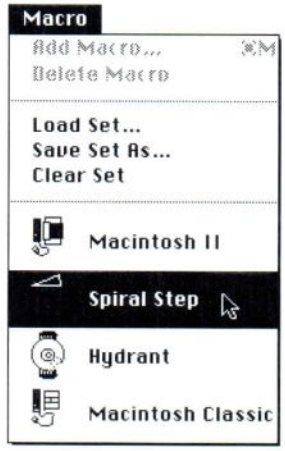
The arc in the center of the back wall is the handrail for a spiral staircase, but it seems our absent-minded architect has forgotten to draw the steps. Your last exercise in this chapter will be to draw them.

1. **Select the Magnifying Glass tool by clicking its icon in the Tool Box.**
2. **Click the circle at the center of the handrail twice to increase the magnification level to 400%.**

   This circle represents the central support of the staircase.

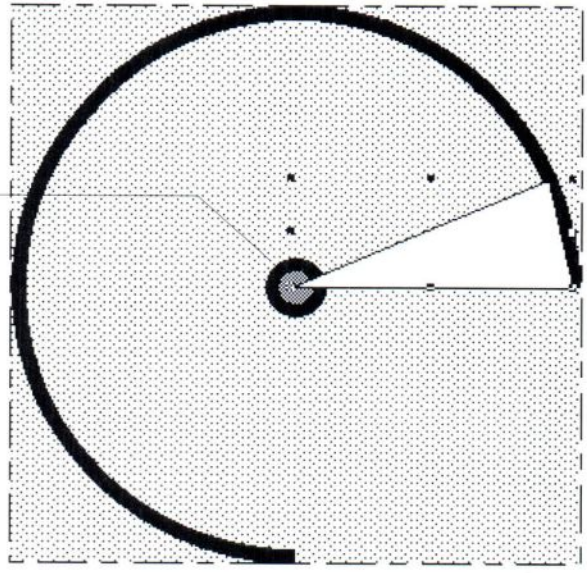


3. **Choose the Spiral Step MacrObject from the Macro menu.**



4. **Position the pointer over the staircase and click to draw the step.**

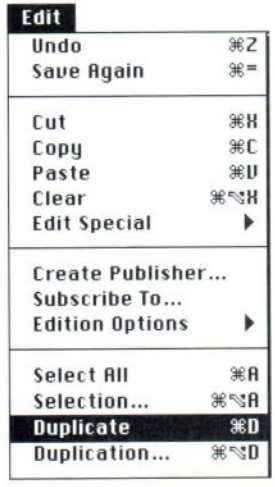
5. **Position the left corner of the triangular step at the center of the small circle by dragging or using the arrow keys.**



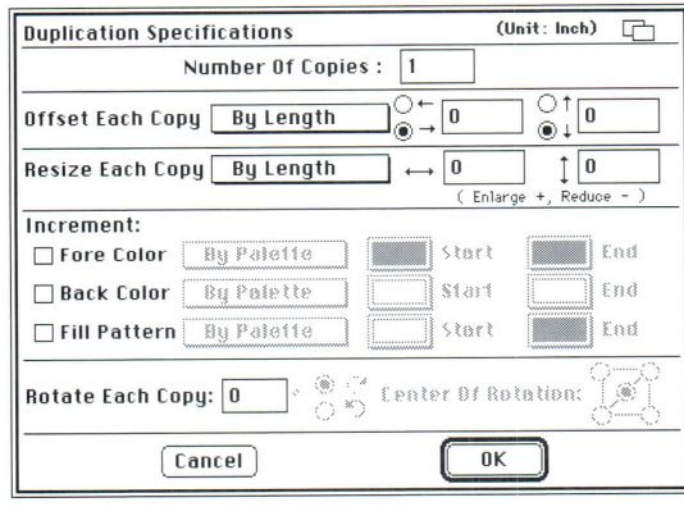
Using the Duplication command

Now you will use the Duplication command to create the remaining steps. Select the step with the Arrow tool if it isn't still selected.

1. **Choose the Duplication command from the Edit menu.**



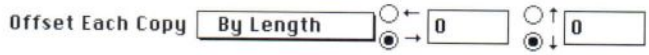
The Duplication Specifications dialog box appears.



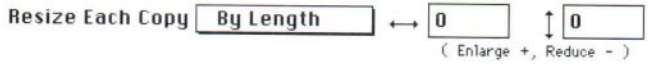
2. Fill in the dialog box as follows:

- Highlight the text box labeled Number Of Copies and type "17."

- Choose "By Length" from the Offset Each Copy pop-up menu and type "0" in each text box.



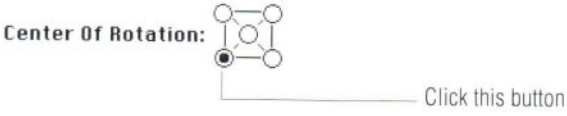
- Type "0" in each of the Resize Each Copy text boxes.



- Type "15" in the Rotate Each Copy text box.

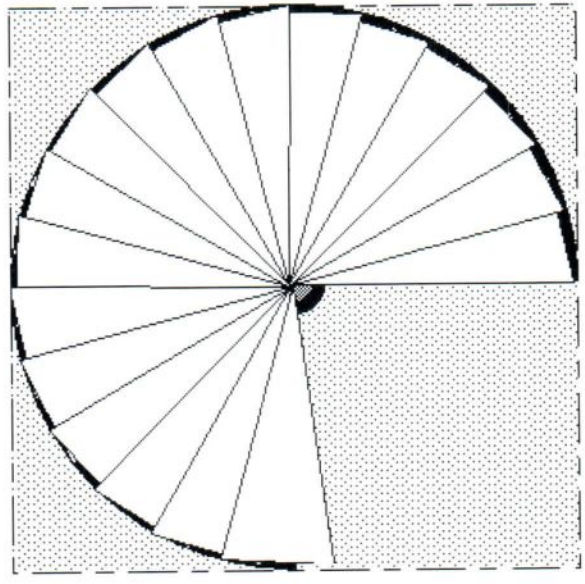
- Click the button next to the arrow indicating counterclockwise rotation.

- Click the radio button indicating rotation around the lower left corner of the object.



3. Click OK.

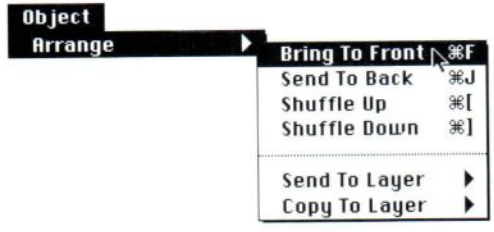
Canvas performs the duplication, creating seventeen copies of the step, each rotated 15° counterclockwise from the preceding copy.



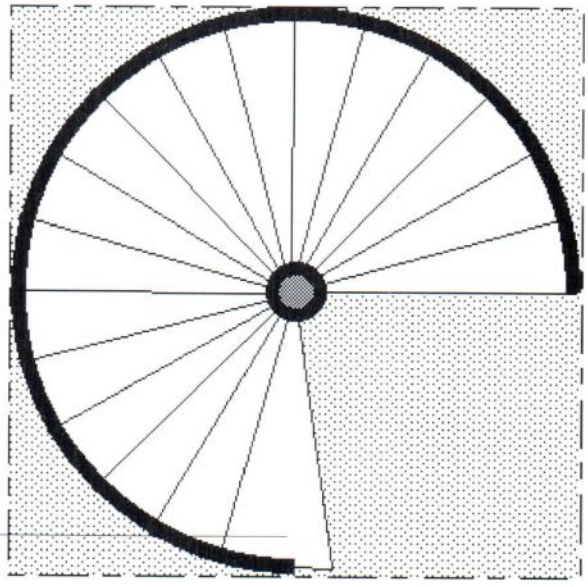
4. **Click the handrail to select it.**

   The center support, which is grouped with the handrail, is also selected.

5. **Choose the Bring To Front option of the Arrange submenu in the Object menu.**



Canvas redraws the handrail and support on top of the steps.

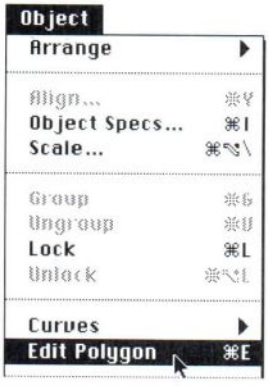


The top step is too wide

Editing polygons

There is only one problem with the resulting image: the last step extends beyond the end of the arc. You will now reshape this step.

1. **Click the topmost step with the Arrow tool to select it.**
2. **Choose the Edit Polygon command from the Object menu.**



The polygon is replaced by an outline. The selection handles are replaced by three edit handles, one at each of the polygon's vertices. The polygon is now in what is known as the edit mode and you can easily change its shape.

3. **Position the pointer over the lower right edit handle.**

   When the pointer is properly positioned, it changes from an Arrow to a small crosshair.

4. **Click the handle to select it.**

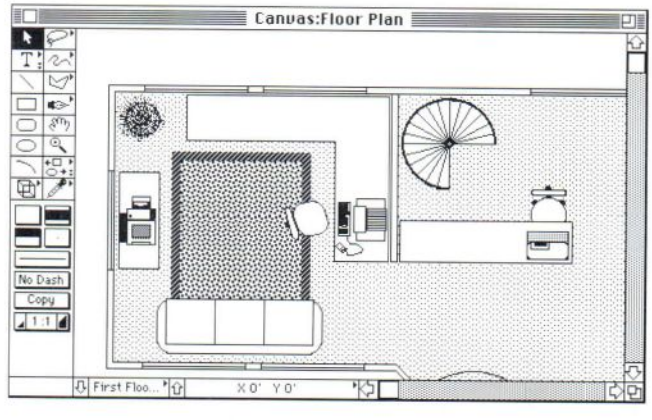
   Canvas inverts the handle to indicate that it has been selected.

5. **Use the Left Arrow key to move the point sc it is directly below the top point.**

6. **Press the Enter key twice to exit the edit mode and deselect the polygon.**

   The polygon returns to its normal form, displaying its pen size, fill pattern, and other properties.

7. **Use the Home View option of the Views submenu in the Layout menu to return to a normal view of the floor plan.**

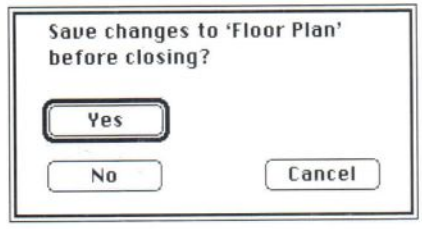


Saving your work

To save your work and quit Canvas at the same time:

1. **Choose the Quit command from the File menu.**

   Canvas presents the following dialog box.



2. **Click Yes.**

   The dialog box closes and Canvas first saves your document and then quits. You return to the Finder, or to the next application running under MultiFinder.

Where to go from here

At this point you can continue with Chapter 4, "Advanced drawing."

Chapter 4

Advanced drawing

Chapter 4 will teach you how to employ some of the sophisticated features of Canvas.

What you will learn

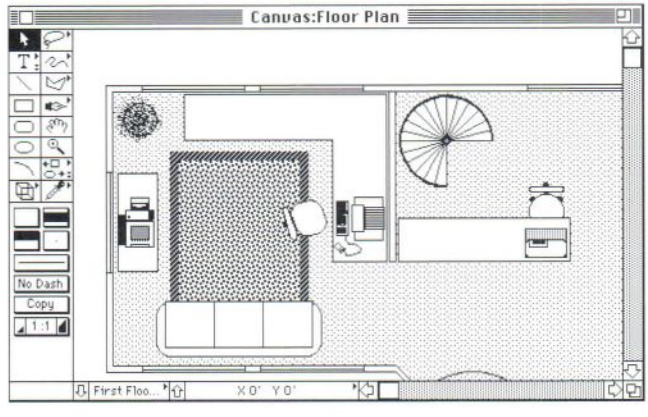
After completing this chapter, you will be able to:

- Move between multiple layers in a Canvas document
- Add layers to a document
- Move objects between the layers of a document
- Print specified layers of a document
- Auto trace paint objects
- Flip objects
- Work with tear-off palettes
- Work with Smart Mouse™
- Create dimension lines
- Add autodimensioning data to objects
- Create and edit dimension objects
- Create an outline from a group of objects

Important: In order to be able to complete the tutorial, you need to install the PostScript font ITC Garamond®, which is found in the Tutorial Files folder. To do so, use Font/DA Mover to install the screen version of the font in your System file and drag the printer version into your System folder. Those of you using System 7.0 or later can install the font by dragging both files into your System folder and letting the computer put them in the correct locations. See your *Macintosh System Software User's Guide* for more information regarding font installation. (Those of you using a font-handling program such as Suitcase II™ or Master Juggler™ should install the font according to the instructions in the manual for that program.)

Going upstairs

Restart the Canvas tutorial by double-clicking the *Floor Plan* document's icon in the Finder. Your screen should look like the following illustration.



At the end of Chapter 3 you completed the spiral staircase. In this chapter, you'll find out where it leads.

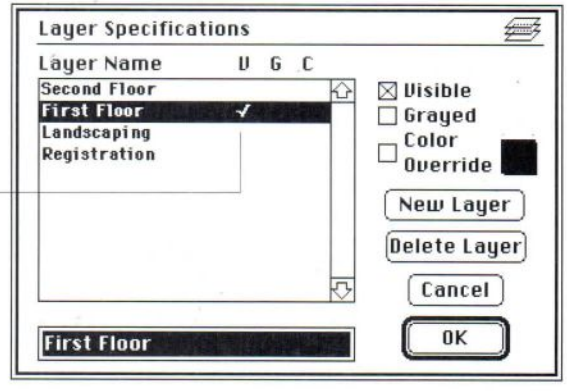
Canvas documents can be composed of multiple layers, stacked one on top of another like plates of glass. Any number of a document's layers can be visible at any given time. You control the properties of the layers in a document using the Layer Specifications dialog box and the Layer palette icon.

Switching between layers

To see the second floor, you'll use the Layer Specifications dialog box.

1. **Choose the Layer Specs command from the Layout menu.**

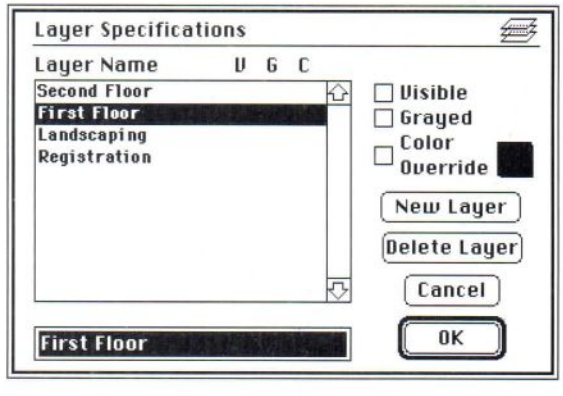
   The Layer Specifications dialog box appears.



Check mark indicates that First Floor layer is visible

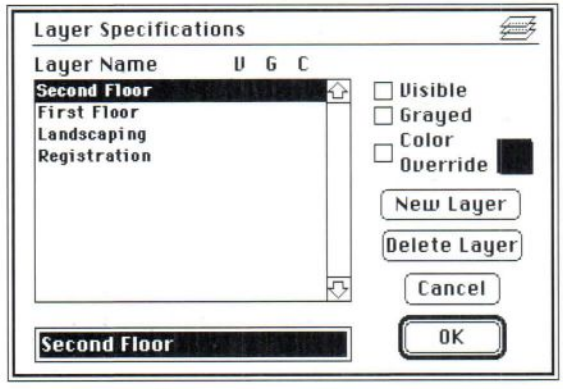
2. **Click the check mark in the V (visible) column next to "First Floor."**

   It disappears. This check mark signified that the layer named First Floor was visible. Removing it makes the layer invisible.



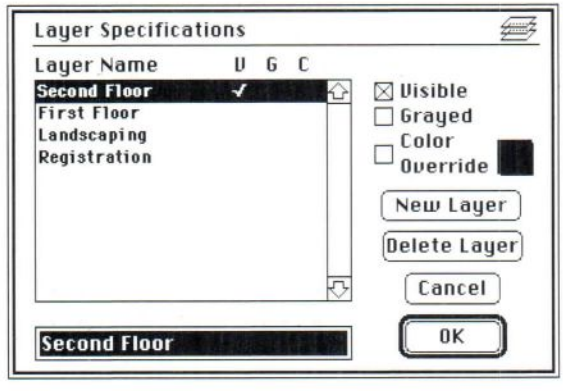
3. **Click the Second Floor layer to select it.**

Canvas highlights the layer's name to show it is selected.



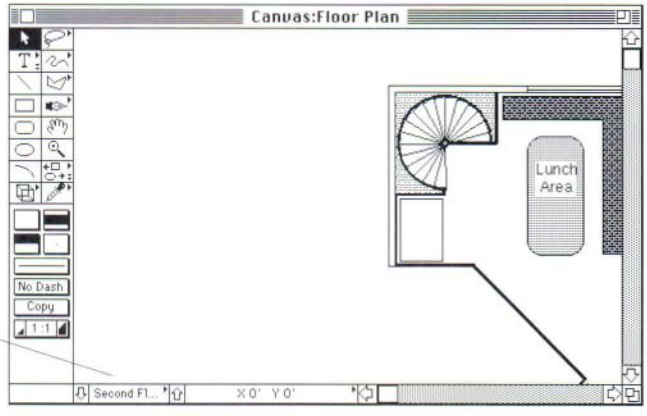
4. **Click the Visible check box.**

   Canvas places an X in the check box and places a check mark in the V column next to Second Floor. The Second Floor layer is now visible.



5. **Click OK.**

Welcome to the second floor! The first floor is no longer visible. Your screen should look like the illustration below. The Layer palette icon now displays *Second Floor*.

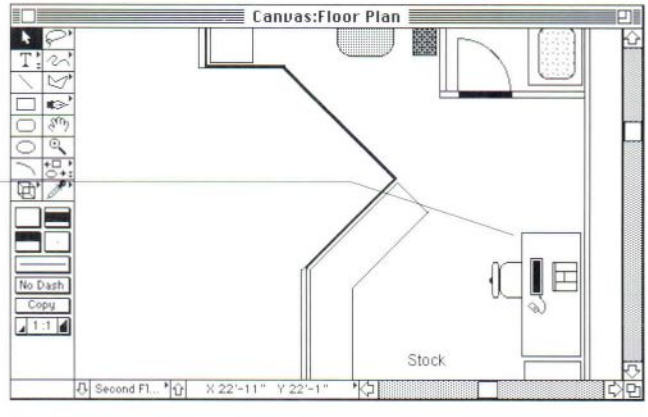


Layer palette icon indicates Second Floor layer

Adding a second desk

The owners of the store have decided to add a second desk to the stock room. In the following exercise you'll duplicate the desk, position it next to the original, and flip it.

To see the desk, scroll downward until it is visible.



Original desk

Paint objects

It turns out that the desk presently in the floor plan is a paint object. Paint objects are defined only as groups of individual pixels and not as lines, rectangles, or other geometric shapes. Generally, any paint objects in your Canvas documents will be images you have scanned or imported from painting programs such as UltraPaint™.

Paint objects occupy more memory than, and can't be edited as easily as, other types of objects. Low resolution bitmaps appear grainy when printed on a high resolution printer and high resolution bitmaps lose fine details when printed on a low resolution printer. There are times, therefore, when it is advantageous to convert paint objects into draw objects.

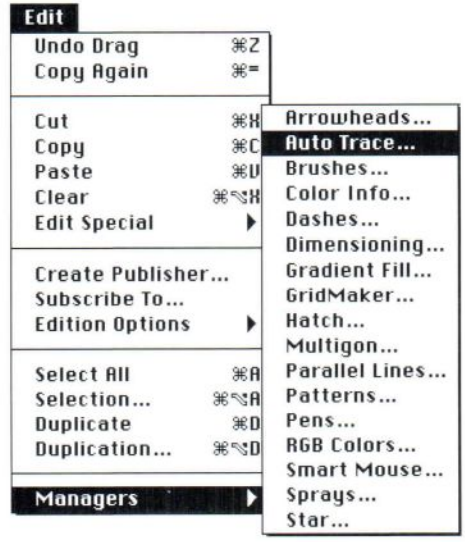
Auto tracing paint objects

Canvas's Auto Trace feature allows you to convert paint objects into draw objects quickly and easily. To auto trace the desk:

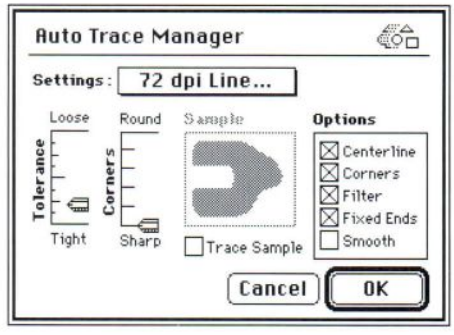
1. **Click the desk to select it.**

   Selection handles appear to indicate that it is selected.

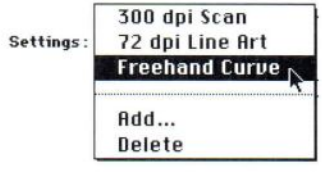
2. **Choose the Auto Trace option of the Managers submenu in the Edit menu.**



The Auto Trace Manager dialog box appears.



3. **Choose the Freehand Curve setting from the Settings pop-up menu.**



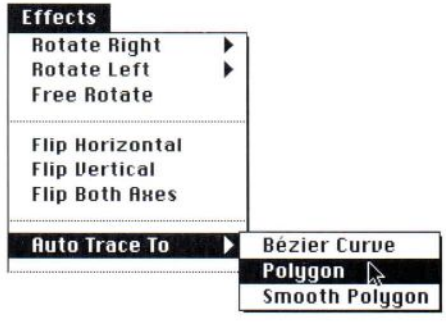
The controls in the dialog box change to match the values saved in the setting.

4. **Click OK.**

5. **Pull down the Effects menu and drag to highlight Auto Trace To.**

   A submenu appears listing the auto tracing options.

6. **Drag through the submenu to highlight the Polygon option.**



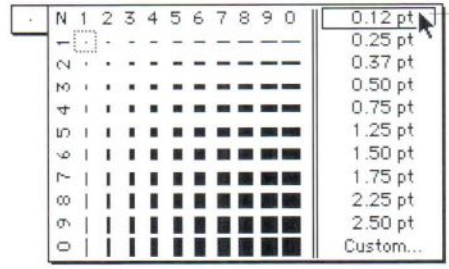
7. **Release the mouse button.**

   When you release the mouse button, Canvas begins tracing the desk. When the operation is complete, Canvas selects the tracing.

8. **Choose the Group command from the Object menu.**

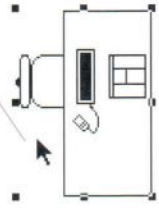
   Selection handles surround the group.

9. **Hold down the pointer on the Pen Size palette icon and drag through the palette to choose the 0.12 pt option.**



10. **Use the Arrow tool to select the original desk by clicking as shown in the following illustration.**

    The group of polygons is deselected and the paint object is selected.



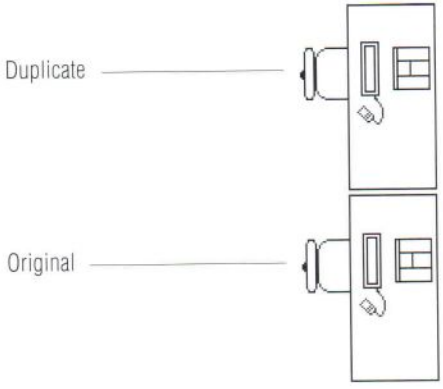
11. **Press the Delete or Backspace key to eliminate the paint object from the illustration.**

Flipping objects

Canvas contains three commands which allow you to flip objects horizontally, vertically, or in both directions. You'll use the Flip Vertical command to flip a copy of the auto tracing.

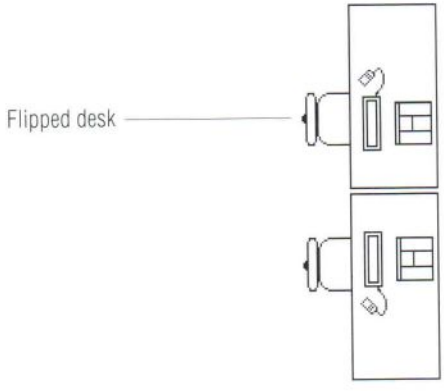
1. **Click the traced desk with the Arrow tool to select it.**

2. **Choose the Duplicate command from the Edit menu to make a copy of it.**
3. **Drag the duplicate next to the original.**



4. **Choose the Flip Vertical command from the Effects menu.**

   The copy of the desk is flipped top to bottom. Notice that the computer and chair are now on the opposite end of the duplicate desk.



Measuring the table

Another important detail of the illustration which has been left out is information regarding the size of objects in the floor plan. Fortunately, Canvas makes it easy to add this information. First you'll add dimensioning information to the table in the Lunch Area.

The Information Manager

The Information Manager lets you add dimensioning data to individual objects or object groups. You will use the Information Manager to obtain the dimensions of the table in the Lunch Area.

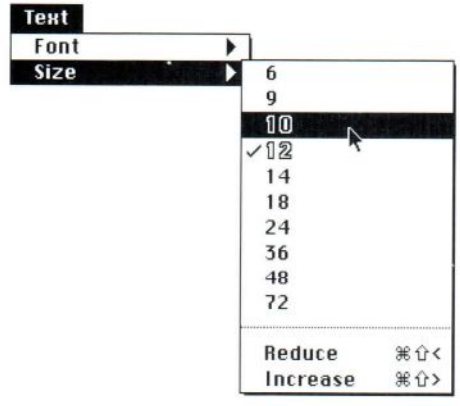
First you will set the text properties for this data.

1. **Press the Enter key twice.**

   This ensures that no objects are selected and that the text properties you set will be the default properties.

2. **Pull down the Text menu and choose Garamond Book from the Font submenu.**

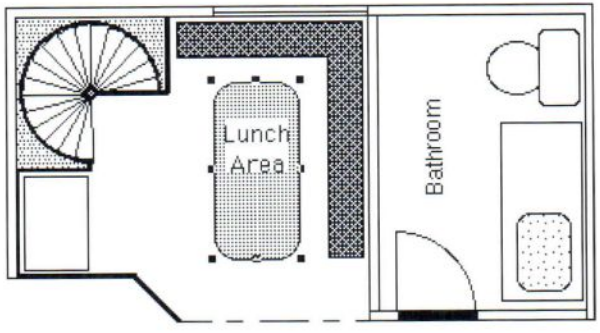
3. **Pull down the Text menu again and choose 10 from the Size submenu.**



   The text of the dimensioning data will be displayed in ten-point Garamond Book type.

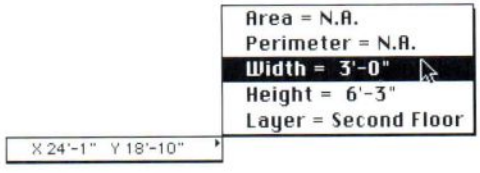
4. **Scroll until the lunch table is visible.**

5. **Select it with the Arrow tool.**



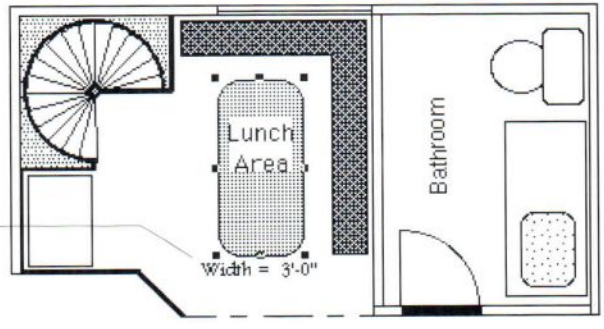
6. **Position the pointer over the Information Manager along the bottom of the Canvas Window and press the mouse button.**

   A pop-up menu containing dimensioning data appears.



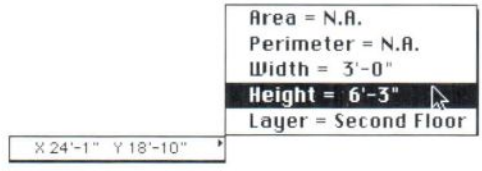
7. **Drag through the pop-up menu and select the Width option.**

   A text object identifying the table's width is added to the illustration below the table.



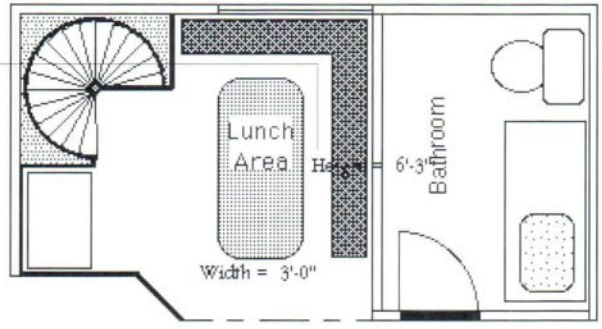
Width data

8. **Hold down the pointer on the Information Manager again and drag through the pop-up menu to choose Height.**



The height of the table is also added to the document.

Height data

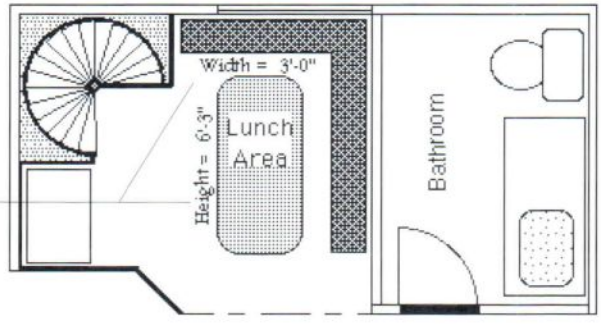


9. **Drag the Width measurement above the table using the Arrow tool.**
10. **Click the Height measurement with the Arrow tool to select it.**
11. **Choose the 90° option of the Rotate Left submenu in the Effects menu.**

The Height text is now vertical.

12. **Drag the Height measurement to the left side of the table, as shown below.**

Final position of dimensioning data



Creating dimension lines

Next, you'll add dimension lines to measure the outside walls.

Smart Mouse

Canvas provides you with a sophisticated drawing aid—Smart Mouse. Smart Mouse lets you limit objects you create or reposition using a number of user-definable constraints. To add the dimension lines, you'll use three Smart Mouse constraints: *Horizontal, Vertical,* and *Polygon & Bézier Anchors.* To enable Smart Mouse:

1. **Choose the Smart Mouse command from the Layout menu.**

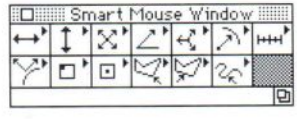
   Canvas enables Smart Mouse.

2. **Choose the Smart Mouse Window command from the Windows menu.**

   Canvas displays the Smart Mouse window. You use the Smart Mouse window to determine which Smart Mouse constraints are active.

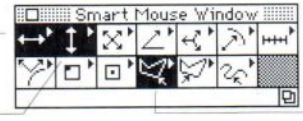
3. **Click any highlighted constraint icons to turn them off.**

   The Smart Mouse window should look like this:



4. **Click the Horizontal, Vertical, and Polygon & Bézier Anchors constraint icons to turn them on.**

   The Smart Mouse window should look like the following illustration.



The Smart Mouse is now properly configured for this exercise. As you complete this exercise, if the Smart Mouse window blocks your view of the Canvas Window, simply move it aside by dragging its title bar.

Dimension arrows

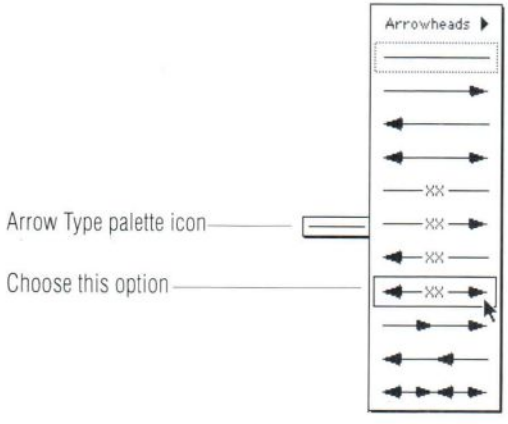
Canvas lets you draw arrows which automatically display their length, making it easy to label dimensions in your documents. Before you draw any arrows, however, you need to specify their properties.

1. **Press the Enter key twice to ensure that no objects are selected.**

   Again, when no objects are selected, you can specify default settings.

2. **Hold down the pointer on the Arrow Type palette icon in the Tool Box.**

   Canvas displays a pop-up palette containing various types of arrows.



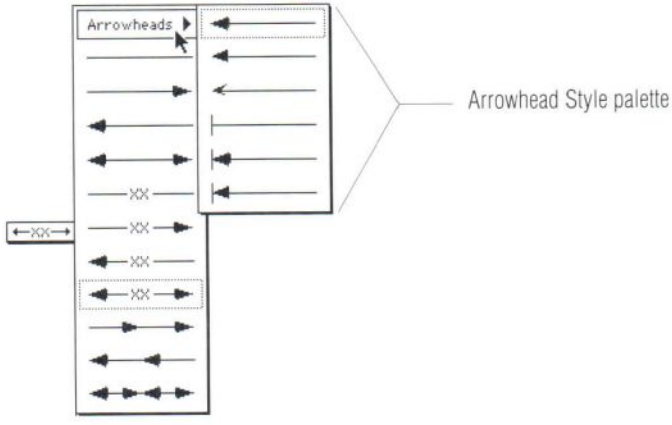
3. **Drag through the palette to enclose the double-headed arrow with the two x's in the selection box, and release the mouse button.**

   This arrow type appears in the Arrow Type palette icon. Canvas will use it when drawing lines.

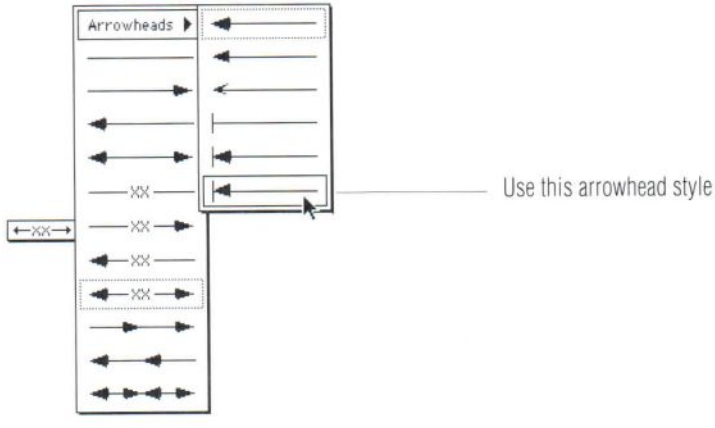
4. **Hold down the pointer on the Arrow Type palette icon again.**

5. **Drag through the palette to enclose *Arrowheads* in the selection box.**

A second palette appears, containing arrowhead styles.

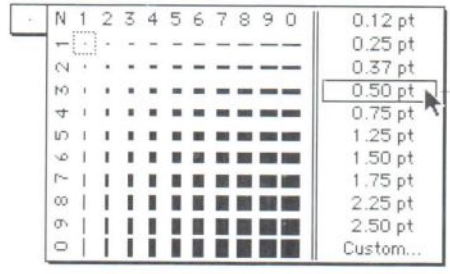


6. **Drag through the palette so that the selection box encloses the arrowhead indicated in the following illustration.**



The lines you draw will have this arrowhead style at each end.

7. **Hold down the pointer on the Pen Size palette icon and choose the 0.50 pt pen size.**

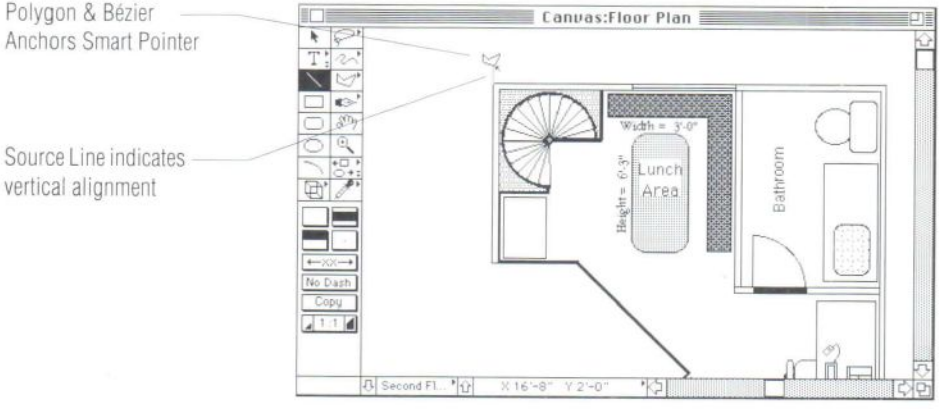


8. **Select the Line tool from the Tool Box.**

   The tool's icon highlights and the pointer changes to a crosshair.

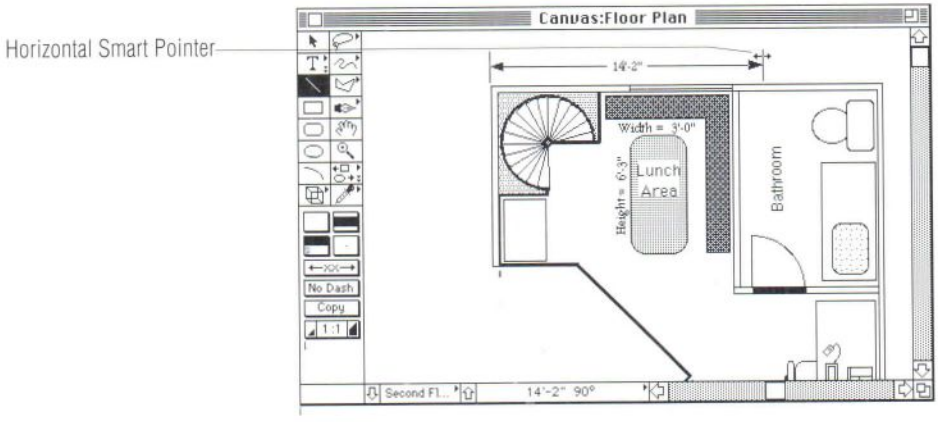
9. **Position the crosshair in the document, near the upper left corner of the second floor, as shown in the following illustration.**

   When properly positioned, the pointer changes from a crosshair to the Polygon & Bézier Anchors Smart Pointer to indicate that the Polygon & Bézier Anchors constraint is being met; dotted lines called Source Lines appear, indicating which polygon or Bézier curve anchor point you are lined up with. The Source Line should indicate that you are aligned vertically with the top left corner of the store.



10. **Drag the pointer to the right to draw a line.**

When you begin dragging, the pointer changes to the Horizontal Smart Pointer, indicating that the line is being constrained horizontally.



11. Continue dragging until you reach the right corner of the floor plan.

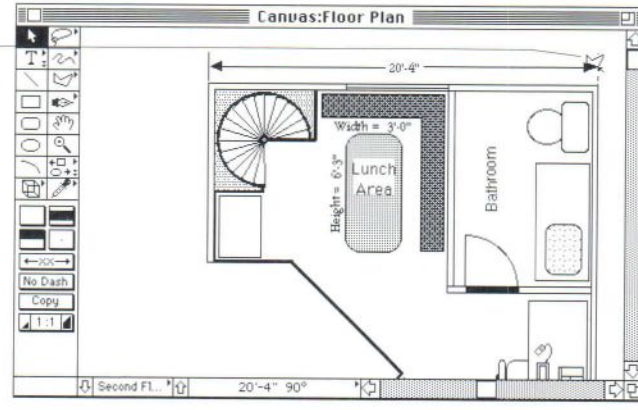
As you drag, the dimensioning data at the center of the line changes to indicate the line's length.

When you reach the right corner of the wall, a Source Line will appear to let you know that you are in line with the corner, however the Horizontal Smart Pointer will still be showing. You can toggle the Smart Pointer between two constraints that are being met simultaneously by using the Command key.

12. When you see the Source Line appear, hold down the Command (⌘) key.

The Horizontal Smart Pointer changes to the Polygon & Bézier Anchors Smart Pointer. The fact that you can toggle between these two Smart Pointers confirms that both constraints are being met. (Make sure that the Source Line indicates that the line is being constrained to the correct corner.)

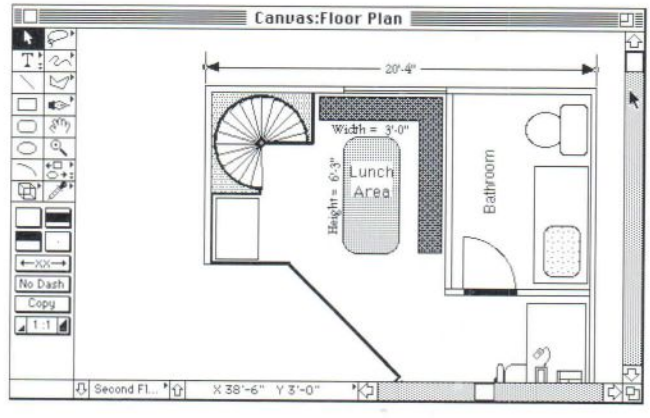
Pressing the Command key displays the Polygon & Bézier Anchors Smart Pointer



Toggling between active Smart Pointers

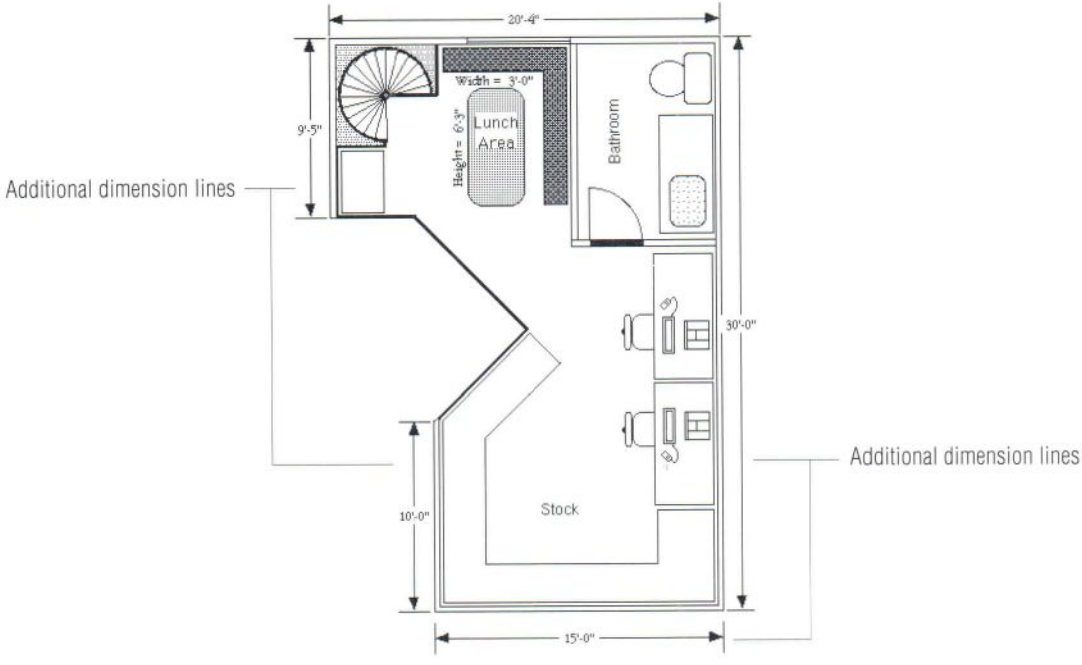
13. Release the mouse button.

The resulting line has an arrowhead at each end and numbers at the center indicating its length.



14. Continue to add dimension lines around the second floor using the same technique, as shown in the following illustration.

Don't forget to reselect the Line tool before drawing each new line.



15. When you finish, choose the Smart Mouse command from the Layout menu again.

This deactivates Smart Mouse and closes the Smart Mouse window.

Adding dimensioning information to the first floor

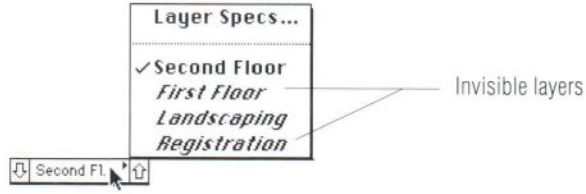
You need to return to the first floor and add some dimensioning information there as well.

Using the Layer palette icon

You can use the pop-up menu in the Layer palette icon to switch between layers instead of using the Layer Specifications dialog box as you did earlier.

1. Hold down the Option key, position the pointer over the Layer palette icon, and press the mouse button.

The pop-up menu shown in the following illustration appears. Invisible layers are indicated by italic type.



2. **Select the First Floor layer.**

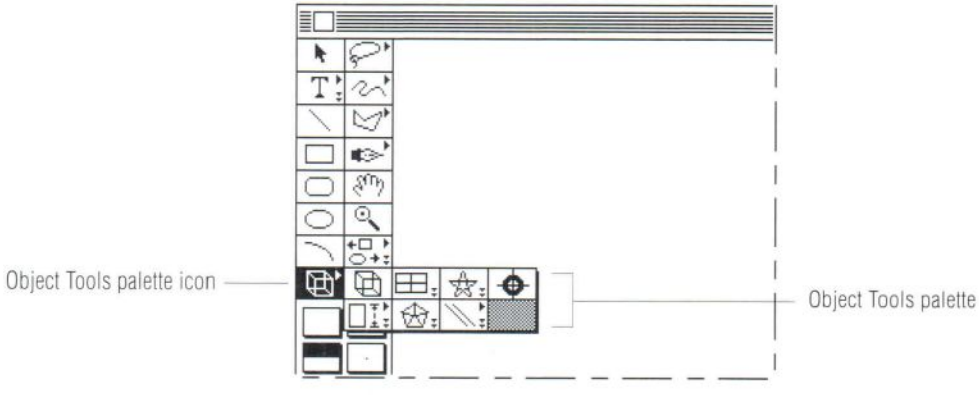
   Canvas makes the Second Floor layer invisible and the First Floor layer visible.

Using tear-off palettes

Canvas provides another way to add dimensioning data to your illustrations, using the Dimensioning tool. To use the tool, you'll first tear off the palette containing it.

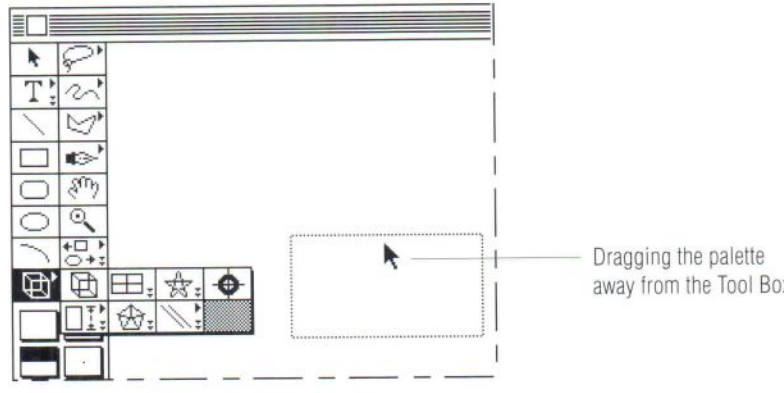
1. **Hold down the pointer on the Object Tools palette icon in the Tool Box.**

   Canvas displays the Object Tools palette.



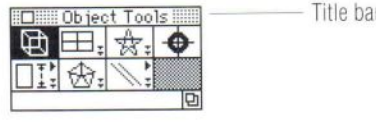
2. **Drag through the palette and away from the Tool Box.**

As you drag beyond the palette's edge, an outline of the palette follows your movements.



3. Release the mouse button.

The palette appears in a floating window, where you released the mouse button.

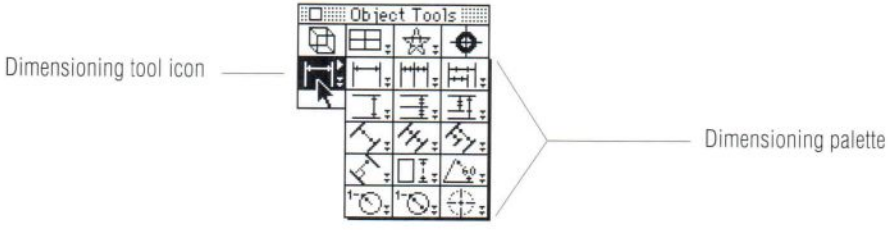


Palettes and menus which you can position on the screen in floating windows are said to "tear-off." When the Object Tools palette is torn off, you can easily select any tool by simply clicking its icon. You can also move the torn off palette anywhere on the screen by dragging its title bar.

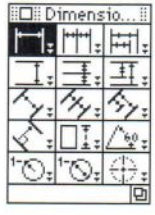
Some tools, such as the Dimensioning tool, contain their own pop-up palettes, which you can also tear off.

4. Hold the pointer down on the Dimensioning tool icon in the Object Tools palette.

Canvas displays the Dimensioning tool's pop-up palette.



5. **Drag through this palette and tear it off as well.**



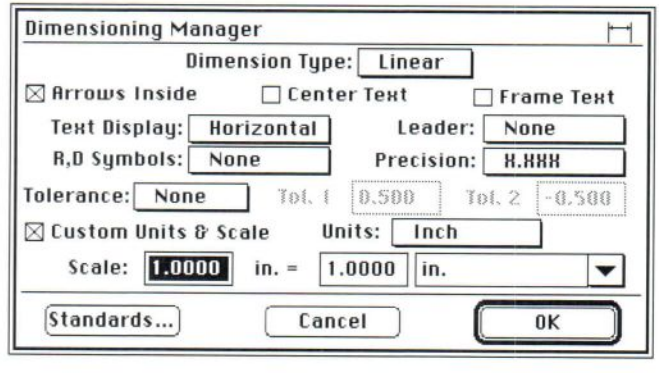
6. **Select the Arrow tool to deselect the Dimensioning tool.**

Configuring the Dimensioning tool

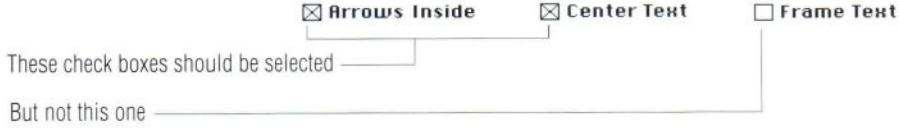
Like the Auto Trace To command, the Dimensioning tool can be configured using its manager dialog box.

1. **Choose the Dimensioning option of the Managers submenu in the Edit menu.**

   The Dimensioning Manager dialog box appears.

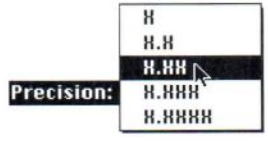


2. **Click to select the Arrows Inside and Center Text check boxes, and to deselect the Frame Text check box.**



3. **Hold down the pointer on the Text Display pop-up box and drag through the menu to choose the Aligned option.**

4. **Choose the X.XX option from the Precision pop-up menu.**



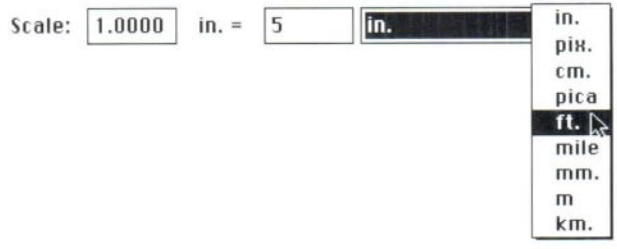
The Precision pop-up box now reads "X.XX." The dimensioning data displayed will be accurate to two decimal places.

You also need to set the scale to match the drawing scale:

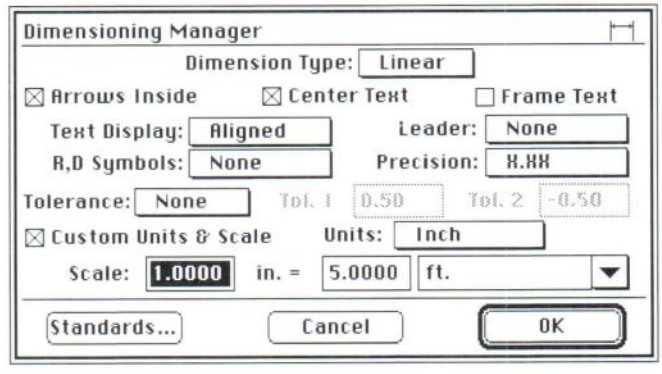
5. **Click the Custom Units and Scale check box to select it if it's not already selected.**

6. **Type "5" in the second Scale text box.**

7. Choose *ft.* from the pop-up menu of units, by holding the pointer down on the downward-facing triangle icon.



The completed dialog box should look like this:



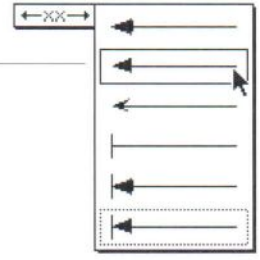
8. Click OK.

Canvas closes the dialog box.

Drawing dimension objects

1. While pressing the Shift key, hold down the pointer on the Arrow Type palette icon.

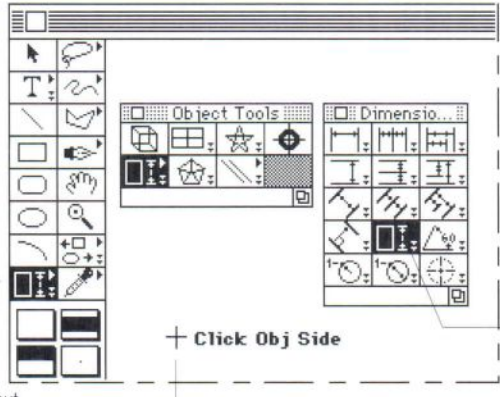
Canvas displays the Arrowhead palette, bypassing the Arrow Type palette, when the Shift key is held down.



2. **Drag through this palette to choose the second option, as indicated in the previous illustration.**

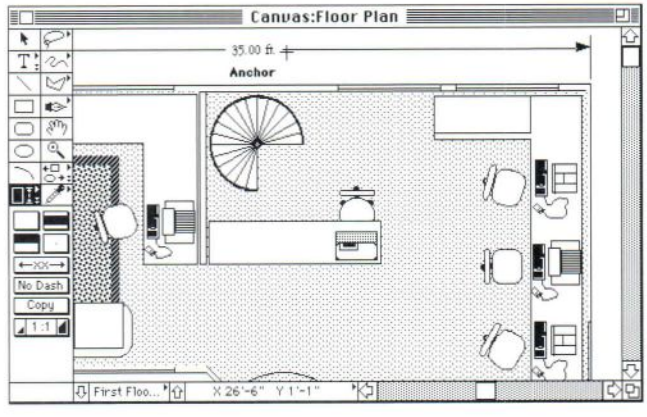
3. **Click the Object Side option in the Dimension palette to select it.**

   The icon highlights and the pointer changes to a crosshair with the words *Click Obj Side* attached. The Object Side icon is also highlighted in the Object Tools palette and the Tool Box.



4. **Position the pointer so that the crosshair is over the top wall and click.**

Canvas draws a dimension object (two witness lines and a double-headed arrow) indicating the length of the upper wall of the building and the pointer changes to read *Anchor*.

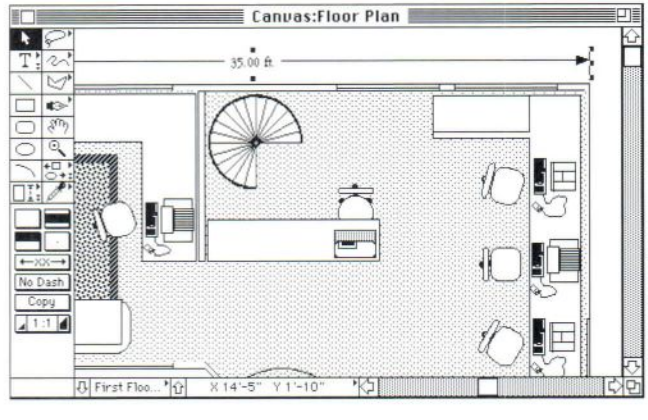


5. **Move the pointer up and down to adjust the dimension object's position.**

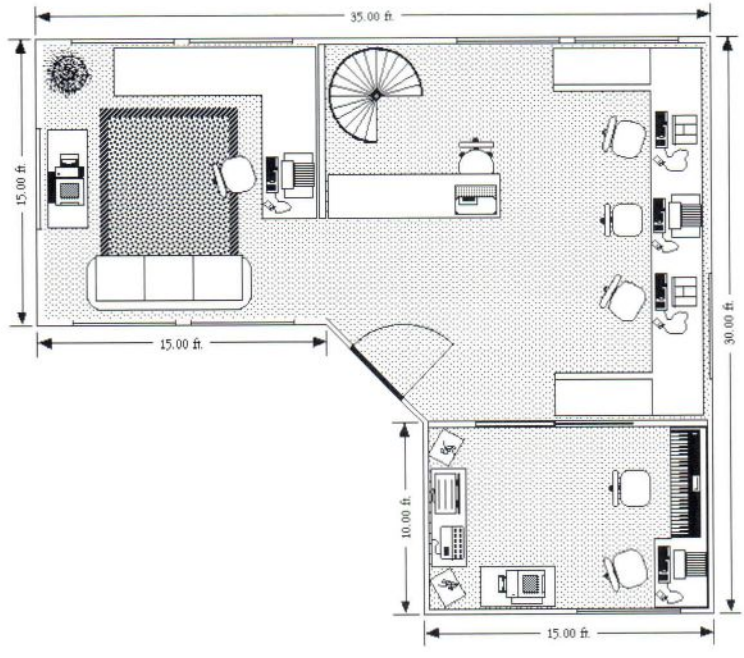
   As you move the pointer, the dimension object moves with it.

6. **When the dimension object is where you want it, click once to anchor it.**

   Your illustration should look like this:

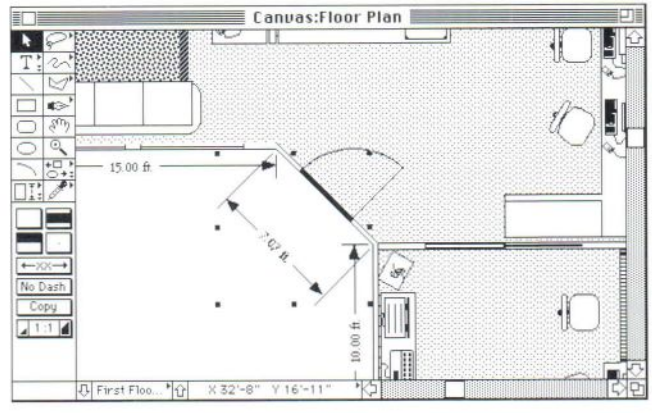


7. **Repeat the same procedure for the five other walls shown in the following illustration.**



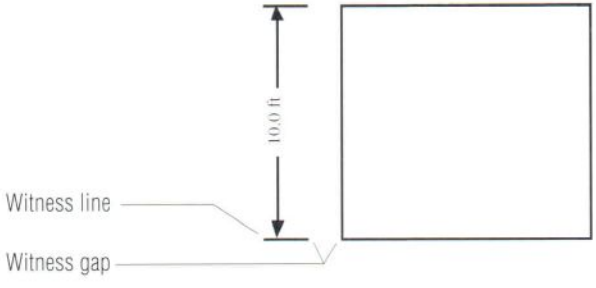
8. **Create a seventh dimension object along the diagonal wall where the front door is.**

This dimension object should be positioned farther away from the wall than the others, as shown below.



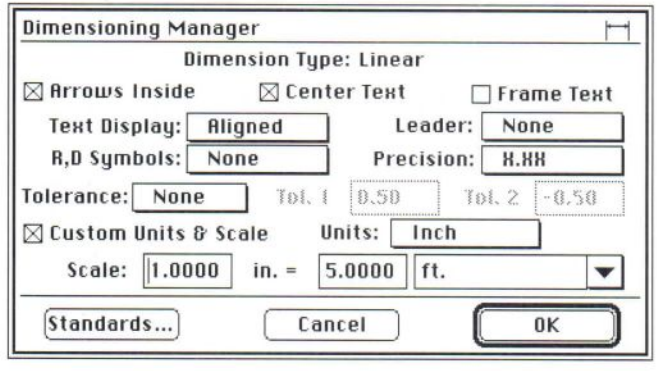
Editing dimension objects

As with other types of objects, Canvas makes it easy to edit dimension objects you have drawn. The witness lines for the last object you drew partly obscure the two objects beside it. To remedy this, you'll increase the witness gap, the distance between the witness lines and the object you're dimensioning.



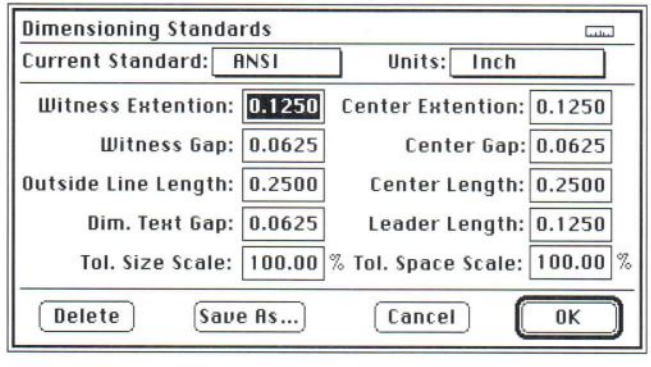
1. Double-click the diagonal dimension object.

Canvas opens the Dimensioning Manager dialog box.



2. **Click the Standards button.**

Canvas opens the Dimensioning Standards dialog box.



3. **Highlight the contents of the Witness Gap text box and type "0.45."**

4. **Click OK.**

Canvas presents the following dialog box.

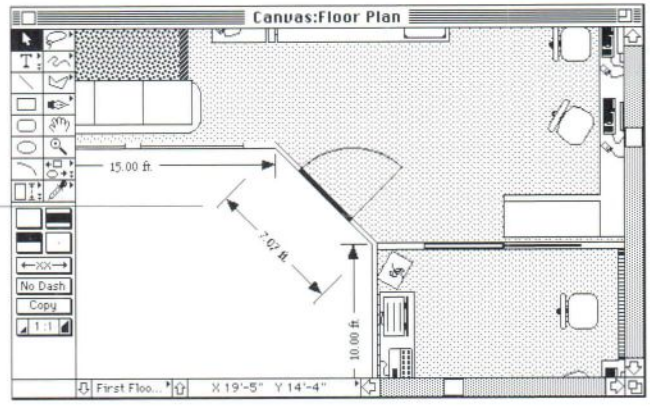
5. **Click Discard to return to the Dimensioning Manager.**

   Canvas will change the witness gap for the diagonal object only, leaving the standard witness gap length unchanged.

6. **Click OK to close the Dimensioning Manager.**

   The dialog box disappears and the diagonal dimension object's witness gap is redrawn at 0.45". (If it still overlaps the adjacent objects, try using a witness gap larger than 0.45".)

Larger witness gap prevents witness lines from obscuring adjacent objects



7. **Close the floating palettes by clicking their close boxes.**

User Tip: You can also close all open floating windows by holding the Option key down while you click one of their close boxes.

The First Dimensions layer

There are times when you will want to view the first floor of the plan without the dimensioning data. To make this easier, you can place the

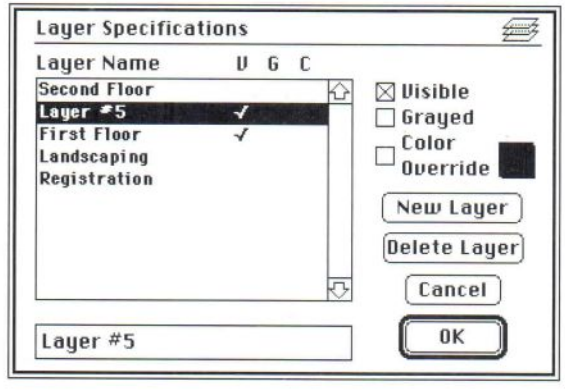
dimension objects on a separate layer. First you'll create a new layer and then you'll move the objects onto it.

1. **Choose the Layer Specs command from the Layout menu.**

   Canvas displays the Layer Specifications dialog box.

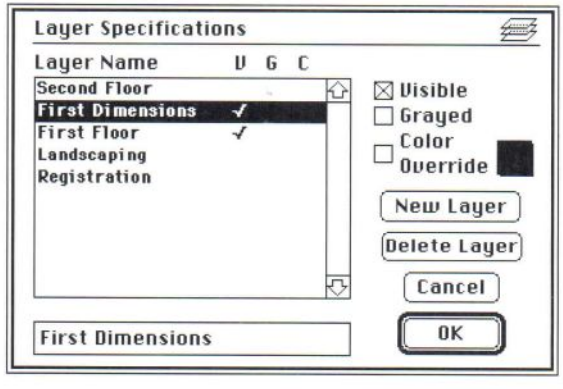
2. **Click the New Layer button.**

   Canvas adds a new layer, Layer #5, between the First and Second Floor layers.



3. **Type "First Dimensions" to change the new layer's name.**

   As you type, the name in the text box at the bottom of the dialog box and the layer's name in the list change.

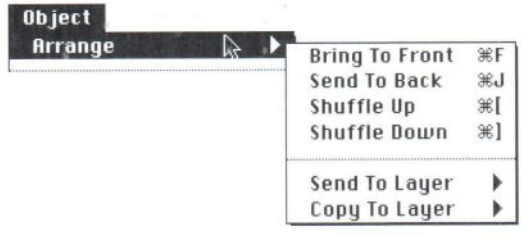


4. **Click the First Floor layer to select it.**
5. **Click OK to close the Layer Specifications dialog box.**

   You have just created a new layer, named First Dimensions.
6. **Click the Dimensioning tool icon to select it.**
7. **Choose the Select All Dimensionings command from the Edit menu.**

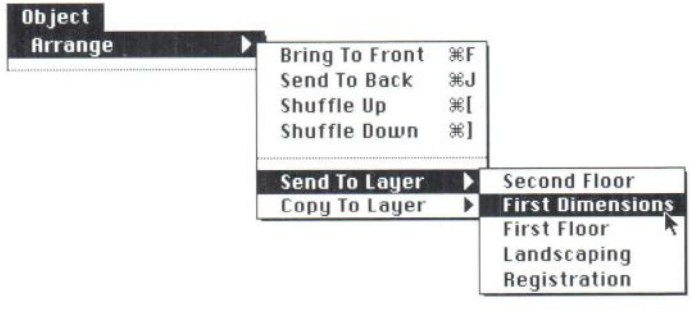
   Canvas selects all the dimension objects you have drawn. When you choose the Select All command while an object tool is selected, you select all objects created with that tool.
8. **Pull down the Object menu and drag to highlight Arrange.**

   The Arrange submenu appears.



9. **Drag to highlight the Send To Layer option.**

   Canvas displays a list of the layers in the Floor Plan document.



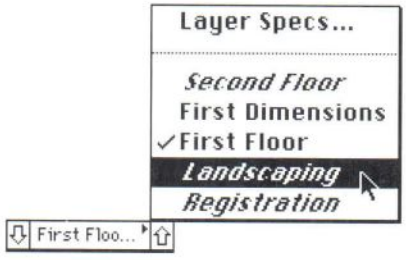
10. **Drag through this list to highlight First Dimensions and release the mouse button.**

    Canvas transfers the dimension objects to the new layer.

Landscaping

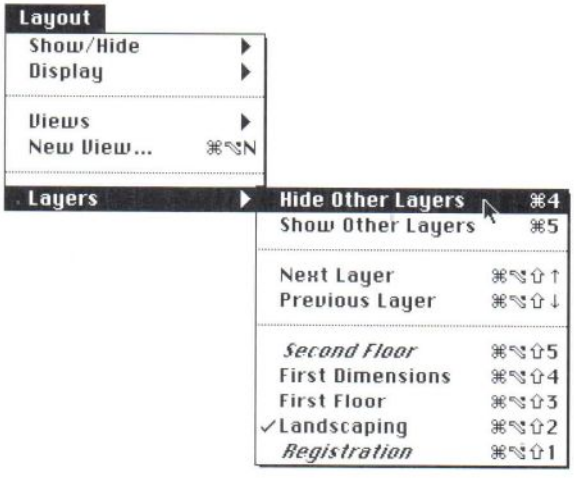
When you switched layers earlier, you may have noticed that one of the layers is called Landscaping. In this exercise, you'll complete the floor plan by adding a fire hydrant to the landscaping layer.

1. **Hold down the pointer on the Layers palette icon and drag through the palette to choose *Landscaping*.**

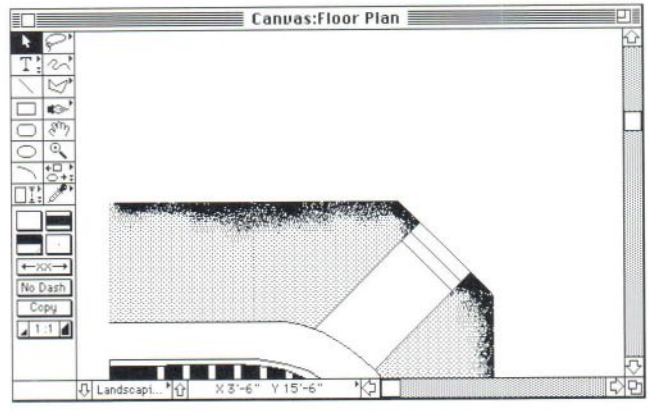


The Landscaping layer is now the active layer. The First Floor and First Dimensions layers are still visible.

2. **Choose the Hide Other Layers option of the Layers submenu in the Layout menu.**



The First Floor and First Dimensions layers become invisible, leaving only the Landscaping layer visible.



Adding a fire hydrant

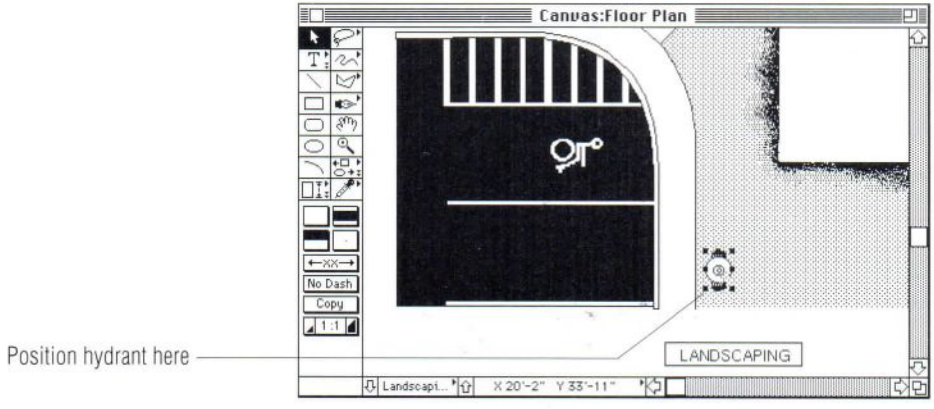
In the steps that follow you will add a fire hydrant, complete with shadow, in front of the store on the Landscaping layer.

1. **Choose the Hydrant MacrObject from the Macro menu.**

2. **Click near the corner of the grass to place the Hydrant MacrObject.**

   The hydrant appears.

3. **Drag the hydrant to position it as shown in the following illustration.**



4. **Choose the Duplicate command from the Edit menu.**

   A second hydrant appears, below and to the right of the original.

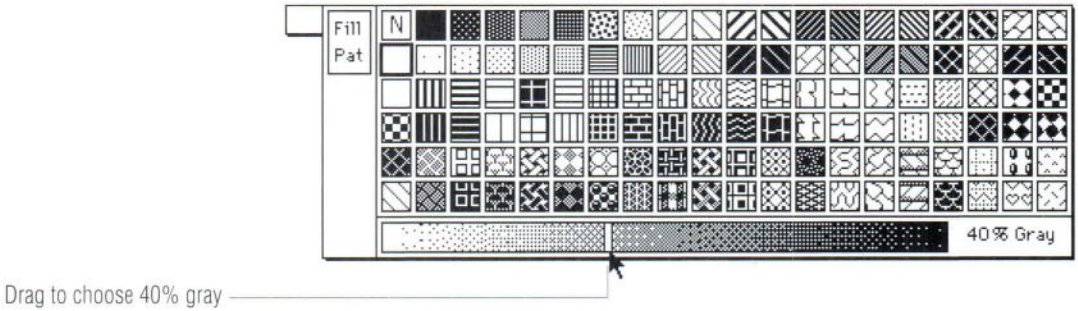
5. **Choose the Outline option of the Combine submenu in the Object menu.**

   Canvas converts the hydrant into an outline that will become the hydrant's shadow.

6. **Hold down the pointer on the Fill Pattern palette icon to display the Fill Pattern palette.**

7. **Drag through the gradient bar in the palette to choose 40% gray.**

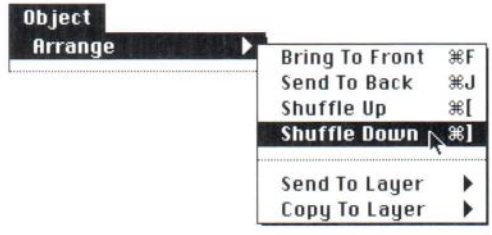
   The number to the right of the scale indicates the gray-scale percentage.



8. **Hold down the pointer on the Pen Pattern palette icon and drag through the palette to set the pen pattern to "N" (none).**

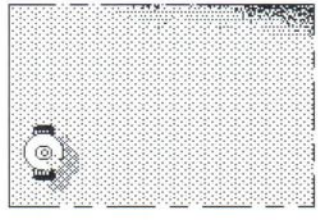
   The shadow's outline disappears.

9. **Choose the Shuffle Down option of the Arrange submenu in the Object menu.**



   Canvas moves the shadow behind the hydrant.

10. **Finally, use the Arrow tool to position the shadow in relation to the hydrant, as shown below.**



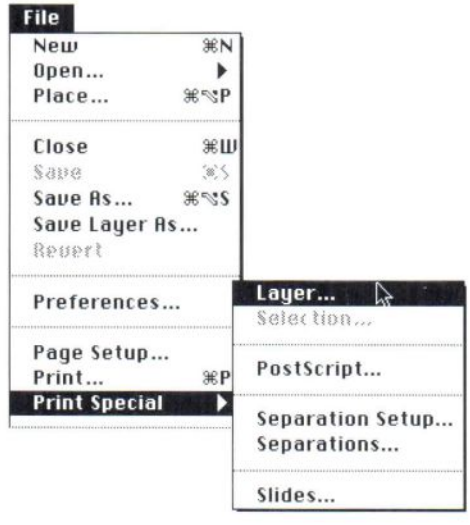
Saving the finished plan

Congratulations! You have completed the floor plan. You should save it before continuing. To do so, simply choose the Save command from the File menu. Canvas updates the document's file.

Printing specific layers

Having completed the floor plan, you can print any combination of the document's layers. When you choose the Print command, as you did in Chapter 1, Canvas prints whichever layers are currently visible. If you want to specify exactly which layers Canvas prints, you can use the Layer option of the Print Special submenu.

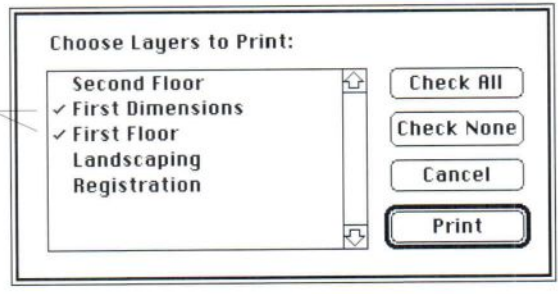
1. **Choose the Layer option of the Print Special submenu in the File menu.**



The dialog box shown in the following illustration appears and the pointer changes to a check mark.

2. **Click "First Floor" and "First Dimensions."**

Canvas places a check mark next to each name, indicating that both will be printed.



Check marks indicate layers to be printed

3. **Click Print.**

   Canvas displays the same Print dialog box you saw in Chapter 1.

4. **Click OK (System 7.0 users click Print).**

   Canvas prints the selected layers.

Where to go from here

In this chapter, you learned how to use some of the advanced drawing capabilities of Canvas. In the next chapter, you will learn about the advanced capabilities that Canvas provides for manipulating text. You'll also learn how to create Bézier curves in Canvas. If you want to take a break, choose the Quit command from the File menu.

Chapter 5

Canvas text

Welcome to the last chapter of *Learning Canvas*. In this chapter you will learn a number of techniques for manipulating text in Canvas as you create an advertisement for the computer store's grand opening sale.

What you will learn

In completing the computer store's floor plan, you have learned to use many of Canvas's drawing tools. In this, the last chapter of the Canvas tutorial, you will extend your knowledge of Canvas's features, focusing mainly on the program's many text handling capabilities. After completing this chapter you will be able to:

- Create and edit text objects in Canvas
- Set the properties of text objects
- Convert text to Bézier curves
- Bind text to other Canvas objects
- Wrap text around other objects
- Add custom tab stops to text objects
- Draw Bézier curves
- Add perspective to objects
- Use the Point Rotate tool

Starting from scratch

Unlike the floor plan, which was a complicated document, the ad you'll create in this chapter is fairly simple. To create it you'll start with a new document. To get started, launch Canvas by double-clicking its

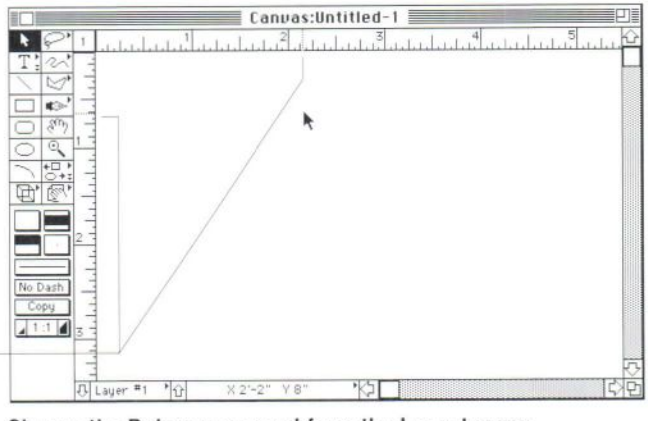
icon. You'll see a new document named *Untitled-1*. Don't let the blank screen intimidate you. In just minutes it will be transformed into an advertisement from which you can print a camera-ready copy.

A framework for the ad's layout

In order to create a nicely laid out ad, there are some preparatory steps you should take. Canvas offers an easy way to set up a framework of guide lines. These will help you precisely position objects on the page. Since the guides are dependent on Canvas's rulers, first you'll need to enable and configure these.

1. **Choose the Rulers option of the Show/Hide submenu in the Layout menu.**

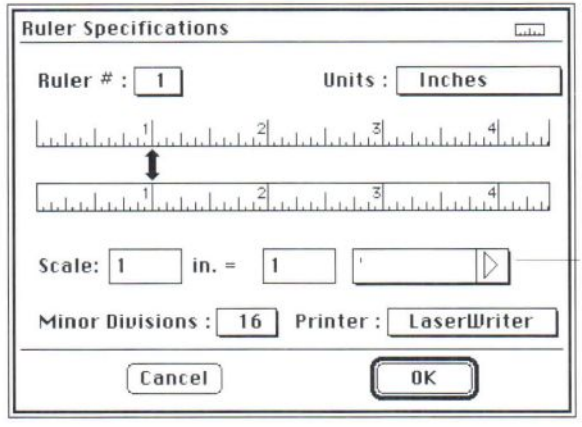
   Canvas displays rulers along the top and left edges of the Canvas Window. As you move the pointer, tick marks on the rulers indicate the pointer's horizontal and vertical position within the document.



Tick marks indicate pointer position

2. **Choose the Rulers command from the Layout menu.**

   Canvas displays the Ruler Specifications dialog box. Using this dialog box you can customize each of Canvas's six rulers to suit your individual needs.



3. **Choose " from the pop-up menu indicated in the previous illustration.**

   To display this menu, hold down the pointer on the triangle icon.

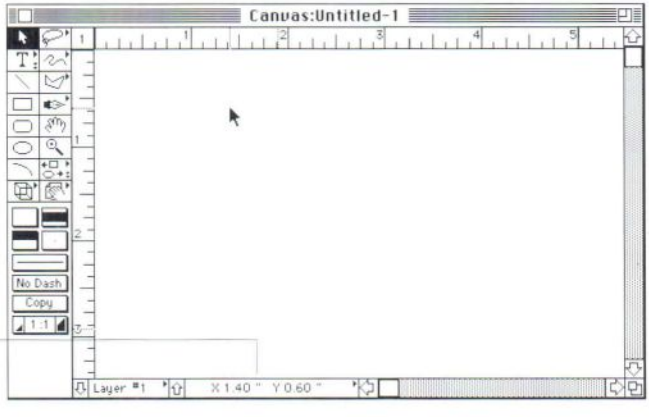
4. **Choose 8 from the Minor Divisions pop-up menu.**

5. **Choose the type of printer you are using from the Printer pop-up menu.**

   Canvas makes minor adjustments depending on which printer you have chosen, ensuring that objects always print at the correct size.

6. **When you have finished making these changes, click OK.**

   The rulers change to display ⅛" intervals.

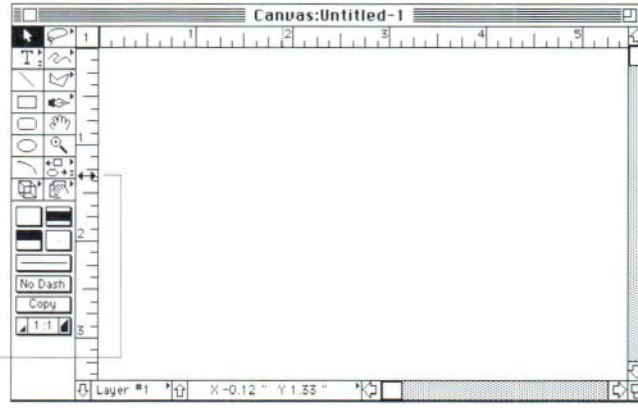


Adding guides to your document

Guides are easy to add—you simply drag them onto the page from either of the two rulers.

1. **Hold down the pointer on the vertical ruler along the left side of the window.**

   The pointer changes to a two-headed arrow.



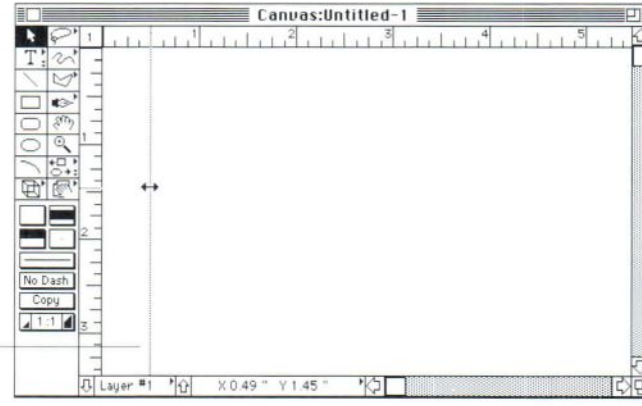
2-headed arrow pointer

2. **Drag to the right.**

   A vertical line follows the pointer.

3. **Drag the guide so that it is in line with the ½" mark on the horizontal ruler and release the mouse button.**

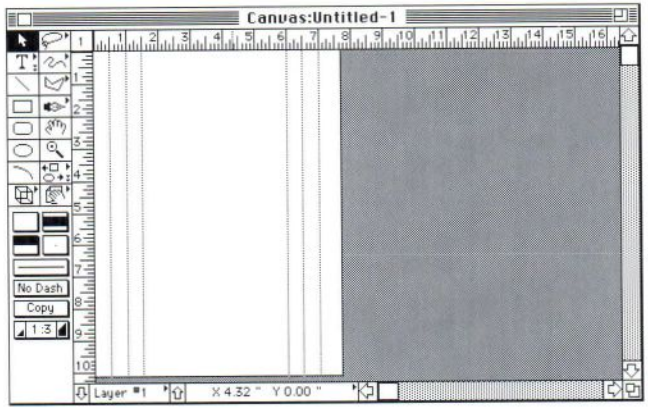
   On a color Macintosh system, the guides appear blue.



Guide

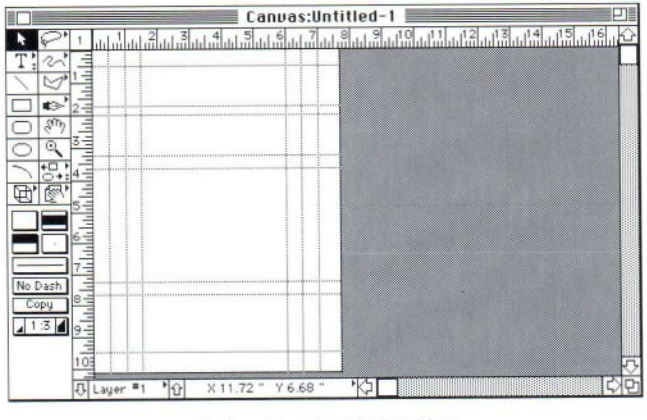
4. **Drag five additional vertical guides to the 1", 1½", 6", 6½", and 7" marks along the top ruler.**

   As you drag the guides beyond the edge of the window, the document scrolls. (The following two illustrations have been reduced so that all of the guides are visible at once.)



Vertical guides

5. **Drag eight horizontal guides into the document from the horizontal ruler, placing them at the ½", 1¾", 2", 3¼", 3½", 7¼", 7⅝", and 9½" marks on the vertical ruler.**



Horizontal and vertical guides

At any time the guides can be hidden to let you see how the page looks by choosing the Guides command in the Layout menu. Simply choose Guides again to redisplay them.

Adding a border to the page

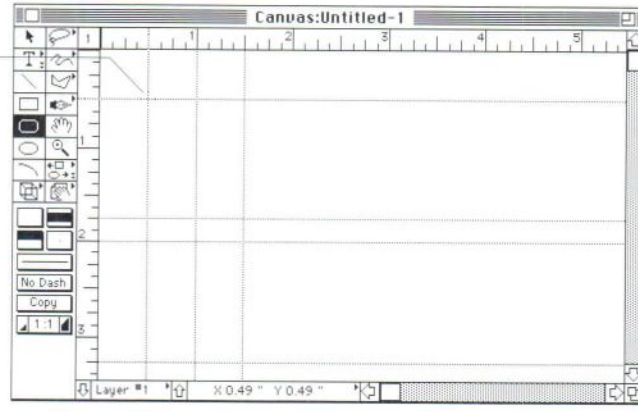
Finally, you'll use the guides you just created to draw a background for the elements comprising the ad.

1. **Select the Rounded Rectangle tool from the Tool Box.**

2. **Position the crosshair pointer over the intersection of the ½" horizontal and ½" vertical guides.**

   When properly positioned, the pointer should seem to disappear—the crosshair blends with the guides beneath it (on a color Macintosh system, the cursor changes color when properly positioned).

Pointer blends in with guides



3. **Drag the pointer to the intersection of the 7" vertical guide and 9½" horizontal guide to create a rounded rectangle, and release the mouse button.**

   Remember that the position of the vertical guide is indicated on the horizontal ruler, and vice-versa. Again, when you are in the correct position, the crosshair will disappear.

4. **Hold the pointer down on the Fill Pattern palette icon and drag through the palette to change the rounded rectangle's fill pattern to 50% Gray.**

   The rounded rectangle's fill pattern is now gray.

5. Choose Duplication from the Edit menu.

Canvas displays the Duplication Specifications dialog box.

6. Set the dialog box's options as shown below:

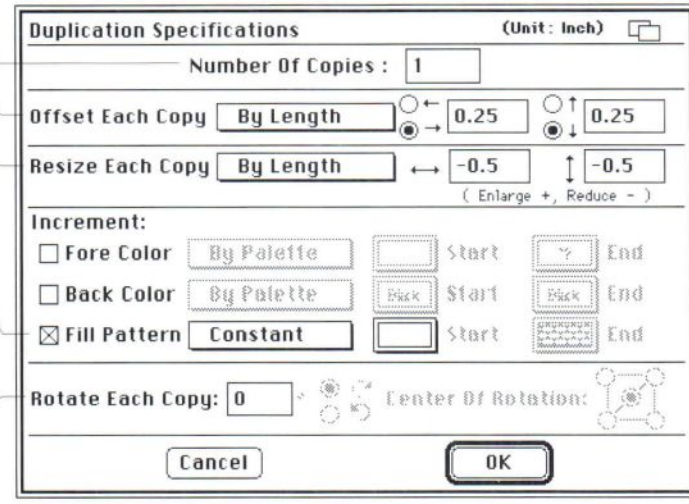
Set Number Of Copies to 1

Set Offset Each Copy to 0.25 down and right

Set Resize Each Copy to -0.5 in both directions

To set the Fill Pattern, click the check box, choose Constant from the pop-up menu, and choose the solid white pattern from the Start pop-up palette

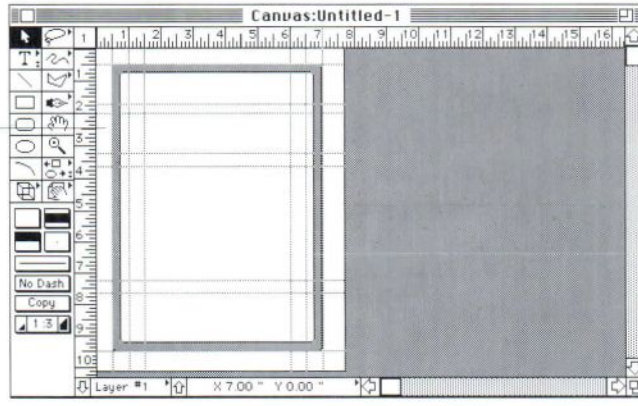
Rotate Each Copy should be set to 0°



7. Click OK.

Canvas duplicates the rounded rectangle, centering the copy inside the original. Since it has been resized, a ¼" border is left between it and the larger rectangle, and its fill pattern is set to white.

Smaller, white rounded rectangle on top of gray one leaves border around page



8. **Select the two rounded rectangles by shift-clicking them.**
9. **Choose the Group command from the Object menu.**
10. **Choose the Lock command from the Object menu.**

    The rectangles are locked. This will make it easier to align the elements of the ad to the background.

Adding a headline

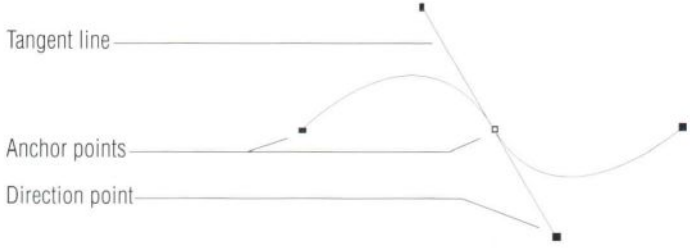
Now you're ready to add the ad's contents. The first element will be a headline saying "Grand Opening." To add interest, you'll bind it to a curve in an arched path.

The Bézier Curve tool

To draw the curved path of the text in this exercise, you'll use the Bézier Curve tool.

> **User Tip:** Canvas's Freehand tool lets you draw Bézier curves by simply tracing the path you want the curve to follow. It is discussed in detail in Chapter 9, "Advanced drawing tools" in the *Using Canvas* section of this manual. You'll use the Bézier Curve tool now because it lets you work with greater precision.

A Bézier curve segment is defined by four points: two anchor points and two direction points. The anchor points are at the segment's end points. The position of the direction points determines the shape of the curve segment—the line from the anchor point to its associated direction point is tangent to the curve at the anchor point.

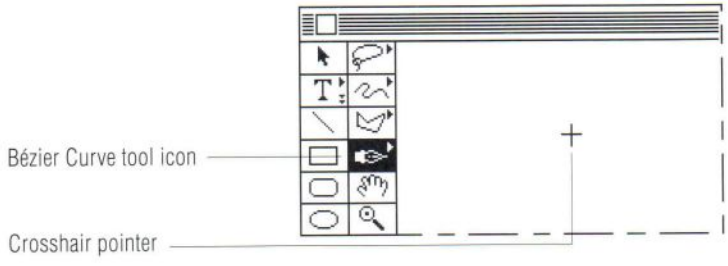


Bézier curve showing tangent line and direction points

The easiest way to see what this means is to simply draw a Bézier curve.

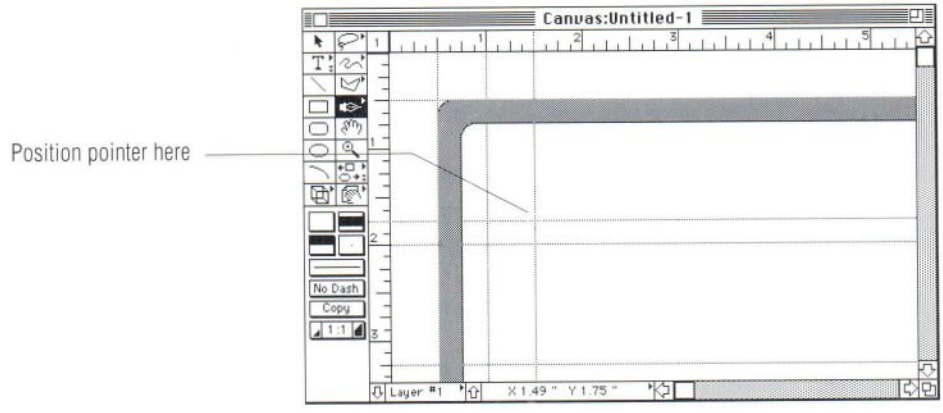
1. **Select the Bézier Curve tool from the Tool Box.**

   The tool's icon highlights and the pointer changes to a crosshair.



2. **Position the pointer at the intersection of the 1½" vertical and 1¾" horizontal guides.**

   It will blend in when properly positioned.

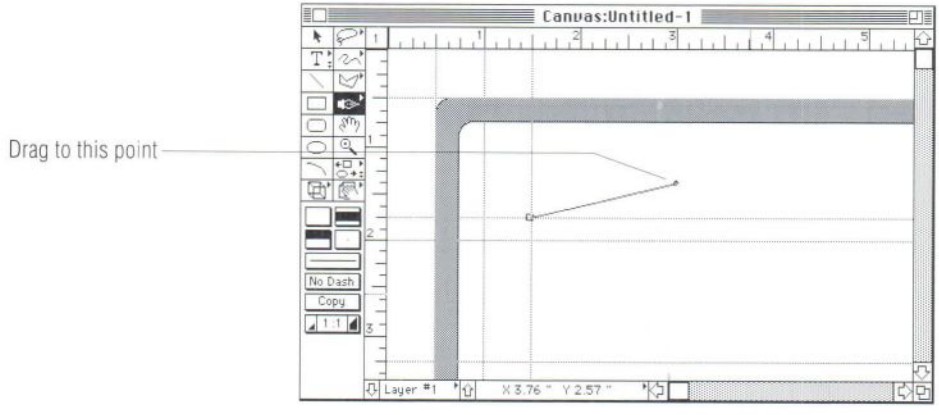


3. **Drag up and to the right.**

   A square appears at the point where you begin dragging and a line stretches from the square to the pointer. The square is the curve's first anchor point and the line is the tangent line connecting the anchor point to the direction point.

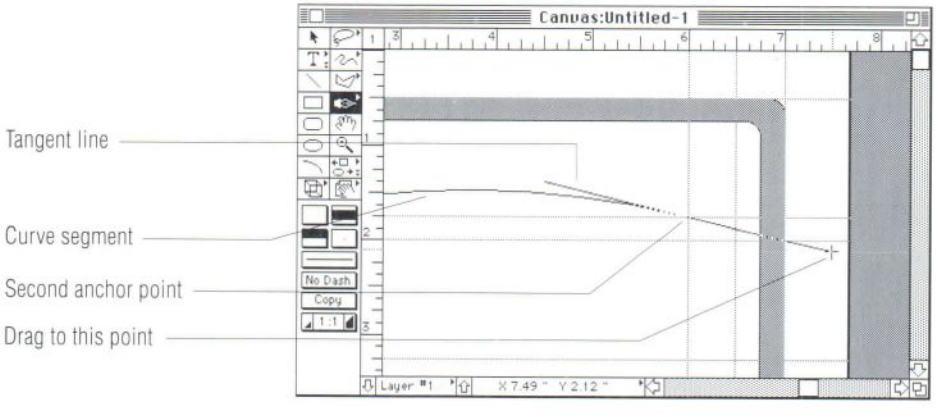
4. **Continue dragging until the crosshair is positioned at 3" across and 1⅛" down and release the mouse button.**

You can see the position of the pointer by watching the tick marks in the rulers.



5. **Position the pointer at the intersection of the 1¾" horizontal and 6" vertical guides and drag down and to the right to the point 7½" across and 2⅛" down and release the mouse button.**

   You may have to scroll the document to get to this point. As you create the second anchor and direction points, the second tangent line and the curve segment itself are drawn.



6. **Press the Enter key to end the curve.**

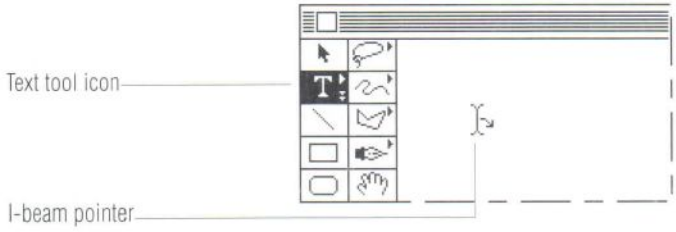
7. **Choose the Home View option of the Views submenu in the Layout menu.**

Typing text

To type the text for the headline, you'll use the Text tool.

1. **Select the Text tool from the Tool Box.**

   The tool's icon highlights and the pointer changes to an I-beam.



2. **Position the pointer below the Bézier curve and click.**

   A blinking insertion point appears where you clicked.

3. **Type "Grand Opening" and press the Enter key.**

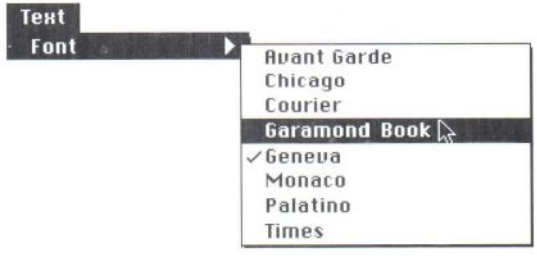
   The text you typed is selected and selection handles surround it.

Setting text properties

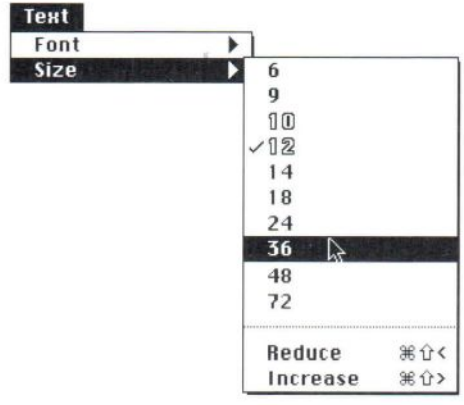
When a text object is selected, you can change its properties. Text objects can have many of the same properties as other types of objects, as well as several others specific to text objects. Properties specific to text objects can be changed using the commands in the Text menu.

1. **Pull down the Text menu and drag to highlight Font.**

2. **Drag to choose Garamond from the Font submenu.**



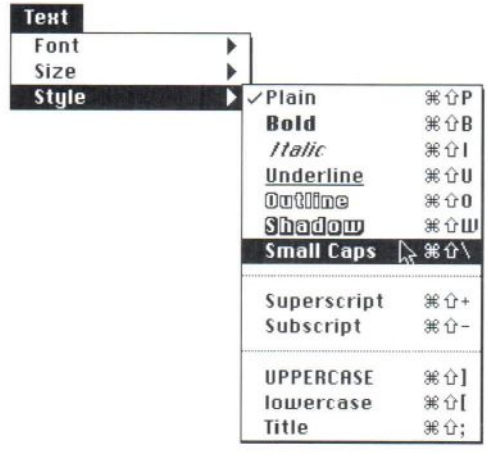
3. **Choose 36 from the Size submenu in the Text menu.**



The text increases to 36-point size. Unless you are using a screen font utility such as Adobe's Type Manager™, the text will look jagged on your screen.

Grand Opening

4. **Choose Small Caps from the Style submenu in the Text menu.**

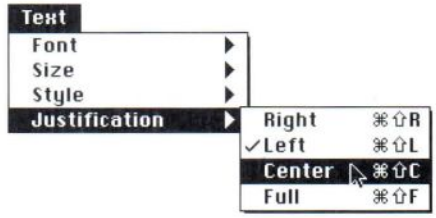


The lowercase letters in the text change to small capital letters.

GRAND OPENING

5. Choose Center from the Justification submenu.

Although you won't notice an immediate change, center justification ensures that the text will be centered when you bind it to the curve.



Binding text to curves

Now you'll bind the text you just created to the Bézier curve. The text object should still be selected. If it isn't, click to select it.

1. Hold down the Shift key and click the curve.

Both objects are now selected.

2. Choose the Bind Text command from the Text menu.

Canvas redraws the text along the Bézier curve.

3. **Click the Bézier curve to select it.**
4. **Press the Delete key to eliminate the curve from the page.**

The text retains its shape even after the curve has been deleted.

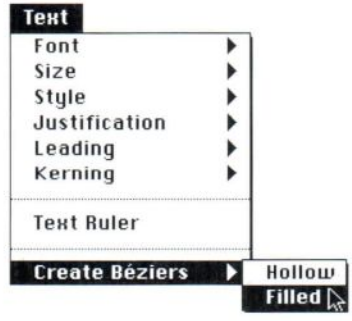
GRAND OPENING

Converting text to Bézier curves

Canvas lets you convert any TrueType™ or PostScript® Type 1 font into Bézier curves. This means that you can easily edit the shapes of the individual letters, and print text accurately at any size or rotation. It is useful if you have used several fonts in a document and don't want to have to download each to your printer. In particular, those of you using an ImageWriter or comparable printer will notice superior quality when you print text which has been converted to Bézier curves. (Compare the normal text above to the converted text on the next page.)

To convert the "Grand Opening" text object to Bézier curves:

1. **Use the Arrow tool to select the text object.**
2. **Pull down the Text menu and choose the Filled option of the Create Béziers submenu.**



Canvas converts the letters in the text object to Bézier curves.

3. **Choose the Group command from the Object menu to group the resulting curves together.**

GRAND OPENING

The store's name

Below "Grand Opening" you'll add the name of the computer store.

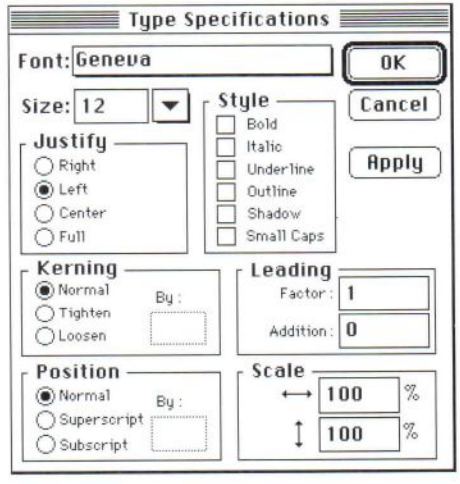
1. **Select the Text tool and click below "Grand Opening" to create a text insertion point.**
2. **Type "Macrobatics, Inc."**
3. **Press the Enter key to select the entire text object.**

Using the Type Specifications dialog box

The Type Specifications dialog box allows you to specify several of a text object's properties simultaneously, just as the Object Specifications dialog box does for objects in general.

1. **Choose the Type command from the Text menu.**

   The Type Specifications dialog box appears.



2. **Choose Garamond Book from the Font pop-up menu.**
3. **Type 50 in the Size text box.**
4. **Click OK to save these changes.**

   The dialog box closes and the store's name changes to reflect the choices you have made.

Macrobatics, Inc.

Canvas gives you full control over the appearance of text objects, allowing you to specify the properties of each character individually if necessary. In the following steps, you'll reduce the size of the characters "Inc." in the store's name.

1. **Scroll horizontally so that "Inc." is visible.**
2. **Double-click the text object with the Arrow tool.**

   A blinking insertion point appears where you clicked so that you can edit the individual text characters and the pointer changes to an I-beam.

3. **Drag the I-beam pointer across the characters " Inc." to highlight them (including the space character in front of the "I").**

4. **Choose 36 from the Size command in the text menu.**
5. **Press Enter.**

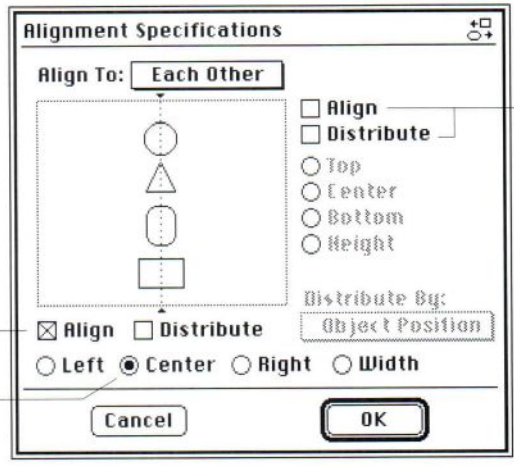
   The text should now look like this.

Macrobatics, Inc.

6. **Drag the text object so that the top of its bounding rectangle is in line with the 2" horizontal guide.**

7. **Shift-click the rounded rectangles.**

8. **Choose the Align command from the Object menu and specify alignment to horizontal centers in the Alignment Specifications dialog box, as shown below.**



9. **Click OK to center the text left to right on the rounded rectangles.**

10. **Shift-click the rounded rectangles to deselect them.**

    The text object remains selected.

11. **Choose the Filled option of the Create Béziers submenu in the Text menu.**

    The text object is converted into Bézier curves.

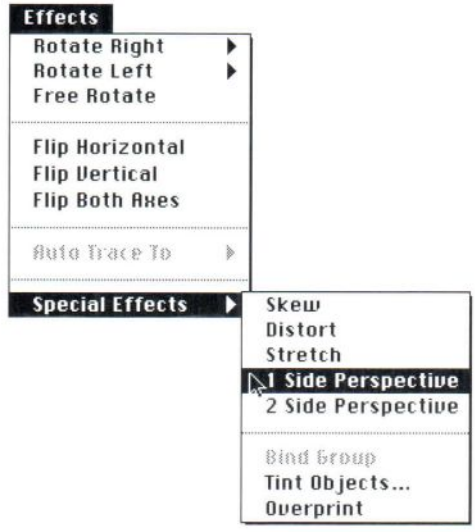
Adding special effects to objects

Canvas lets you add a variety of effects to objects. In Chapter 3 you learned how to rotate objects and in Chapter 4 you learned how to flip them. Now you'll add a special effect to the store's name to make it stand out more.

The 1 Side Perspective option lets you stretch one corner of an object, distorting its bounding rectangle into a trapezoid and creating an illusion of perspective. The other special effects options—Distort, Skew, 2 Side Perspective, and Stretch—are all described fully in Chapter 16, "Adding Effects," in the *Using Canvas* section of this manual.

The store's name should still be selected. To add the perspective effect:

1. **Choose the 1 Side Perspective option from the Special Effects submenu in the Effects menu.**



The text object's selection handles are replaced by four edit handles similar to the ones displayed by the Free Rotate command.

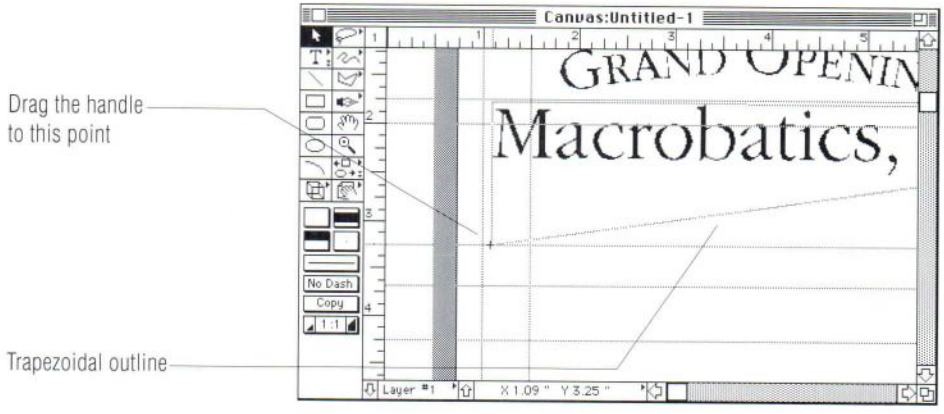
2. **Position the pointer over the lower left edit handle.**

   When properly positioned, the pointer changes to a small crosshair.

3. **Drag the edit handle straight down.**

   As you drag, an outline of the object follows the pointer. Notice that it has become a trapezoid rather than a rectangle.

4. **Continue dragging until the corner of the trapezoid touches the 3¼" horizontal guide, as shown in the following illustration.**



5. **Release the mouse button.**

   Canvas redraws the Bézier curves comprising the name, distorting them to fill the trapezoidal outline.

Macrobatics, Inc.

A slogan for the store

Now you'll add a slogan below the store's name.

Creating the text

1. **Press the Enter key twice to deselect any selected objects.**
2. **Choose Garamond Book from the Font submenu in the Text menu.**

   Choosing a font when no text is selected sets the default font. Canvas will use this font for all new text objects you create.

3. **Select the Text tool.**
4. **Click to place an insertion point below the computer store's name.**

5. **Type "Specializing in products for Macintosh® computers." and press the Enter key.**

   To type the "®," hold down the Option key and type "r."

6. **Choose 14 from the Size submenu in the Text menu.**

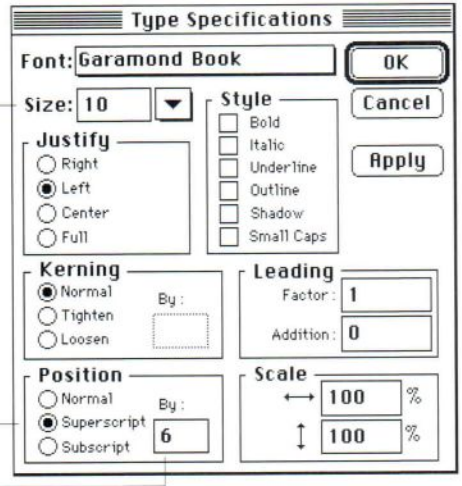
   The text should look like this:

   Specializing in products for Macintosh® computers.

7. **Drag to highlight the "®."**
8. **Choose the Type command from the Text menu.**
9. **Type 10 in the Size text box.**
10. **Click the Superscript radio button and type 6 in the adjacent text box.**

Set the size to 10 points

Specify 9 point superscripting



11. **Click OK.**

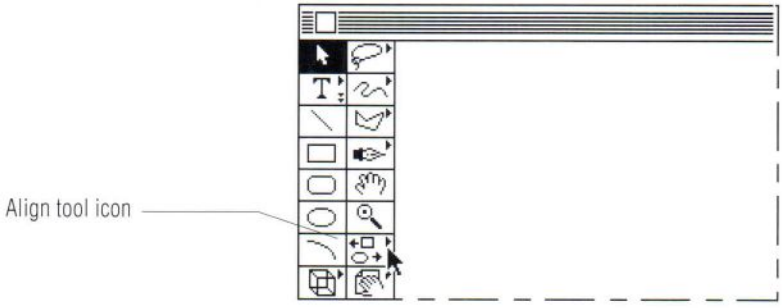
    The Type Specifications dialog box closes. The "®" now appears superscripted and smaller than the rest of the line.

    Specializing in products for Macintosh® computers.

12. **Press the Enter key to select the entire text object.**

13. **Shift-click the rounded rectangles to add them to the selection.**

14. **Click the Align tool in the Tool Box.**



Canvas aligns the text object to the vertical center of the background. Clicking the Align tool icon is a shortcut for repeating the last alignment action you performed.

Using the Point Rotate tool

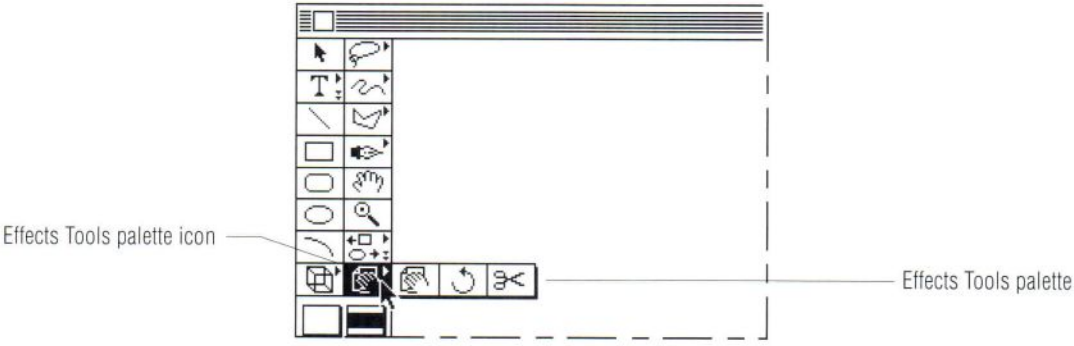
In Chapter 3 you used the Free Rotate command to rotate the chairs on the floor plan. With the Free Rotate command, Canvas rotated the objects around their centers. Here you'll use the Point Rotate tool to rotate the slogan around a point you choose.

1. **Shift-click the rounded rectangles to deselect them.**

   The text object remains selected.

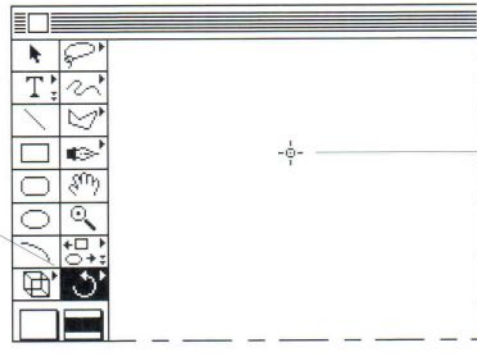
2. **Hold down the pointer on the Effects Tools palette icon.**

   The Effects Tools palette appears.



3. **Drag through the palette to select the Point Rotate tool.**

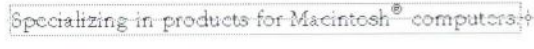
   When the Point Rotate tool is selected, its icon appears in the Effects Tools palette icon and the Point Rotate pointer appears.



4. **Position the Point Rotate pointer over the left edge of the text object.**

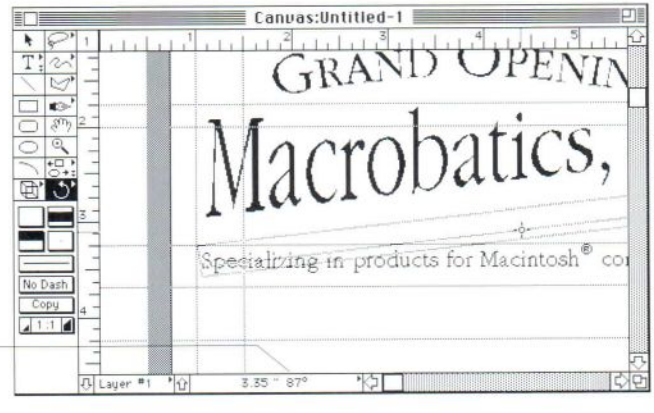
5. **Drag to the right.**

   As you drag, a dotted line indicating the angle of rotation and a dotted outline of the object's bounding rectangle follow the pointer.



6. **Drag up and to the right until the outline of the text object is parallel with the lower edge of the store's name, as shown in the following illustration.**

   As you rotate the object, the Information Manager displays its angle.

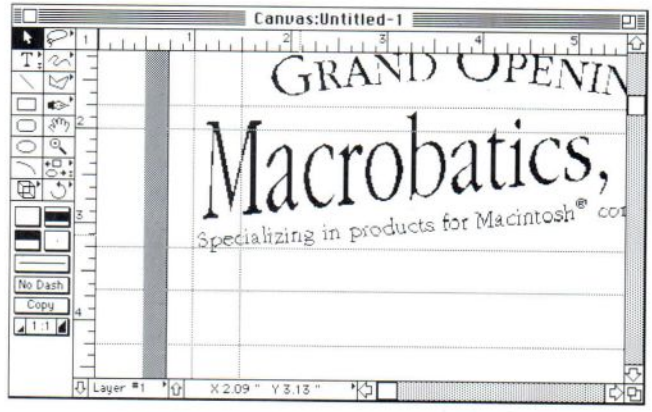


7. **Release the mouse button.**

   Canvas redraws the slogan at the angle you have specified.

8. **Use the Up Arrow and Down Arrow keys to move the slogan if necessary.**

   The "S" in *Specializing* should just touch the 3¼" guide.



9. **Choose the Filled option of the Create Béziers command in the Text menu to convert the text object to a group of Bézier curves.**

Adding some graphics to the page

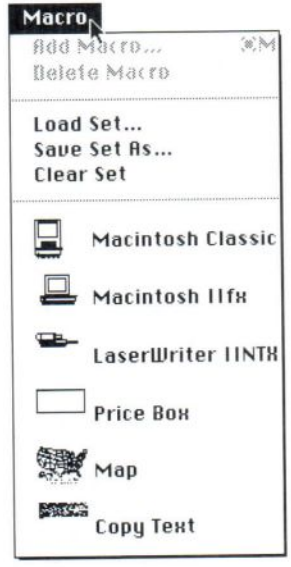
So that you can easily add some graphics to the page, a macro set file has been included in the Tutorial Files folder. Using these MacrObjects you can add a number of details to the ad quickly and easily.

1. **Choose the Load Set command from the Macro Menu.**

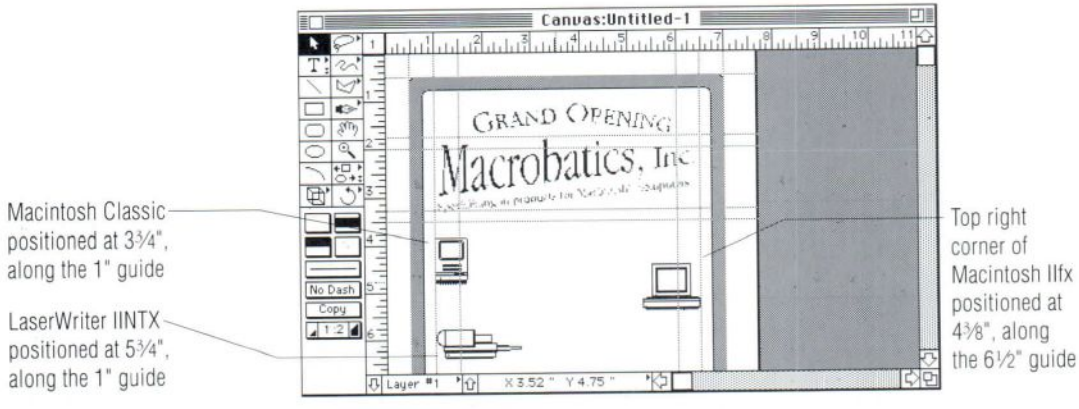
   Canvas displays the Open dialog box.

2. **Locate and open the file called *Ad Macros*, located in the Tutorial Files folder.**

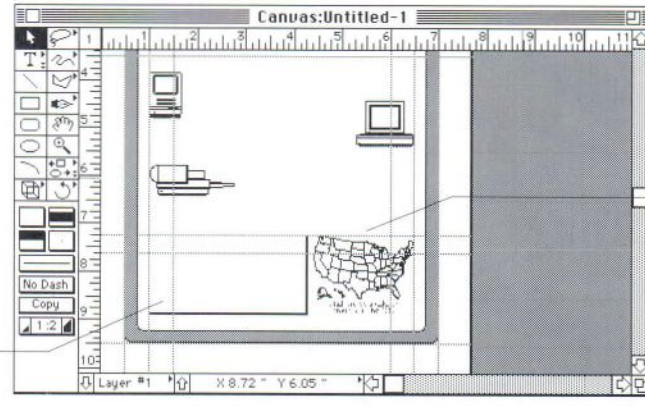
The Macro menu now contains several MacrObjects.



3. **Choose the Macintosh Classic MacrObject from the menu.**
4. **Position the pointer over the 1" vertical guide, at 3¼" along the vertical ruler, and click to draw the computer.**
5. **Position the Macintosh IIfx and LaserWriter IINTX MacrObjects in the document as well, as shown in the following illustration.**



6. **Choose the Price Box MacrObject from the Macro menu and click at the intersection of the 1" vertical and 7¼" horizontal guides to place it.**
7. **Choose the Map MacrObject from the Macro menu and click to place it in the document.**
8. **Drag the map so that its upper right corner is at the intersection of the 6½" vertical and 7¼" horizontal guides.**



Adding the ad's copy

With these objects in the document, you're ready to add the remaining text: the ad's copy and a list of sale prices.

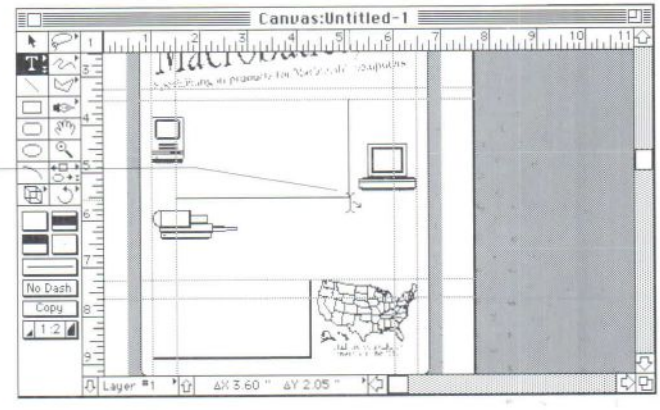
Creating paragraph text

Up to now, you have only used what is known as caption text. Caption text objects have no defined right margins so text won't wrap around automatically (you have to press the Return key at the end of each line). In addition to caption text, Canvas allows you to create paragraph text objects, which have both left and right margins. Text wraps around to the left margin just as it would in a word processing program. You create paragraph text using the Text tool, as described below.

1. **Select the Text tool from the Tool Box.**
2. **Position the tool's I-beam pointer in the document at the intersection of the 3½" horizontal and 1½" vertical guides.**

3. **Drag down and to the right as if you were drawing a rectangle.**

   As you drag, a rectangle follows your movements, delineating the boundaries of the paragraph text object.



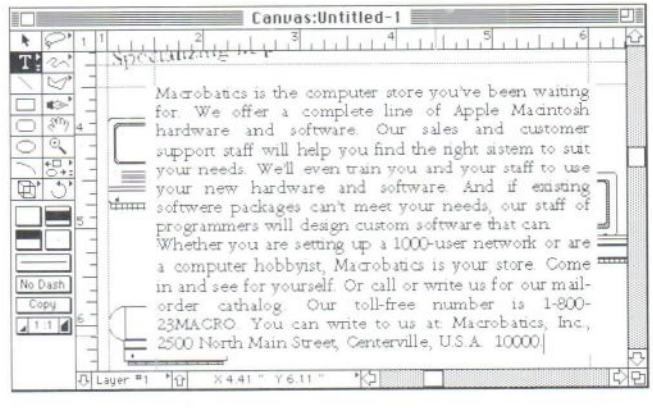
Dragging to create paragraph text object

4. **Release the mouse button when the right side of the rectangle is in line with the 6" guide.**

   When you release the mouse button, a blinking insertion point appears in the upper left corner of the text object.

5. **Type the text in the following illustration.**

   As you type, each new line wraps around to the left margin, causing the bottom boundary of the text object to expand downward.



User Tip: A MacrObject containing the copy text has been included in the *Ad Macros* set you loaded earlier. If you decide to use it instead, you must first eliminate the existing text object by pressing the Enter key followed by the Delete key. Now choose the Copy Text MacrObject from the Macro menu, position the pointer as in Step 2 above, and click to place the MacrObject. It should look like the text in the preceding illustration.

6. **In case the margins aren't exactly on the guides, you can adjust them by simply dragging the completed text object's selection handles.**

7. **Choose the Type command and set the properties of the copy text as follows:**

   - Font: Garamond Book
   - Size: 12 points
   - Style: Plain (all of the Style check boxes should be deselected)
   - Justification: Full

8. **Click OK.**

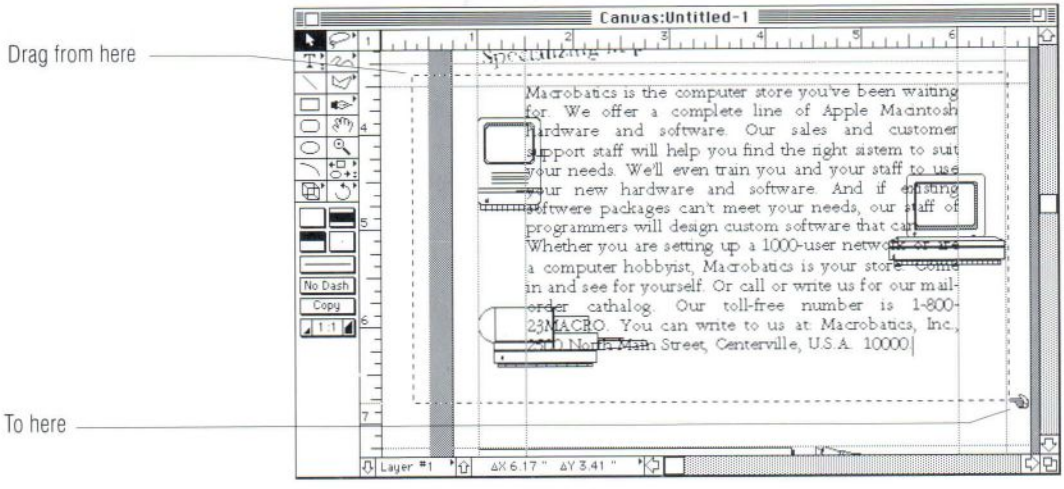
   The Type Specifications dialog box closes and the properties of the text object reflect your changes.

Wrapping text

Now the text of the ad's copy is all set. The only problem is that it partially obscures the three graphic objects you drew earlier. In the following steps you'll use Canvas's text wrapping capabilities to force the text margins to conform to the edges of the objects.

1. **Drag the Arrow pointer as shown in the following illustration to enclose the three graphics and the text object within the selection rectangle.**

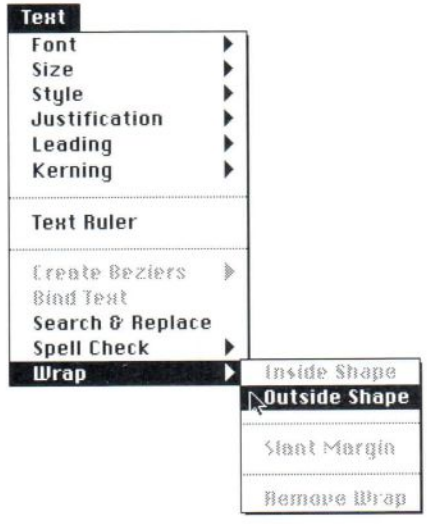
Your screen may scroll if the selection rectangle is wider than the window.



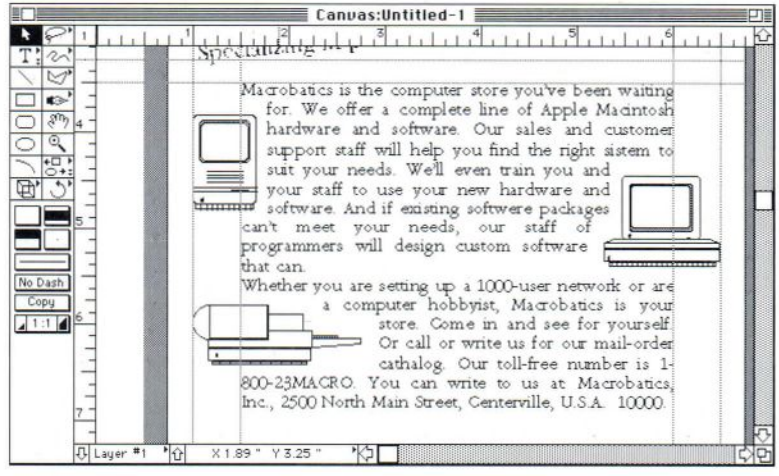
2. Release the mouse button.

The four objects are now selected.

3. Choose the Outside Shape option of the Wrap submenu in the Text menu.



Canvas redraws the text object, adjusting the margins of each line to conform to the edges of the three graphics.



Spell checking text in Canvas

Another of Canvas's text features is a powerful, 100,000 word spelling dictionary. You can use it to check all of the text in your document at once, or to check only a selection. You can also customize it by adding non-standard words which you use often.

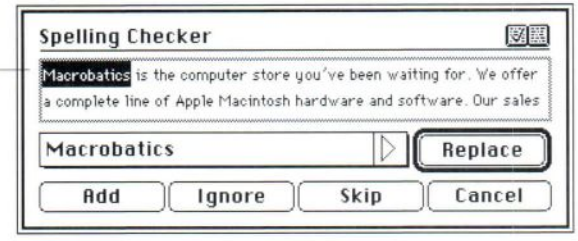
Those of you who chose to use the MacrObject to create the text will notice that there are a few misspellings in it. The rest of you may or may not have made any mistakes.

1. **Select the ad's copy if it isn't still selected.**
2. **If the graphics are still selected, deselect them.**
3. **Choose the Spell Check Selection option of the Spell Check submenu in the Text menu.**

   Canvas spell checks the text.

If Canvas finds a misspelled word, it presents it in the following dialog box. The first misspelled word it should find is *Macrobatics*.

This box shows the misspelled words in context

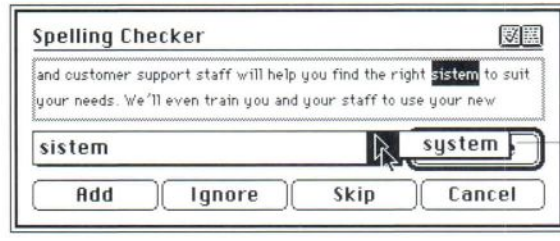


4. **Click Ignore.**

   Canvas ignores the word and continues checking the selection.

   Canvas will ignore any future occurrences of *Macrobatics* until you quit the program, treating it as a correct spelling. If *Macrobatics* were a word you were going to use often, you could click the Add button to add the word to your personal dictionary. You could also click Skip to allow this particular occurrence but consider it a misspelling if it appears again in the document.

5. **When Canvas stops at other spelling errors, type the correct word in the text box or choose a replacement from the pop-up menu of suggested words.**



Pop-up menu of replacement words

6. **Click Replace.**

   Canvas replaces the word and moves on to the next one it finds.

7. **Continue correcting any misspelled words in the text.**

   The Spelling Checker dialog box closes once Canvas has checked the entire selection.

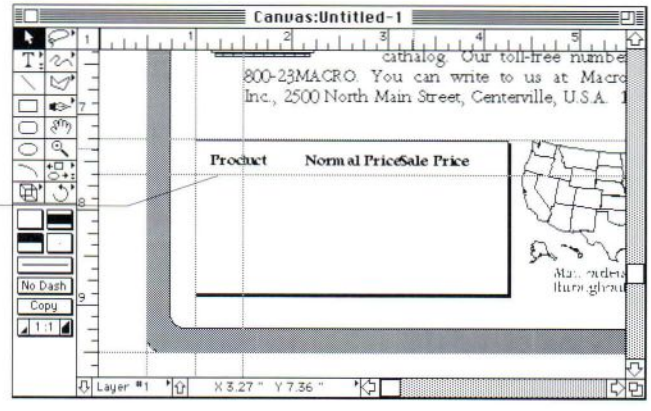
Price list

Now you'll add a small list of sale prices inside the box you drew earlier in the lower left corner of the page. In the following steps you'll create two text objects containing columns separated by tab stops.

1. **Scroll so that the Price Box MacrObject is visible.**
2. **Select the Text tool and click inside the price box to create a text object.**

   The pointer should be at about 1⅛" across, above the 7⅝" guide.
3. **Type the words *Product*, *Normal Price*, and *Sale Price*, pressing the Tab key after each of the first two headings, and the Enter key after the third.**

   The resulting text object is selected.
4. **Choose the Bold option of the Style submenu in the Text menu.**
5. **Click OK to close the dialog box.**



Price list headings

You'll customize the tab stops in a minute. For now, though, proceed with the following steps to create the price list.

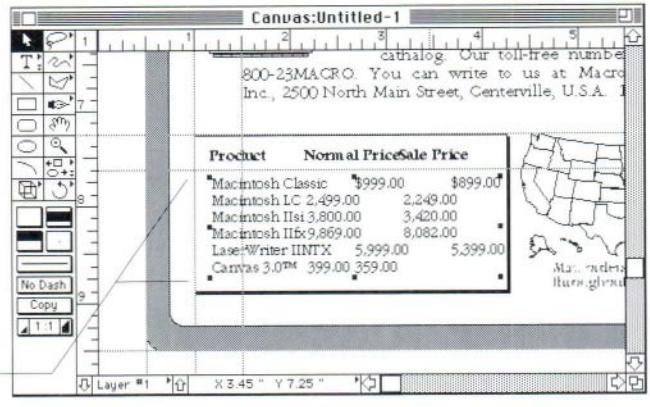
1. **Select the Text tool again.**
2. **Click below the first text object to create another.**
3. **Type "Macintosh Classic," "$999.00," and "$899.00," separating the items with tab characters.**
4. **Press Return (not Enter).**

   This brings you to the next line.

5. **Type the remaining lines in the text block the same way, as shown in the following illustration.**

6. **Press Enter after the last line.**

   Again, you'll add tab custom stops later, so don't worry about the alignment of the columns for now.



Price list text object

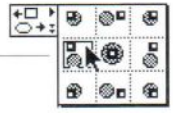
7. **Hold down the Shift key and click the first text object to select it.**

   Both text objects are now selected.

8. **Hold down the pointer on the Align tool icon in the Tool Box**

   The Align palette appears.

9. **Drag into the palette and choose the Left Sides option.**



Left Sides alignment option

   When you release the mouse button, Canvas aligns the two text objects along their left sides.

10. **Press Enter to deselect the objects.**

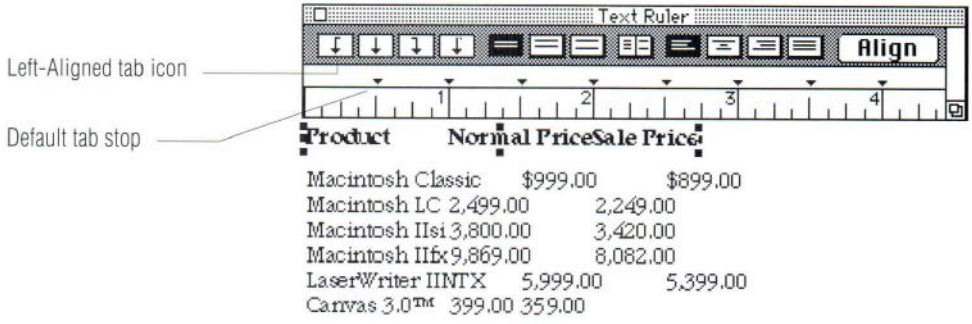
Adding tab stops

To set the tab stops in the price list, you'll use Canvas's Text Ruler.

1. **Select the text object containing the headings by clicking it.**

2. Choose the Text Ruler command from the Text menu.

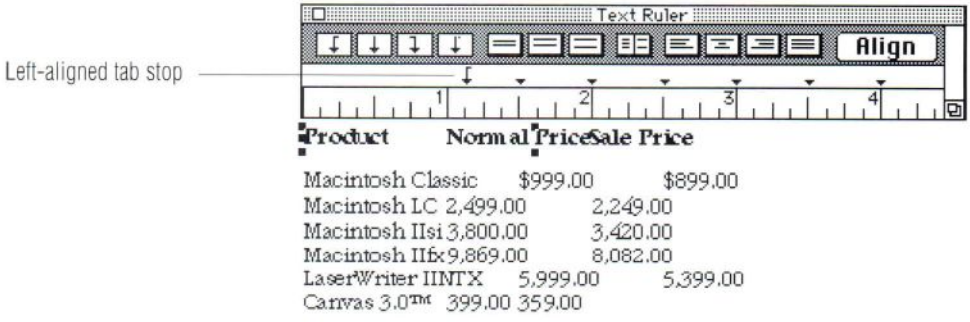
The Text Ruler floating window appears. Canvas positions it so that the zero point on the ruler is in line with the selected object's left margin.



Canvas's Text Ruler is similar to ones found in word processing programs. Using it you can set left-, right-, center-, or decimal-aligned tab stops, adjust the line spacing (leading) of the text, and change the justification style. When you first create a text object, it has default tab stops at ½" intervals. You can replace these with custom tabs.

3. Drag a tab stop from the Left-Aligned tab icon to the 1⅛" point on the ruler.

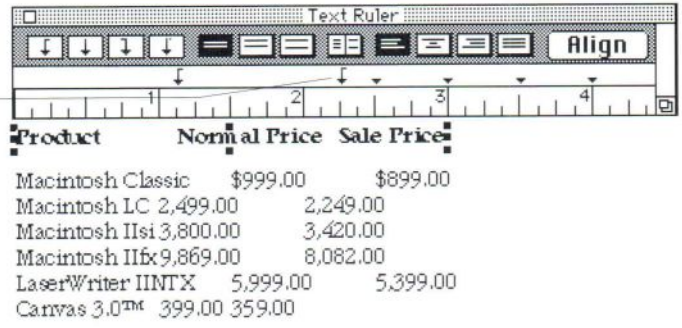
The words *Normal Price* are left-aligned to this tab stop. This pushes the words *Sale Price* to the right as well. The default tab stops to the left of the new tab are deleted.



4. Drag a second left-aligned tab stop to the 2¼" point on the ruler.

The words *Sale Price* are aligned to this tab stop.

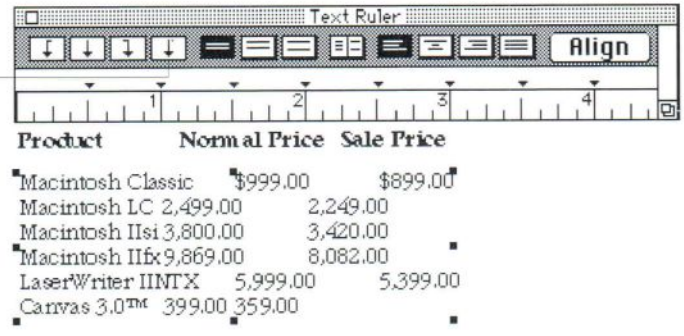
Second tab stop



5. Click the second text object to select it.

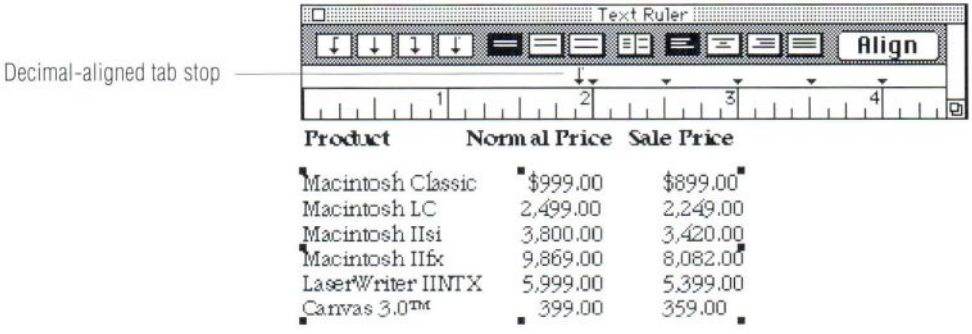
The text ruler changes to indicate the tab stops in this object, which are still all default stops.

Decimal-Aligned tab icon



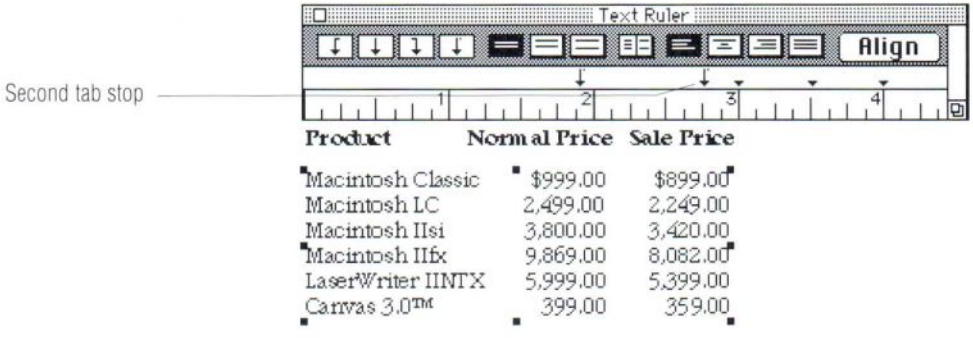
6. Drag a tab from the Decimal-Aligned tab icon to the 1⅞" point on the ruler.

The prices in the first column are positioned with their decimal points aligned to the tab stop.



7. Drag another decimal-aligned tab to the 2¾" position on the ruler.

The prices are aligned in columns by their decimal points.



8. When you have finished setting tab stops, click the Text Ruler's close box to close it.

The finished price list should look like this:

Product	Normal Price	Sale Price
Macintosh Classic	$999.00	$899.00
Macintosh LC	2,499.00	2,249.00
Macintosh IIsi	3,800.00	3,420.00
Macintosh IIfx	9,869.00	8,082.00
LaserWriter IINTX	5,999.00	5,399.00
Canvas 3.0™	399.00	359.00

Centering it all on the page

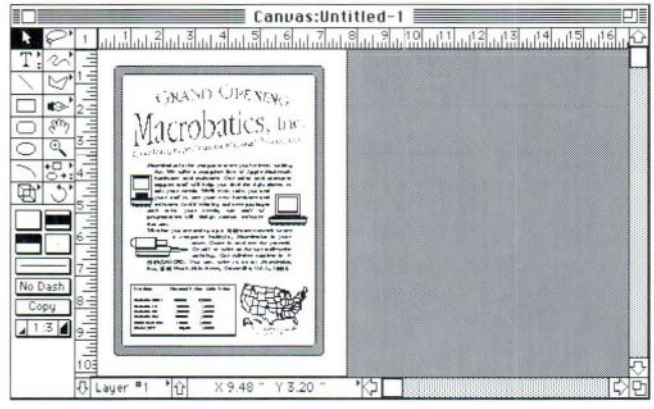
To ensure the ad's proper positioning on the page, you'll use the Alignment Specifications dialog box to center it.

1. **Choose the Reduce To Fit option of the Views submenu in the Layout menu.**

   This allows you to see how the ad looks in relation to the page.

2. **Choose the Guides command from the Layout menu to turn off the guides.**

   Your screen now shows only the elements of the document which will be printed.



3. **Choose the Select All command in the Edit menu to select every object in the document.**

4. **Choose the Unlock command from the Object menu so that you will be able to manipulate the locked objects as well.**

   Canvas unlocks the rounded rectangles in the background—their gray selection handles become black.

5. **Choose the Group command from the Object menu to group everything together.**

   One set of selection handles surrounds all the objects.

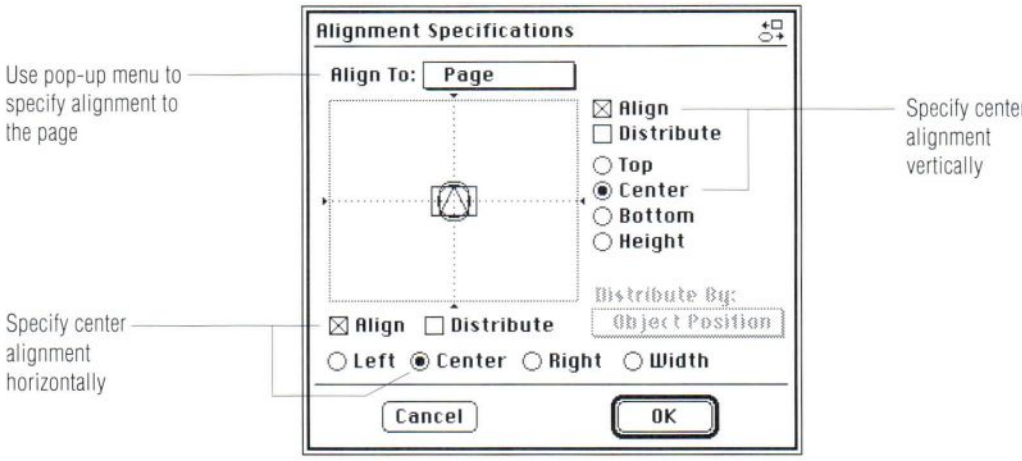
6. **Choose the Align command from the Object menu.**

   Canvas displays the Alignment Specifications dialog box.

7. **Choose the Page option from the Align To pop-up menu.**

8. **Specify alignment by centers both horizontally and vertically.**

   The dialog box should look like this:



9. **Click OK.**

   Canvas closes the dialog box and centers the ad on the page.

10. **Choose the Lock command in the Object menu to ensure that the ad doesn't move.**

You have completed the ad. All that remains now is to print a camera-ready copy.

Printing the finished ad

Before you print the ad, you should save it.

1. **Choose the Save command from the File menu to save the completed ad.**

   Since you haven't saved the document before, Canvas displays the Save As dialog box to let you choose a name for the file.

2. **Type "Grand Opening Ad" and click Save.**

   If you want to save the document in a location other than the one indicated in the dialog box, choose a new folder or disk before you click Save.

3. **To print the ad, choose the Print command from the File menu.**

Canvas displays the Print dialog box appropriate for your printer. You shouldn't need to make any adjustments to its settings.

5. **Click OK.**

   Canvas prints the finished ad.

Learning more about Canvas

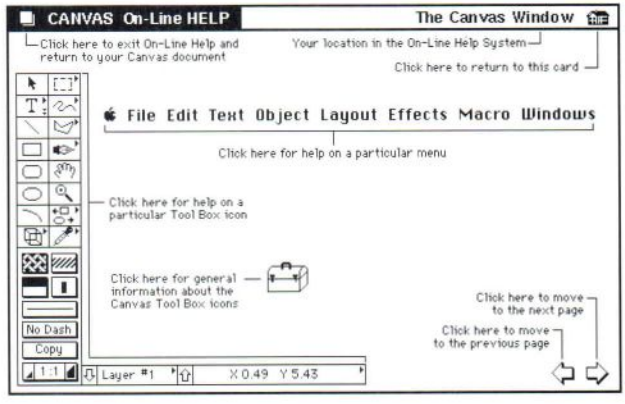
Congratulations! You have now completed the Canvas tutorial. Although there is still a lot to learn about Canvas's many features, you now know enough to be able to begin working on your own. There will, however, be times when you have additional questions about a particular topic, or a specific command. Using the other sections of this manual, as well as Canvas's on-line help feature, you should be able to find the answer to any questions you may have.

You can continue to study Canvas by going on to the *Using Canvas* section of the manual. The chapters in this section explain in detail the use of Canvas's tools and commands. The tools and commands are divided functionally among the chapters—each chapter presents those commands and tools which you would use in performing certain tasks, such as doing precision drawing (Chapter 11) or working with paint objects (Chapter 15). Those of you who have color systems will undoubtedly want to read Chapter 18, "Using color in Canvas."

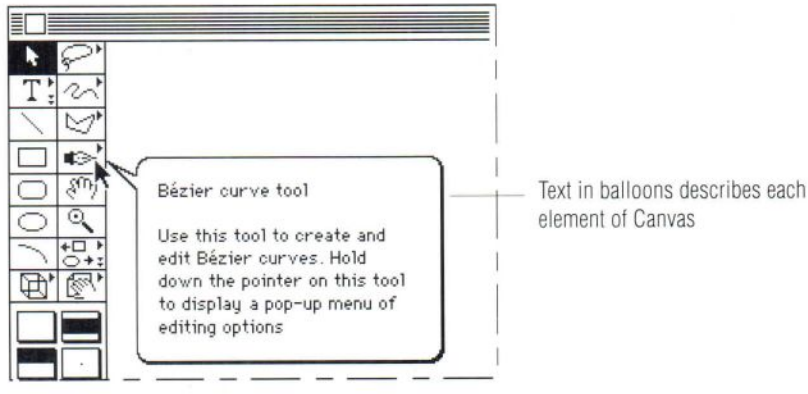
While you are working with Canvas, if you have a question about a particular tool or command, you can turn to the *Reference* section of the manual. It contains a description of all of the tools, commands, and other features found in Canvas, given in alphabetical order. In this way you can find help on whatever topic you need.

Don't forget that Canvas's on-line help is also available. Choose the Help command from the Apple (🍎) menu to display the help window.

Use the arrow icons and other buttons to move through the help system as you would through a HyperCard™ stack.



Those of you running Canvas under Apple's system software version 7.0 will also be able to take advantage of Canvas's Balloon Help. When Balloon Help is turned on, balloons appear giving you information about each element of the program.



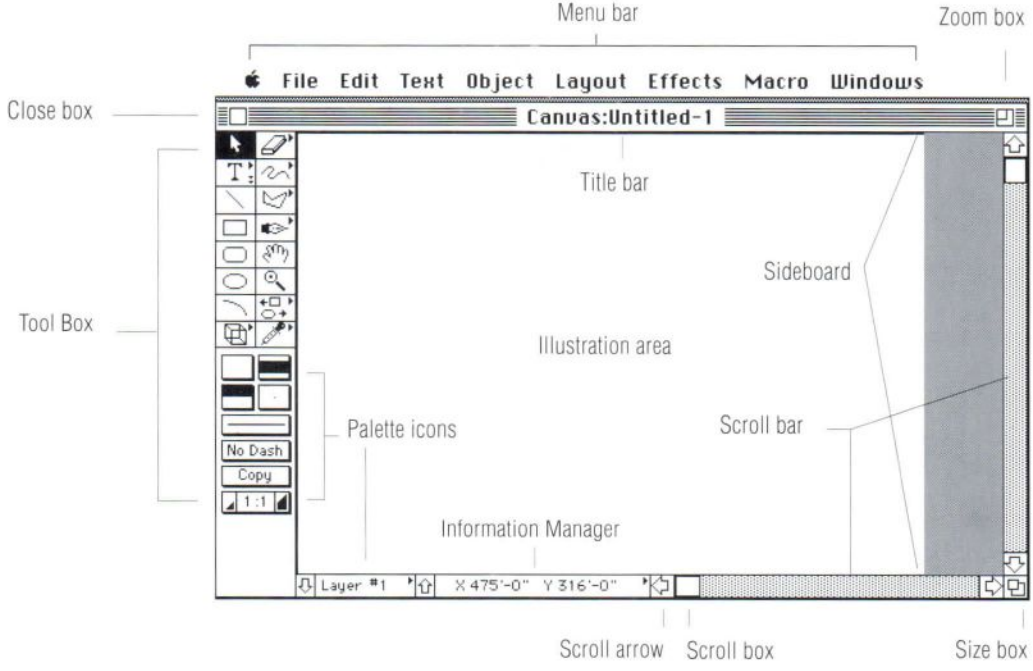
Section Three
Using Canvas

Chapter 6

The Canvas Window

The **Canvas Window** is a unique and feature-laden window which contains your electronic drafting table. This is where you create your illustrations, with all of the necessary tools and commands at your fingertips. This section describes the elements of the Canvas Window. Specific information about the individual Tool Box items, menu bar commands, and floating windows is found in later chapters.

When you start Canvas, the menu bar and the Canvas Window, which contains the Tool Box and the illustration area, are displayed.



Chapter 6 *The Canvas Window*

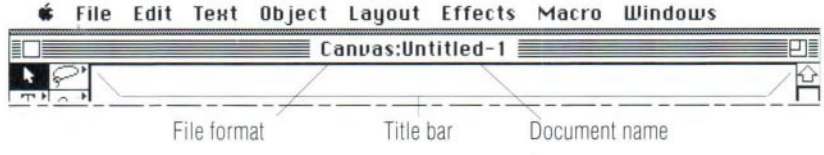
The Canvas Window is like any other Macintosh window. It can be moved, resized, zoomed, closed, and scrolled. Each document you open is contained in its own Canvas Window. The number of windows you can open at one time is limited only by the memory capacity of your computer. Some of the elements in the Canvas Window are standard Macintosh items and some are unique to Canvas.

Standard Macintosh window elements

As with any standard Macintosh window, the Canvas Window contains close, zoom, and size boxes, and scroll bars, scroll boxes, and scroll arrows.

The title bar

The **title bar** is located at the top of the Canvas Window above the illustration area. It displays the type of document you are working on and the document's name.



Canvas can open files which have been saved in the following formats:

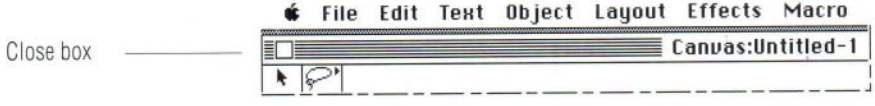
Canvas	MacDraw I™
Canvas Prefs	MacDraw II™
Canvas 1.0	MacPaint
CGM	PICT
DXF	PICT1
EPSF	StartupScreen
IGES	TIFF
Illustrator 1.1™	UltraPaint™
Illustrator 88™	

Therefore, any time you are working on a document that was originally saved by another program, you need only refer to the title bar to know its format. Following the file type is the name of your document.

The first new document in a working session of Canvas is automatically named *Untitled-1*. After you assign a name to a document when saving it, the name appears in place of *Untitled-1* in the title bar. Canvas automatically names additional new documents *Untitled-2*, *Untitled-3*, and so on.

The close box

The **close box** is located at the top left corner of the Canvas Window. Clicking the close box closes the active document. You can also close the active document by choosing the Close command (⌘-W) from the File menu. If you have not saved your document, Canvas asks you if you want to save it before closing the document. See "Saving a document" on page 7-48 for instructions.

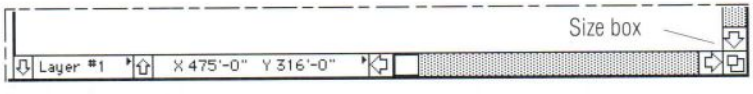


The zoom box

The **zoom box**, located in the top right corner of the Canvas Window, changes the size of the Canvas Window. Click it to quickly enlarge the window to the maximum size possible on your particular screen. Click it again to return the Canvas Window to its size before zooming.

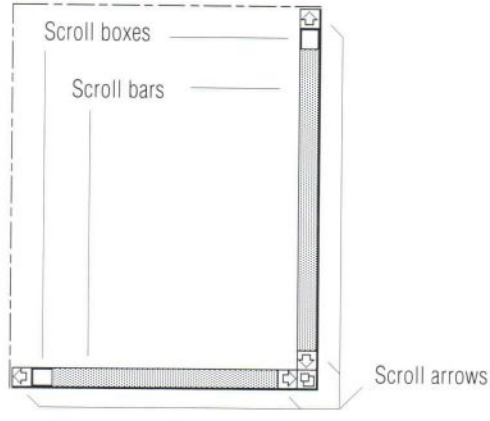
The size box

You can drag the **size box** in the lower right corner of the Canvas Window to tailor the size of the window.



The scroll bars, scroll boxes, and scroll arrows

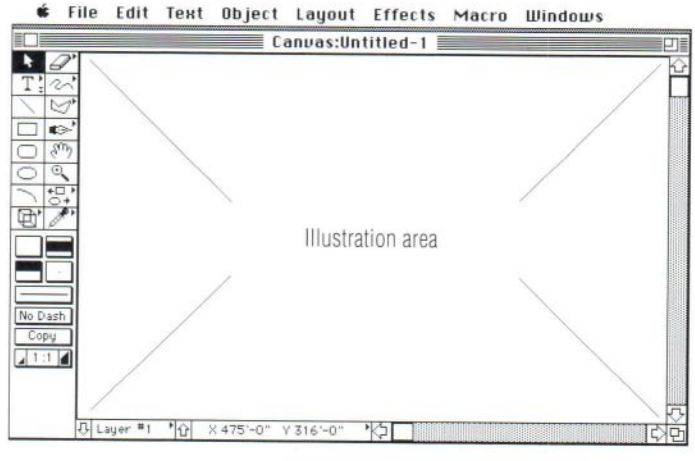
The **scroll bars, scroll boxes,** and **scroll arrows** are located along the right side and the bottom of the Canvas Window. You can use them to move your document horizontally and vertically and see the parts of your document that are not currently displayed on the screen.



Window elements unique to Canvas

The illustration area

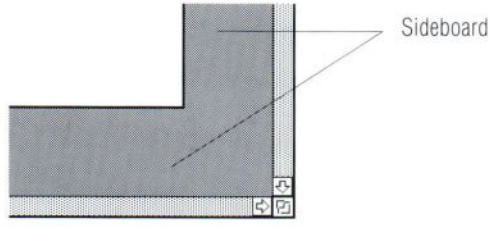
All drawing and painting takes place inside the **illustration area** of the Canvas Window.



Your document can be much larger than your Macintosh screen, up to 9 feet by 9 feet. To facilitate working on large documents, Canvas offers a variety of methods for quickly moving around your document and provides magnification levels for refining details and reduction levels for previewing the entire document.

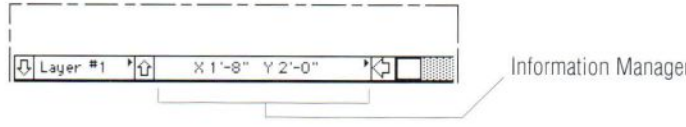
The Sideboard

The Canvas Window contains a gray shaded area to the right and below the illustration area called the **Sideboard**. This is your "workbench." You can move objects out of the Canvas illustration area and place them on the Sideboard until you need them. You can also create objects in the Sideboard first, and then move them into your illustration area. Objects in the Sideboard are saved with the document, but are not printed. The Sideboard is always larger than the drawing size.



The Information Manager

Canvas is preset to open with the **Information Manager** showing. It appears to the left of the horizontal scroll bar. You can hide the Information Manager by choosing Info Manager from the Show/Hide submenu in the Layout menu.

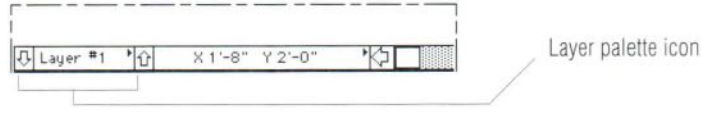


The Information Manager displays various types of data, referred to as autodimensioning data which are useful for accurately measuring, resizing, and positioning objects as you work on an illustration. The units of the autodimensioning data are set using Rulers in the Layout menu. The meaning of the data depends upon the action you are performing. See "Using the Information Manager data display" on

page 13-29 for information concerning the meaning of the dimensioning data with regard to your actions in the Canvas Window.

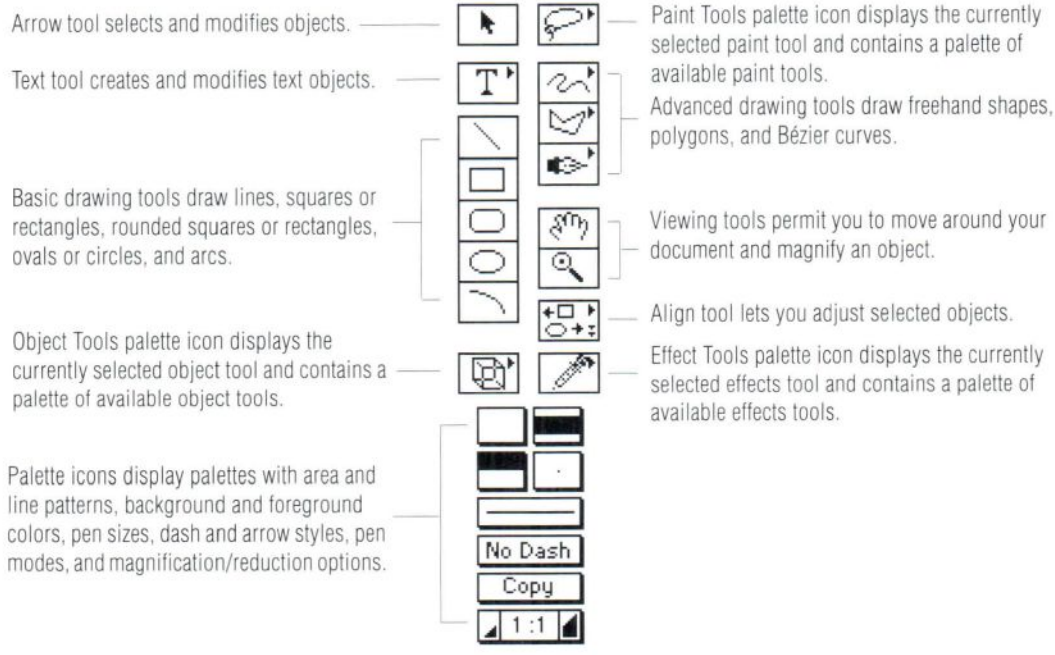
The Layer palette icon

A Canvas document can be comprised of an unlimited number of layers that can be turned on and off to meet your drawing needs. The Layer palette icon, located at the bottom left of the Canvas Window, displays the name of the currently active layer. You can also use it to move between layers and to open the Layer Specifications dialog box.



The Tool Box

Located along the left side of the Canvas Window is the **Tool Box**, which contains tools to assist you in creating your documents.



Types of Canvas tools

Canvas contains two types of tools: core tools and external tools. **Core tools** are an integral part of the Canvas application and are always available. All core tools appear in the Tool Box. **External tools** are shipped in the Canvas Tools folder. You have the option of loading or not loading external tools depending on your needs. External tools appear as tools in the Tool Box or as commands in the Canvas menus. See "Where external tools appear" on page 6-11 for more information.

Using the ToolPicker

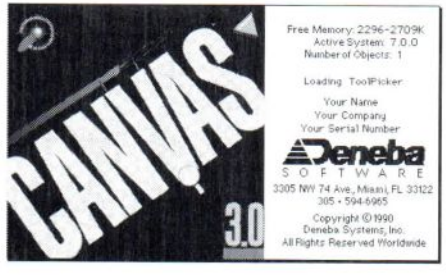
When there are certain tools that you need to use in some situations but not in others, you have the option of activating or deactivating them at the start of a Canvas session using the **ToolPicker**. The ToolPicker lets you select which external tools you want to load when you open Canvas. The ToolPicker can save memory by deactivating unnecessary tools and therefore improve the overall performance of Canvas, increase its speed, and allow larger documents to be opened.

To use the ToolPicker, ToolPicker must be in your Canvas Tools folder; if it is not there, you must drag it into the Canvas Tools folder.

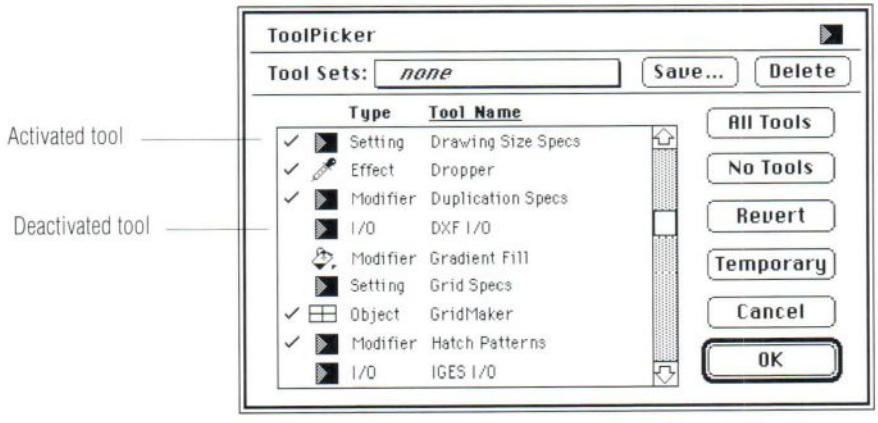
> **Important:** In the Canvas Tools folder, the ToolPicker tool's name is preceded by a space. Do not delete this space. It is necessary for the proper functioning of the tool.

To use the ToolPicker:

1. **Hold down the Space bar while launching Canvas from the Finder desktop.**
2. **Release the Space bar when "Loading ToolPicker" appears in the Canvas title box above the user name.**



The ToolPicker dialog box appears on your screen.



Settings

The **scrolling list** on the left side of the dialog box displays all the tools in the Canvas Tools folder. Tools that are menu items are represented by the Canvas logo; tools that appear in the Tool Box are represented by their respective icons.

There are two column headings: Tool Type and Tool Name. You can choose to sort the tools in the scrolling list by either of these two headings. To do so, click the one you want to sort by. An underline appears under the heading by which the scrolling list contents are sorted.

Tool Type sorts by the following categories

- Effect: Tools which appear in the Effect Tools palette
- I/O: Tools which import and/or export files that are not in Canvas format
- Manager: Tools which appear in the Managers submenu of the Edit menu
- Modifier: Tools which are used to modify objects in the Canvas Window
- Object: Tools which appear in the Object Tools palette
- Paint: Tools which appear in the Paint Tools palette

- Setting: Tools which affect the Canvas documents. These tools' settings can be saved in a Canvas Prefs file.

Check marks appear to the left of active tools' names. Only the active tools will load with the application. Clicking a tool's icon or double-clicking a tool's name toggles the tool on and off. You can quickly scroll to a tool's name by typing the first few characters of its name. Type Option-↑ or Option -↓ to scroll to the top or bottom of the scrolling list.

Canvas will not let you load two versions of the same tool. If you have more than one version of a tool in your Canvas Tools folder, the most recent one appears in plain text and all other versions appear in italics. If you have activated one version of the tool and then activate another version of it, Canvas automatically deactivates the previously selected version.

All Tools (⌘-A) activates all the tools.

No Tools (⌘-N) deactivates all the tools. If you only want to use a few tools, click No Tools and then reactivate only the tools you want.

Revert (⌘-R) returns the tools to their status when you opened the dialog box.

Indicate in the scrolling list which tools you want loaded when you launch Canvas.

Tool Sets

A **Tool Set** is a customized selection of external tools. The active tools in the scrolling list form the current Tool Set. You can create a Tool Set that is automatically used for every session of Canvas, or you can create and save different Tool Sets for different circumstances and select the appropriate Tool Set for each session of Canvas.

The **Tool Sets** pop-up menu lists all the saved Tool Sets. If you have not yet saved a Tool Set, this pop-up box will say "none".

Save lets you save the scrolling list selection as a Tool Set. If you plan to reuse your tool selection, it is highly recommended that you save it.

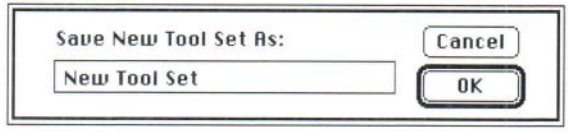
Delete lets you delete the Tool Set which appears in the Sets pop-up box from the Sets pop-up menu.

Saving a Tool Set

To save your scrolling list selection as a Tool Set:

1. **Click Save.**

   A dialog box appears asking you to name your new Tool Set.



2. **Type a name in the text box.**
3. **Click OK or press the Return key to save the Tool Set or click Cancel to return to the ToolPicker dialog box.**

   The new Tool Set's name appears in the Tool Sets pop-up box.

Deleting a Tool Set

To delete a Tool Set:

1. **Choose the Tool Set's name from the Tool Sets pop-up menu.**

   The Tool Set's name appears in the Tool Sets pop-up box.

2. **Click Delete.**

Activating a saved Tool Set

To activate a saved Tool Set, choose the Tool Set's name from the Tool Sets pop-up menu, or, if its name already appears in the Tool Sets pop-up box, click its name. The tool selection in the scrolling list is updated to match the Tool Set in the Tool Sets pop-up box.

> **User Tip:** You can modify the current tool selection without overwriting your saved Tool Set. If you modify the selection and want to save it as a Tool Set, you must click Save.

Launching Canvas from the ToolPicker

When you have finished customizing your Tool Set with the ToolPicker, you are ready to proceed with the launching of Canvas. To launch Canvas:

- Click **OK** (⌘-O) to launch Canvas using the currently selected tools. When you click OK or press Return, your tool selection remains active until you use ToolPicker again to change it.
- Click **Temporary** (⌘-T) to use the current tool selection for the current session of Canvas only and launch the program. Subsequent sessions revert to the previous tool selection.
- Click **Cancel** (⌘-C) to disregard any changes made to the tool selection and launch Canvas with the previously used tool selection.

The tools which are active when you launch Canvas load with the program, regardless of the name showing in the Tool Sets pop-up box.

If you need to activate or deactivate a tool after you have finished launching Canvas, quit Canvas and relaunch the program while holding down the Space bar to open the ToolPicker dialog box again.

Deactivated menu-item tools appear dimmed in the menus or do not appear at all. Deactivated Tool Box tools do not appear in the Tool Box.

Tool Information

Tool Information is a file in your Canvas Tools folder that is created each time you launch Canvas. It is Canvas's guide to locating and initializing the external tools at startup time. If no changes are made concerning which external tools are loaded (either using ToolPicker or by dragging tools in or out of the Canvas Tools folder on the Finder desktop), Tool Information accelerates the launching of Canvas considerably for all subsequent, identical external tool setups. Keep this file in your Canvas Tools folder to ensure faster loading of the external tools.

Where external tools appear

This tool:	Is found in the:
ToolPicker	ToolPicker dialog box
Alignment Specs	Align: Object menu
	Align tool: Tool Box
Arrowhead Manager	Arrowheads: Managers/Edit menu

This tool:	Is found in the:
Auto Trace	Auto Trace: Managers/Edit menu
	Auto Trace To: Effects menu Freehand tool submenu: Tool Box
Balloon Help	System 7.0 Help menu
Bézier Text	Create Béziers: Text menu
Bind	Bind Text: Text menu
	Bind Group: Special Effects/Effects menu
Blend Objects	Blend: Object menu
Brush Manager	Brushes: Managers/Edit menu
Canvas 1.0 I/O	Canvas 1.0: File Format/Open dialog box
Canvas 2.1 I/O	Canvas 2.1: File Format/Save dialog box
CGM I/O	CGM: File Format/Open and Save dialog boxes
Combine Objects	Combine: Object menu
Convert To	Convert To: Object menu
Cube	Cube tool: Object Tools palette
Dash Manager	Dashes: Managers/Edit menu
Dimensioning	Dimensioning: Managers/Edit menu
	Dimensioning tool: Object Tools palette
Drawing Size Specs	Drawing Size: Layout menu
Dropper	Dropper tool: Effect Tools palette
Duplication Specs	Duplication: Edit menu
DXF I/O	DXF: File Format/Open and Save dialog boxes
Gradient Fill	Gradient: Object menu
	Gradient Fill: Managers/Edit menu
Grid Specs	Grids: Layout menu
GridMaker	GridMaker: Managers/Edit menu
	GridMaker tool: Object Tools palette
Hatch Patterns	Hatch Patterns: Object menu
	Hatch: Managers/Edit menu
IGES I/O	IGES: File Format/Open and Save dialog boxes

This tool:	Is found in the:
Illustrator I/O	Illustrator 88, Illustrator 1.1, and EPSF: File Format/Open dialog box
Layer Specs	Layer Specs: Layout menu and Layer palette icon
MacDraw I/O	MacDraw: File Format/Open dialog box
MacPaint I/O	MacPaint: File Format/Open and Save dialog boxes
Mover	Effect Tools palette
Multigon	Multigon and Star tools: Object Tools palette, and Multigon and Star: Managers/Edit menu
Object Specs	Object Specs and Group Specs: Object menu
Object Tint	Tint Objects: Special Effects/Effects menu
PANTONE ® Colors	PANTONE® Colors: Windows menu, Color Info: Managers/Edit menu, Copy Object's Colors: Edit Special/Edit menu
Parallel Lines	Parallel Lines: Managers/Edit menu
	Parallel Lines tool: Object Tools palette
Pattern Manager	Patterns: Managers/Edit menu
Pen Manager	Pens: Managers/Edit menu
Place	File menu
Point Rotate	Point Rotate tool: Effect Tools palette
Preferences	Preferences: File menu
Registration Marks	Registration Marks tool: Object Tools palette
RGB Color Manager	RGB Colors: Managers/Edit menu
Ruler Specs	Rulers: Layout menu
Scale Specs	Scale: Object menu
Search & Replace	Text menu
Selection Specs	Selection: Edit menu
Separations	PostScript, Separation Setup, and Separations: Print Special/File menu
	Separations, Illustrator 1.1, Illustrator 88, and EPSF: File Format/Save dialog box, Overprint: Special Effects/Effects menu

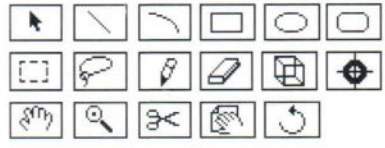
This tool:	Is found in the:
Slides	Layout menu
	Print Special: File menu
Smart Mouse	Smart Mouse: Managers/Edit menu, Smart Mouse Window: Window menu, Smart Mouse: Layout menu
Spelling	Spell Check: Text menu
Split	Split tool: Effect Tools palette
Spray Manager	Sprays: Managers/Edit menu
	Spray Can tool: Paint Tools Palette
StartupScreen I/O	StartupScreen: File Format/Save and Open dialog boxes
System 7.0 Options	Create Publisher, Subscribe To, and Options: Edit menu
Text Ruler	Text Ruler: Text menu
Text Utilities	Type: Text menu
	Wrap: Text menu
TIFF I/O	TIFF: File Format/Save and Open dialog boxes
UltraPaint I/O	UltraPaint: File Format/Save and Open dialog boxes

Styles of Canvas icons

The Canvas Tool Box contains three styles of tool icons: basic, multiplex, and palette icons. Each type of icon is characterized by a distinctive design for ease of recognition.

Basic icons

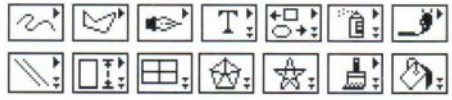
A **basic icon** is a simple rectangle with a drawing of the respective tool inside. Clicking these icons activates the associated tools. The basic icons are:



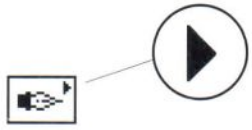
Multiplex icons

The right side of a **multiplex icon** contains one side-facing indicator, two down-facing indicators, or both. Like the basic icons, if you click a multiplex icon you activate the associated tool.

The multiplex icons are:



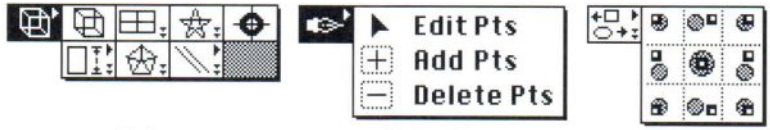
A side-facing indicator shows that a pop-up menu or pop-up palette of additional options is available.



To use one of these icons:

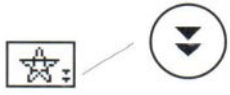
1. **Hold down the pointer on the icon.**

   A pop-up menu of tools, tool settings, or options appears.



2. **Drag to select your choice.**

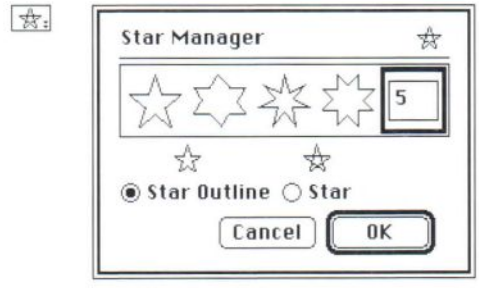
Down-facing indicators show that a dialog box containing a tool manager is available.



Tool managers allow you to customize a tool's settings. To use one of these icons:

1. **Double-click the icon.**

The appropriate tool manager appears.

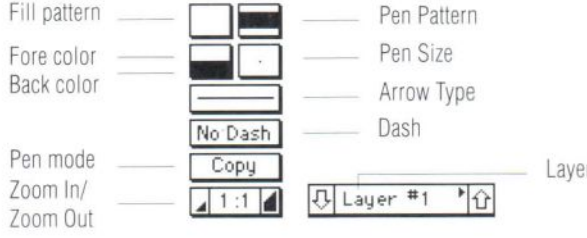


2. Indicate the desired settings in the tool manager.

Refer to "Dialog boxes" on page 6-22 for instructions on using tool manager dialog boxes.

Palette icons

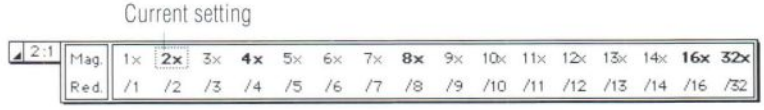
The **palette icons** are used for changing an object's properties and moving between layers in a document. The current default property for each is displayed in the icon. The palette icons are:



To use a palette icon:

1. Hold down the pointer on the palette icon.

A pop-up palette appears with the current setting enclosed in a dotted box.

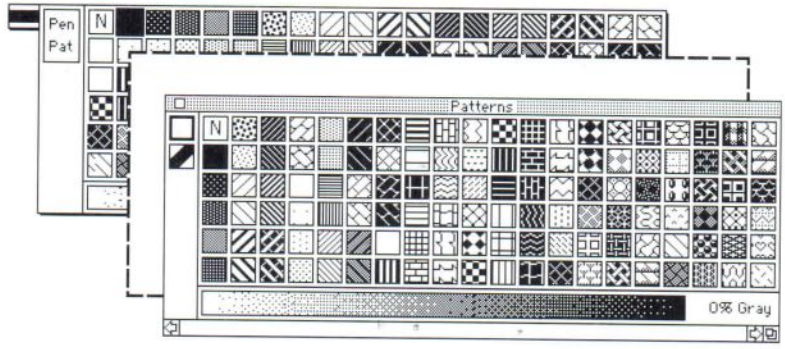


2. Drag to enclose your choice in the selection box.

The selection box follows the pointer as you drag. Your choice will appear as the active property in the palette icon.

Tear-off palettes

You can tear off the palette of a palette icon, tool group (Paint tools, Object tools, and Effect tools), and tool options (brush shapes, nozzle shapes, and so on). It then becomes a **tear off palette** which can be closed, dragged, resized, and scrolled like a Macintosh window. Its title bar indicates the property it controls.



To tear off a palette:

1. **Hold down the pointer on the palette icon.**

   The pop-up palette appears.

2. **Drag the palette into the Canvas Window.**

   The palette tears off and becomes a floating palette, labeled with the palette title.

The tear-off palettes float on top of the active Canvas Window. They can be placed on top of each other. To bring one floating palette in front of another, click its title bar. To choose an option from a torn off palette, click the option. To open the manager associated with the palette, double-click the palette.

The Canvas menu bar

The Canvas **menu bar** stretches across the top of your screen. Standard Macintosh and special Canvas pull-down menus are located here.

The Canvas menu bar is composed of nine menus, each of which is briefly described below.

The menu

The Apple menu tells you the version of Canvas you are working with and the amount of free memory available, offers an on-line help file, and gives you access to your desk accessories.

The File menu

The File menu contains file management commands for opening, setting up, saving, printing, and reverting to the last saved version of your document. It gives you access to commands for setting important user preferences and quitting Canvas.

The Edit menu

The Edit menu lets you undo, redo, or repeat your last command. You can select all the objects in a layer of your document or objects with specific characteristics and copy, cut, paste, and duplicate using Edit menu commands. You can open tool managers that let you customize auto traces, brushes, spray nozzles, and so on from this menu.

The Text menu

The Text menu commands let you manipulate the font, size, style, kerning, leading, and justification of text, as well as search for and replace text, check spelling, and bind text to objects.

The Object menu

The Object menu commands let you rearrange the stacking order of your objects; change the properties, type, size, or position of an object; lock, unlock, group, ungroup, align, and scale objects; edit curves and polygons; create object blends or combinations; and add hatch patterns or gradient fills to objects.

The Layout menu

The Layout menu provides commands which affect your entire document. From this menu you can control the display of objects, views,

layers, grids, page breaks, rulers, guides, and specify your document size. This menu also offers the Smart Mouse and Slides commands.

The Effects menu

The Effects menu contains commands for auto tracing, rotating and flipping objects, plus all of the Canvas special effects and image effects including perspective, skew, distort, and invert.

The Macro menu

The Macro menu lets you create and store sets of objects that you frequently use. When a set is opened, its MacrObjects can be used like the tools in your Tool Box.

The Windows menu

The Windows menu lets you choose which document is active. This menu also gives you access to the PANTONE® Colors and Smart Mouse windows and the Paint Tools, Object Tools, and Effect Tools floating palettes.

Using the menus

Each item in the Canvas menu bar is a standard Macintosh pull-down menu. **Pull-down menus** display commands. To use the pull-down menus:

1. **Hold down the pointer on a menu name.**

   The commands available from that menu are displayed.

2. **Drag to highlight the command you want to execute.**

The names of several of the Canvas commands change, depending on what you are doing. For example, the Again command in the Edit menu changes to reflect whatever action you executed last:

The last menu command chosen was Copy

Combination keystrokes

Many commands appear in the menus with a keystroke sequence on the right which you can use to execute the command from the key-

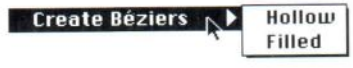
board instead of using the menus. The symbols for the Command, Option, Shift, and Control keys are shown in the following illustration.

Hierarchical menus

The Canvas menus also contain commands called **hierarchical menu** commands. They have an arrow-shaped indicator to the right of the command name.

A hierarchical menu command contains a submenu of command options. One of these options must be chosen to execute the command. To use a hierarchical menu command:

1. **Hold down the pointer on the command to display the submenu.**



2. **Drag through the submenu to highlight the desired command option.**

If there is not enough room on the right side of the pull-down menu to display the submenu, Canvas displays it to the left of the menu.

A detailed explanation of each of the commands available in the menus can be found in the Reference section.

Toggle menu options

Several Canvas commands and options toggle on and off when selected. These are referred to as **toggle menu options**. Toggle menu options display check marks to the left when they are on or active and no check marks when they are not active.

Toggle menu items include Guides, Smart Mouse, and Snap To Grid in the Layout menu. The Show/Hide submenu in the Layout menu contains several toggle menu options. Toggle settings can be saved in your Canvas Prefs file. See "Using a customized Canvas Prefs file" on page 7-44 for information on Canvas Prefs files.

To use toggle menu options:

1. **To activate a toggle menu option, choose it by dragging to highlight it.**

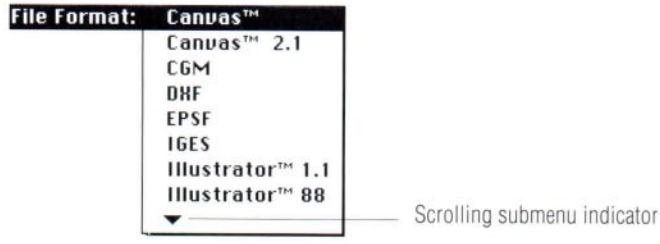
   A check mark appears to the right of the toggle menu item.

2. **To deactivate an active toggle menu item, choose the item again.**

   The check mark disappears.

Scrolling submenus

Canvas uses a **scrolling submenu** when a command has more options than can be displayed at one time. For example, if you have more fonts in you system folder than Canvas can display on one screen, Canvas will use a scrolling submenu when you choose Font in the Text menu. Canvas displays an indicator at the top or bottom of the submenu to indicate that there are more options available.



To use the scrolling submenus:

1. **Hold down the pointer on the indicator.**

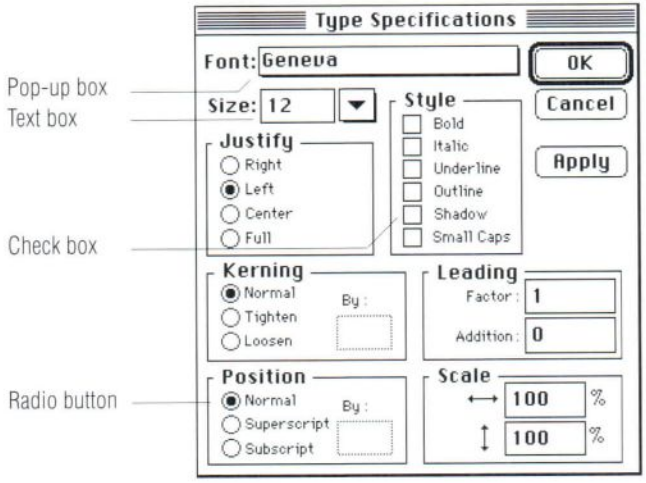
   The contents of the menu scroll to display the rest of the options.

2. **Drag to highlight the option you want to use to execute.**

Dialog boxes

Canvas opens a dialog box when you choose an option or command that appears with ellipses (...) following its name or when you double-click a tool icon containing two down-facing arrows.

Dialog boxes allow you to specify names, settings, proportions, and other properties for the command or tool you have chosen. You indicate your specifications using pop-up menus, text boxes, check boxes, and radio buttons.



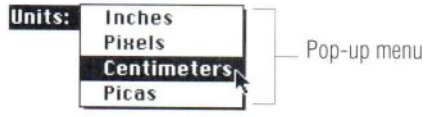
Pop-up menus

Pop-up menus are indicated by a box with a shadowed outline called a **pop-up box**. The current setting is displayed in the pop-up box.

To change the setting:

1. **Hold down the pointer on the pop-up box to display the pop-up menu.**

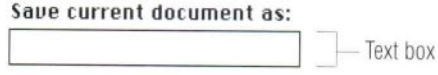
2. Drag through the menu to highlight your choice.



Your selection is now displayed in the pop-up box.

Text boxes

Text boxes contain numbers or text that you type in yourself. When the dialog box opens, the top left text box is highlighted. You can move through the available text boxes by pressing the Tab key or by clicking the text box you want to edit. The current setting for each is displayed in the text box.



To change a setting:

1. Select the text box you want to use by clicking it or use the Tab key to go to it.

When replacing existing text, either tab to the text box or double-click it. The existing text highlights and your typing replaces it.

2. Type in the desired setting.

Your specification shows in the text box and is the active setting.

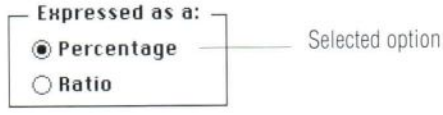
Check boxes

You can select or deselect an item preceded by a check box in a dialog box by clicking it. When an *X* appears in the check box, the item is selected; when the check box is empty, the item is not selected.

Radio buttons

When you must select one of several options, the options are preceded by radio buttons. You select an option by clicking it. The selected option's radio button appears black in the center, indicating that it is the active option. You can change your selection by clicking another option. The new option's radio button will appear black in the center

and your original option's radio button will appear white in the center since you can have only one of these options selected at a time.



Using a dialog box

To use the Canvas dialog boxes:

1. **Use the pop-up menus, text boxes, check boxes, and radio buttons to specify the desired settings in the dialog box.**
2. **Click OK or press the Return key to execute the command with the indicated settings or click Cancel (⌘-.) to close the dialog box without saving your changes.**

   In certain dialog boxes, there is no OK button. In such cases you click a button that signifies the command it executes; such as Open or Save. The button that executes the command has a bold border.

Moving around the Canvas Window

Canvas documents can be up to 9' 3" by 9' 3". When a document is larger than screen size, you are only able to see part of the document. Canvas provides five ways of adjusting your view of your document. You can choose the best method to suit your needs.

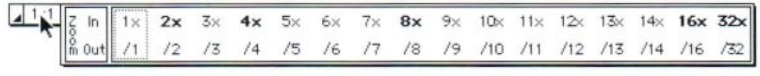
- the Zoom In/Zoom Out palette icon
- the Magnifying Glass tool
- the Hand tool
- the Views submenu
- the scroll bars, scroll boxes, and scroll arrows

The Zoom In/Zoom Out palette icon

To adjust your view of a document using the Zoom In/Zoom Out palette icon:

1. **Hold down the pointer on the Zoom In/Zoom Out palette icon.**

The Zoom In/Zoom Out palette of magnification and reduction levels appears.



2. Drag to enclose your choice with the selection box.

Your view of the document is immediately reduced or enlarged and the Zoom In/Zoom Out palette icon displays the current reduction or magnification level.

User Tip: The Zoom In/Zoom Out palette shows the magnification levels for high-resolution paint object editing in boldface type (2X, 4X, 8X, 16X, and 32X). See "Creating paint objects" on page 15-6.

You can also use the zoom icons at either side of the Zoom In/Zoom Out palette icon to enlarge or reduce your view.

1. Click the right icon to enlarge your view (zoom in).

2. Click the left icon to reduce your view (zoom out).

You can zoom in or zoom out through thirty-two reduction or magnification levels; from 3200% to 3.125%.

The Magnifying Glass tool

The Magnifying Glass tool is available from the Tool Box. You can use it to zoom out or zoom in on any area of your document.

To magnify or reduce your view of the document in the Canvas Window with the Magnifying Glass tool:

1. Select the Magnifying Glass tool from the Tool Box.

The pointer changes to a magnifying glass with a "+" in the center, indicating that it is in the magnification mode. If you hold down the

Shift key, the magnifying glass will have a "-" in the center, indicating that it is in the reduction mode.

2. **Position the magnifying glass at the center of the area that you want to enlarge or reduce.**

   The document in the Canvas Window will zoom around this point.

3. **Click once.**

   The document zooms in or out by a factor of two. The Zoom In/Zoom Out palette icon reflects the current magnification or reduction level.

The actual size of the objects does not change, only the magnification level at which you see them changes.

The Magnifying Glass tool, like the Zoom In/Zoom Out palette icon, provides thirty-two magnification and reduction levels, from 3200% to 3.125%.

The Hand tool

Another way to change your view of a document in the Canvas Window is by using the Hand tool available from the Tool Box.

Using the Hand tool lets you position your document in the Canvas Window as freely as if you were positioning a piece of paper on your desk with your hand placed on top of the paper.

To use the Hand tool:

1. **Select the Hand tool from the Tool Box.**

   The pointer becomes a hand when in the Canvas Window.

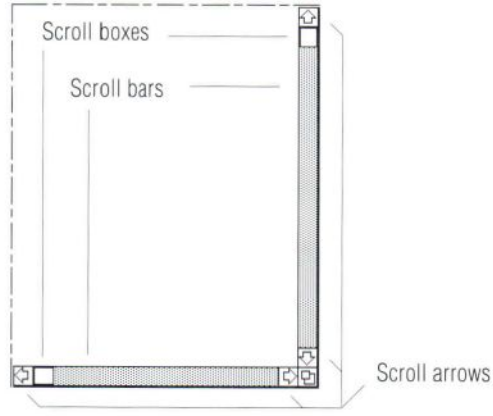
2. **Hold down the mouse button as you drag the Hand in the direction that you want to move your document.**

   Your document moves with the hand.

3. **Release the mouse button when you are satisfied with the position of your document in the Canvas Window.**

The scroll bars, scroll boxes, and scroll arrows

The standard Macintosh scroll bars, scroll boxes, and scroll arrows provide another way to move around within the Canvas Window to view different areas of your document.



The scroll bars, scroll boxes, and scroll arrows work just as they do in other Macintosh applications. There are three ways to use them:

- Click the scroll arrow that points in the direction you want to move: up, down, left, or right. You can scroll continuously by holding down the pointer on a scroll arrow.
- Drag a scroll box to the location in the scroll bar that approximates the location in your document that you want to view.
- Click the gray area of a scroll bar, above or below the scroll box, depending on the direction that you want to view. This scrolls your document half a windowful at a time.

The Views submenu

The fifth means of viewing a document in the Canvas Window is to use Views in the Layout menu. Two options available from the Views submenu are Home View and Reduce To Fit.

The Home View option

Home View (⌘-Option-H) is the view of your document with the top left corner of your document lined up with the top left corner of the Canvas Window, at the normal (100%) magnification level. This is the view in which all new Canvas documents are preset to open. You can return to this view by choosing Home View from the Views submenu.

The Reduce To Fit option

When you choose Reduce To Fit (⌘-Option-R) from the Views submenu in the Layout menu, the document is scaled so that it can be viewed in its entirety in the Canvas Window. You can manipulate objects in this view just as you can when they are at actual size.

Using the Arrow tool

The Arrow tool is a core tool. It is used to select objects that you want the next command applied to. Many of the Canvas menu commands are enabled only when an object or group of objects is selected.

The Arrow tool is also used to pull down menus, control the Canvas Window functions, and select tools and properties from the Tool Box. You use the Arrow tool to select, move, or change the size of objects you create. No drawing is performed with the Arrow tool.

Selecting a single object with the Arrow tool

To select a single object:

1. **Select the Arrow tool from the Tool Box.**

   The pointer becomes an arrow.

2. **Click the border or the filled portion of the object.**

   If the object's fill pattern is set to none (N), you must click its border or hold down the Tab key to select it when you click inside it.

When an object is selected, handles appear at the corners and midpoints of its bounding rectangle.

Selecting multiple objects with the Arrow tool

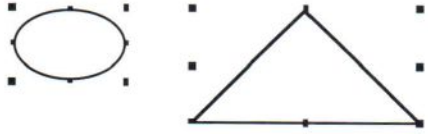
When you click an object with the Arrow tool, all other selections are cancelled. To select multiple objects using the Arrow tool:

1. **Select the Arrow tool from the Tool Box.**

   The pointer becomes an arrow.

2. **Hold down the Shift key while clicking any number of separate objects.**

   Previously selected objects remain selected as new objects are added to the selection.

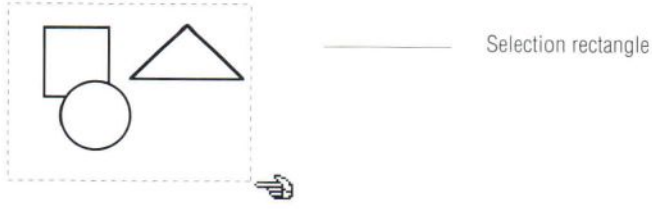


Another way of selecting multiple objects is by delineating a selection rectangle around them with the Arrow tool. To do so:

1. **Position the Arrow tool at the outer corner of the objects you want included in the selection.**

2. **Hold down the mouse button and drag diagonally until the selection rectangle completely encloses all of the desired objects.**

   The pointer changes to a pointing index finger as you drag.



User Tip: To select all of the objects touched by or enclosed within the selection rectangle, hold down the Option key as you drag.

Selecting obscured objects with the Arrow tool

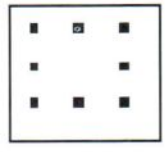
You can select an object that is obscured by other objects using the Arrow tool. To do so:

1. **Hold down the Control key and use the Arrow tool to click the object obscuring the desired object.**

   Canvas will select the object below the current selection.

2. **Continue clicking the top object while holding down the Control key until the desired obscured object is selected.**

   You cycle through the stack of objects to select the buried object.



If you want to reposition the obscured object, you must hold down the mouse button and drag as you click it.

Selecting objects on other layers

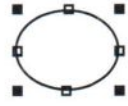
You can select objects on layers other than the active layer using the Arrow tool. To do so:

1. **Select the Arrow tool from the Tool Box.**

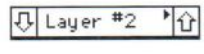
   The pointer becomes an arrow.

2. **Hold down the Control and Tab keys while you click the object which is not on the active layer with the Arrow tool.**

   The object is selected.



Selected object is on Layer #1



Active layer is Layer #2

Deselecting objects using the Arrow tool

If you have multiple objects selected, you can deselect one of them. To do so:

1. **Select the Arrow tool from the Tool Box.**

   The pointer becomes an arrow.

2. **Hold down the Shift key while clicking the object with the Arrow tool.**

   The object you click is deselected. All other previously selected objects remain selected.

Moving a selection using the Arrow tool

To use the Arrow tool to move a selection:

1. **Hold down the pointer on the object.**

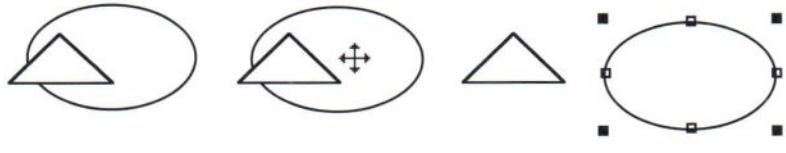
   The pointer changes to a four-headed arrow.

2. **Drag the object to the desired position.**

   If you drag to the edge of the Canvas Window, the window scrolls.

   - To limit your drag to multiples of 45°, whether horizontal, vertical, or diagonal, hold down the Shift key as you drag.
   - To leave the original selection in place and drag a copy of it, hold down the Option key as you drag. If you have multiple objects selected, Canvas groups the copy of the selection.
   - To leave a trail of copies of the selection, hold down both the Command (⌘) and Option keys as you drag your selection.

3. **Release the mouse button when you are satisfied with the new location of the object.**



Resizing objects with the Arrow tool

You can use the Arrow tool to resize objects. To do so:

1. **Select the object.**

   Selection handles appear around the object.

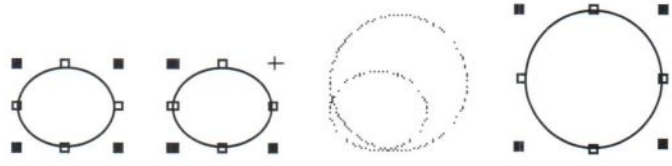
2. **Position the Arrow over one of the handles that appear around the selected object's bounding rectangle.**

   The Arrow becomes a small crosshair (+) when properly positioned.

3. **Hold down the mouse button and drag the handle in the desired direction to resize the object.**

   - To maintain the original proportions of a set of grouped objects, polygon, smooth polygon, or Bézier curve when resizing, hold down the Shift key when you drag.
   - To resize from the center outward, hold down the Option key while you drag.
   - To maintain image quality when resizing a paint object, hold down the Command (⌘) key while resizing.
   - To maintain the original proportions of a paint object while resizing, hold down the Shift and Command (⌘) keys while resizing.
   - To scale text when resizing a text object, hold down the Command (⌘) key while you drag.

4. **Release the mouse button when you are satisfied with the new size of the object.**



Chapter 7

Document setup

A **Canvas Prefs** file is a document which contains defaults settings used to create a new file. The numerous default settings governing virtually every aspect of the operation of Canvas are contained in a Canvas Prefs file. For example, when you choose the New command from the File menu, Canvas opens a blank Canvas Window with the drawing size preset to one page. Canvas is shipped with a Canvas Prefs file titled *Canvas Prefs*.

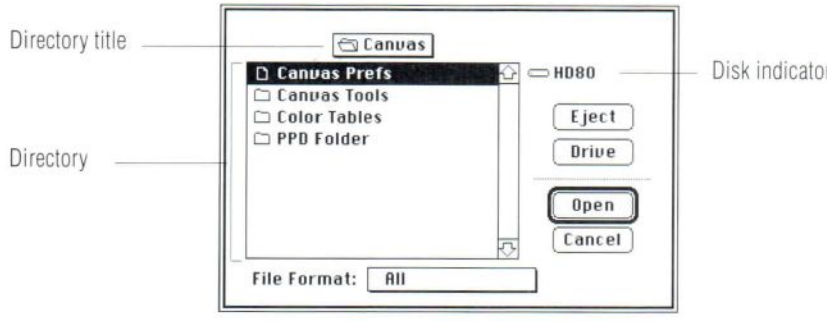
In this chapter you will learn how to modify the default settings to fit your individual drawing requirements and save them in your own personalized Canvas Prefs files. With customized Canvas Prefs files, you avoid the need to repeat the setup procedures you often use.

Using the New command

The **New** command (⌘-N) in the File menu opens a new untitled document. This document is created from information in the Canvas Prefs file (see "Creating a Canvas Prefs file" on page 7-43). You can have as many documents open at one time as the memory of your computer allows. The new documents you create are named Untitled-1, Untitled-2, and so on.

Using the Open command

The Open command (⌘-O) in the File menu lets you open previously saved documents from inside Canvas. When you choose Open, a directory dialog box appears.



Settings

The **directory title** pop-up box at the top of the dialog box displays the currently open folder. This pop-up menu list the hierarchical path from the currently open folder to the root of the current disk.

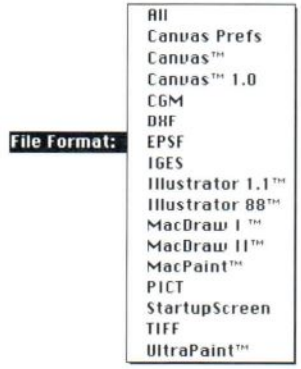
The **directory** on the left of the dialog box alphabetically lists all the files and folders in the folder displayed in the directory title pop-up box for the file format displayed in the File Format pop-up box.

The current **disk indicator** shows which disk you are reading from.

Clicking **Eject** lets you eject a disk from your floppy drive.

Clicking **Drive** lets you cycle through any other disks which are currently available for your computer. The current disk indicator will change as you do so.

The **File Format** pop-up menu displays all the formats available to you.



Since all but the Canvas, Canvas Prefs, and PICT formats are available through external tools, the options displayed depend upon which tools you have loaded. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

When you choose a file format from this pop-up menu, only documents saved in that format are displayed in the directory.

- Choose **All** if you want to be able to display documents saved in any of the file formats listed in the File Format pop-up menu.
- Choose **Canvas Prefs** if you want to display Canvas Prefs files. See "Creating a Canvas Prefs file" on page 7-43 for more information.
- Choose **Canvas**™ if you want to display documents saved in the Canvas 2-3 format.
- Choose **Canvas 1.0** if you want to display documents saved in the Canvas 1.0 format. This format is available when Canvas 1.0 I/O is active in your Canvas Tools folder.
- Choose **CGM** (Computer Graphics Metafile) to display documents saved in format commonly used by mainframe and IBM PC-compatible CAD (computer-aided design) programs. This format is available when CGM I/O is active in your Canvas Tools folder.
- Choose **DXF** (Drawing Exchange Format) or **IGES** (Initial Graphics exchange Standard) if you want to display AutoCAD™ documents and Canvas documents saved in the DXF or IGES format. IGES uses the ANSI standard as its file format. These file formats are available when DXF I/O and IGES I/O are active in your Canvas Tools folder. Canvas imports objects from DXF files in the following manner:
  - 3-D lines are imported as 2-dimensional lines.
  - 3-D Face is imported as a 2-D polygon.
  - Circles are imported as ovals.
  - Trace, Solid, Polyline, Vertex, and SEQEND are imported as polygons.
  - Shapes, Blocks (BLKEND), and inserts are imported as groups.
  - ATTDEF and ATTRIB are imported as text.

Canvas imports 3-D objects from IGES files as 2-D objects. However, if no Canvas object can estimate the original 3-D object (for example, a sphere), the object is not imported.

- Choose **EPSF** to display files saved in Encapsulated PostScript. Illustrations are then displayed as white boxes with cross marks in the center and can be edited as picture objects. This option is available when Illustrator I/O is active in your Canvas Tools folder.
- Choose **Illustrator 1.1** or **Illustrator 88** to display files saved in these formats. These options are available when Illustrator I/O is active in your Canvas Tools folder. To import files created in Illustrator 3.0 into Canvas, the files must have been saved in the Illustrator 88 format with the Include Header option selected.
- Choose **MacDraw I** or **MacDraw II** to display documents created in the programs MacDraw I or MacDraw II. These options are available when MacDraw I/O is active in your Canvas Tools folder.
- Choose **MacPaint** to display documents that were created in the program MacPaint or created in Canvas and saved in the MacPaint format. This option is available when MacPaint I/O is active in your Canvas Tools folder.
- Choose **PICT** to display documents saved in the PICT format.
- Choose **StartupScreen** to display a document that was saved in the StartupScreen format. A StartupScreen file is used as a backdrop that appears when you start up your computer. This file must be located in your System folder. Therefore, open the System folder in the Open dialog box directory to find your StartupScreen file. This option is available when StartupScreen is active in your Canvas Tools folder.
- Choose **TIFF** to display documents saved as TIFF (Tagged Image File Format) files. This option is available when TIFF I/O is active in your Canvas Tools folder.
- Choose **UltraPaint** to display UltraPaint documents in Canvas. This option is available when UltraPaint I/O is active in your Canvas Tools folder.

Opening a file

To open a file using the Open command:

1. **Choose Open (⌘-O) from the File menu.**

   The Open directory dialog box appears.

2. **Choose the format of the document you want to open from the File Format pop-up menu.**

3. **Choose the folder of the document you want to open.**

   When opening a StartupScreen file, choose the System folder.

4. **Click the document's name in the directory to select it.**

   The document's name highlights.

5. **Click Open or double-click the document's name in the directory.**

   Your document opens.

You can also open a Canvas file by double-clicking its icon on the Finder desktop. Canvas launches if necessary and the file opens. When opening files in the TIFF, DXF, or CGM format, additional dialog boxes are available which offer options for importing files created in these formats into Canvas. See "Open" in the *Reference* section.

> **Important:** When opening a large color TIFF file, you should allot extra RAM to the Canvas application on the Finder desktop. (3X the amount of the TIFF file is recommended.)

Using the Place command

The Place command in the File menu lets you import layers from other Canvas files and files saved in other formats into the currently active Canvas document.

To use the Place command:

1. **Choose Place (⌘-Option-P) from the File menu.**

   A directory dialog box appears.

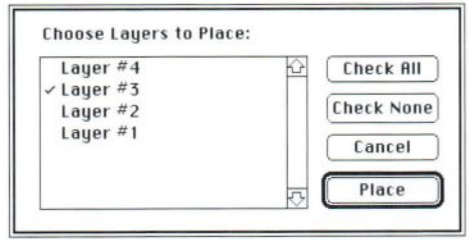
2. **Locate the file you want to place and click Open.**

   You can place files that have been saved in any format that Canvas can open normally.

3. Click Open to load the file you chose or Cancel to disregard the command.

The dialog box closes and you return to the Canvas Window where the document you chose appears.

If you have chosen a Canvas or UltraPaint file, a dialog box appears asking you which layers you want to load. Each layer you load will be added to the document as an individual layer.



Click each layer you want to place in your document; check marks appear next to their names.

Click **Check All** to select all the layers.

Click **Check None** to deselect all the layers, removing the check marks from their names.

Click **Place** to load the individual layers into your document or click Cancel if you change your mind. The dialog box closes.

The Place icon appears if you choose any format other than Canvas or UltraPaint.

To size the image as you place it, position the top left corner of the icon where you want the top left corner of the image to appear and drag to where you want the bottom right corner of the image to be. To place the image at its original size, click to place the image.

Changing the drawing size

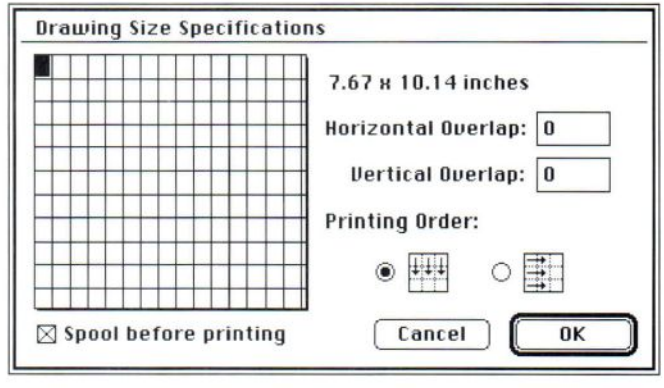
Canvas is preset to open a new document to one printer page. You can enlarge the document in page-sized increments up to 9' 3" by 9' 3".

The Drawing Size command is available when Drawing Size Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

To use the Drawing Size command:

1. **Choose the Drawing Size command (⌘-\) from the Layout menu.**

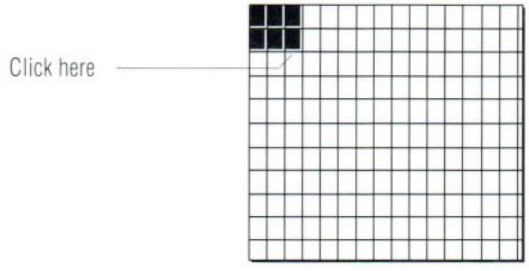
   The Drawing Size Specifications dialog box appears, displaying a grid representing 81 square feet with each rectangle representing one page. The size of the document is designated by a black rectangle in the top left corner of the grid. The current dimensions of the document are shown to the right of the grid.



2. **Click the box within the grid that represents the bottom right corner of your illustration.**

   For example, if you calculate that your illustration needs to print over six pages, three horizontal and two vertical, then you would

click the rectangle that is in the second row from the top and third column from the left.



3. **If your document is larger than one page and requires any overlap printing, type the required amounts in the Horizontal Overlap and Vertical Overlap text boxes.**

   Various printing devices, such as the LaserWriter, are not able to print to the edge of a page, thereby leaving a margin of white space. Check your printer owner's manual for the margin requirements. Entering an overlap value equal to or greater than the size of the margin requirements tells Canvas to print the part of your illustration that normally would have printed in the margin on all surrounding pages by the amount of overlap that you specify. This lets you tile (match and join) the pages of your printed illustration with a high degree of precision.

4. **Select either a vertical or horizontal Printing Order by clicking the appropriate button.**

   You can print the pages in your document either vertically down columns or horizontally across rows. Printing Order is important when you need to print specific pages of a document.

5. **Select the Spool Before Printing check box to regain control of the Canvas Window sooner when printing to an ImageWriter.**

6. **Click OK to save your changes and close the Drawing Size Specifications dialog box or click Cancel to ignore any changes.**

Canvas default settings

The Canvas Prefs file that is shipped with the program contains the default settings that are referenced in this manual. These are:

File Menu:

New: Canvas Pref settings

Page Setup:

- Paper: US Letter
- Reduce or Enlarge: 100%
- Orientation: Upright
- Printer Effects: All selected
- LaserWriter Options: None selected

Print:

- Copies: 1
- Page Range: All
- Cover Page (LaserWriter): No
- Paper Feed (Source): Automatic (Paper Cassette)
- Print (LaserWriter): Color/Grayscale
- Destination (System 7.0): Printer

Preferences:

- Bézier & Polygon:
  - Canvas 2.1 Polygon Creation: Off
  - Automatically Enter Edit Mode: Off
  - Show Original Curve When Editing: Off
  - Always Create Cusps: Off
  - Freehand Tolerance: Center Option
- Coord System: Clockwise from 12 o'clock
- Double-Clicking: Enter Edit Mode
- Dragging: Both
- Duplication: 10 pixels X and Y
- General:
  - Retain Selected Tool: Off
  - No Background Updates: Off
  - Smooth Text Edit: On
  - Smooth Redraw: On

Dithered Redraw: Off
Info Mgr Display: i.xx
Moving:
Command Key ⌘: 10 pixels
Option Key ⌥: 50 pixels
Paint Options:
Auto-Create Paint Objects: On
Auto-Expand Paint Objects: On
Print Options:
Resolution: Maximum
Fractional Character Widths: On
Selection Options:
Select Across All Visible Layers: Off
Resize Multiple Objects: Off

Text Menu:

Font: Geneva
Size: 12 points
Justification: Left
Style: Plain
Leading: Single Space
Kerning: Normal

Layout Menu:

Show/Hide:
Grid: Off
Info Manager: On
Rulers: Off
Page Breaks: Off
Size: Off
Publisher borders: On
Subscriber borders: On
Display: QuickDraw
Layer Specs:
One layer
Visible: On

Grayed: Off

Color Override: Off

Grids:

Snap To Every: 1/8 Divisions

Snap To X Grid: Off

Snap To Y Grid: Off

Show Grid: Off

Rulers:

Ruler #: 1

Units: Inches

Scale: 1"=1'

Minor Divisions: 16

Printer: ImageWriter

Guides: On

Snap To Grid: Off

Drawing Size: One Page

Horizontal Overlap: 0

Vertical Overlap: 0

Print Order: Vertical

Spool Before Printing: On

Tool Box:

Palette icons:

Fill Pattern: Solid White

Pen Pattern: Solid Black

Fore Color: Black

Back Color: White

Arrow Type: No arrow

Arrowhead: Topmost Basic Arrow Type

Dash: No Dash

Pen Mode: Copy

Pen Size: 1 point x 1 point

Zoom In/Zoom Out: 1:1

Paint Tools:

Brush Shapes: Small round

Spray Can: Large round nozzle, Flow Rate = 7

Paint Object Creator: 72 dpi

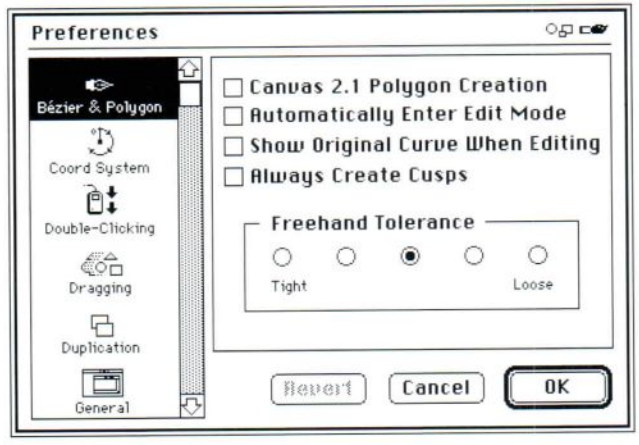
Freehand tool: Make Bézier Curves

Using the Preferences dialog box

There are many ways for you to adapt Canvas to suit your specific needs. Several of these can be found in the Preferences dialog box.

The Preferences dialog box is available when Preferences is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Choosing Preferences in the File menu opens the Preferences dialog box.



Settings

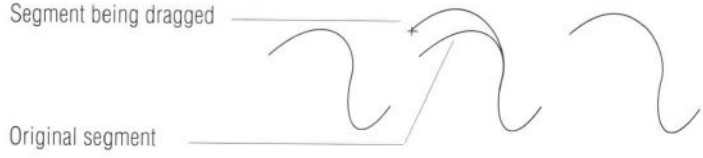
Preferences is a Control Panel style dialog box. First you must scroll to the preference you want to set in the scrolling list on the left side of the dialog box. When you click it, it highlights and the right side of the dialog box displays the options available for the preference. Familiarize yourself with the items in the Preferences dialog box so you can change their default settings as you see fit.

Revert lets you reset a preference to its setting when you first opened the dialog box. If the selected preference has not been edited, Revert appears dimmed. Clicking Revert only effects the selected preference.

Bézier & Polygon

Bézier & Polygon preferences gives you four options for creating Bézier curves and polygons.

- **Canvas 2.1 Polygon Creation** lets you create polygons by having the line segment follow your movements, as in previous versions of Canvas. See "Using the Polygon tool in the old style" on page 9-5 for instructions on creating polygons in the old style creation mode.
- **Automatically Enter Edit Mode** lets you place all completed polygons and Bézier curves into the edit mode by selecting them.
- **Show Original Curve When Editing** leaves a copy of the original object in place as you edit it so you can see how the object you are editing looks in relation to the original.

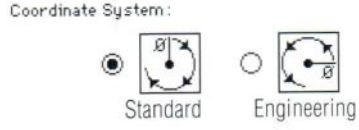


- **Always Create Cusps** causes all your objects drawn with the Bézier curve tool to be created with cusps (ends which can be pointed). This option is useful for greater control while editing. When this option is checked, each anchor is created with only one direction point. This lets you edit the preceding curve segment without affecting the following curve segment. Selecting this option also affects the editing of existing Bézier curves.

Freehand Tolerance lets you select how closely a Bézier curve drawn with the Freehand tool follows the pointer's position on screen. Tight results in a more exact representation of the pointer's movement and the most anchor points. Loose results in the least anchor points and the smoothest curve.

Coord System

Coordinate System lets you select from one of two coordinate systems for Canvas to use when measuring angles.



- **Standard** defines angle and rotation as proceeding in a clockwise direction with zero at the top (the 12 o'clock position).
- **Engineering** defines angle and rotation as proceeding in a counter-clockwise direction with zero at the right (3 o'clock position).

Double-Clicking

Double-Clicking lets you specify what you want Canvas to do when you double-click an object in the Canvas Window.

- **Enter Edit Mode** places polygons, Bézier curves, cubes, dimension objects, and parallel lines in the edit mode if you double-click them. This is the equivalent of selecting the object and choosing Edit Object (⌘-E) from the Object menu. Double-clicking a paint object makes it active and puts you in the paint mode. For all other object types, double-clicking displays the Object Specifications dialog box.
- **Display Object Specifications** displays the Object Specifications dialog box if you double-click an object or the Group Specifications dialog box if you double-click an object group. These dialog boxes let you modify the characteristics of the double-clicked objects. This is the equivalent of selecting the object and choosing Object Specs or Group Specs (⌘-I) from the Object menu.
- **Do Nothing** results in no effect when double-clicking an object.

Dragging

When Dragging Objects Show lets you select the option that you want Canvas to use when dragging an object.

- **Outline** displays only an outline of an object while it is being dragged.
- **Objects** displays the actual object while it is being dragged.

- **Both** displays an outline of the object during a fast drag, or the actual object when you click and then pause before dragging.

Show Original Object leaves a copy of the original object in place until the object is repositioned.

Duplication

Duplication lets you type values in the X and/or Y text boxes to change the offset Canvas applies to duplicated objects.

General

Retain Selected Tool keeps Canvas from reverting to the Arrow after you finish drawing with a draw tool.

No Background Updates keeps Canvas from redrawing the screen when you are using another application under MultiFinder with a Canvas Window open in the background.

Smooth Text Edit causes Canvas to perform the entire redraw off screen when editing text. When working on slower machines, turning this option off allows you to type faster.

Smooth Redraw causes Canvas to redraw the entire illustration off screen and then refresh the screen as opposed to redrawing each object individually on screen.

Dithered Redraw lets Canvas dither 32-bit color images to 8-bit color images on screen when you have 32-bit color capabilities. Since the image must be drawn off screen before dithering it on screen, selecting this option automatically selects Smooth Redraw. This option requires a large amount of RAM. Any time insufficient RAM is available when performing a redraw, the dither will not be performed.

Info Mgr Display

Information Manager Display lets you select the form in which you want measurements of objects you create in Canvas displayed. These options apply to the Information Manager, the dimensions displayed when you choose to show Size, and dimensions displayed when you select an arrow type which displays dimensions.

Moving

Moving lets you type values in the Command key (⌘) and the Option key (⌥) text boxes to set the offsets Canvas uses when moving

selected objects with the keyboard's arrow keys while holding down these modifier keys.

Auto Scroll To Selection lets you choose to auto scroll the Canvas Window if a selection moved using the keyboard arrows is moved out of the current view of the Canvas Window.

Paint Options

Auto-Create Paint Objects lets you create a paint object whenever a paint tool is selected from the Tool Box and positioned inside the Canvas Window. If this option is not checked, you must first define a paint area with the Paint Object Creator tool to create a paint object.

Auto-Expand Paint Objects causes Canvas to automatically extend the boundary of a paint object's bounding rectangle when painting action exceeds the existing boundary.

Print Options

Print Options lets you choose the resolution at which you want to print. Maximum prints at your printer's maximum allowable resolution. However, maximum resolution from a QuickDraw® printer (144 dpi for the ImageWriter® and 216 dpi for the ImageWriter® LQ) disables the image reduction options and the faster printing features. To enable these features, set the printing resolution to 72 dpi. Changing the printer's resolution also causes the settings in Page Setup to revert to their default settings. Be sure to choose Page Setup and reset the settings if you change the resolution.

Fractional Character Widths lets Canvas print character widths accurate to one decimal point as opposed to rounding them up to the nearest pixel. This results in better text output quality. However, the LaserWriter cannot perform font substitution if this option is selected. Therefore, if your are using a font for which no LaserWriter font is available you should not select this option. Not selecting it allows the LaserWriter to perform a font substitution as opposed to creating a bitmap version of the screen font, which can produce jagged results. Another reason to not check this option is if you are exporting to a program that does not support fractional character widths. If you export a graphic containing text from Canvas to a program that does not support font substitution, the text will appear spread out. If this happens, reopen the file in Canvas and deselect this option; the text will appear spread out as it did in the other program. Make whatever adjustments

are necessary to your illustration in Canvas to account for the change in character widths and export the file again.

Selection Options

Selection Across All Visible Layers lets you choose how you want the Select All command (⌘-A) in the Edit menu to work. Selecting this check box causes Canvas to select all the objects on all the visible layers in the active document. You can also select objects on multiple layers by dragging a selection rectangle around them or by Shift-clicking them when this option is selected. If this option is not selected, choosing Select All causes Canvas to select only objects in the active layer of the active document. You can temporarily reverse this setting by holding down the Control and Tab keys while selecting.

Resize Multiple Objects causes resizing to affect all currently selected objects instead of just the topmost selected object.

Using the Preferences dialog box

To set up the Preferences dialog box to your choices:

1. **Choose the Preferences command from the File menu.**

   The Preferences dialog box appears.

2. **Use the scroll bar for the scrolling list on the left side of the dialog box to find the preference you want to set.**

3. **Click the preference.**

   The preference highlights and the right side of the dialog box displays the options applicable to the selected preference.

4. **Use the text boxes, check boxes, pop-up menus, and radio buttons to indicate your choices as described previously.**

5. **Click OK to accept you changes or click Cancel to ignore any changes.**

   You will return to the Canvas Window. If you saved your changes they will be applied to and saved with the active document only. If you want to make a Preference change that will be applied to all future documents you must save your changes in a Canvas Prefs file. See "Creating a Canvas Prefs file" on page 7-43 for instructions.

Setting the default properties for creating objects

Properties for objects drawn in Canvas are controlled using the palette icons in the Tool Box. Canvas is preset to draw objects with no dash, solid black pattern lines, using a one-point by one-point pen size, and a white fill pattern. These are the default properties.

If no objects are selected in the Canvas Window, you can change these default properties at any time using the following instructions. Canvas will apply the new properties to all objects drawn from then on.

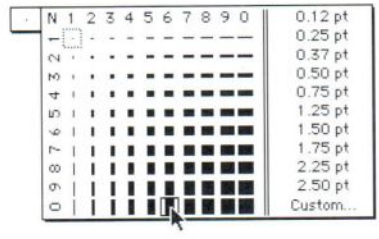
Changing the default pen size

The default pen size is changed using the Pen Size palette icon in the Tool Box. From this palette you can select one of 131 predefined sizes or select Custom to create a new size.

To change the default pen size to one of the 131 predefined pen sizes:

1. **Hold down the pointer on the Pen Size palette icon.**

   The Pen Size palette appears.



2. **Drag to enclose your choice with the selection box.**

   The new default pen size now appears in the pen size palette icon.

Canvas lets you specify pen sizes where one of its dimensions has a zero value. This feature can result in some interesting effects especially with ovals and circles. However, PostScript printers do not support pen sizes in which one of its dimensions is zero. Therefore, lines with a zero-dimension pen size do not print at all on a PostScript printer.

Creating a custom pen size

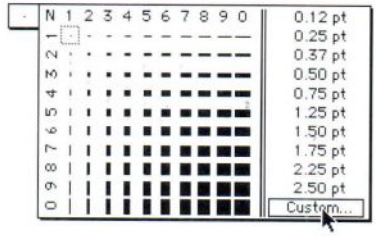
Canvas lets you create custom pen sizes when Pen Manager is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

To create a custom pen size:

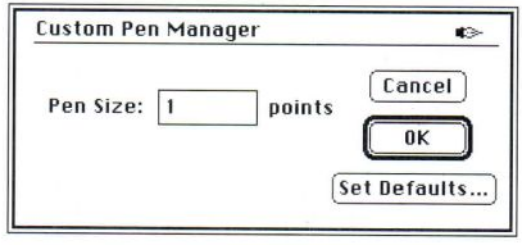
1. **Hold down the pointer on the Pen Size palette icon.**

   The Pen Size palette appears.

2. **Select Custom from the Pen Size palette.**



The Custom Pen Manager appears.



3. **Type a pen-point size from .01 to 127 points in the Pen Size text box.**

When a custom pen size is defined using this method, Canvas retains it only until you select a new pen size. To use it again you must repeat this procedure. If you will be using a custom pen size repeatedly, you may want to make it one of you default pen point size options. To do so, use the following instructions.

Editing the default pen point size options

To edit the default pen point size options along the right side of the Pen Size palette:

1. **Hold down the pointer on the Pen Size palette icon.**

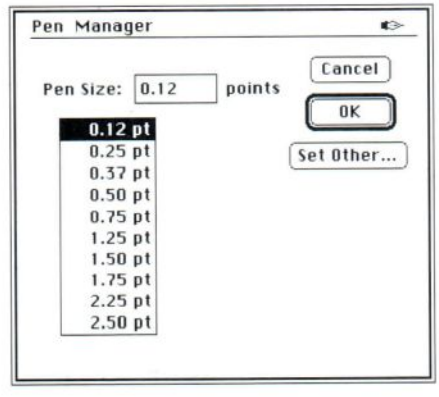
   The Pen Size palette appears.

2. **Select Custom from the Pen Size palette.**

   The Custom Pen Manager appears.

3. **Click Set Defaults.**

   The Pen Manager dialog box appears listing the ten current default pen point sizes. The top default setting is selected in the list and appears in the Pen Size text box.

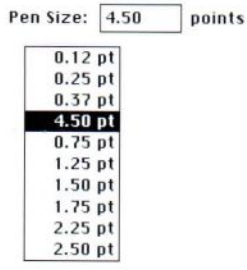


4. **Click the default pen point size in the list that you want to replace.**

   The selected size appears in the Pen Size text box.

5. **Type the pen point size you want to replace it with.**

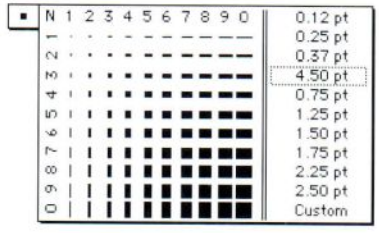
The size you type appears in the list of sizes.



6. **Repeat Steps 4-5 to continue to customize the default pen point sizes.**

7. **When you have finished editing the default pen point sizes, click OK to save your changes, Cancel to disregard them, or Set Other if you want to return to the Custom Pen Manager.**

   The Pen Manager closes. If you click Set Other, see the instructions under "Creating a custom pen size" on page 7-19. If you click OK, the changes you have made appear in the Pen Size palette.



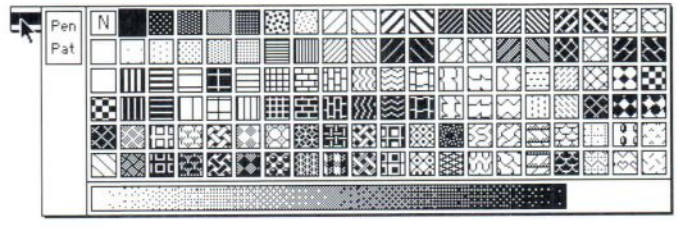
Changing the default pen pattern

The pen pattern is used to represent object lines. The default pen pattern is initially set to solid black. You can change the default pen pattern using the Pen Pattern palette icon in the Tool Box by choosing one of the predefined patterns or by choosing a gray-scale percentage from the gray scale at the bottom of the menu. Black portions of the pattern represent the active foreground color and white portions represent the active background color.

To change the default pen pattern:

1. **Hold down the pointer on the Pen Pattern palette icon.**

The Patterns palette appears.



2. **Drag to enclose your pattern choice in the selection box or drag through the gray scale at the bottom of the pattern palette until the desired percentage is displayed to the right of the gray scale.**

The new default pen pattern or gray scale is displayed in the Pen Pattern palette icon. Object lines will be drawn using this pattern, the active foreground color, and the active background color.

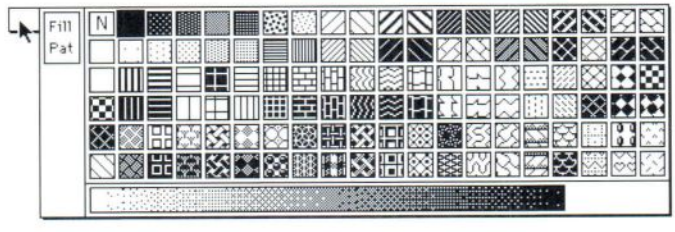
Changing the default fill pattern

The fill pattern is used for the inside portion of objects. The default fill pattern is initially set to solid white. You can change the default fill pattern using the Fill Pattern palette icon in the Tool Box by choosing one of the predefined patterns, or by choosing a gray-scale percentage. Black portions of the pattern represent the active foreground color and white portions represent the active background color.

To change the fill pattern:

1. **Hold down the pointer on the Fill Pattern palette icon.**

The Patterns palette appears.



2. **Drag to enclose your pattern choice in the selection box or drag through the gray scale at the bottom of the pattern palette until the desired percentage is displayed to the right of the gray scale.**

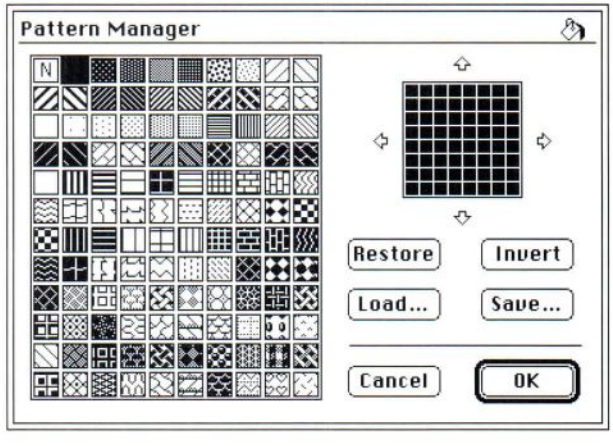
   The new default fill pattern or gray scale is displayed in the Fill Pattern palette icon. Object insides will be filled using this pattern, the active foreground color, and the active background color.

Editing pattern options

Canvas comes with 120 preset patterns from which you can select the pen or fill pattern. You can change a preset pattern to one that you create using the Pattern Manager.

The Pattern Manager is available when Pattern Manager is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

You open the Pattern Manager by choosing Patterns in the Managers submenu in the Edit menu, double-clicking a pattern in the torn-off Patterns palette, or double-clicking the Paint Bucket tool icon.



The left side of the Pattern Manager displays all the patterns from the Patterns palette. Select a pattern from this side to edit. A border appears around the selected pattern.

The **edit box** on the right side of the Pattern Manager displays the currently selected pattern from the left side of the Pattern Manager at an 800% magnification level.

The **arrows** surrounding the edit box let you scroll the pattern in the edit box one pixel. Clicking an arrow scrolls the pattern in the indicated direction.

Invert turns all black pixels in the edit box white and all white pixels black.

Save opens a directory dialog box which lets you save all the patterns in a pattern file which can be loaded into other Canvas documents. For instructions on saving a file, see "Saving a document" on page 7-48.

Load opens a directory dialog box which lets you load a previously saved pattern file into the active Canvas document. The pattern file will then be attached to the document as its default pattern set. For instructions on loading a pattern file, see "Opening a file" on page 7-5.

To load a pattern set saved in an earlier version of Canvas, select a pattern on the left side of the Pattern Manager. The pattern you select will be the first of twenty patterns replaced with those from the previously saved set.

To customize a pattern using the Pattern Manager:

1. **Choose Patterns from Managers in the Edit menu, double-click the Paint Bucket icon, or double-click a pattern in the torn-off Patterns palette.**

   The Pattern Manager appears.

2. **Click the pattern you want to customize.**

   The pattern appears in the edit box.

3. **Edit the pattern in the edit box by clicking the arrows surrounding the edit box, clicking individual pixels in the edit box, or by using the Invert button.**

   As you edit the pattern in the edit box, the original pattern reflects your changes.

4. **Click OK to save you changes or click Cancel to disregard your changes.**

   The Pattern Manager closes.

Changing the default foreground or background color

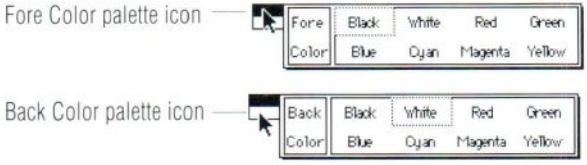
Just as when you draw with black ink on white paper, the default foreground color is black (because the default pen pattern is solid black) and the default background color is white (because the default fill pattern is solid white). When you select a pattern for either the pen or fill,

the foreground color is applied to the black part of the pattern while the background color is applied to the white part of the pattern.

You can change the default foreground or background color using the Fore Color or Back Color palette icon. To do so:

1. **Hold down the pointer on the Fore Color or Back Color palette icon.**

   The Fore Color or Back Color palette appears. The palette you see depends upon your monitor's setting. The following illustration is for a black and white setting.



2. **Drag to enclose your choice in the selection box.**

   The new default foreground or background color appears in the Fore Color or Back Color palette icon. If your monitor is set to black and white, all colors other than white are displayed as black.

You can also use the Color Info Manager to set the foreground or background color. To do so, hold down the Control and Shift keys and click the Fore Color or Back Color palette icon. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions on using of this dialog box. The PANTONE® Colors window can be used to set the default colors also; see "Changing the default foreground or background color" on page 18-18 for information.

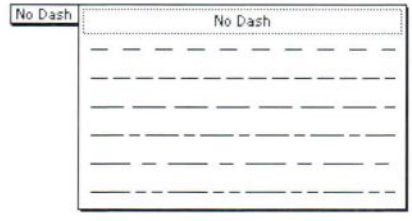
> **User Tip:** Refer to Chapter 18, "Using Color in Canvas," for information regarding the use of color with an 8-bit, 24-bit, or 32-bit video card.

Changing the default dash type

The default dash type is No Dash. The Dash palette icon in the Tool Box lets you set your default object lines to dashed lines. To use dashed lines:

1. **Hold down the pointer on the Dash palette icon in the Tool Box.**

The Dashes palette showing the available dashed line types appears.



2. Drag to enclose your choice in the selection box.

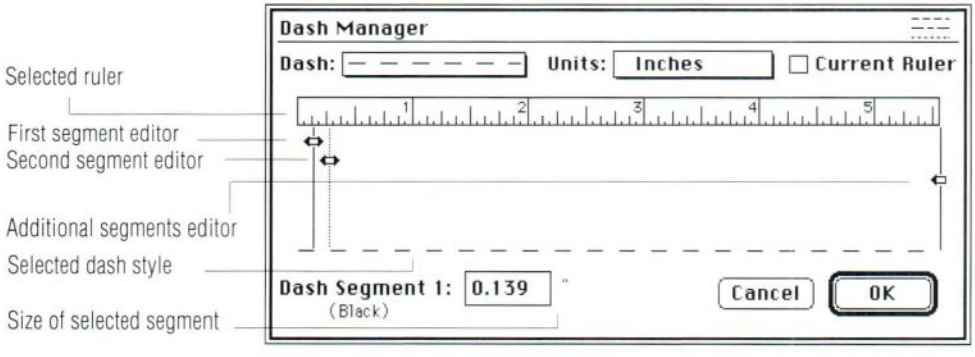
The new default dashed line is displayed in the Dash palette icon.

Editing dashed line options

Canvas comes with six preset dashed line types. You can change a preset dashed line type to one that you create using the Dashes option of the Managers submenu under the Edit menu.

This option is available when Dash Manager is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Choosing Dashes or double-clicking the torn-off Dash palette opens the Dash Manager.



The Dash Manager displays a ruler in the units currently selected in the Ruler Specifications dialog box. (See "Setting up the Ruler Specifications" on page 7-33.) However, you can change the units used for editing the dashed lines. To use units other than the current ruler units:

1. **Click the Current Ruler check box to deselect it.**

   The Units pop-up box is enabled.

2. **Choose the desired units from the Units pop-up menu.**

   The ruler in the Dash Manager changes to reflect your choice.

To change a preset dashed line type:

1. **Choose a dashed line to edit from the Dash pop-up menu.**

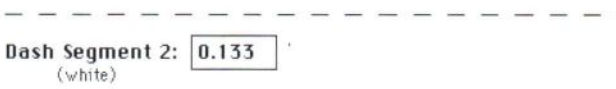
   The chosen line is displayed at the bottom of the dialog box and the size of its first black segment is displayed in the "Dash Segment 1 (black)" text box at the bottom left of the Dash Manager.

2. **Type a length for the first black segment in the text box, or drag the first segment editor to the desired position.**

   The dashed line at the bottom of the dialog box reflects the change.

3. **Press the Tab key or click the second segment editor to edit the next segment of the line (the white space).**

   The display changes to "Dash Segment 2 (white)."



4. **Type a size for the second segment of the line (a white segment), or drag the second segment editor to the desired position.**

   Once again the display adjusts to reflect the change.

5. **Continue in this manner until all segments of the line are edited to your satisfaction.**

   You can add segments to a line by dragging the line segment editor at the right end of the ruler to the left. The new segments can be edited in the above manner. Canvas supports dashed lines of up to ten different segment sizes.

6. **Click OK or press the Return key to save your changes. Click Cancel if you change your mind.**

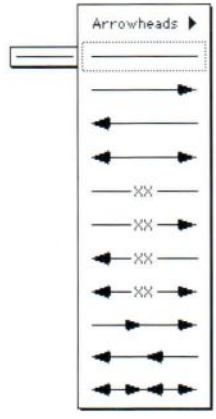
   The Dash Manager closes.

Changing the default arrow type

The Arrow Type palette icon in the Tool Box lets you change the default setting for the appearance of lines, arcs, Bézier curves, polygons, and smooth polygons in your illustration by letting you add terminators and dimensions. To change the arrow type:

1. **Hold down the pointer on the Arrow Type palette icon in the Tool Box.**

   The Arrow Type palette appears.



The arrow types with "XX" in the center add linear or angular dimensions to lines and arcs when they are created. These dimensions change as the line or arc is resized.

The bottom three arrow type options place arrowheads on each segment of a Bézier curve, polygon, or smooth polygon.

2. Drag to enclose your choice in the selection box.

The new default arrow type appears in the Arrow Type palette icon.

Changing the default arrowhead styles

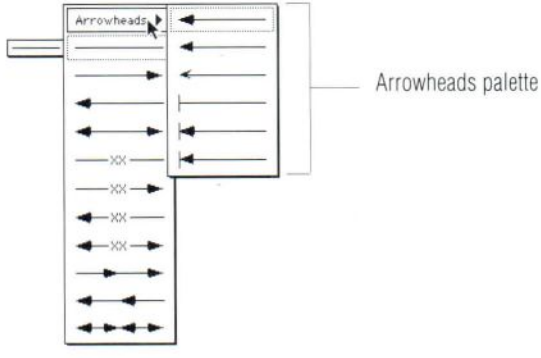
The Arrow Type palette in the Tool Box also lets you change the default setting for the appearance of arrowheads in your illustration. Arrowhead styles are applied to arrow types with line terminators. To change the default arrowhead:

1. Hold down the pointer on the Arrow Type palette icon in the Tool Box.

The Arrow Type palette appears.

2. Drag to Arrowheads and pause.

The Arrowheads palette appears.



3. Drag to enclose your choice in the selection box.

Editing arrowhead options

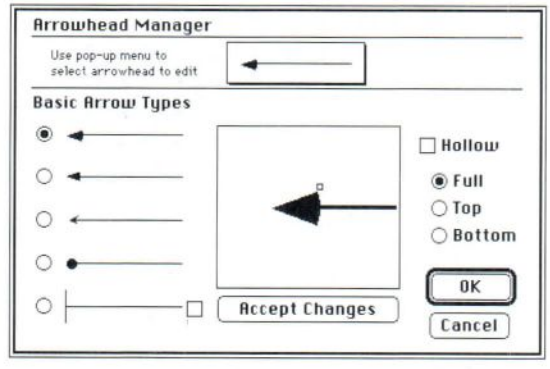
Canvas comes with six preset arrowhead options. You can change these arrowhead styles using the Arrowheads option of the Managers submenu in the Edit menu. This option is available when Arrowhead

Manager is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

To customize an arrowhead:

1. **Choose Arrowheads from the Managers submenu in the Edit menu or double-click either the Arrow Type or Arrowheads palette.**

   The Arrowhead Manager appears.



1. **Choose the arrowhead you want to edit from the pop-up menu at the top of the dialog box.**

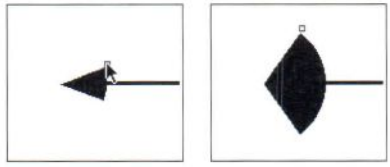
   Your choice appears in the edit box.

2. **Click an option under Basic Arrow Types on the left side of the dialog box on which to base your new arrowhead.**

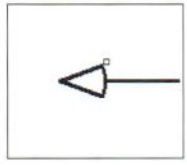
   Your choice appears in the edit box in the center of the Arrowhead Manager.

3. **Select the check box to the right of the last Basic Arrow Types option if you want to include witness lines with the arrowhead.**

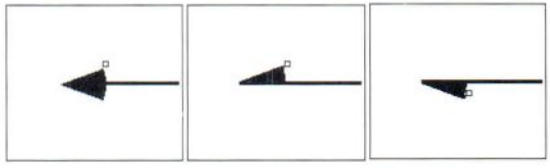
4. **Drag the square handles of the arrowhead in the edit box to edit its shape.**



5. **Select the Hollow check box if you do not want a solid arrowhead.**



6. **Select Full, Top, or Bottom, depending on how you want the arrowhead drawn.**



7. **Click Accept Changes when you are satisfied with your changes.**

   The edited arrowhead replaces the arrowhead chosen in the pop-up menu at the top of the Arrowhead Manager.

8. **Repeat Steps 1-7 for each arrowhead style that you want to customize.**

9. **Click OK to close the Arrowhead Manager and save your changes.**

User Tip: Canvas proportionally resizes arrowheads as the pen size of the line or arc is changed.

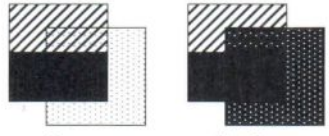
Changing the Pen Mode

The Pen Mode palette icon in the Tool Box supports the Macintosh pen modes available on QuickDraw printers. There are four transfer

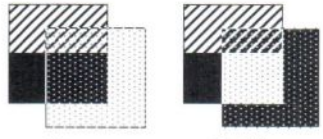
modes you can select: Copy, Or, Xor, and Bic. Each mode has an inverse: Not Copy, Not Or, Not Xor, and Not Bic. The inverses work the same, except that the selected object is first inverted, then the transfer mode is applied.

Copy / Not Copy The object is opaque. The underlying images do not show through.

Or / Not Or gives the object a transparent effect by letting any underlying objects show through background colored areas.



Xor / Not Xor (Exclusive OR) reverses the image wherever the underlying image is black.



Bic / Not Bic (erase) Foreground colored areas in the image become white, and white areas become transparent, letting any underlying objects show through.

These effects can only be printed on a QuickDraw printer. PostScript printers print all objects using the Copy mode.

Setting up the Ruler Specifications

When you choose the Rulers command from the Layout menu, the Ruler Specifications dialog box opens. The Ruler Specifications dialog box lets choose from six preset ruler options, or customize any of six preset rulers to fit your drawing needs.

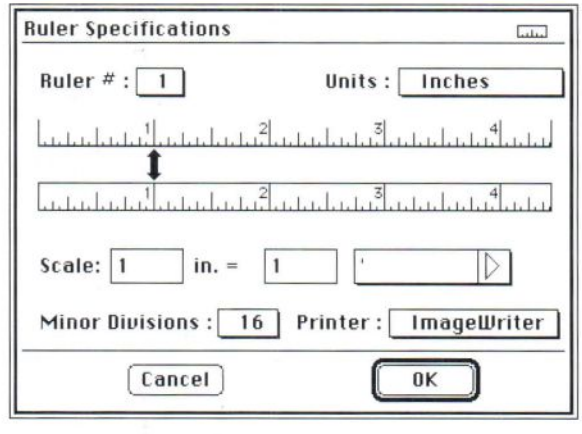
The Rulers command is available when Ruler Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Choosing a ruler

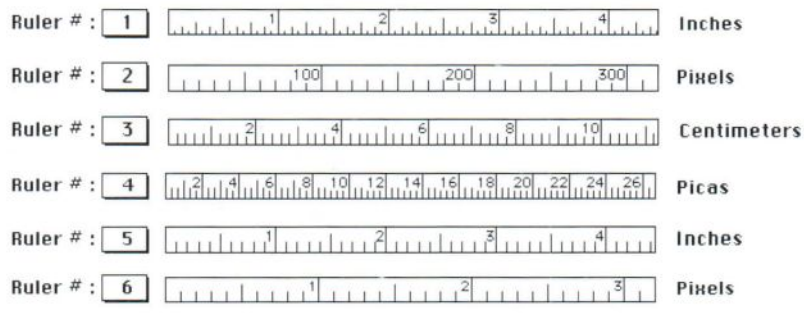
To choose a ruler:

1. **Choose the Rulers command from the Layout menu.**

   The Ruler Specifications dialog box appears.



2. **Use the "Ruler #" pop-up menu to choose a ruler.**



The chosen ruler appears in the Ruler # pop-up box and all the other pop-up boxes and text boxes in the Ruler Specifications dialog box change to apply to the active ruler type.

3. **When you are satisfied with your ruler selection, click OK to use your new ruler setting or Cancel to retain your original ruler setting.**

Customizing a ruler

To customize a ruler:

1. **Choose the Rulers command from the Layout menu.**

   The Ruler Specifications dialog box appears.

2. **Use the "Ruler #" pop-up menu to choose which ruler to configure.**

   The ruler you choose appears in the Ruler # pop-up box and all the other pop-up boxes and text boxes in the Ruler Specifications dialog box change to apply to the active ruler type.

3. **Choose a type of units from the Units pop-up menu or type a custom unit.**

4. **Type a scale ratio in the Scale text boxes, and choose a predefined unit of measure from the Units pop-up menu or type a custom unit.**

   For example, if you want to specify a scale in which one inch equals two feet, type a "2" in the "=" text box and choose "feet" from the pop-up menu.

5. **Use the Minor Divisions pop-up menu to choose the number of divisions between units.**

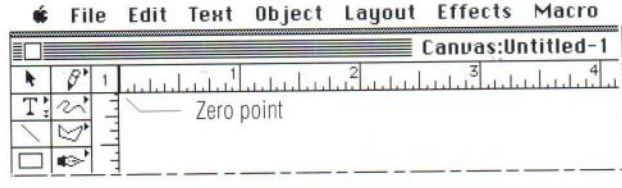
6. **Use the Printer pop-up menu to choose the device from which your illustration will be printed.**

   Choosing the correct printer is very important. Each setting makes small adjustments which are reflected in the rulers displayed on screen to account for scaling differences between the PostScript and QuickDraw printers. For example, if you want a one-inch square box to print as exactly one inch square on the LaserWriter, you must set the Printer to LaserWriter. When printed, the square will print correctly. If you change printers and print the same square on an ImageWriter without first changing the Printer option, the square will be 4% larger. The converse is also true.

7. **Click OK to save your changes and close the Ruler Specifications dialog box or click Cancel if you change your mind.**

Changing the zero point

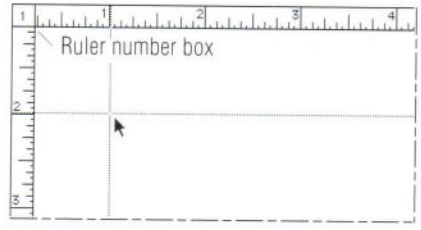
The zero point of the Canvas rulers is the point from which the rulers begin measuring. The zero point is preset to be located in the upper-left corner of your illustration.



You can, however, change this point. To do so:

1. **Select the Arrow tool from the Tool Box.**
2. **Position the Arrow in the ruler number box in the upper left corner of the Canvas Window where the two rulers intersect.**
3. **Drag the pointer to where you want the zero point to be.**

A pair of guide lines follows the pointer to assist you in repositioning the ruler's zero point.



You can reset the zero point to its default position by clicking the ruler number box.

Peel-away rulers

You can peel away the Canvas rulers to provide additional measurement capabilities in specific areas of your illustration.

To use the peel-away rulers:

1. **If the rulers are not visible in the Canvas Window, choose Rulers from the Show/Hide submenu (⌘-Option-Shift-R) from the Layout menu.**
2. **Position the Arrow tool on the ruler to peel-away.**
3. **Hold down the Option key and drag the ruler to a new position.**

To remove peel-away rulers:

1. **With the Arrow tool, select the peel-away ruler.**
2. **Choose the Cut command (⌘-X) from the File menu or press the Delete or Backspace key.**

Setting up the autogrid

Choosing the Grids command in the Layout menu opens the Grid Specifications dialog box. This dialog box lets you turn on the autogrid for precise placement and drawing of objects. The **autogrid** restricts the size and placement of objects to the spacing set in the Grid Specifications dialog box.

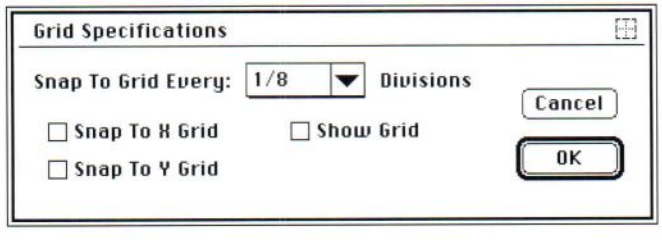
The Grid Specifications dialog box is available when Grid Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Customizing the autogrid

To customize the autogrid:

1. **Choose the Grids command (⌘-Option-G) in the Layout menu.**

   The Grid Specifications dialog box appears.



2. **Type a value in the Snap To Grid Every text box or choose a predefined value from the pop-up menu to define the autogrid spacing.**

   These Divisions are based on the units specified in the Ruler Specifications dialog box.

3. **Select the Snap To X Grid check box, Snap To Y Grid check box, or both check boxes to activate the autogrid.**

   You will snap to either or both axes depending on which options you select. If neither of these boxes is checked, choosing the Snap To Grid command from the Layout menu turns on both Snap To X Grid and Snap To Y Grid.

4. **Select the Show Grid check box to display the grid lines on the screen.**

This option is the same as the Grid option of the Show/Hide submenu in the Layout menu.

5. **Click OK to save your changes and apply the command or click Cancel to close the Grid Specifications dialog box without applying any changes.**

On screen grid lines do not have to be visible for the autogrid to be active. The Snap To Grid command works independent of the Show Grid option in the Grid Specifications dialog box and the Grid option of the Show/Hide submenu in the Layout menu.

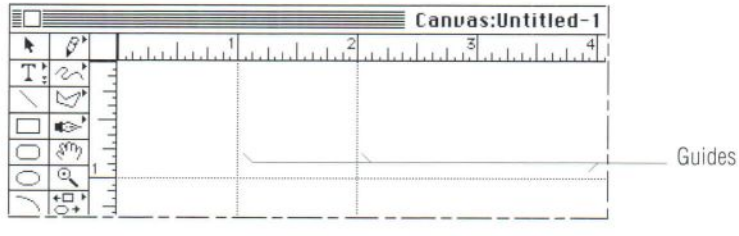
User Tip: To temporarily disable the autogrid as you create, resize, or move objects, hold down the Tab key while doing so.

Turning on the autogrid with the Snap To Grid command

The Snap To Grid command (⌘-Option-]) in the Layout menu is a toggle command. When active, it turns on the autogrid system. The grid does not need to be displayed on screen for the autogrid to be active. When the autogrid is on, the bounding rectangle of any object that you create is aligned to the grid. As you draw, move, or modify the size of an object, the object's size or position changes in relation to the settings in the Grid Specifications dialog box. When the autogrid is on, you cannot place an object between the designated grid increments.

Using the Guides command

Guides are lines which help you align objects. Guides can be added whenever rulers are displayed in the Canvas Window. Although visible on the screen, guides do not print. The Guides command is a toggle command. You can choose to display or hide your guide lines by toggling the Guides command.



Adding guides to the Canvas Window

To add guides to the Canvas Window:

1. **If rulers are not currently displayed in the Canvas Window, choose Rulers from the Show/Hide submenu in the Layout menu (⌘-Option-Shift-R).**
2. **If a check mark does not appear next to Guides in the Layout menu, choose Guides from the Layout menu.**
3. **Select the Arrow tool from the Tool Box.**
4. **Hold down the pointer on either the horizontal or vertical ruler.**

   The pointer changes to a two-headed arrow.
5. **Drag the guide to the desired position in the Canvas Window.**

Removing guides from the Canvas Window

To remove guides from the Canvas Window:

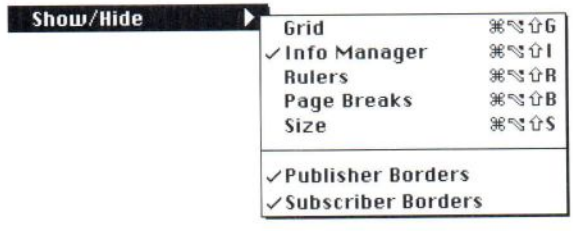
1. **Hold down the pointer on the guide you want to remove.**

   The pointer changes to a two-headed arrow.
2. **Drag the guide out of the Canvas Window.**

User Tip: If you hold down the Option key as you drag a guide, Canvas moves all objects that touch the guide along with it.

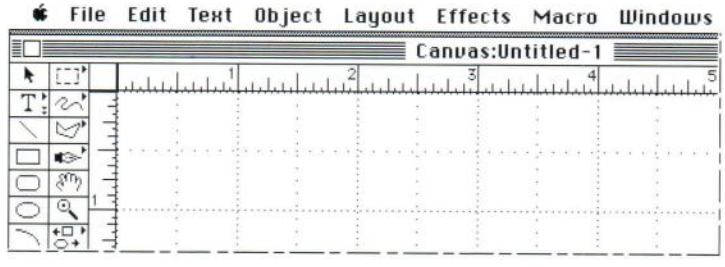
Using the Show/Hide submenu

Show/Hide in the Layout menu displays a submenu which contains several toggle options which you can activate or deactivate. You can save your settings for these options in your Canvas Prefs file. See "Creating a Canvas Prefs file" on page 7-43 for more information.



Grid

The Grid option (⌘-Option-Shift-G) displays a grid of evenly spaced lines and points in the Canvas Window when active. This grid is useful for precisely aligning and positioning objects. The spacing between these lines and points is determined by the ruler settings for the illustration. Deactivating Grid hides the grid lines. See "Setting up the autogrid" on page 7-37 for instruction on using the Canvas autogrid system.

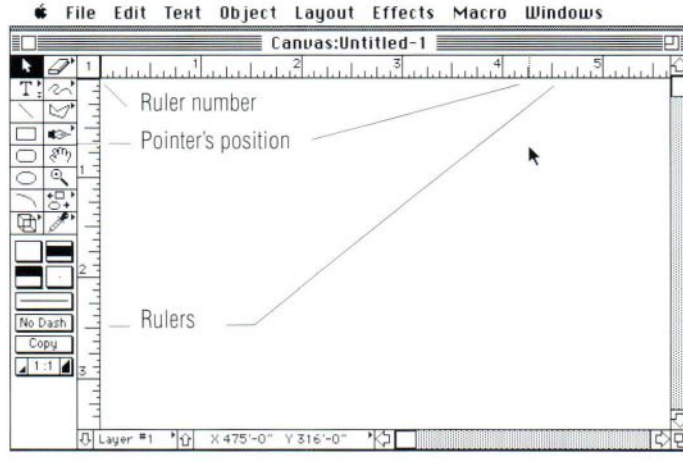


Info Manager

The Info Manager option (⌘-Option-Shift-I) displays the Information Manager at the bottom of the Canvas Window when active. See "Using the Information Manager data display" on page 13-29 for the meaning of the data displayed here.

Rulers

The Rulers option (⌘-Option-Shift-R) displays rulers along the top and left sides of the Canvas Window when active. The rulers disappear when you deactivate this option.

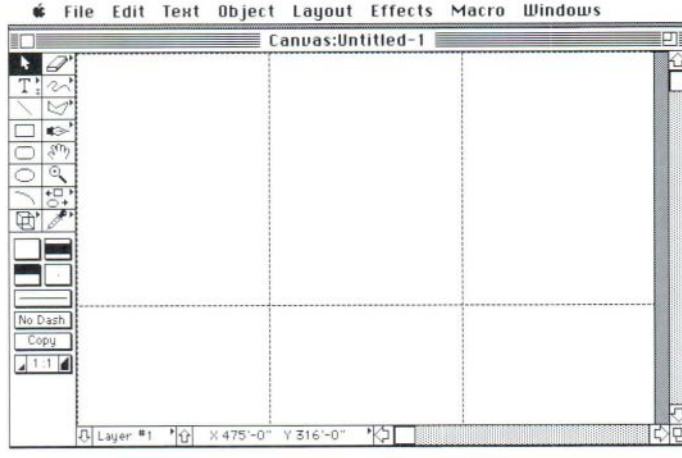


At the intersection of the two rulers is the ruler number box, which shows the number of the active ruler. Canvas also shows the position of the pointer in each ruler as a dotted line. As you move the pointer in the Canvas Window, the dotted lines follow its movement. See "Setting up the Ruler Specifications" on page 7-33 for more information.

Page Breaks

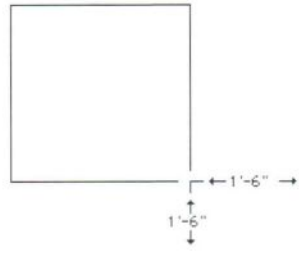
The Page Breaks option (⌘-Option-Shift-B) displays thick striped lines on the screen which indicate where your illustration is divided into pages for printing when active. These page break lines do not print

and you can draw over them. The page break lines are hidden when this option is deactivated.



Size

The Size option (⌘-Option-Shift-S) displays the dimensions of objects as you draw or resize them when active. It also displays the object's size if you hold down the mouse button while pointing on the object.



Publisher Borders and Subscriber Borders

The Publisher Borders and Subscriber Borders options are available when you are using System 7.0 or later and System 7.0 Options is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

When Publisher Borders is active, Canvas displays the gray borders surrounding publishers in the Canvas Window. When Subscriber Bor-

ders is active, Canvas displays the gray borders surrounding subscribers in the Canvas Window. These borders appear on screen but do not print. Deactivate these options to hide these borders. See "The Create Publisher command" on page 13-9 and "The Subscribe To command" on page 13-10 for information on creating publishers and subscribers.

Creating a Canvas Prefs file

A Canvas Prefs file is a template for the Canvas Window which contains all of the active default settings for a new document. Canvas is shipped with a Canvas Prefs file titled *Canvas Prefs*. Canvas lets you create customized Canvas Prefs files so that Canvas opens with all of the settings that you commonly use. Provided that you give your new Canvas Prefs file a name other than *Canvas Prefs*, the original Canvas Prefs file remains unchanged and can be reused for other documents.

You can save as many Canvas Prefs files as you need. For example, you may have one Canvas Prefs file which contains the settings you use to create business forms and another which contains the settings that you use for architectural drawing. In this way, you do not have to repeat the document setup procedure for repetitive work. You need only open the Canvas Prefs file that contains the settings you require and begin working.

Once you have customized the default settings described in this chapter, you can save them as your own Canvas Prefs file. To do so:

1. **Choose the Save As command (⌘-Option-S) from the File menu.**

   The Save As dialog box appears.

2. **Choose Canvas Prefs from the File Format pop-up menu.**

   The "Save current document as" text box changes to read *Canvas Prefs*. If you want to overwrite the original Canvas Prefs file, leave the text box unchanged. If you want to create your own Canvas Prefs file and still have access to the original Canvas Prefs file, type a new name in the "Save current document as" text box.

3. **Click Save to save the Canvas Prefs file or click Cancel to close the dialog box without saving the file.**

Using a customized Canvas Prefs file

To use your own Canvas Prefs file for a new document:

1. **Choose the Open command (⌘-O) from the File menu.**

   The Open directory dialog box appears.

2. **Locate the Canvas Prefs file you created in the directory.**

3. **Click the name of the Canvas Prefs document in the directory.**

   The name highlights.

4. **Click Open.**

When you open a Canvas Prefs file, it appears untitled and with all of the settings as they were when you saved it. You can begin creating an illustration as if you had opened a new document. When you have finished creating your illustration, you can save it following the normal procedure you would use to save any Canvas document.

You can set your own Canvas Prefs file to be the default Canvas Prefs. To do so:

1. **Hold down the Shift key when launching Canvas.**

   A directory dialog box appears asking you to locate the Canvas Prefs file you want to use.

2. **Locate the Canvas Prefs file you created in the directory.**

3. **Click the name of the Canvas Prefs document in the directory.**

   The name highlights.

4. **Click Open.**

All subsequent new Canvas documents will be created using the Canvas Prefs file you choose.

Saving a document

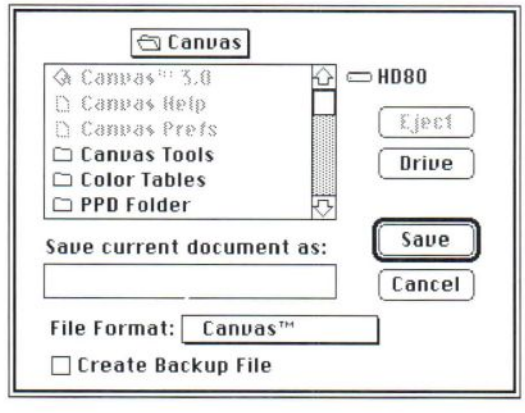
When you complete an illustration that you want to be able to retrieve later, you need to save it to disk. Canvas offers two commands for saving documents: the Save command and the Save As command, both of which are found in the File menu.

The Save command

The Save command (⌘-S) is used to update changes to a document that has already been saved or to save a new document that has never been saved. The Save command saves changes to the active document using the same name, format, and location as when you previously saved it, thereby overwriting your last-saved version of the document. If no changes have been made to the active document since the last time you saved it, the Save command appears dimmed. If the document has never been saved, the Save command works the same as the Save As command.

The Save As command

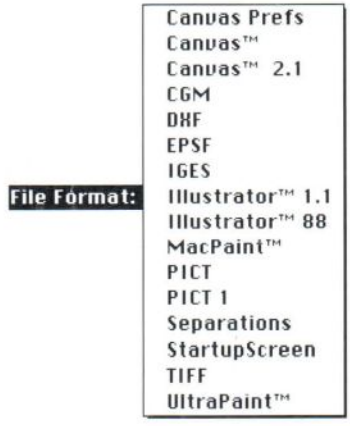
The Save As command saves a document by a different name, in a different format, or to a different location. Choosing the Save As command opens the following dialog box.



File Formats

The File Format pop-up box opens a list of the available formats for saving your Canvas document. Some of the File Format options are available through external tools. In these cases you must have the tool active in the Canvas Tools folder for the format to appear in the File

Format pop-up menu. For information on using the Canvas external tools, see "Using the ToolPicker" on page 6-7.



- The **Canvas Prefs** format tells Canvas to save your document as a customized file that you can use as a template for other documents.
- The **Canvas** format is the default format for saving new documents in Canvas. When you save a document in this format, you save it as you created it. This is the recommended file format.
- The **Canvas 2.1** format lets you open a document created in the current version of Canvas in Canvas 2.1. Elements of the drawing created using features not available in Canvas 2.1, such as gradient fills, parallel lines, hatch patterns, and so on, will be lost when saving in this format. Text will be severely affected.
- **CGM:** The CGM (Computer Graphics Metafile) format is commonly used by mainframe and IBM PC-compatible CAD programs. It lets Macintosh files be read by IBM PC-compatibles and vice versa. Use this format if you want to open a Canvas file on an IBM PC-compatible. This format is similar to the DXF format, but supports more color and text features. This format is available when CGM I/O is active in your Canvas Tools folder.
- The **DXF** and **IGES** formats save Canvas documents as DXF (Drawing Exchange Format) or IGES (Initial Graphics Exchange Standard) files which can be opened in AutoCAD™. The IGES file format is defined by the ANSI standard. The **ANSI standard** sets the struc-

tures for information used by various CAD (Computer Aided Design) systems. The DXF and IGES file formats are available when their respective tools are active in your Canvas Tools folder.

- The **Illustrator 1.1**™ file format can be opened in the graphics program Adobe Illustrator 1.1 ™. The **Illustrator 88**™ file format can be opened in the graphics program Adobe Illustrator 88™. The Illustrator file formats convert Canvas documents from the QuickDraw graphics language to the PostScript® page-description language so that they can be imported to other PostScript drawing programs. Illustrator files only support Copy Mode; they do not support other pen modes (Xor, Bic, and so on), QuickDraw patterns, or non-square pen sizes. All colors are output as CYMK colors. Illustrator 1.1 does not support paint objects. These file formats are available when Separations is active in your Canvas Tools folder.
- The **EPSF** format converts Canvas documents from the QuickDraw graphics language to the PostScript® page-description language so they can be exported to PostScript programs while maintaining their original quality and high resolution. Once you close an EPSF file it can no longer be edited in Canvas. It must be placed in the correct program before you can print or view the image within it. If you open a file in Canvas which was saved in the EPSF format, it appears as a white box if it has no fill pattern, or as a representation of the file if you assign it a fill pattern. EPSF files only support Copy Mode for draw objects; they do not support other pen modes (Xor, Bic, and so on). For paint objects, EPSF files support all but the Xor pen mode. This file format is available when Separations is active in your Canvas Tools folder.
- The **MacPaint** format lets you export documents to the graphics program MacPaint. The MacPaint file format is available when MacPaint I/O is active in your Canvas Tools folder.
- The **PICT** format lets you transfer your file to virtually any Macintosh program. Use **PICT** if your document was created on a color Macintosh; use **PICT 1** if your document was created on a black-and-white Macintosh (Macintosh Plus, Macintosh SE, and so on).
- The **Separations** format saves color separations of your document for printing using the process-color method. For more information on creating color separations, see "Separation Setup..." on

page 17-9. Once created, these files can only be opened or printed as EPSF files. The Separations file format is available when Separations is active in your Canvas Tools folder.

- The **StartupScreen** format lets you save a Canvas document as a StartupScreen file. The StartupScreen file is displayed in place of the "Welcome to Macintosh" screen when you start up your computer. This file must be named StartupScreen and be located in your System folder. The StartupScreen file format is available when StartupScreen I/O is active in your Canvas Tools folder.
- The **TIFF** format lets you save Canvas paint objects as TIFF (Tagged Image File Format) files when TIFF I/O is active in your Canvas Tools folder. TIFF is a file format that stores paint images along with their gray scale, black and white, or color information. TIFF is a standard file format for black and white paintings, as well as gray-scale or color scanned imagery. TIFF files do not store draw objects.
- The **UltraPaint** file format lets you open a document in both Canvas and UltraPaint. The UltraPaint file format is available when UltraPaint I/O is active in your Canvas Tools folder.

The file format you choose affects the procedure you follow to save a document.

Create Backup File lets you save your last version of the file as a backup file. Selecting this check box causes Canvas to save the previously saved version of the file by the same name, with the extension ".backup" added. Each time you save your document, the backup version is updated to the last previously saved version.

Saving a document

To save a document using Illustrator 1.1 or Illustrator 88, EPSF, MacPaint, PICT, PICT1, UltraPaint, or any of the Canvas formats:

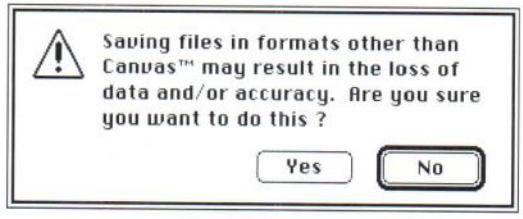
1. **Choose the Save As (⌘-Option-S) command from the File menu.**

   The Save As dialog box appears.

2. **Locate the folder you want to save your document to in the directory.**
3. **Choose the desired file format from the File Format pop-up menu.**
4. **Type a name for the file in the "Save current document as" text box.**

5. **Click Save to save your document or click Cancel to close the dialog box without saving your document.**

   When saving a document in a format other than Canvas Prefs or Canvas, it is possible that some data may be lost. In such cases, Canvas displays the following alert box:



   Either click Yes to continue with the save procedure or click No, return to the Save As dialog box and save a copy of the file in the Canvas file format first.

When saving in the CGM, DXF, IGES, Separations, StartupScreen, or TIFF format, additional dialog boxes are available which offer options for saving Canvas files in these formats. See "Save As" in the *Reference* section.

Reverting to the last saved version

You can discard any changes that you have made to your file since the last time you saved it using the Revert command. Once this command has been executed, it cannot be undone. Canvas displays an alert box to confirm that you want to discard all of your changes before performing the command.

Quitting Canvas

To end a Canvas work session, choose the Quit command from the File menu or type ⌘-Q. If you have not saved your file, or if you have made changes to the file since the last time you saved it, Canvas gives you the opportunity to save the document before quitting.

Chapter

8

The basic drawing tools

A draw object is a mathematically defined graphic entity whose properties (pen size, fill pattern, color, and so on) can be easily modified. This chapter explains the five basic Canvas drawing tools: the Line tool, the Rectangle tool, the Rounded Rectangle tool, the Oval tool, and the Arc tool.

How to use a basic drawing tool

When you use any of the basic drawing tools, Canvas gives you the option of drawing the object from one corner to the opposite corner or from the center outward.

To draw an object from one corner to the opposite corner:

1. **Select a basic drawing tool from the Tool Box.**
2. **Position the pointer in the Canvas Window at the point where you want one corner of the object to appear.**
3. **Drag to the opposite corner to draw your shape.**

To draw an object from the center outward:

1. **Select a basic drawing tool from the Tool Box.**
2. **Position the pointer in the Canvas Window at the point where you want the center of the object to appear.**
3. **Hold down the Option key.**
4. **Drag to draw your shape.**

You can draw objects that extend beyond the area displayed by the Canvas Window. If the pointer reaches the edge of the Canvas Window while you are drawing, the window scrolls, letting you continue to draw (even into the Sideboard). Scrolling stops when you move the pointer away from the Canvas Window's edge.

User Tip: To retain a tool for further drawing, hold down the Command key (⌘) after drawing with the tool.

Using the Line tool

The Line tool is a core tool that uses the pen size, dash, arrow, pen pattern, and foreground and background colors shown in the Tool Box to draw straight lines at any desired angle.

To use the line tool:

1. **Select the Line tool from the Tool Box.**

   The pointer becomes a crosshair.

2. **Position the pointer in the Canvas Window at the point where you want to begin drawing the line.**

3. **Hold down the mouse button and drag to draw the line.**

4. **Release the mouse button when you reach the desired endpoint for the line.**

User Tip: To constrain a line to angles that are multiples of 45° hold down the Shift key as you draw the line.

Changing a line's specifications

Once you draw a line, you can easily change it. Once it is selected, you can modify its size, move it, or change its properties.

When you change the properties of a selected line after it is drawn, the changes affect only the line or lines selected; they do not affect the default settings of the properties. The default settings of the properties can only be modified when no objects are selected.

Resizing a line

To resize a line:

1. **Select it with the Arrow tool.**

Handles appear at each end of the line indicating that the line is selected.

2. **Position the Arrow tool over one of the handles.**

   The Arrow changes to a small crosshair when properly positioned.

3. **Drag the handle away from the object to enlarge it or towards the object to reduce it.**

Moving a line

To reposition a line:

1. **Position the Arrow tool on the line.**
2. **Press the mouse button.**

   The Arrow tool changes to a four-headed arrow (✣).

3. **Drag the line to the desired position.**

   You can also move a selected line using the keyboard arrows.

4. **Release the mouse button when you are satisfied with the new position.**

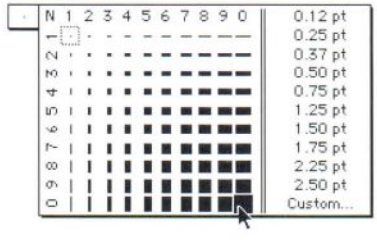
Changing the pen size of a line

You can change the pen size for a line you draw using the Pen Size palette icon in the Tool Box. To do so:

1. **Use the Arrow tool to select the line whose pen size you want to change.**

2. **Hold down the pointer on the Pen Size palette icon in the Tool Box.**

   A palette displaying the available pen sizes appears.



3. **Drag to enclose the desired pen size in the selection box.**

   Your line is now redrawn in the chosen pen size.

You can create a customize pen size by choosing Custom from the Pen Sizes palette. See "Changing the default pen size" on page 7-18 for instruction.

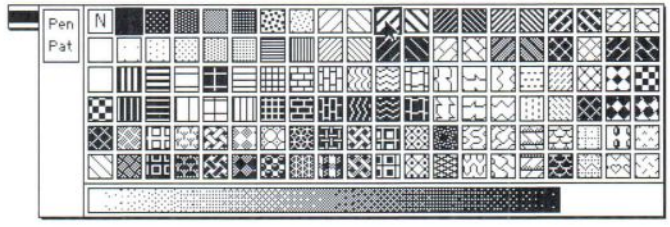
Changing the pen pattern of a line

You can change the pattern or gray scale of a line using the Pen Pattern palette icon in the Tool Box. To select a pen pattern:

1. **Use the Arrow tool to select the line whose pattern you want to change.**

2. **Hold down the pointer on the Pen Pattern palette icon in the Tool Box.**

   A palette of the available pen patterns and gray scale appears.



3. **Drag to enclose the desired pen pattern in the selection box, or select a gray-scale value from the gray scale at the bottom of the Patterns palette.**

   Your line now appears in the chosen pen pattern or gray-scale percentage.

Changing the foreground color or background of a line

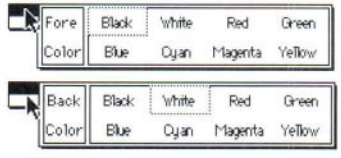
You can change the foreground or background color of your line from the Fore Color and Back Color palette icons in the Tool Box. The foreground color is used for all black portions of your pen pattern. The

background color is used for white portions of the pen pattern. To select a color from the Fore Color or Back Color palette icon:

1. **Use the Arrow tool to select the line that you want to color.**

2. **Hold down the pointer on the Fore or Back Color palette icon in the Tool Box.**

   The appropriate palette appears displaying the available colors.



3. **Drag to enclose the desired foreground or background color in the selection box.**

   The foreground or background of your line becomes the color you selected.

You can also use the Color Info Manager to change the foreground or background color of the line. To do so, select the line and choose Color Info from Managers in the Edit menu. The Color Info Manager appears with the foreground or background color of the line in the preview box. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box. The PANTONE® Colors window can be used to set the foreground or background color also, see "Changing the default foreground or background color" on page 18-18 for information.

Changing the dash style of a line

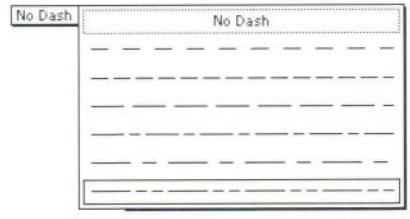
You can change your line to a dashed line using the Dash palette icon in the Tool Box. To do so:

1. **Use the Arrow tool to select the line that you want dashed.**

2. **Hold down the pointer on the Dash palette icon in the Tool Box.**

   A palette displaying the available dashed line types appears. The No Dash option draws solid lines.

3. **Drag to enclose the desired dashed line type in the selection box.**



Your line now appears in the chosen dash style.

You can create a custom dash style using the Dashes option from the Managers submenu in the Edit menu. For detailed instruction on customizing dashes, see "Editing dashed line options" on page 7-26.

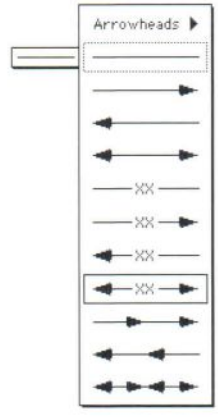
Adding arrowheads and dimensions to a line

You can include dimensions and arrowheads with your line using the Arrow Type palette icon in the Tool Box. To do so:

1. **Select the line that you want to add dimensions and/or arrowheads to.**

2. **Hold down the pointer on the Arrow Type palette icon in the Tool Box.**

A palette displaying the available arrow types appears.



The arrow styles with "XX" in the center add the line's dimension as it is drawn, and automatically adjust the dimension if the line is resized. The last three styles place left-facing, right-facing, or two-way arrowheads on each segment. Although they do affect a line, they are designed primarily for use with polygons, smooth polygons, and Bézier curves which have multiple segments.

3. **Drag to enclose the type of arrow that you want to attach to your line with the selection box.**

   Your line is now drawn in the chosen arrow style.

Changing the arrowhead style for your line

Once you specify an arrow type for your line, you can also select the style of the arrowheads using the Arrow Type palette icon. To select the arrowhead style:

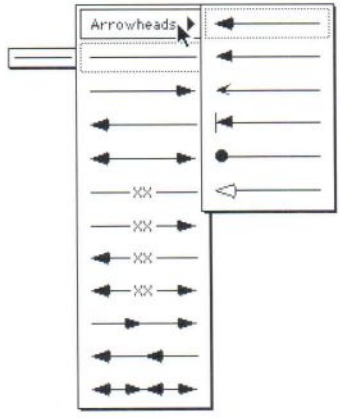
1. **Use the Arrow tool to select the line whose arrowheads you want to change.**

2. **Hold down the pointer on the Arrow Type palette icon in the Tool Box.**

   The Arrow Type palette appears.

3. **Drag to choose Arrowheads.**

   A palette displaying the available arrowhead styles appears.



4. **Drag to enclose the type of arrowhead that you want to attach to your line in the selection box.**

   Your arrow now appears with the chosen arrowheads.

The available arrowhead types can be customized by using the Arrowheads option of the Manager submenu in the Edit menu. See "Editing arrowhead options" on page 7-29 for instructions.

User Tip: Canvas displays the arrowheads in proportion to the line's pen size.

Using the Rectangle tool

The Rectangle tool is a core tool located in the Tool Box. You can use the Rectangle tool to draw rectangles or squares using the pen and fill patterns, foreground and background colors, pen size, and dash style shown in the Tool Box.

To use the Rectangle tool:

1. **Select the Rectangle tool from the Tool Box.**

   The pointer becomes a crosshair.

2. **Position the pointer in the Canvas Window at the point where you want to begin drawing the rectangle.**

3. **Drag diagonally to draw the rectangle and release the mouse button when you have finished.**

User Tip: To constrain the Rectangle tool to draw a square, hold down the Shift key as you draw the rectangle.

Changing a shape's specifications

All draw objects, except for lines, are **shapes**. A shape has two dimensions; that is, it has height and width. Like lines, shapes can be modified after they have been drawn. In addition to the properties available for lines, shapes can have fill patterns.

Resizing a shape

To resize a shape:

1. **Select it with the Arrow tool.**
2. **Position the pointer over one of the handles.**

   The pointer changes to a small crosshair when properly positioned.
3. **Drag away from the object to enlarge it or towards the object to reduce it.**

   If you hold down the Option key while resizing the shape, you resize it from the center outwards.

Changing the fill pattern of a shape

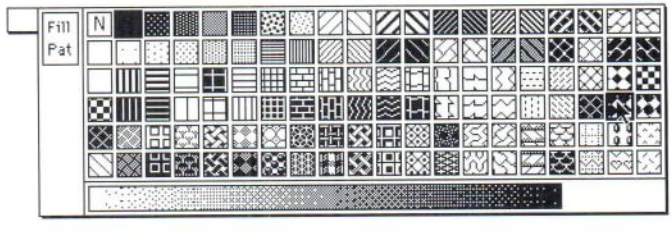
You can select a pattern or gray scale for filling your shape using the Fill Pattern palette icon in the Tool Box. To do so:

1. **Use the Arrow tool to select the shape whose fill pattern you want to change.**

   Selection handles appear around the shape to indicate that it is selected.

2. **Hold down the pointer on the Fill Pattern palette icon in the Tool Box.**

   A palette of the available fill patterns and gray scale appears.



3. **Drag to enclose the desired fill pattern in the selection box, or select a gray-scale value from the gray scale.**

   Your shape is filled with the chosen pattern or gray-scale value using the foreground and background colors you have assigned to the shape. For information on changing these colors, see "Changing the foreground color or background of a line" on page 8-4.

Using the Rounded Rectangle tool

The Rounded Rectangle tool is a core tool available from the Tool Box. You can use the Rounded Rectangle tool to draw rounded rectangles or squares using the pen and fill patterns, foreground and background colors, pen size, and dash style shown in the Tool Box.

To use the Rounded Rectangle tool:

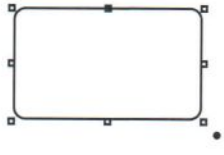
1. **Select the Rounded Rectangle tool from the Tool Box.**

   The pointer becomes a crosshair.

2. **Position the pointer in the Canvas Window at the point where you want to begin drawing the rounded rectangle.**

3. **Hold down the mouse button.**

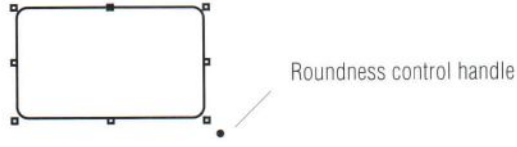
4. **Drag diagonally to draw the rounded rectangle and release the mouse button when you have finished.**



User Tip: To constrain the Rounded Rectangle tool to draw a rounded square, hold down the Shift key as you draw the rounded rectangle.

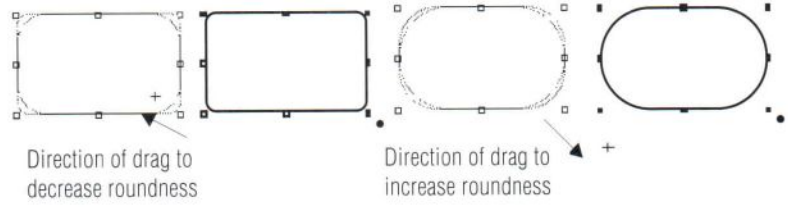
Editing the roundness of corners

Rounded rectangles and squares display an additional round handle located below the lower right corner of the object.



You can modify the roundness of the corner by dragging this handle.

- Pushing the handle towards the rounded rectangle decreases the roundness of the corners.
- Pulling the handle away from the rounded rectangle increases the roundness of the corners.



Using the Oval tool

The Oval tool is a core tool available from the Tool Box. You can use the Oval tool to draw ovals and circles using the pen and fill patterns, foreground and background colors, pen size, and dash style shown in the Tool Box.

To use the Oval tool:

1. **Select the Oval tool from the Tool Box.**

The pointer becomes a crosshair.

2. **Position the pointer in the Canvas Window where you want to begin drawing the oval.**
3. **Hold down the mouse button.**
4. **Drag diagonally to draw the oval and release the mouse button when you have finished.**

User Tip: To constrain the Oval tool to draw a circle, hold down the Shift key as you draw the oval.

Using the Arc tool

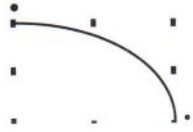
The Arc tool is a core tool located in the Tool Box. You can use the Arc tool to draw quarter-oval and quarter-circle arc segments using the pen and fill patterns, foreground and background colors, pen size, arrow style, and dash style shown in the Tool Box.

To use the Arc tool:

1. **Select the Arc tool from the Tool Box.**

   The pointer becomes a crosshair.
2. **Position the pointer in the Canvas Window at the point where you want to begin drawing the arc.**
3. **Hold down the mouse button.**
4. **Drag diagonally to draw the arc and release the mouse button when you have finished.**

The initial dragging direction determines the direction of the arc's curve.

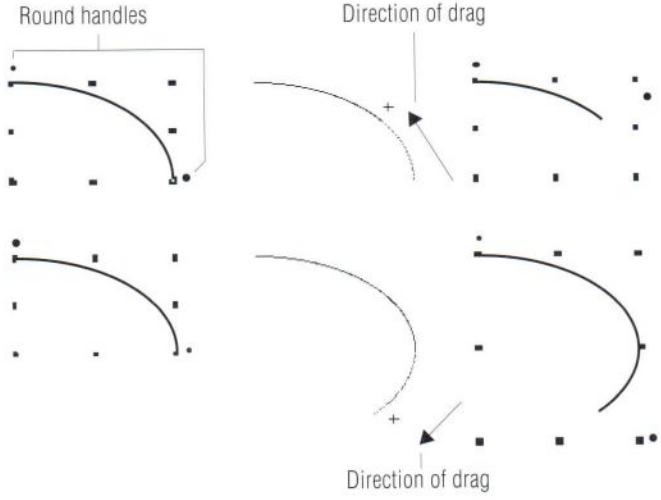


User Tip: To constrain the Arc tool to draw a quarter-circle, hold down the Shift key as you draw the arc.

Although arcs may vary greatly in appearance, all arcs are initially drawn as quarter-oval segments.

Changing the angle of an arc segment

You can change the length of the arc segment by pulling or pushing on either or both of the round handles located at each end of the arc outside its bounding rectangle.



- Pulling either handle in a direction representing a continuation of the arc segment increases its size.
- Pushing either handle over an existing portion of the arc segment decreases its size.

Chapter 9

Advanced drawing tools

In addition to the five basic drawing tools discussed in Chapter 8, "Using Basic Drawing Tools," Canvas offers three advanced drawing tools: the Freehand tool, the Polygon tool, and the Bézier curve tool. These three tools are used to draw lines, curves, and shapes. Anything drawn with an advanced drawing tool is defined by consecutive segments. A **segment** has a starting and ending point. One or more connected segments are a **path**. This path is the object. The objects you create with the advanced drawing tools have advanced editing options.

Using the Freehand tool

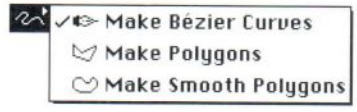
The Freehand tool lets you draw in a mode that creates paths as you drag the pointer in the Canvas Window, just as if you were sketching an illustration with a pen or pencil.

The objects you create with the Freehand tool can be Bézier curves, polygons, or smooth polygons if Auto Trace is active in your Canvas Tools folder. (See "Using the ToolPicker" on page 6-7 for information on loading external tools.) Otherwise, objects you create with the Freehand tool will be smooth polygons.

Choosing an object type to create

The Freehand tool is multiplex icon. When you hold down the pointer on the Freehand tool, the following pop-up menu appears offering

options as to the type of objects you create when you draw with the Freehand tool.



The default option is Make Bézier Curves. A check mark appears to the left of its name.

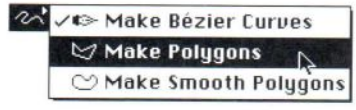
To change the type of object created while drawing with the Freehand tool:

1. **Hold down the pointer on the Freehand tool icon in the Tool Box.**

   A pop-up menu appears.

2. **Drag to highlight your choice.**

   A check mark will appear by your choice and the Freehand tool will create this type of object when you draw with it.



Drawing objects with the Freehand tool

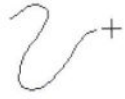
Once you have decided the type of object you want to create, you are ready to draw using the Freehand tool. To do so:

1. **Select the Freehand tool from the Tool Box.**
2. **Position the pointer in the Canvas Window where you want to begin drawing.**

   When you position the pointer in the Canvas Window it becomes a crosshair, showing you where your object will begin.

3. **Hold down the mouse button and drag to draw your object.**

As you drag, the path continues to lengthen as long as you hold down the mouse button.



4. **Release the mouse button to complete your object.**

   When creating Bézier curves with the Freehand tool, how closely the curve follows the pointer's movements is controlled by the Tolerance setting in the Preferences dialog box. See "Bézier & Polygon" on page 7-13 for information regarding this setting.

Editing freehand objects

Once the freehand shape is complete, it is a Bézier curve, polygon, or smooth polygon object, depending on the mode the Freehand tool was in when you created it. See "Placing objects in the Edit mode" on page 9-10 for information on editing the objects you create with the Freehand tool once they are complete.

Using the Polygon tool

The Polygon tool is used to create polygon objects. A **polygon** is a many-sided geometric figure. You draw with the Polygon tool by defining vertices in the Canvas Window. Canvas connects these vertices with a path of straight line segments, creating a polygon.

Drawing with the Polygon tool

To draw with the Polygon tool:

1. **Select the Polygon tool from the Tool Box.**
2. **Position the pointer in the Canvas Window where you want to begin drawing.**

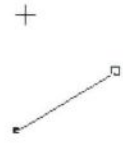
   When you position the pointer in the Canvas Window, it becomes a crosshair to show you where your shape will begin.

3. **Click to anchor the first vertex and move the pointer to where you want the second vertex to be.**

   The first point appears as a hollow square. You do not have to hold down the mouse button as you draw a segment.

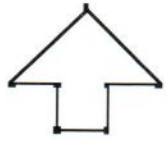
4. **Click to anchor the second vertex.**

   Canvas places a vertex where you click and draws the segment connecting the first two vertices.



   You can also hold down the mouse button to display the line segment, drag to position the segment, and release the mouse button to place the vertex.

5. **Repeat Step 4 to create the remaining segments of your polygon.**



   - To constrain a segment to an angle that is a multiple of 45°, hold down the Shift key while positioning the segment.
   - To remove the last segment drawn, press the Delete or Backspace key.

6. **When you have finished drawing your polygon**

   - to deselect the polygon, press the Enter key twice
   - to select the polygon, double-click when placing the end vertex or press the Enter key once
   - to place the polygon in the edit mode, select the Arrow tool

Using the Polygon tool in the old style

There are several options you can set in the Preferences command of the File menu that affect how you create polygons in Canvas. One of these, Canvas 2.1 Polygon Creation, lets you draw polygons using the polygon creation process used in Canvas 2.1. See "Bézier & Polygon" on page 7-13 for information on these options. To draw with the Polygon tool if you select Canvas 2.1 Polygon Creation:

1. **Select the Polygon tool from the Tool Box.**
2. **Place the pointer in the Canvas Window and click to place the first vertex.**
3. **Move the pointer to where you want to place the second vertex.**

   A line follows your movements.

4. **Click to place the next segment.**

   Repeat Steps 3-4 until your polygon is complete.

5. **Double-click to anchor your polygon or press the Enter key when you have finished.**

Using the Smooth and Unsmooth options

You can convert polygons into smooth polygons and smooth polygons into polygons using the Smooth and Unsmooth options of the Curves submenu in the Object menu.

The **Unsmooth** option is enabled when a smooth polygon is selected. It changes a smooth polygon into a straight-lined polygon.

The **Smooth** option of the Curves submenu in the Object menu is enabled when a polygon is selected. It changes a polygon into a smooth polygon.

To use the Smooth and Unsmooth options of the Curves submenu:

1. **With the Arrow tool, select the smooth polygons you want to unsmooth or the polygons you want to smooth.**
2. **Choose the Unsmooth (⌘-Option-Shift-`) or Smooth (⌘-Shift-`) option, as applicable, from the Curves submenu in the Object menu.**

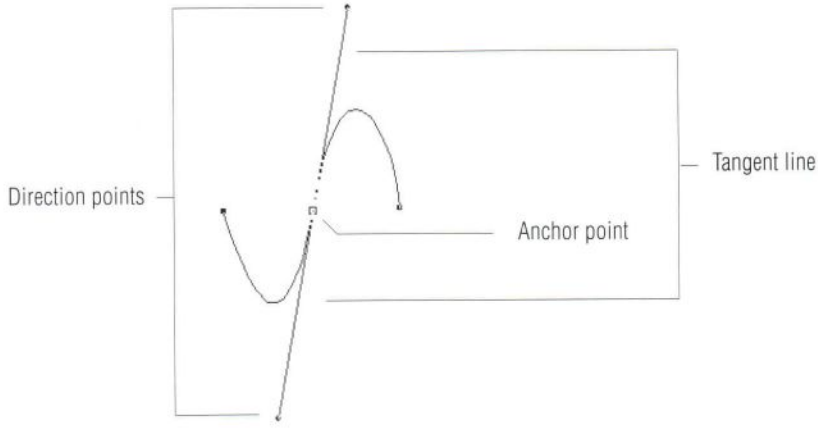
Original polygon Smoothed polygon Unsmoothed polygon

Using the Bézier curve tool

With the Bézier curve tool, you construct curves by specifying points. Canvas connects these points to form segments and connects the segments to form a path.

When you draw with the Bézier curve tool, you specify four points for each curve segment: two anchor points and two direction points. **Anchor points** determine where your curve segments start and end. **Direction points** and the tangent lines that connect them to the anchor points determine the size and positioning of your curve segments. The Bézier curve tool discussion assumes familiarity with Bézier

preferences you can set in the Preferences command. Refer to "Bézier & Polygon" on page 7-13 if necessary.



Drawing with the Bézier curve tool

To draw a Bézier curve:

1. **Select the Bézier curve tool from the Tool Box.**
2. **Position the pointer in the Canvas Window.**

   When you position the pointer in the Canvas Window, it becomes a crosshair to show you where your curve will begin.

3. **Drag to place the first anchor point and position the first direction point.**

   A hollow square and the first tangent appear.

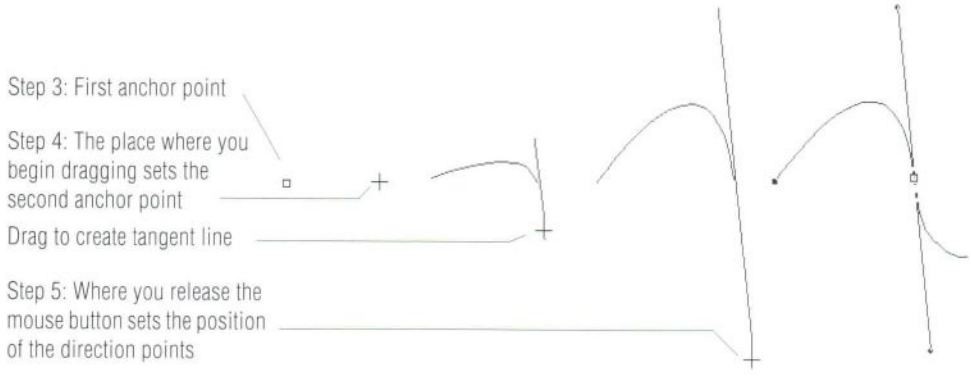
4. **Move to where the second anchor point should be, hold down the mouse button, and drag to form the segment and establish the curve's direction.**

   As you drag, a tangent line follows your movement shaping the segment.

5. **Release the mouse button when you are satisfied with the shape of the segment.**

   This ends the first segment of the curve.

6. Repeat Steps 4-5 to continue creating your curve.



7. Press the Enter key twice to complete your curve.

While creating Bézier curves, several effects can be achieved through the use of modifier keys:

- To constrain the tangent line to an angle that is a multiple of 45°, hold down the Shift key while positioning the tangent line.
- To create a straight line segment, press the Command key (⌘) while placing the segment's anchor point.
- To remove the last segment drawn, press the Delete or Backspace key.
- To create a cusp, press the Option key while placing the segment's anchor point.

Resizing objects

If you have selected Enter Edit Mode as your Double-Clicking option in the Preferences dialog box, you must use the Scale command in the Object menu to resize polygons, smooth polygons, or Bézier curves. Otherwise, you resize a polygon, smooth polygon, or Bézier curve the same way you resize objects created with the basic draw tools.

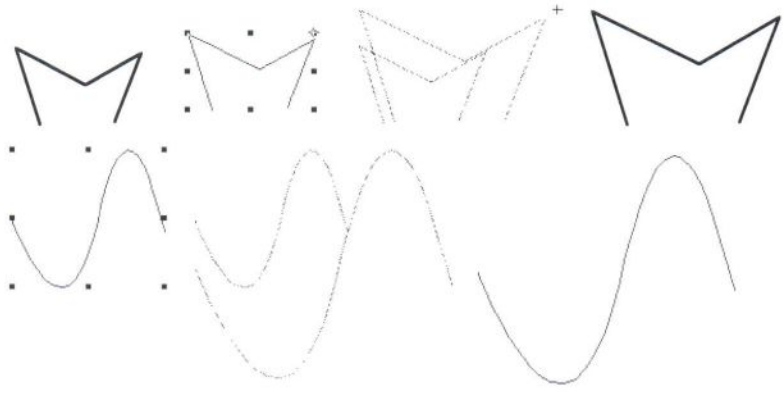
1. Select the polygon, smooth polygon, or Bézier curve you want to resize with the Arrow tool.

Handles appear around the object to show that it is selected.

2. **Position the pointer over one of the handles.**

   The pointer becomes a small crosshair when properly positioned.

3. **Drag the handle until the polygon, smooth polygon, or Bézier curve is the desired size.**



User Tip: To retain the object's original proportions, hold down the Shift key as you resize it.

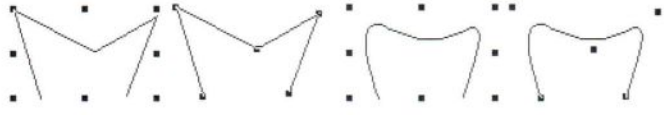
Repositioning objects

To reposition a polygon, smooth polygon, or Bézier curve, drag it to the new location using the Arrow tool or select it with the Arrow tool and use the keyboard arrow keys to move it into position.

- You can limit your movements to angles which are multiples of 45° by holding down the Shift key as you drag.
- You can drag a copy of the selected object while leaving the original object behind by holding down the Option key as you drag.
- You can leave a trail of copies of the selected object behind by holding down both the Command (⌘) and Option keys while dragging.

Placing objects in the Edit mode

Canvas lets you edit the individual points and segments of polygons, smooth polygons, and Bézier curves. To do so, the polygon, smooth polygon, or Bézier curve must be in the edit mode. When the object is in the edit mode, its individual points are displayed along its path. This is different from being selected, where handles appear around the object's bounding rectangle.



Selected polygon | Polygon in the edit mode | Selected smooth polygon | Smooth polygon in the edit mode

Selected Bézier curve | Bézier curve in the edit mode

You can place numerous objects in the edit mode at one time. There are four ways you can place the object in the edit mode:

- Double-click the object with the Arrow tool.
- Select the object or objects with the Arrow tool and choose Edit Polygon or Edit Curve (⌘-E) from the Object menu.
- Select the Arrow tool after placing the last vertex or anchor point of the object you are creating.
- If you checked the "Automatically Enter Edit Mode" option of Bézier & Polygon in the Preferences dialog box, you will be in the edit mode when you finish drawing a polygon, smooth polygon, or Bézier curve. With this Preference selected, you can also place a polygon, smooth polygon, or Bézier curve in the edit mode by clicking it once with the Arrow tool. See "Bézier & Polygon" on page 7-13 for more information on this option.

Editing a single point

To edit a single vertex in a polygon or smooth polygon, or a single anchor point on a Bézier curve:

1. **Place the object in the edit mode.**

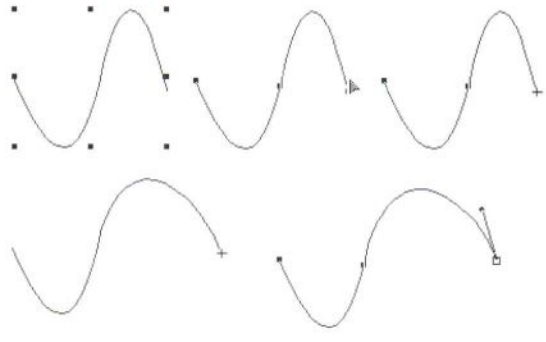
   Once you enter the edit mode, the pointer changes to a gray arrowhead and the object displays its points for editing. Whenever the pointer is over an edit point in the selected object, the pointer changes to a small crosshair.

2. **Position the pointer over the point you want to edit.**

   The pointer changes to a small crosshair when properly positioned.

3. **Drag the point to its new location.**

   The object remains in the edit mode. You can continue editing points by repeating Steps 2-3 until you are satisfied with your object.



4. **Double-click outside the object, or press the Enter or Return key to exit the edit mode.**

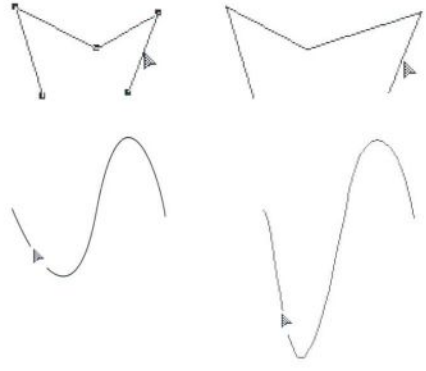
Editing a single segment

To edit a segment of a polygon, smooth polygon, or Bézier curve:

1. **Place the object in the edit mode.**
2. **Position the pointer over the segment you want to edit.**

   The pointer changes to a gray arrowhead when properly positioned.

3. **Drag the segment to its new location.**



   The object remains in the edit mode. You can continue editing points by repeating Steps 2-3 until you are satisfied with the object.

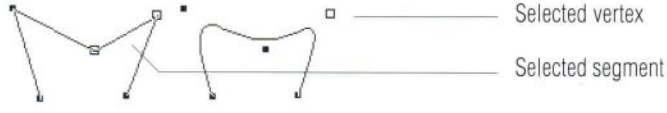
4. **Double-click outside the object, or press the Enter or Return key to exit the edit mode.**

Editing multiple points and segments

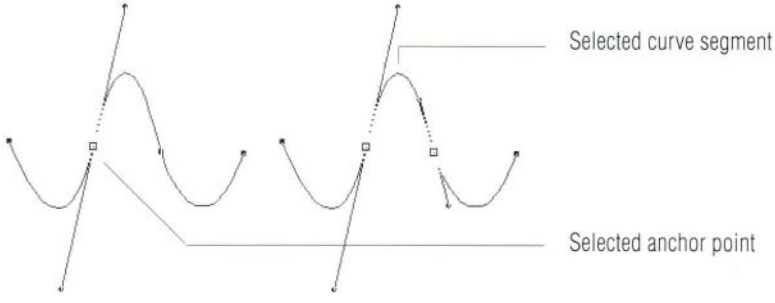
To edit multiple points and segments in one or more polygons, smooth polygons, and Bézier curves:

1. **Place the object or objects in the edit mode.**
2. **Position the pointer over the first point or segment you want to edit.**

   The pointer changes to a crosshair when properly positioned over a point or a gray arrowhead when properly positioned over a segment of a polygon or Bézier curve. (Since the vertices of smooth polygons do not touch the curve, Canvas cannot display where one segment ends and the next begins. To select a segment of a smooth polygon, select the vertices at either end of the segment.)
3. **Click once to select the point or segment.**



   The selected point becomes hollow or the points at each end of the segment become hollow to indicate that the segment is selected.



4. **Position the pointer over the next point or segment to be selected.**

   The pointer changes to a small crosshair or gray arrowhead to show that it is properly positioned.
5. **Press the Shift key and click once to select the point or segment.**

   Repeat Steps 4-5 until all points and segments that you want to edit are selected. You can also select multiple points using a selection

rectangle. See "Selecting multiple objects with the Arrow tool" on page 6-29 for instructions.

To select all the points, place the object or objects in the edit mode and choose Select All Anchors (⌘-Option-Shift-A) from Curves in the Object menu.

6. **Once you have selected all points and segments that you want to edit, position the pointer over any selected point or segment.**

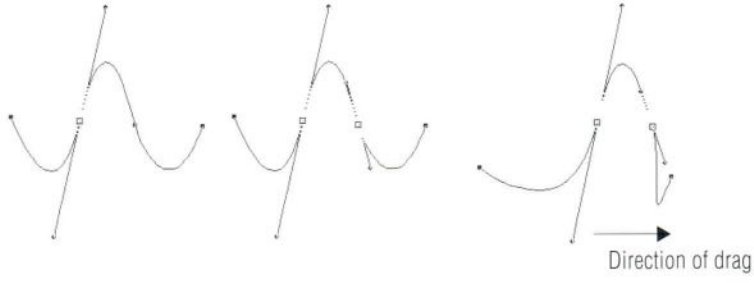
   The pointer changes to a small crosshair or gray arrowhead to indicate that it is properly positioned.

7. **Drag to reshape the selected portion of the object.**

   You can also use the keyboard arrow keys to move the selected points. See "Moving" on page 7-15 for more information.

8. **Release the mouse button when you have finished.**

The objects remain in the edit mode. You can continue editing points until you are satisfied with your object.



9. **Double-click outside the object, or press the Enter or Return key to exit the edit mode.**

You can copy selected points and segments to the Clipboard and paste them into your drawing. This allows you to easily duplicate selected portions of polygons, smooth polygons, or Bézier curves. You can also

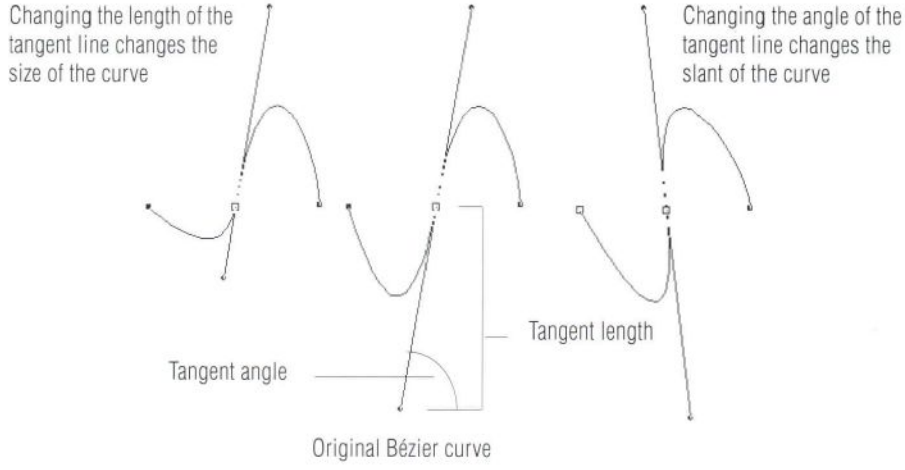
apply Effects menu commands to selected points and segments. See Chapter 16, "Using Special Effects" for instructions concerning the use of the Effects menu commands.

Advanced Bézier curve editing capabilities

The angle of the tangent line determines the slant of the curve segment, while the length of the tangent line determines the size of the curve segment.

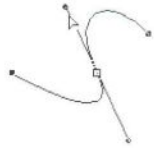
To change the angle of a tangent line without changing its length:

1. **Place the Bézier curve in the edit mode.**
2. **Click the anchor to display its direction points and tangent line.**



3. **Position the pointer on the tangent line.**

   The pointer becomes a hollow arrowhead when it is properly positioned.



4. **Drag the tangent line until the curve is at the desired angle.**

The curve segment's slant changes as you drag while its size remains constant.

To change the size of a curve segment without changing its slant:

1. **Place the Bézier curve in the edit mode.**
2. **Click the anchor to expose its direction points and tangent line.**
3. **Hold down the Command (⌘) and Option keys.**
4. **Drag the direction point.**

   The curve segment's size increases or decreases as you drag while its slant remains constant.

   To edit the curve segments on both sides of the anchor point, hold down just the Command (⌘) key when you drag the anchor point.

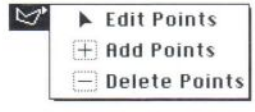
To change the angle and length of a curve segment without changing its slant:

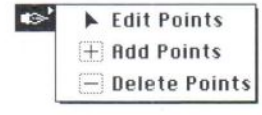
1. **Place the Bézier curve in the edit mode.**
2. **Click the anchor to expose its direction points and tangent line.**
3. **Position the pointer over a direction point.**
4. **Drag the direction point.**

   The curve segment's angle and length change as you drag.

Using the multiplex options of the Polygon and Bézier Curve tools

The Polygon tool and the Bézier Curve tool icons are multiplex icons. When you hold down the pointer on these icons in the Tool Box, one of the following pop-up menus appears offering editing options.





The **Edit Points** option puts any selected polygons, smooth polygons, or Bézier curves into the edit mode, as if you chose Edit Polygon or Edit Curve (⌘-E) from the Object menu. You can then edit the selection as previously described.

The **Add Points** option is used to add vertices to any selected polygons or smooth polygons or to add anchor points to any selected Bézier curves.

The **Delete Points** option is used to remove vertices from any selected polygons or smooth polygons or to remove anchor points from any selected Bézier curves.

Adding points to polygons, smooth polygons or Bézier curves

To add vertices to the selected polygons or smooth polygons or to add anchor points to selected Bézier curves:

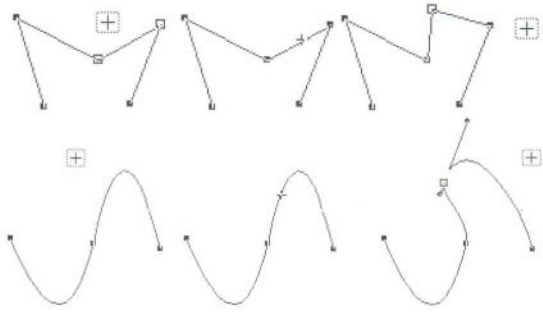
1. **Choose Add Points from the Polygon or Bézier Curve tool's pop-up menu.**

   The pointer changes to look like the menu icon.

2. **Position the pointer along the object where you want the new point to appear.**

   The pointer changes to a small crosshair when it is properly positioned over a segment.

3. **Drag the new point to the desired location.**



   The object remains in the edit mode. Repeat Steps 2-3 until you have finished adding points.

4. **Double-click outside the selection or press the Enter or Return key to exit the edit mode.**

User Tip: You can also add points to objects in the edit mode by holding down the Option key (the pointer changes to the add-point pointer) and clicking where you want the new point to appear.

Deleting points from a polygon, smooth polygon, or Bézier curve

To delete vertices from a selected polygon or smooth polygon or anchor points from a selected Bézier curve:

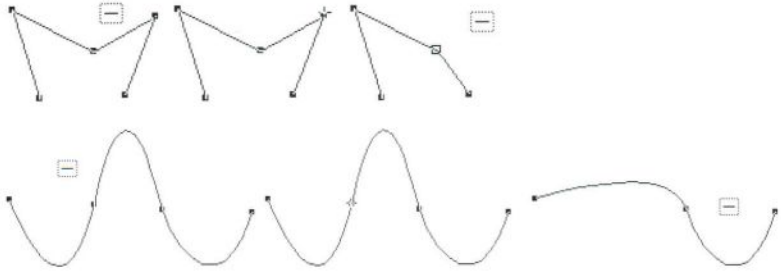
1. **Choose the Delete Points option from the Polygon or Bézier Curve tool's pop-up menu.**

   The pointer changes to look like the menu selection.

2. **Position the pointer over the point you want to delete.**

   The pointer changes to a small crosshair when properly positioned.

3. **Click to delete the point.**



   The object remains in the edit mode. Repeat Steps 2-3 until you have finished deleting points.

4. **Double-click outside the selection, or press the Enter or Return key to exit the edit mode.**

User Tip: There are two additional ways of deleting a point from an object in the edit mode: select the point to delete and press the Delete or Backspace key, or hold down the Option and Shift keys (the pointer changes to the subtract-point pointer) and click the point you want to delete.

Closing and opening objects

A closed object is one whose starting point and ending point meet. An open object has a space between its starting and ending points. You can close an open polygon, smooth polygon, or Bézier curve or open a closed one.

Closing an open object

To close an open polygon, smooth polygon, or Bézier curve:

1. **Place the object in the edit mode.**
2. **Hold down the Command (⌘) key as you click either the first or last point of the object.**

   Canvas closes the object by connecting the first and last points.

Open polygon Closed polygon

Open Bézier curve Closed Bézier curve

   To close a Bézier curve with a straight line, hold down both the Command (⌘) and Option keys as you click an endpoint of the object.

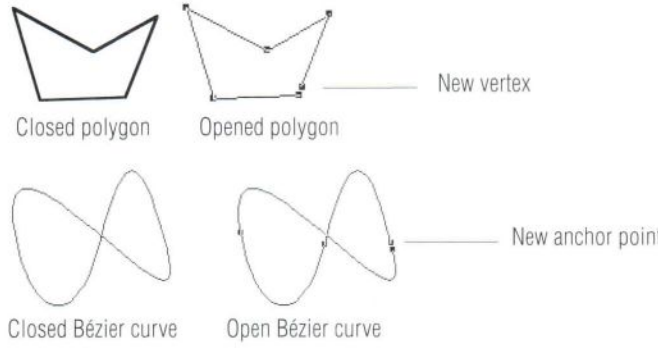
3. **Click outside the object to deselect it.**

Opening a closed object

A closed polygon, smooth polygon, or Bézier curve can be opened. To do so:

1. **Place the object in the edit mode.**

2. **Hold down the Command (⌘) key as you click the point where you want to open the object.**



Canvas opens the object by cutting the connection between the point that you clicked and the next point in the object.

3. **Click outside of the object to deselect it.**

Adding cusps to objects

You can make vertices on polygons or smooth polygons or anchor points on Bézier curves into cusps. **Cusps** are points which can add corners to objects. There are several types of cusps. The types of cusps available depend on the type of object to which you are adding them.

Adding cusps to smooth polygons and polygons

You can add sharp points known as cusps to polygons and smooth polygons. Cusps do not smooth. They always maintain their sharpness. To create a cusp:

1. **Place the object in the edit mode.**
2. **Hold down the Option key.**

   The pointer becomes the add point pointer.
3. **Position the pointer over the vertex you want to add a cusp to.**

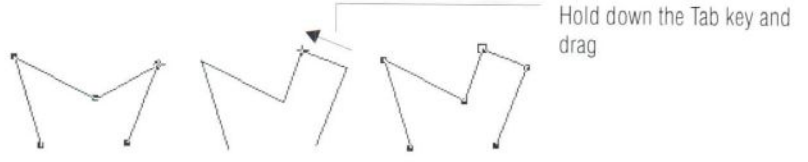
   The pointer becomes a small crosshair when properly positioned.

4. **Click the point where you want to add a cusp.**

Canvas adds a point on top of the one you click, creating the cusp.

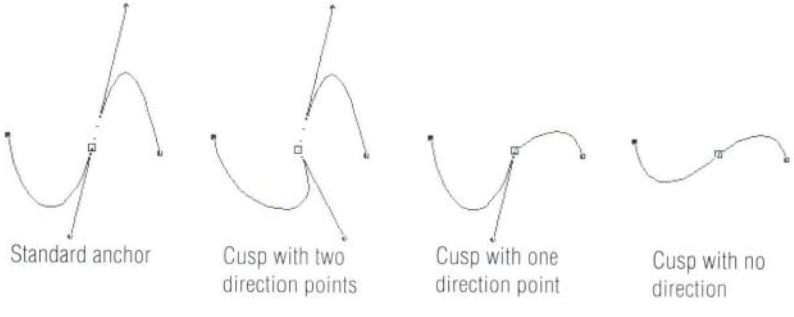
5. **Click outside the object to deselect it.**

If you smooth the polygon, the cusp maintains its sharpness. You can remove the cusp by holding down the Tab key and dragging the two superimposed vertices apart to break the cusp.



Adding cusps to Bézier curves

As discussed previously, an anchor point contains a tangent line and two direction points. Initially a tangent line is a straight line between the two direction points that passes through the anchor point. If this is not the case, the anchor point is a cusp.



The **standard anchor** is the default way that Canvas creates anchor points. The tangent line is a straight line connecting the two direction points and the anchor. If you change the angle of one direction point,

you automatically change the second. This affects both adjacent curve segments.

The **cusp with two direction points** has two direction points and a tangent line that bends at the anchor point. Dragging one direction point affects either the preceding or succeeding curve segment depending upon which direction point you drag, but has no affect on the remaining segment. This option lets you control both the preceding and succeeding curve segments independently.

The **cusp with one direction point** has just one direction point, connected to the anchor by a tangent line. You can select to always create one direction point cusps when using the Bézier curve tool by selecting the Always Create Cusps option of Bézier & Polygon in Preferences under the Edit menu. The advantage to using this option is that you can edit one curve segment without affecting its neighboring segment. At any anchor point you can control the preceding curve segment but have no control over the succeeding curve segment.

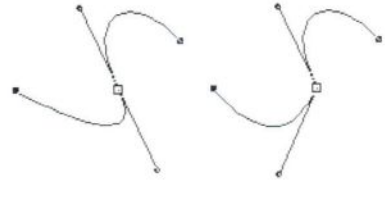
The **cusp with no direction points** has no direction points or tangent line. This cusp type is useful when you need a sharp corner in a Bézier curve.

You can convert an existing standard anchor point to a two direction point cusp. To do so:

1. **Place the curve in the edit mode.**
2. **Click the anchor point that you want to change into a cusp.**

   Its tangent line and direction points appear.
3. **Position the pointer over one of the direction points, hold down the Tab key, and drag the direction point to reposition it.**

   The tangent line breaks at the anchor point. You can now edit the curve segment preceding the anchor point independently of the curve segment following the anchor point.



To return the cusp to a standard anchor, hold down the Tab key and click the direction points whose position you want to maintain. The other direction point aligns to the one you clicked.

You can convert an existing standard anchor point to a one direction point cusp or a no direction point cusp by eliminating either or both direction points. To do so:

1. **Place the curve in the edit mode.**
2. **Click the anchor point that you want to change into a cusp.**

   Its tangent line and direction points appear.
3. **Position the pointer over a direction point, hold down the Command (⌘) and the Tab keys, and click the direction point you want to eliminate.**

   The tangent line and the anchor point disappear, and the anchor is now a one direction point cusp.

   To make the anchor point a no direction point cusp, click the anchor point instead of a direction point.

To regain a tangent line that has been eliminated, hold down the Tab key and drag to pull out the tangent line from the anchor point.

Converting other objects to polygons or Bézier curves

You can convert other object types to polygons or Bézier curves using the Convert To submenu in the Object menu. This is often desirable to give you greater ease and precision in editing.

The Convert To submenu is available when Convert To is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Converting other objects to polygons

You can convert lines, rectangles, or any straight-line objects to polygons. To do so:

1. **Select the object to convert with the Arrow tool.**
2. **Choose the Polygon option of the Convert To submenu in the Object menu.**

   The object is now a polygon.

Converting other objects to Bézier curves

You can convert arcs, lines, smooth polygons, rectangles, ovals, rounded rectangles, and polygons to Bézier curves. To do so:

1. **Select the shape to convert with the Arrow tool.**
2. **Choose the Bézier Curve option of the Convert To submenu in the Object menu.**

   The object is now a Bézier curve.

Chapter

10

Working with text

This chapter teaches you how to create caption and paragraph text objects; how to mix fonts, sizes, styles, and colors in your text objects; how to apply the special effects to text objects; and how to use the Canvas Spell Check and Search & Replace tools. Also covered in this chapter are advanced text functions that let you flow text through any shape and create text composed of editable Bézier curves.

Setting text properties

Just as the appearance of objects is determined by the properties selected in the palette icons in the Tool Box, text has its own set of properties which can be changed using the Text menu commands.

Setting the font for your text

To set the font for your text:

1. **Choose Font from the Text menu.**

   A submenu listing the fonts that are installed in your system folder appears. Canvas does not place any limit on the number of fonts available for use in the program.

2. **Drag to highlight your choice.**

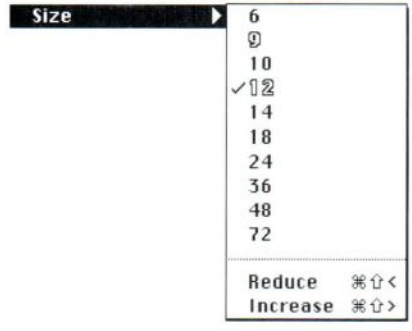
   Canvas places a check mark next to the chosen font.

Setting the size for your text

To choose a size for your type:

1. **Choose Size from the Text menu.**

   A submenu of size options appears.



   Canvas displays sizes which are installed in your System folder in outline text. Sizes which are not installed are displayed in plain text. Font sizes that are not installed can appear jagged on screen.

   Reduce (⌘-Shift -<) reduces the text size one point.

   Increase (⌘-Shift ->) increases the text size one point.

2. **Drag to select a font size option.**

   Canvas places a check mark next to the font size you choose.

Setting the style for your text

Styles do not change the actual text which is stored; they apply effects to the on-screen and printed appearance of the text. To apply styles to your text:

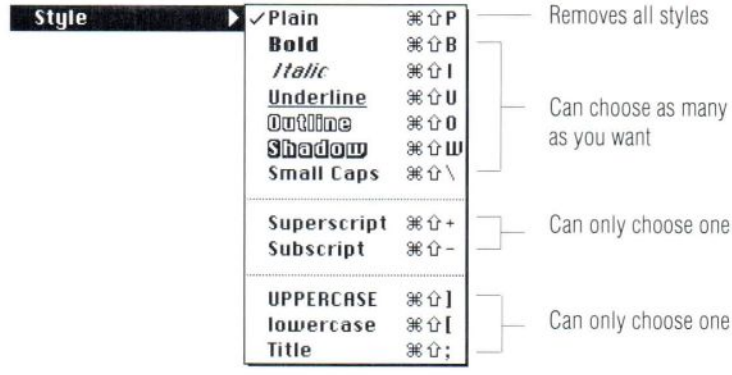
1. **Choose Style from the Text menu.**

   A submenu of style options appears.

2. **Drag to select a font style.**

   Canvas places a check mark next to your selection. In some cases you can apply multiple styles to text by choosing them individually from the Style submenu (see the following illustration). Choosing Plain removes all styles.

User Tip: In previous releases of Canvas, uppercase, lowercase, and title changed the stored text. They are now styles applied to text.



Setting the justification for your text

Justification is the method used for the alignment of text within its margins. Canvas gives you four options for justifying your text.

Right (⌘-Shift-R) aligns text to the right edge of its bounding rectangle.

Left (⌘-Shift-L) aligns text to the left edge of its bounding rectangle.

Center (⌘-Shift-C) centers each line of text in its bounding rectangle.

Full (⌘-Shift-F) aligns text to both the right and left edges of its bounding rectangle, giving you two flush margins.

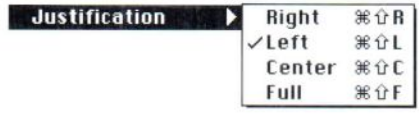
To set the justification for your text:

1. **Choose Justification from the Text menu.**

   A submenu of justification options appears.

2. **Drag to select a justification option.**

   Canvas places a check mark next to your selection.

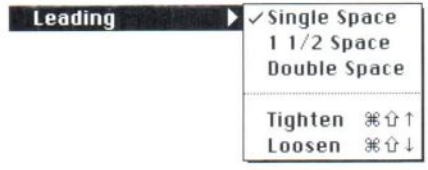


Setting the leading for your text

Leading is the spacing between lines of text. Canvas gives you several options for setting the leading of text.

1. **Choose Leading from the Text menu.**

   A submenu of leading options appears.



2. **Highlight your choice.**

   When you choose Single Space, 1 1/2 Space, or Double Space, Canvas places a check mark next to your selection. In these cases the leading is based on the largest font size in the preceding line of text. Therefore, if the size of text varies from line to line in a text object, so will the leading.

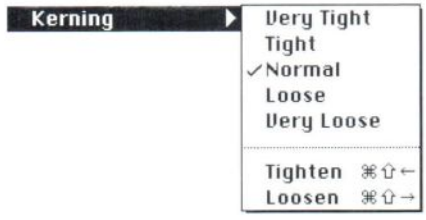
   Tighten (⌘-Shift-↑) and **Loosen** (⌘-Shift-↓) decrease and increase the leading by 0.5 points respectively.

Setting the kerning for your text

Kerning affects the space between letters. To set the kerning for text:

1. **Choose Kerning from the Text menu.**

   A submenu of available kerning options appears.



   The top half of the submenu lists five preset kerning choices: Very Tight, Tight, Normal, Loose, and Very Loose. Canvas places a check mark next to your selection. If none of these preset options precisely meet your needs, use the Tighten (⌘-Shift-←) and Loosen (⌘-Shift-→) options at the bottom of the submenu to decrease and increase space between letters 0.5 points.

2. **Drag to highlight your choice.**

Once you select your text properties, you are ready to add text to your illustration. If you do not change the font, size, justification, style, case, leading, kerning, or text scale, Canvas uses Geneva 12-point type with left justification, single spacing, and normal kerning.

Using the Text tool's multiplex options

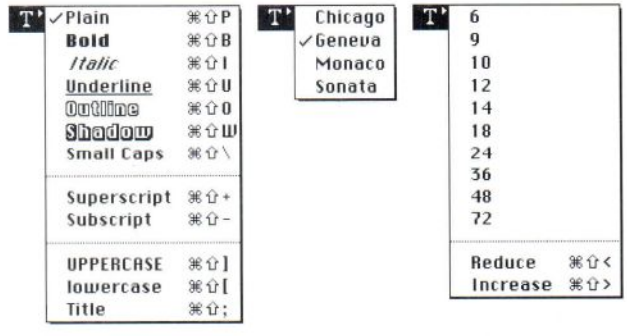
The Text tool icon is a multiplex icon. Use the Command (⌘) or Shift key with the Text tool icon in the Tool Box to open various pop-up menus which you can use to modify the default text settings.

To use the multiplex options of the Text tool icon:

1. **Use the appropriate modifier key with the Text tool icon to display a text property pop-up menu.**

   - Hold down the pointer on the Text tool icon to display a pop-up menu of the available text styles. This is the same as choosing Style in the Text menu.
   - Press the Command (⌘) key and hold down the pointer on the Text tool icon to display a menu of the fonts installed in your system folder. This is the same as choosing Font in the Text menu.
   - Press the Shift key and hold down the pointer on the Text tool icon to display a menu of the available font sizes.This is the same as choosing Size in the Text menu.

     The appropriate text property menu is displayed.



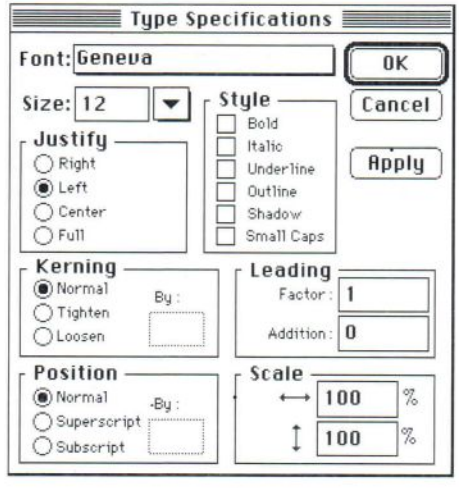
2. **Drag through the menu to highlight your choice.**

Using the Type command

The Type command in the Text menu opens the Type Specifications dialog box. You can use this dialog box to set the default text font, size, style, justification, kerning, leading, position, and scale or to change these properties for selected text.

The Type Specifications dialog box is available when Text Utilities is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

You open the Type Specifications dialog box by choosing Type from the Text menu or by double-clicking the Text icon in the Tool Box.



Settings

Font lets you choose a font from a pop-up menu of those installed in your system folder. This is like Font in the Text menu.

Size lets you choose a size for your type from a pop-up menu or by typing a point size in the text box. This is like Size in the Text menu.

Style lists style options which you can apply to your text. You can select as many styles as you want. This is like Style in the Text menu.

Justify lets you select the alignment for the text within its bounding rectangle from one of four options: Right, Left, Center, and Full. See page 10-3 for information on the definitions of these terms.

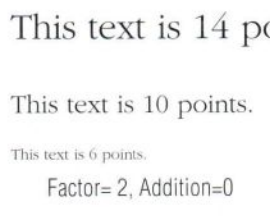
Kerning lets you select the spacing of your text characters. This is like Kerning in the Text menu.

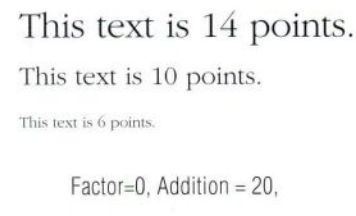
> The **By** text box is enabled when you select Tighten or Loosen. This text box lets you specify the number of points by which to decrease or increase the spacing between the characters.

Leading lets you either force the leading to be consistent throughout the text object or define a factor for adjusting the leading for each line depending on the largest text size in the preceding line of text.

- The **Factor** text box lets you type a factor by which to multiply the largest text size in the preceding line of text to determine the leading below that line of text. In this situation, the leading throughout a text object varies with the text size.
- The **Addition** text box lets you specify a constant number of points to add to the leading (shown in Factor) for each line of text in the text object. When you want to set your leading to a constant number of points, type that number in the Addition text box and type 0 in the Factor text box.

For example, consider a situation where you have three lines of text and the largest text size in each row is 14, 10, and 6 points for rows 1, 2, and 3 respectively. If you enter a Factor of 2 and an Addition of 0, the leading between rows 1 and 2 will be 28 points and the leading between rows 2 and 3 will be 20 points. If, instead, you enter a Factor of 0 and an Addition of 20, the leading between rows 1 and 2 will be 20, and the leading between rows 2 and 3 will be 20.





Position lets you select the baseline for your text from one of three options: Normal, Superscript (x^{2}), and Subscript (x_{2}).

The **By** text box is enabled when you select either Superscript or Subscript. This text box lets you specify how many points above or below Normal you want your text to start.

Scale lets you size text by setting independent scaling factors for both the horizontal and vertical components of the text. If you want to scale the text proportionately you must enter the same percentage in both the horizontal and vertical text boxes.

The **Apply** button lets you apply the settings in the Type Specifications dialog box to selected text without closing the dialog box.

Using the Type Specifications dialog box

To use the Type Specifications dialog box:

1. **Select the text object you want to edit.**

   If you do not select a text object, you change the default settings.

2. **Choose Type (⌘-T) from the Text menu or double-click the Text tool icon in the Tool Box.**

   The Type Specifications dialog box appears. If the dialog box covers your selected text, drag the dialog box to another location.

3. **Choose the properties in the Type Specifications dialog box which you want applied to text using the previous instructions.**

4. **If you have text selected, click Apply.**

   The properties you chose are applied to the selected text. If you are satisfied with the results, proceed to Step 5; otherwise, repeat Steps 3-4 until you are satisfied with the results.

5. **Click OK to save your changes or click Cancel if your change your mind.**

   The dialog box closes. If no text is selected, the text properties you chose will be applied to subsequent text objects you create.

Creating text objects

Canvas offers two methods for creating text objects: caption text method and paragraph text method. Text objects are treated like other objects in Canvas. You can drag them to new locations, group them with other objects, or apply commands to them.

Creating caption text

Caption text is suitable for captions, titles, and labels. You will want to create caption text when you are just typing a few words and do not need to establish margins.

To create caption text:

1. **Select the Text tool from the Tool Box.**

   The pointer becomes an I-beam.

2. **Click in the Canvas Window where you want the text to appear.**

3. **Begin typing.**

   Words that you type using the caption method do not automatically wrap. You must press the Return key to begin a new line.

4. **When you have finished, press the Enter key or click somewhere else in the Canvas Window.**

This text was created using the caption text method.

You can also create caption text by positioning the pointer where you want to begin typing and pressing Command (⌘)-Option-T. You can then begin typing.

Creating paragraph text

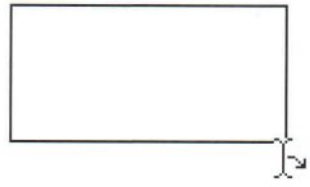
You will want to create a paragraph of text when precise control of all margins is necessary. This is useful when creating a newsletter, for example, where you want to define columns of text in advance. To do this, you must first define the margins that contain the text.

To set the margins for paragraph text:

1. **Choose the Text tool from the Tool Box.**

   The pointer becomes an I-beam.

2. **Place the pointer over the point where the left margin of text should be.**
3. **Drag diagonally to where the right margin should be to create a bounding rectangle.**



The bottom dimension of the rectangle is unimportant since it will shrink or expand to fit the text you type.

4. **Release the mouse button.**

A blinking cursor appears at the top left margin of the text object.

5. **Type the text.**

Do not click within the text box, just start typing. The text automatically wraps within your preset margins. If you want to enter a blank line (for example, between paragraphs), press the Return key.

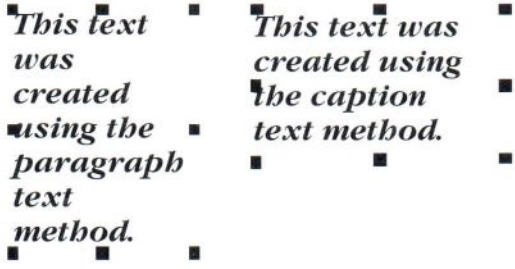
6. **When you have finished entering text, press the Enter key, select another tool from the Tool Box, or click anywhere outside of the text object.**

This text was created using the paragraph text method

Editing text

Since Canvas treats text objects like draw objects, you can apply all of the standard Macintosh functions, as well as the Canvas special effects functions, to selected text objects. For example, you can fill text objects with a pattern, change the color of individual characters, or rotate the text object. You can also scale text or change the margins of a text object after it has been created by dragging the handles of the text object's bounding rectangle. The text will automatically wrap to match

the new margins, whether it was created as paragraph text or caption text. The bottom will expand if necessary.



Selecting text

You can select an entire text object using the Arrow tool or individual characters within a text object using the Text tool. Once text is selected you can edit it.

Using the Arrow tool to select a text object

Like draw objects, a text object selected with the Arrow tool can be resized, moved, or grouped with other objects. Commands and effects can be applied to a selected text object.

When you select a text object with the Arrow tool you can replace the entire body of text by typing in new text. The new text will have the same properties of the text you are replacing.

To select an entire text object:

1. **Select the Arrow tool from the Tool Box.**
2. **Click the text object or objects with the Arrow tool.**

   Canvas displays handles around the bounding rectangle of the text objects to indicate your selection. You can choose commands from the Text menu or apply effects to the text.

Using the Text tool to select a portion of a text object

You can limit your selection to individual letters, words, or entire lines of text within one text object. You can then edit the selected text or change its properties. As you type, insert text, or change font types, sizes, or styles, words automatically wrap to the next line and remain inside of the preset margins.

To edit text using the Text tool:

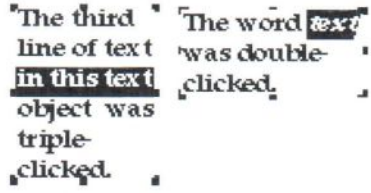
1. **Select the Text tool or double-click the text object you want to edit.**

The pointer becomes an I-beam.

2. **Drag the I-beam through the letters, words, or lines that you want to edit.**

   - To select a word, double-click it with the Text tool.
   - To select a line of text, triple-click it with the Text tool.

   Canvas highlights the text to indicate that it is selected.



3. **Begin editing.**

Deselecting text

To deselect text

- click outside the bounding rectangle of the object OR
- select another tool from the Tool Box

Scaling text

You can scale a selected text object. For best on-screen results, use a PostScript Type 1 font with ATM turned on or a TrueType font. Although you cannot apply multiple effects to text and maintain the ability to edit the object as text, if you scale the text object first and then apply one effect, you can still edit the object as text.

To scale text:

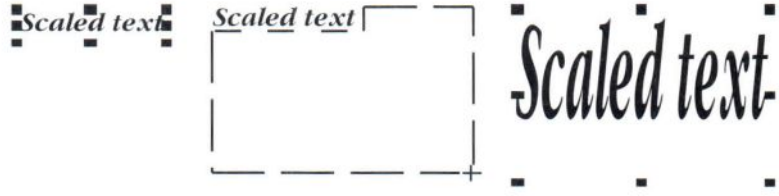
1. **With the Arrow tool, select the text object.**

   Handles appear around the text object.

2. **Position the pointer over one of the handles.**

   The pointer changes to a small crosshair when properly positioned.

3. **Press the Command(⌘) key and drag until the text is the desired scale.**



Changing the background pattern

You can change the background pattern of a text object. To do so:

1. **With the Arrow tool, select the text object.**
2. **Select a pattern or gray scale from the Fill Pattern palette icon.**

   The selected pattern appears in the background of the text object.

Changing the foreground and background color

You can assign a foreground and background color to the background pattern of a text object. These colors can differ from the colors you select for the individual text characters in the text object. However, you must select these colors first. If you select these colors after assigning colors to individual text characters, your choices will override your color selections for individual text characters.

To change the foreground or background color of the entire text object:

1. **Select the text object by clicking it once with the Arrow tool.**
2. **Select a color from the Fore Color or Back Color palette icon in the Tool Box.**

   Colors, except white, appear as black on a black and white screen but print in color if you print to a color printer.

   You can also use the Color Info Manager to set the foreground or background color of the text object. To do so, select the text object,

press the Control and Shift keys, and click the Fore Color or Back Color palette icon. The Color Info Manager appears with the foreground or background color of the text object in the preview box. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box. The PANTONE® Colors window can be used to choose the foreground or background color also; see "Changing the default foreground or background color" on page 18-18 for information.

Changing the color of individual characters

You can assign different colors to the individual characters in a text object. These colors can differ from the foreground and background colors of the text object. However, once you assign these colors you cannot change the text object's foreground color. If you do, you will override your color assignments for the individual text characters.

To change the color of individual text characters:

1. **Select the Text tool icon from the Tool Box.**

2. **Drag to highlight the characters you want to modify.**
3. **Select a color from the Fore Color palette icon in the Tool Box.**

   Foreground colors, except white, appear as black on a black and white screen, but print in color on a color printer.

   You can also use the Color Info Manager to choose colors for the text characters. To do so, highlight the text characters with the text tool, press the Control and Shift keys, and click the Fore Color palette icon. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions on using this dialog box. The PANTONE® Colors window can be used to choose a color also; see "Changing the default foreground or background color" on page 18-18 for information.

Adding effects to text

Canvas provides a number of effects that can be applied to a text object. You can

- rotate it
- flip it horizontally, vertically, or along both axes
- add a one or two side perspective effect to it
- skew it

Each of these is available from the Effects menu. Several are options of the Special Effects submenu in the Effects menu. These commands are applied to the entire text object only; you cannot apply these effects to a portion of the text within the text object. For more information on these effects, see Chapter 16, "Using Special Effects".

You can apply only one effect to text and maintain the ability to print and edit the text object as text. (See "Editing text to which effects have been applied" on page 10-16.) If multiple effects are applied to a text object, Canvas converts the text object to a paint object. You will no longer be able to edit it as text and the output quality will be reduced. There is one exception; you can scale a text object, add one effect to it, and maintain the ability to print and edit the text object as text. However, you must first scale the text object and then perform the effect.

Certain effects, such as skew and perspective, convert the text object to a picture object. In these cases multiple effects cannot be performed; however, the text maintains its ability to be edited and printed as text.

To apply one or more effects to a text object:

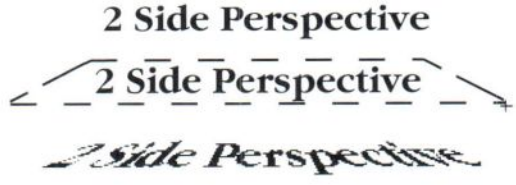
1. **Select the text object with the Arrow tool.**

   Handles appear around the bounding rectangle of the text object to indicate that it is selected.

2. **Choose the desired command from the Effects menu.**

   If you are using the Rotate Left, Rotate Right, Flip Horizontal, Flip Vertical, or Flip Both Axes command, Canvas applies the effect.

If you are using Free Rotate, or any of the Special Effects submenu options, you must drag a handle of the selected text object to achieve the desired effect.



Editing text to which effects have been applied

After you have added effects to your text object you can still edit the text. To do so:

1. **Either click the text object you want to edit with the Text tool or double-click it with the Arrow tool.**

   Canvas restores the text to its original form and allows you to edit it.

2. **Make the desired changes.**
3. **Click outside the text object (or press the Enter key) to restore the effects.**

Copying and pasting text

You can copy text from one text object and paste it into the same or another text object. To do so:

1. **Select the text that you want to copy.**
2. **Choose Copy (⌘-C) from the Edit menu.**
3. **Click where you want to insert the text.**

   A blinking insertion point appears there.

4. **Choose Paste (⌘-V) from the Edit menu.**

When you paste text into another text object, the text wraps around to fit within the preset margins.

The original text object

The copied text has been pasted into the original text object

Deleting a text object

To delete an entire text object:

1. **Select the text object to be deleted with Arrow tool.**

   Handles appear around the text to show that it is selected.

2. **Press the Backspace or the Delete key, or use Cut (⌘-X) or Clear (⌘-Option-X) from the Edit menu.**

   The text object disappears.

Deleting a portion of a text object

To delete portions of a text object:

1. **Select the text to delete with the I-beam pointer.**

2. **Press the Backspace key or the Delete key, or use the Cut (⌘-X) or Clear (⌘-Option-X) command from the Edit menu.**

   Canvas deletes the selected text.

Row, row, row, row your boat.

Row, row, row, row your boat.

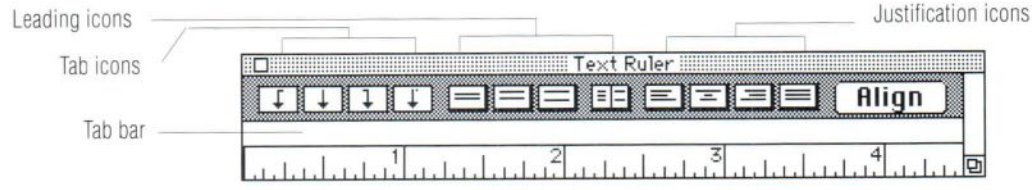
Row, row, row your boat.

Using the Text Ruler

The Text Ruler command in the text menu is a toggle command used to open and close the Text Ruler floating window. When this window is open, a diamond appears to the left of its name in the Text menu and the Text Ruler appears in the Canvas Window. You can use the Text Ruler interactively while working with text objects in your document. The Text Ruler lets you assign tab settings to the tabs in your text objects, and control the leading and the justification of text objects.

The Text Ruler command is available when Text Utilities is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

To display the Text Ruler, choose Text Ruler in the Text menu.



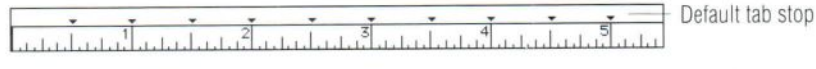
Settings

The Text Ruler displays a ruler using the units currently set in the Ruler Specifications dialog box. (See "Setting up the Ruler Specifications" on page 7-33.) The ruler changes to reflect the current magnification level. When a text object is selected, the Text Ruler changes to display the tab settings, leading, and justification of the selected text object.

The **Align** button aligns the Text Ruler to a selected text object.

The **Tab icons** offer four tab alignment options which can be assigned to tabs in your text object.

- Left aligned
- Center aligned
- Right aligned
- Decimal aligned



Default tab stops appear in the tab bar if a text object is selected.

The **Leading icons** offer five options which can be used to set the spacing between the lines of text in your text object. These icons represent the same options available from the Leading submenu in the Text menu. Your leading choice is applied to the entire text object.

- Single space
- 1 $^{1}/_{2}$ space

- Double space
- Tighten
- Loosen

The **Justification icons** offer four options which can be used to set the alignment of the text in your text object. These icons represent the same options available from the Justification submenu in the Text menu. Your justification choice is applied to the entire text object.

- Left
- Center
- Right
- Full

Placing a tab stop

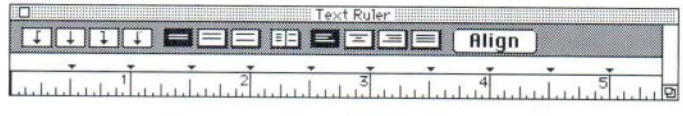
To place a tab stop in your text object:

1. **Choose Text Ruler from the Text menu.**

   The Text Ruler window appears.

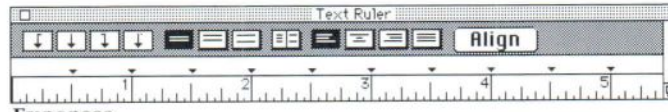
2. **Use the Arrow tool to select the text object whose settings you want to edit.**

   The Text Ruler displays the tab stops, leading, and justification of the selected text object.



3. **Click Align.**

   The Text Ruler window moves so that the zero point aligns to the left margin of the selected text object.



Expenses

Item	Person	Price	Date
Paper	Denise	24.95	11/24/90
Lunch	Robert	87.49	9/7/89
Coffee	John	17.63	11/3/90
Soda	Mario	43.59	3/17/91
Tea	Maria	9.63	12/19/90
Toner	Denise	109.79	8/13/90
Disks	Dave	9.99	5/29/90

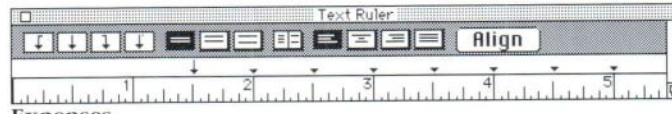
If a text object is selected when you choose the Text Ruler, the Text Ruler will align itself to the selected text object automatically.

4. **Hold down the pointer on the appropriate tab icon.**

   The pointer becomes the selected tab icon.

5. **Drag the tab from the icon to the desired position in the tab bar.**

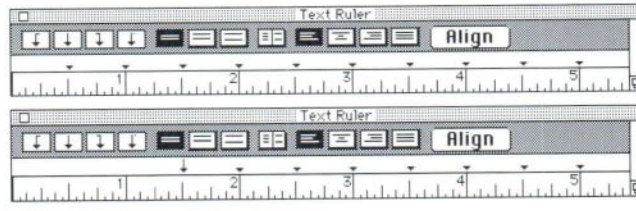
   The tab icon snaps to the ruler and the tab in your text adjusts to reflect your tab stop placement.



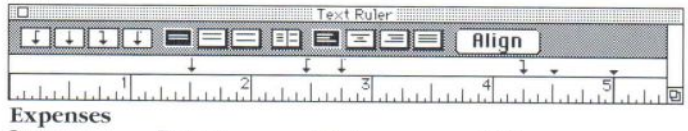
Expenses

Item	Person	Price	Date
Paper	Denise	24.95	11/24/90
Lunch	Robert	87.49	9/7/89
Coffee	John	17.63	11/3/90
Soda	Mario	43.59	3/17/91
Tea	Maria	9.63	12/19/90
Toner	Denise	109.79	8/13/90
Disks	Dave	9.99	5/29/90

Once you place the tab, all default tab stops to the left of the tab you set are removed.



If your text object is a single line of caption text, Canvas extends the right edge of the text object when the tab stop placement causes the text to exceed the existing bounding rectangle. If your text object is paragraph text, Canvas extends the bottom border of the text object when necessary to compensate for the tab stop placement.



Expenses

Item	Person	Price	Date
Paper	Denise	24.95	11/24/90
Lunch	Robert	87.49	9/7/89
Coffee	John	17.63	11/3/90
Soda	Mario	43.59	3/17/91
Tea	Maria	9.63	12/19/90
Toner	Denise	109.79	8/13/90
Disks	Dave	9.99	5/29/90

Removing a tab stop

To remove a tab stop from the Text Ruler window:

1. **Place the pointer on the tab stop in the tab bar that you want to remove.**
2. **Drag the tab stop outside the tab bar.**

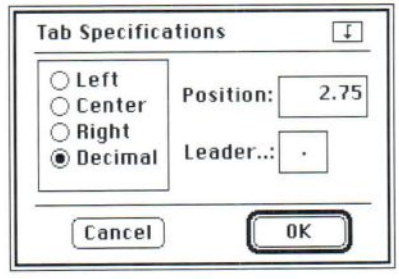
   The tab stop is removed and the text adjusts to reflect your changes. Any default tabs stops which were initially removed by the placement of the tab stop return to the tab bar.

Using the Tab Specifications dialog box

After you place a tab stop you can assign a leader character to it, change the type of tab stop it is, and change its position using the Tab Specifications dialog box. To do so:

1. **Double-click the tab stop you want to edit.**

The Tab Specifications dialog box appears.



Position is the location of the active tab on the Text Ruler.

Leader is the symbol used to fill in the space before the tab. When no symbol is specified, Canvas uses a space for a leader.

2. **Type a character in the Leader text box that you want to fill the space before the tab stop.**

   You can adjust the leader spacing using the Kerning submenu in the Text menu (see "Setting the kerning for your text" on page 10-4) after you close the Tab Specifications dialog box.

3. **Type a new location in the Position text box to reposition the tab.**

   Canvas allows for accuracy to two decimal places.

4. **Change the tab's type by clicking the button next to the type you want.**

5. **Click OK to accept your changes or Cancel to leave the tab stop unchanged.**

   The Tab Specifications dialog box closes and you return to your document.

Setting the leading

You can set the leading of a text object using the Text Ruler. To do so:

1. **Select the text object whose leading you want to set.**

   Handles appear around the text object to show that it is selected.

2. **Choose Text Ruler from the Text menu if it is not presently active.**

   The Text Ruler appears in the Canvas Window displaying the settings of the selected text object.

3. **Click the Single Space, 1 1/2 Space, or Double Space icon, or hold down the pointer in the Tighten or Loosen icon until the desired leading is achieved.**

Setting the justification

To set the justification of a text object using the Text Ruler:

1. **Select the text object whose leading you want to set.**

   Handles appear around the text object to show that it is selected.

2. **Choose Text Ruler from the Text menu if it is not presently active.**

   The Text Ruler appears in the Canvas Window displaying the settings of the selected text object.

3. **Click the icon for the justification option you want applied to the text object.**

   The justification of the text object changes to reflect your selection.

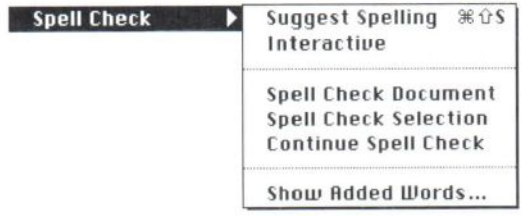
Using the Spell Check submenu

The Spell Check submenu in the Text menu lets you spell check entire documents, selected text, or a single word in Canvas. Spell Check can also alert you as you type misspelled words. You can add new words, such as technical terms, to the dictionary at any time, and you can interrupt or continue spell checking a document.

The Spell Check command is available when Spelling is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Spell Check dictionary contains 100,000 words and was specifically developed for Canvas. Owners of Deneba Software's Spelling Coach™ Professional can use their already customized Coach Spelling Dictionary (based on Merriam-Webster's 9th Collegiate Dictionary) and Coach User Environment in place of the spelling dictionary and user environment included with Canvas.

Choosing the Spell Check command opens a submenu of options.

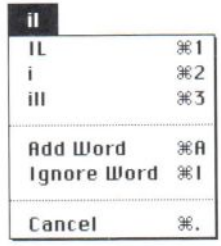


Suggest Spelling

Suggest Spelling lets you check the spelling of a single word. To use the Suggest Spelling option:

1. **Highlight the word you want to check.**
2. **Choose Suggest Spelling (⌘-Shift-S) from the Spell Check submenu under the Text menu.**

   The Suggest Spelling menu appears with a list of suggested words; the options to Add, Ignore, or Cancel; and their Command-key equivalents.



3. **To select a suggested word, click the word in the Suggest Spelling menu or type its Command-key equivalent.**

   Spell Check replaces your word with the one from the list.

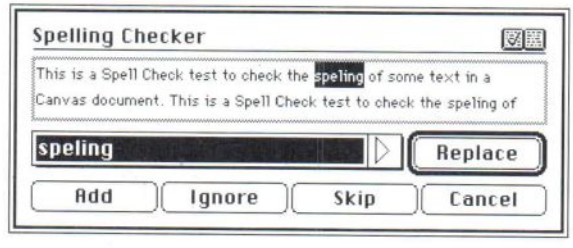
   - **Add Word** (⌘-A) adds the word to a list of User Added Words.
   - **Ignore Word** (⌘-I) causes Spell Check to consider the word correct any time it appears during the current working session.
   - **Cancel** (⌘-.) closes the Suggest Spelling menu without correcting the misspelled word.

Using Spell Check interactively

Interactive is a toggle option. When the Interactive option is active, it signals you of a misspelled word after you type it. When you press the Space bar after you type a misspelled word, Spell Check makes the sound currently selected from your Macintosh Control Panel.

Checking an entire document

The Spell Check Document option spell checks all the text in a document, regardless of how many different text objects there may be. You do not need to have the text selected when you choose this command. Canvas displays a dialog box with the first misspelled word in the text box. In the example below, the word "spelling" has been misspelled in the text selection being checked.



Click **Add** if you want to add the word to the Canvas dictionary.

Click **Ignore** if the word is correctly spelled but you do not want to add it to the dictionary. Spell Check ignores that word whenever it is encountered in that working session.

Click **Skip** if you want to skip a word that has been flagged. Clicking Skip causes Spell Check to ignore only that one occurrence of the word. Any other occurrences will be flagged during a working session.

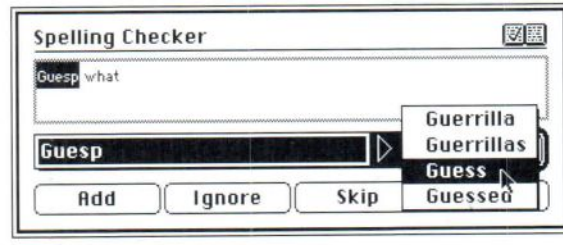
Click **Cancel** to interrupt the Spell Check and go to the currently selected word in your document.

To make a correction:

1. **Hold down the pointer on the arrow to the right of the edit box.**

   A pop-up menu appears showing suggested spellings for the word.

2. **Drag to highlight the correct selection or type a correction in the edit box.**



3. **Click Replace to replace the misspelled word with the selected word.**
4. **Continue as above until all the misspelled words have been corrected.**

   When the spelling check is complete, the dialog box automatically disappears, returning you to the Canvas Window.

Checking selected text

The Spell Check Selection option lets you check the spelling of one or more selected text objects or highlighted text. To do so:

1. **Use the Arrow tool to select one or more text objects, or use the Text tool to highlight text.**
2. **Choose Spell Check Selection from the Spell Check submenu in the Text menu.**
3. **Proceed as in Steps 1-4 of "Spell Check Document."**

Continuing an interrupted spelling check

The Continue Spell Check option lets you continue a spelling check that has been interrupted by clicking the Cancel button in the Spelling Checker dialog box. Choose the Continue Spell Check option of the Spell Check submenu to resume where you left off.

Viewing user-added words

The Show Added Words option of the Spell Check submenu lets you view the words you have added to the spell check dictionary. When you choose this option, the following dialog box appears.

Add Word lets you add more words to this list by typing them in the text box at the bottom of the dialog box and clicking Add Word.

Delete Word lets you delete a word from the list by highlighting it and clicking Delete Word.

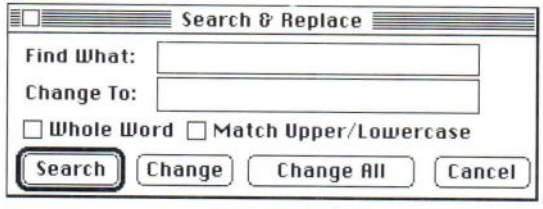
Click **Done** to exit the dialog box when you have finished.

Using the Search & Replace command

The Search & Replace command in the Text menu lets you search for all occurrences of a user-specified text string throughout all text objects and layers in the active Canvas document. You can specify for all occurrences to be changed to a user-specified text string or decide for each occurrence individually whether or not to change it.

The Search & Replace command is available through Search & Replace in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

When you choose Search & Replace, the following dialog box appears.



Settings

The **Find What** text box lets you enter the text you want to search for.

The **Change To** text box lets you enter the text you want to replace the Find What text with.

Whole Word, when selected, locates only exact matches of the Find What text. For example, if Find What is *time*, in the sentence *How many times did you check your timepiece for the time?*, Canvas would find three occurrences without Whole Word selected, but only the last one if Whole Word is selected.

Match Upper/Lowercase, when selected, locates only exact matches of the Find What text with regard to case (capitalization).

Search causes Canvas to find the first occurrence of the Find What text if you are beginning your search or the next occurrence if you are in the process of searching.

Change causes Canvas to replace the currently selected occurrence of the Find What text in your document with the Change To text and find the next occurrence of the Find What text.

Change All causes Canvas to replace all occurrences of the Find What text in your document with the Change To text.

Cancel lets you interrupt the search and return to your document. You can continue your search from where you interrupted it by choosing Search & Replace again from the Text menu.

Using the Search & Replace dialog box

To use the Search & Replace dialog box:

1. **Choose Search & Replace from the Text menu.**

   The Search & Replace dialog box appears.

2. **Type the text you want to search for in the Find What text box.**
3. **Type the replacement text in the Change To text box.**
4. **Click Change All to replace all occurrences of the Find What text with the Change To text or use the Search and Change buttons to decide for each occurrence.**
5. **Click Cancel to close the Search & Replace dialog box.**

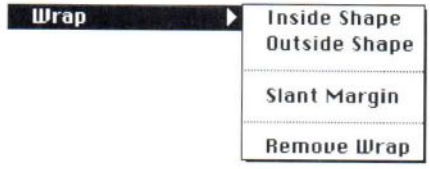
If Canvas finds an occurrence of the Find What text which is hidden by the Search & Replace dialog box, drag the dialog box by its title bar to a new location in the Canvas Window.

Using the Wrap submenu

The Wrap submenu in the Text menu lets you make text conform to the inside or outside of an object. You can also use Wrap to slant the margins of a text object.

The Wrap command is available when Text Utilities is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

When you choose the Wrap command, a submenu of options appears.

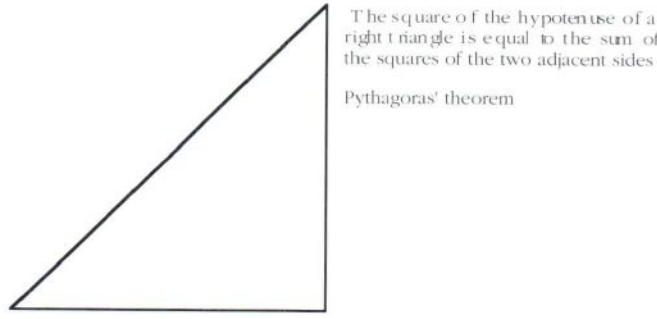


Inside Shape

The Inside Shape option causes the text to conform to the inside of the object. This option is enabled when text and an object are selected.

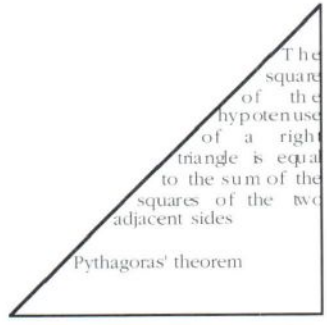
To wrap text within a selected object:

1. **Use the Arrow tool to select both the text object and the object within which you want the text wrapped.**



2. **Choose Inside Shape from the Wrap submenu in the Text menu.**

   Canvas wraps the selected text inside the selected object.

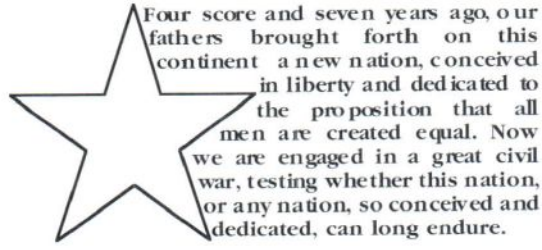


User Tip: Set the text object to Full Justification for more precise alignment to the object's borders.

You can also wrap text inside an object by first selecting the object you want to wrap the text inside and then typing the text you want wrapped inside the object. The text you type will conform to the object lines of the selected object.

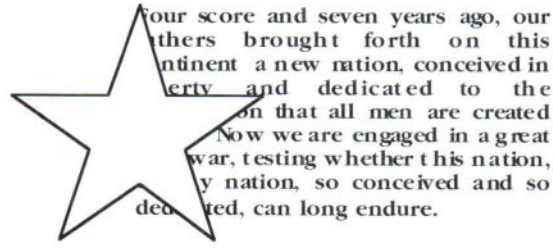
Outside Shape

Outside Shape causes the text to flow around the outside of an object overlapping the edge of the text object. This option is enabled when a text object and another object are selected.



To wrap text around the outside of selected objects:

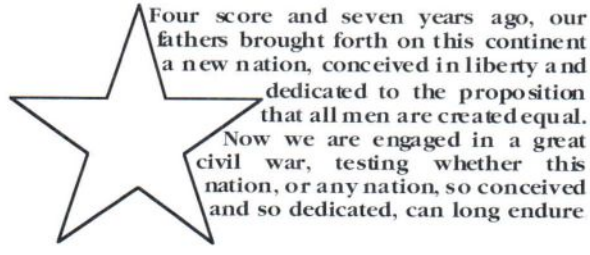
1. **Position the object or objects you want the text to wrap around along the edge of the text object.**



2. **Select the object or objects around which you want the text to be wrapped.**
3. **Hold down the Shift key and select the text object with the Arrow tool.**

   At this point both the text object and the objects around which you want the text wrapped should be selected.
4. **Choose Outside Shape from the Wrap submenu in the Text menu.**

   Canvas wraps the text around the selected objects.



Slant Margin

Slant Margin lets you slant the margins of a text object by dragging a selection handle until the desired angle is achieved.

To slant the margins of a text object:

1. **Select the text object using the Arrow tool.**
2. **Choose Slant Margin from the Wrap submenu in the Text menu.**

   Handles appear at the corners of the selected text object.
3. **Position the pointer on any one of the handles.**

   The pointer becomes a small crosshair when properly placed.
4. **Drag the corner until the desired slant is achieved.**

Canvas flows the text to conform to the new margins.

San Francisco, California, January 10 - Deneba Software announces today the introduction of Canvas™ 3.0, the most significant upgrade to date of their best selling drawing program. This new version delivers more than fifty new features including significantly enhanced text handling.

San Francisco, California, January 10 - Deneba Software announces today the introduction of Canvas™ 3.0, the most significant upgrade to date of their best selling drawing program. This new version delivers more than fifty new features including significantly enhanced text handling.

Remove Wrap

All of the Wrap options can be removed from text to which they have been applied. To remove a Wrap option:

1. **Select the text object using the Arrow tool.**
2. **Choose Remove Wrap from the Wrap submenu under the Text menu.**

   The text margins return to the condition they were in before you performed the Wrap option.

Using the Bind Text command

The Bind Text command in the Text menu makes a text object conform to the path of an object drawn with a core draw tool. The bound text and the object can then be modified individually or together.

Bind Text is available when Bind is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Binding text

To use the Bind Text command to bind text to an object:

1. **Select a text object with the Arrow tool.**
2. **Hold down the Shift key and select the object you want to bind the text to.**

3. **Choose Bind Text from the Text menu.**

   The selected text binds to the selected object.

Text starts binding to the object at the object's origin and follows the object's path until the path ends or there is no more text to bind. Text characters bind to an object in the order that they are typed (left to right). Therefore, the direction in which the object is drawn determines how the text appears once it binds to the object.

You can edit the bound characters or text object as you would text objects with effects added to them. See "Editing text to which effects have been applied" on page 10-16 for more information.

You can also group the new text and the object and modify them together. To do so, select the text and the object with the Arrow tool and choose Group (⌘-G) from the Object menu. You can then apply various effects to the text and object as unit.

Using the Create Béziers submenu

The Create Béziers submenu in the Text menu lets you convert text characters to Bézier curves. The original text must be a TrueType™ or a PostScript Type 1 printer font. If it is a Type 1 font, you must have at least one of its printer font files in your system folder or, if you have Suitcase™ installed, it must be open in your font suitcase.

The Create Béziers command is available when Bézier Text is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

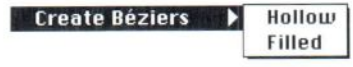
To use the Create Béziers submenu:

1. **Use the Text tool to highlight text characters or select a text object with the Arrow tool.**

If you highlight the text characters, Canvas performs the command on a copy of the text; if you select a text object, Canvas performs the command on the text object itself.

2. **Choose Create Béziers from the Text menu.**

   A submenu of options appears.



3. **Drag to highlight your choice.**

- Choose **Hollow** to draw outlines around the text characters using the currently selected pen pattern and pen size.
- Choose **Filled** to fill the text characters with the currently selected pen pattern using a 0 pen size. Enclosed areas, such as the area inside the letter O are filled with the selected fill pattern.

Hollow Filled

Canvas then creates Bézier curves which surround the individual characters and groups the curves. You can edit the entire group or choose the Ungroup command (⌘-U) from the Object menu to edit individual Bézier characters. You edit Bézier text as you would Bézier curves. See "Placing objects in the Edit mode" on page 9-10.

Chapter

11

Technical illustration

In this chapter you will learn about the Canvas precision drawing tools, designed for creating technical illustrations: the Smart Mouse tool, Dimensioning tool, Hatch tool, and Parallel Lines tool.

Using the Smart Mouse

The Smart Mouse Manager, window, and command let you invoke constraints which aid in precision drawing. Smart Mouse indicates when a object you are creating or dragging meets the constraints. You can select which constraints are active, turn the Smart Mouse on or off, and change the settings of certain constraints.

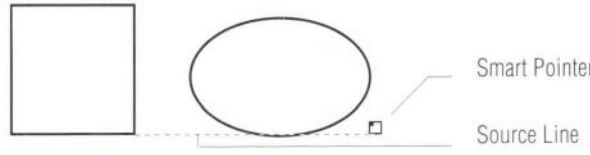
The Smart Mouse Manager, window, and command are available when Smart Mouse is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Smart Mouse command

Smart Mouse (⌘-Option-[) can be toggled off and on using the Smart Mouse command in the Layout menu. A check mark appears to its left when it is active.

How Smart Mouse works

Smart Mouse indicates when the pointer is within user-specified constraints by changing the pointer's appearance. Smart Mouse works in conjunction with the Canvas core and external drawing tools. In the following example, the Object Corners constraint is active.



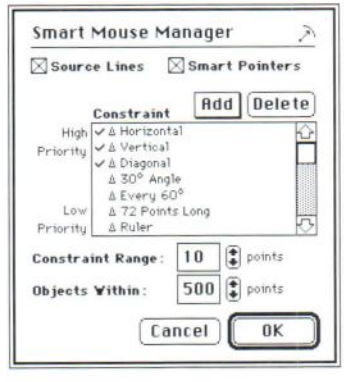
While drawing the oval with the Corners constraint active, the pointer changes to a **Smart Pointer** (an icon representing the constraint) when the pointer aligns with the corner of the square's bounding rectangle. A **Source Line** points to the corner of the square which is defining the constraint.

The Smart Pointer indicates that the draw object you are creating meets the active constraint. Two constraints can be active at one time but only one Smart Pointer is visible at a time. To determine when you meet both constraints, press the Command key (⌘) while a Smart Pointer is visible and drag, if necessary, until it switches to the second Smart Pointer. Release the Command key to confirm you still meet the first constraint. When you meet both constraints, pressing the Command key should switch the display between the two Smart Pointers.

User Tip: To temporarily turn Smart Mouse off while creating a draw object, hold down the Tab key while you draw the object.

The Smart Mouse Manager

Choosing Smart Mouse from the Managers submenu in the Edit menu displays the Smart Mouse Manager.



User Tip: Snap To Grid in the Layout menu must not be active when you use Smart Mouse. If Snap To Grid is active, your draw objects will snap to the grid's rather than the Smart Mouse's constraints.

Settings

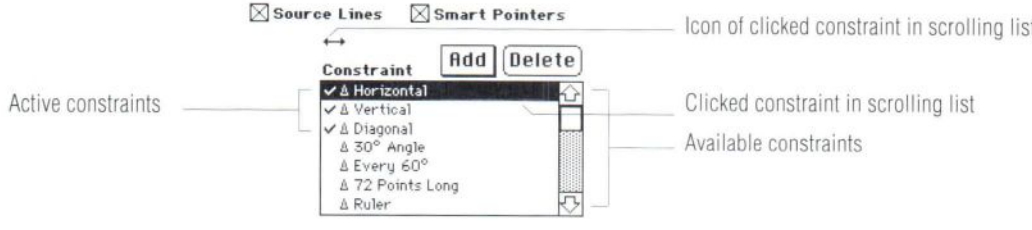
The Smart Mouse Manager lets you set your constraint options, activate and deactivate constraints, and change constraint settings.

The **Smart Pointers** check box allows you to turn the pointer-changing feature of Smart Mouse on or off. Smart Pointers are on when there is an "X" in this check box. Click this check box to turn the Smart Pointers on or off. You might want to turn off the Smart Pointers if you are using only constraints such as Object Corners for which Source Lines adequately indicate when the constraint is met.

The **Source Lines** check box lets you turn the Source Lines feature of Smart Mouse on and off. Source Lines are helpful when you have several objects in your drawing and want the constraint defined by a particular one.

User Tip: To temporarily turn off Smart Pointers, press the Control key. The Smart Pointer reappears when you move the mouse. If Source Lines are on, they will still be visible to indicate when the constraint is met.

The **Constraint scrolling list** displays all the available constraints with check marks next to the active ones. These constraints also appear in the Smart Mouse window (discussed at the end of this section). When you click a constraint name in the scrolling list, its icon appears below the Source Lines option of the Smart Mouse Manager.



To activate a constraint, click to the left of its name in the scrolling list. A check mark appears next to it. To deactivate a constraint, click the

check mark and it disappears. You can activate as many constraints as you want at one time although only two can affect the mouse.

There are two types of constraints: relative and absolute. **Relative constraints** apply to the relation between the pointer's position when you first pressed the mouse button and the current position of the pointer. Smart Pointers are displayed as you drag to indicate when you meet these constraints. If you release the mouse button while the Smart Pointer is visible, the object will be appropriately constrained. Relative constraints are preceded by a delta symbol (Δ) in the Constraint scrolling list. The Relative constraints are: Horizontal, Vertical, Diagonal, Angle, Multiple Angle, Length, Ruler, and Tangent & Perpendicular.

Absolute constraints apply to the positioning of an object with respect to another object in your drawing. These constraints indicate when the object you are drawing or dragging aligns horizontally or vertically to the constraint specifications. If you release the mouse button while the Smart Pointer is visible, the object will be appropriately constrained.

Absolute constraints differ from Relative constraints in that they also exhibit Smart Pointers and Source Lines (with the exception of Object Edges which does not display a Source Line) before you draw to show when the pointer meets the constraints. If you begin drawing an object while the Smart Pointer is visible, the object will be appropriately constrained. The Absolute constraints are: Object Corners, Object Fractions, Polygon & Bézier Anchors, Polygon Fractions, and Object Edges.

Relative Constraints

The **Horizontal** ↔ constraint indicates when line segments you draw or drag are horizontal by displaying the Horizontal Smart Pointer.

The **Vertical** ↕ constraint indicates when line segments you draw or drag are vertical by displaying the Vertical Smart Pointer.

The **Diagonal** constraint indicates when line segments you draw or drag are 45°, 135°, 225°, or 315° angles by displaying the Diagonal Smart Pointer.

The **Angle** constraint indicates when line segments you draw or drag are a user-specified angle by displaying the Angle Smart Pointer.

Angle constraint set to 30°

You can specify the setting of the Angle constraint using the Smart Mouse Manager. See "Changing constraint settings" on page 11-9 for more information.

The **Multiple Angle** constraint indicates when line segments you draw are a multiple of a specified angle. For example, if the Multiple Angle constraint is set to 30°, the Multiple Constraint Smart Pointer appears when the angle of the line segment is 30°, 60°, 90°, and so on.

Multiple Angle constraint is set to 60°
Angle in illustration is 120°

You can specify the setting of the Multiple Angle constraint using the Smart Mouse Manager. See "Changing constraint settings" on page 11-9 for more information.

The **Length** constraint indicates when the diagonal of an object's bounding rectangle or the line segment of a polygon reaches a user-specified length. When you create or resize a draw object with the Length constraint active, the Length Smart Pointer indicates when the Length constraint is met.

Length constraint
is set to 200 points

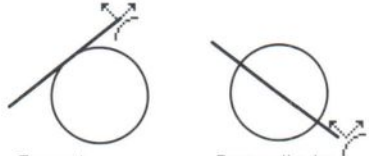
You can specify the setting of the Length constraint using the Smart Mouse Manager. See "Changing constraint settings" on page 11-9 for more information.

The **Ruler** constraint lets you snap draw objects you create or resize to incremental lengths of the active ruler. (To change the active ruler, choose the Rulers command in the Layout menu.)

Ruler set to inches with 4 minor divisions.
Line segment is 1 $^{1}/_{4}$ inches

If, for example, your ruler is in inches with four minor divisions, the Ruler Smart Pointer appears every quarter inch that you drag the pointer, letting you snap objects to quarter-inch length intervals.

The **Tangent & Perpendicular** constraint indicates when a line you draw or resize is tangent or perpendicular to another object.

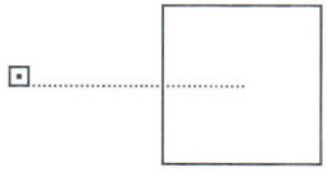


Absolute Constraints

The **Object Corners** constraint lets you align draw objects you draw or drag to the corner of another object's bounding rectangle. After you select a draw tool and place the pointer in the drawing area, the Object Corners Smart Pointer and Source Line will indicate when you have found an object's corner to snap to.

The **Object Fractions** constraint lets you align objects you draw or drag to a specified fraction of another object by displaying the Object

Fractions Smart Pointer when you are at the specified fraction of another object.

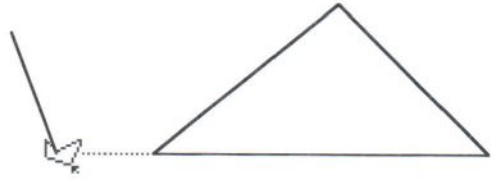


Object Fractions constraint is set to $^1/_2$

Smart Pointer and Source Line show that the pointer is aligned to the $^1/_2$ point (center) of the square

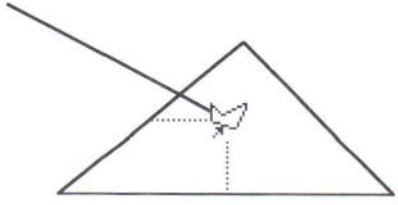
You can specify the setting of the Object Fractions constraint using the Smart Mouse Manager. See "Changing constraint settings" on page 11-9 for more information.

The **Polygon & Bézier Anchors** constraint lets you align objects you draw or drag to the vertices of a polygon or the anchor points of a Bézier curve. The Polygon & Bézier Anchors Smart Pointer and Source Line are displayed when you have found a vertex or anchor point on a polygon or Bézier curve to align to.



Smart Pointer and Source Line indicate the line is in horizontal alignment with the bottom left vertex of the polygon

The **Polygon Fractions** constraint lets you align objects you draw or drag to a specified fraction of a polygon segment by displaying the Polygon Fractions Smart Pointer when you are aligned to the specified fraction of a line segment of a polygon.

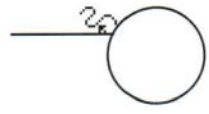


The Polygon Fractions constraint is set to $^1/_2$

The Smart Pointer and Source Lines show that the line segment's end aligns horizontally with the $^1/_2$ point (center) of the left side of the polygon, and aligns vertically with the $^1/_2$ point (center) of the bottom side

You can specify the setting of the Polygon Fractions constraint using the Smart Mouse Manager; see "Changing and Adding Settings" for more information.

The **Object Edges** constraint lets you snap objects you draw or drag to the edge of another object by displaying the Object Edges Smart Pointer when it has found the edge of another object to snap to. When Smart Mouse indicates that this constraint is met, no other constraint can also indicate that it is met or being snapped to.



Smart Pointer is displayed when the dragged line's endpoint touches the edge of the circle

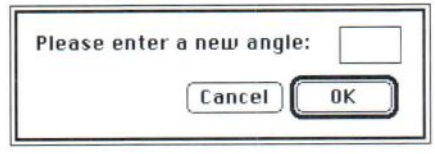
Adding constraints

You can add constraints to the Smart Mouse Manager Constraint scrolling list and the Smart Mouse window, (see "Working with the Smart Mouse window" on page 11-11). To do so:

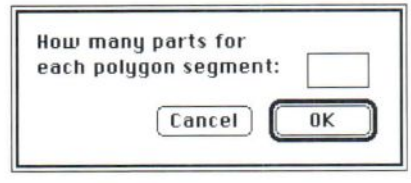
1. **Choose the type of constraint you want to add from the Add pop-up menu.**

   The constraint appears in the scrolling list with a check mark by its name indicating that it is active. If you want to deactivate the constraint, click the check mark.

   If you choose the Angle, Multiple Angle, or Length constraint, a dialog box opens asking you to enter an angle or new length.



   If you select the Object Fractions or Polygon Fractions constraint, a dialog box opens asking you to enter the number of parts for each object side or polygon segment. For example, if you enter 2, your draw objects snap to the center of objects or polygon segments.



2. **Type a number in the text box.**

3. **Click OK to save the setting or click Cancel to disregard it and return to the Smart Mouse Manager.**

Deleting constraints

To remove a constraint from the Constraint scrolling list:

1. **Click the constraint in the scrolling list.**

   The constraint highlights.

2. **Click Delete.**

   The constraint disappears from the Constraint scrolling list. You can always add a deleted constraint back into the scrolling list using the Add pop-up menu.

Changing constraint settings

To change an existing Angle, Multiple Angle, Length, Object Fractions, or Polygon Fractions constraint setting:

1. **Double-click the constraint's name in the Constraint scrolling list.**

   These constraints are named according to their settings (72 points long, 30° Angle, Object 1/2's, and so on).

   A dialog box opens asking you to define the new setting. Follow the instructions in "Adding Constraints" to change existing ones.

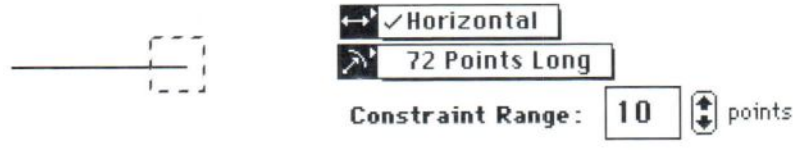
2. **Click OK to accept your changes or Cancel to ignore them.**

> **User Tip:** Smart Pointers do not distinguish between different settings for the same constraint. Since it might be difficult to tell which setting is affecting the drawing, it is best to have only one setting per constraint type active at one time.

The constraints in the scrolling list are given priority ranging from **High Priority** to **Low Priority.** The topmost constraint in the scrolling list has the highest priority. As you proceed downward in the scrolling list, the priority of the constraints decreases to the bottommost constraint in the scrolling list, which has the lowest priority. When several constraints are active, the Smart Pointers of the two active constraints with the highest priority whose constraints are met can be displayed. To change a constraint's priority, drag it to a new position in the scrolling list. The constraint's position in the Smart Mouse window will reflect this change.

Constraint Range applies to both Absolute and Relative Constraints. It is the maximum horizontal or vertical distance the pointer can be from the exact point satisfying the constraint in order to snap to that point.

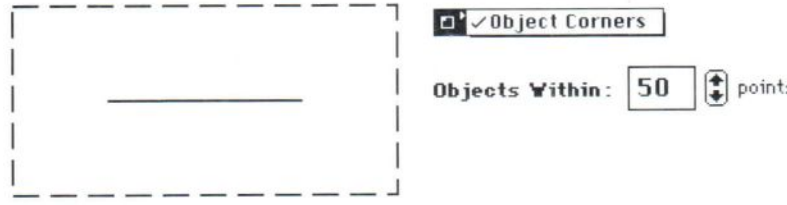
In the following illustration, drawing a line with the Horizontal constraint active, the Length constraint set to 72 points, and the constraint range set to 10 points results in a constraint range illustrated by the square. The square, which is 20 points x 20 points, indicates the area in which Smart Mouse will display the Length Smart Pointer. Releasing the mouse button anywhere within this square will snap the line to a length of 72 points. Outside the indicated area Smart Mouse will not display the Length Smart Pointer and will not snap to 72 points.



Type a constraint range in the text box or use the up and down arrows to the right of the text box to increase or decrease the constraint range.

Objects Within applies to Absolute Constraints only. It is the maximum horizontal or vertical distance an object can be from the pointer and affect the Smart Pointer.

In the following illustration, a 100 point long line exists, the Object Corners constraint is active, and Objects Within is set to 50 points resulting in an Objects Within area for the line illustrated by the rectangle. The rectangle, which is 100 points x 200 points, indicates the area in which Smart Mouse will display the Object Corners Smart Pointer with regard to the line. Outside the square, the line will not effect the Smart Pointers.



Type an amount in the Objects Within text box or use the up and down arrows to the right of the text box to increase or decrease the amount.

When you have finished choosing constraints and constraint options in the Smart Mouse Manager, click OK to save your changes or Cancel if you change your mind. The Smart Mouse Manager will close.

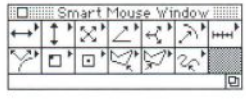
Working with the Smart Mouse window

The Smart Mouse window is a floating window which lets you activate or deactivate the available constraints. The Smart Mouse window is only available when the Smart Mouse command is active. (See "The Smart Mouse command" on page 11-1.) Using the Smart Mouse window, you can activate different constraints for each object you draw.

To use the Smart Mouse window:

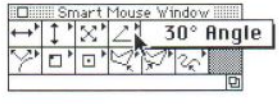
1. **Choose Smart Mouse Window from the Windows menu.**

   A diamond appears in the Windows menu next to the Smart Mouse Window command and the following floating window appears. Each constraint is represented by its Smart Pointer, as described earlier in this section. There is one Smart Pointer icon for each constraint in the Smart Mouse Manager Constraint scrolling list.



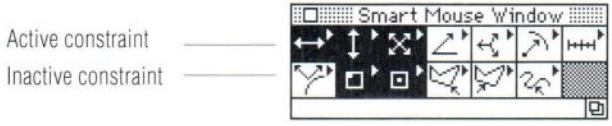
2. **Hold down the pointer on a constraint's icon to display its pop-up menu.**

   This pop-up menu gives the name of the constraint and its setting, if applicable.



3. **Click a constraint to activate or deactivate it.**

The activated constraints appear highlighted. You can activate as many constraints as you want at one time but only one can change the appearance of the pointer at any one time.



The icons in the Smart Mouse window are in the same priority order as the constraints in the Smart Mouse Manager Constraint scrolling list. You can delete constraints from the Smart Mouse window through the Smart Mouse Manager (see "Deleting constraints" on page 11-9).

Using the Dimensioning tool

The Dimensioning tool is an external tool that is used to add precise dimensions to your Canvas drawings. You can customize the standards for drawing dimensions and use different dimensioning options on different types of dimensions. You can also modify your dimension objects with commands from the Text and Effects menus.

This tool is available when Dimensioning is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Dimensioning tool

To use the Dimensioning tool:

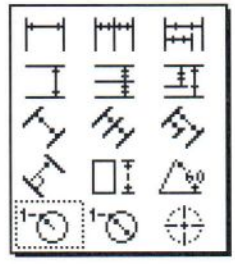
1. **Hold down the pointer on the Object Tools palette icon and drag to select the Dimensioning tool.**

   If the Dimensioning tool already appears as the Object Tools Palette icon, you only need to click it to select it.

2. **Press the Option key, then hold down the pointer on the Dimensioning tool.**

   If the Object Tools palette is open, you do not need to use the Option key.

The following pop-up menu of Dimensioning options appears. (Text is included with this illustration to name each option.) You can tear off this palette. See "Tear-off palettes" on page 6-17.



Horizontal, Horizontal Chain, Horizontal Baseline

Vertical, Vertical Chain, Vertical Baseline

Oblique, Oblique Chain, Oblique Baseline

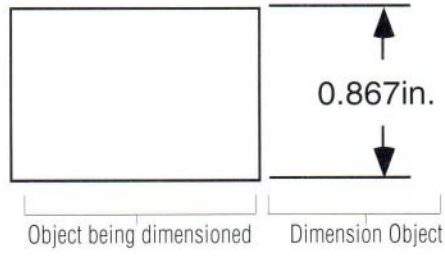
Perpendicular, Object Side, Angle

Radius, Diameter, Center

3. Drag inside the menu to enclose your choice in the selection box.

After you select a Dimensioning option, the pointer changes to a crosshair with text indicating what you should do next. Follow the instructions of this text to create a dimension object.

Some options let you create a group of dimension objects originating from the same baseline or create a chain of dimension objects. These dimension groups can be edited individually if you apply the Ungroup command (⌘-U) from the Object menu to the dimension group.



Editing dimension objects

Dimension objects can be modified like draw objects. You can rotate, flip, skew, distort, stretch, or add perspective to selected dimension objects using commands from the Effects menu. You can change the properties of selected dimension objects with the palette icons in the Tool Box. You can also modify a selected dimension object's text using commands from the Text menu.

Dimension objects can be converted to object groups, ungrouped, and edited by individual components using the Convert To submenu. See "Using the Convert To submenu" on page 13-24.

Using constraints

You can use Smart Mouse constraints in conjunction with the Dimensioning tool. These constraints can, for example, let you snap your dimension object to the object you are dimensioning. Refer to "Using the Smart Mouse" on page 11-1 for information on the Smart Mouse.

The Dimensioning options

Each option in the Dimensioning palette creates a different type of dimension object. You can change the dimensioning option for each dimension object you create. The instructions for creating dimension objects vary with the type of dimension object you are creating.

Creating a Horizontal, Vertical, or Oblique dimension object

These options measure the horizontal, vertical, or oblique distance between two points. To use these options:

1. **Select the Horizontal, Vertical, or Oblique option from the Dimensioning tool palette.**

   The pointer becomes a crosshair which reads *Click 1st Pt.*

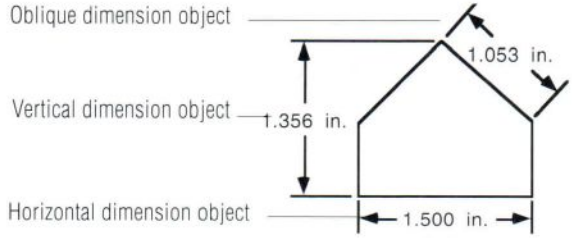
2. **Click to place the first point.**

   The pointer changes to read *Click 2nd Pt.*

3. **Move to the second point and click again.**

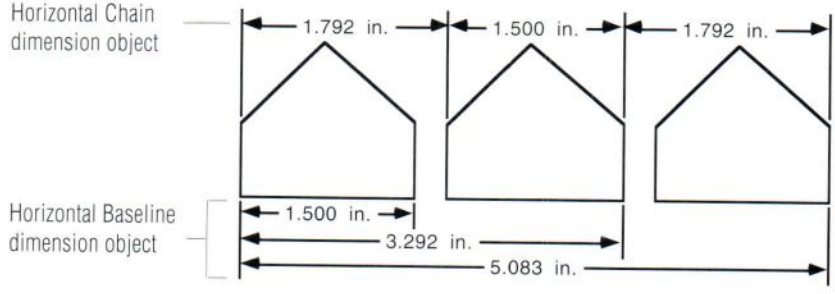
   The dimension object appears on the screen and follows the movement of the pointer. The pointer changes to the word *Anchor.*

4. **Position the dimension object as desired and click once, press the Return key, or press the Enter key to anchor it.**



Creating a Chain or Baseline dimension object

The Horizontal, Vertical, and Oblique Chain and Baseline options each create a group of horizontal, vertical, or oblique dimension objects parallel to each other from different starting points (Chain) or from the same starting point (Baseline).



To use any of these six options:

- Horizontal Chain
- Vertical Chain
- Oblique Chain
- Horizontal Baseline
- Vertical Baseline
- Oblique Baseline

1. **Select any of these six options from the Dimensioning tool palette.**

   The pointer changes to a crosshair which reads *Click 1st Pt.*

2. **Click to place the first point.**

   The pointer changes to the words *Click Next Pt.*

3. **Move to the second point and click again.**

   The dimension object appears on the screen and follows the movement of the pointer. The pointer changes to the word *Anchor.*

4. **Position the dimension object as desired and click once to anchor it.**

The pointer changes to the words *Click Next Pt* again. Move to the next point and proceed as before to draw a chain of dimensions or a series originating from the same baseline.

5. **Double-click or press the Enter key after you anchor the last dimension object.**

> **User Tip:** To cause Canvas to align the dimensions in any of the Chain dimensioning options to each other, hold down the Shift key while anchoring the dimension text.

Creating Perpendicular dimension objects

The Perpendicular option measures the perpendicular distance between a designated line and point. This option is useful when measuring the distance between parallel edges.

To use this option:

1. **Select the Perpendicular option from the Dimensioning tool palette.**

   The pointer changes to the words *Click Line.*

2. **Click the line from which you want to measure a perpendicular distance.**

   The pointer changes to the words *Click Pt.*

3. **Position the pointer on the point that you want to measure the perpendicular distance from the line to and click.**

   The dimension object appears on the screen and follows the movement of the pointer, and the pointer changes to the word *Anchor.*

4. **Position the dimension object.**

5. **Click once, press the Return key, or press the Enter key to anchor it.**

Creating Object Side dimension objects

The Object Side option dimensions a segment of an object. To use the Object Side option:

1. **Select the Object Side option from the Dimensioning tool palette.**

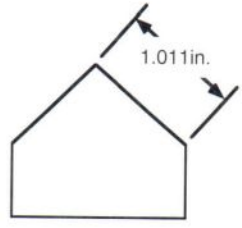
   The pointer changes to the words *Click Obj Side.*

2. **Click the object side you want to measure.**

   The dimension object appears on the screen and follows the movement of the pointer, and the pointer changes to the word *Anchor.*

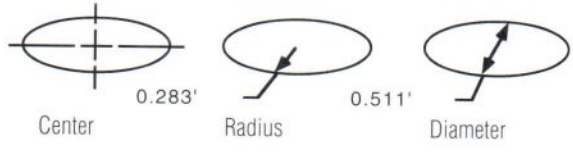
3. **Position the dimension object.**

4. **Click once, press the Return key, or press the Enter key to anchor it.**



Creating Center, Radius, or Diameter dimension objects

The Center option indicates the center of a circle, arc, or oval. The Radius and Diameter options measure the radius or diameter of a circle, arc, or oval.



To use one of these options:

1. **Select one of these options from the Dimensioning tool palette.**

   The pointer changes to the words *Click Arc/Circle.*

2. **Click the edge of the circle, arc, or oval you want to measure.**

   The Center option marks the circle's center with a cross mark. The Radius or Diameter option places a radius or diameter dimension

object respectively in the circle. The dimension object follows the movement of the pointer. The pointer changes to the word *Anchor*.

3. **Position the cross mark or dimension object. When it is properly positioned, click once, press the Return key, or press the Enter key to anchor it.**

> **User Tip:** To constrain your dimension lines to multiples of 45°, hold down the Shift key when you anchor your dimension object.

Creating Angle dimension objects

The Angle option measures the angle between two lines. To use the Angle option:

1. **Select the Angle option from the Dimensioning tool palette.**

   The pointer changes to the words *Click 1st Line*.

2. **Click the first line.**

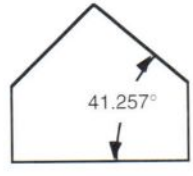
   The pointer changes to the words *Click 2nd Line*.

3. **Click the second line.**

   The dimension object appears on the screen and follows the movement of the pointer. The pointer changes to the word *Anchor*.

4. **Position the angle dimension object.**

5. **Click once, press the Return key, or press the Enter key to anchor it.**

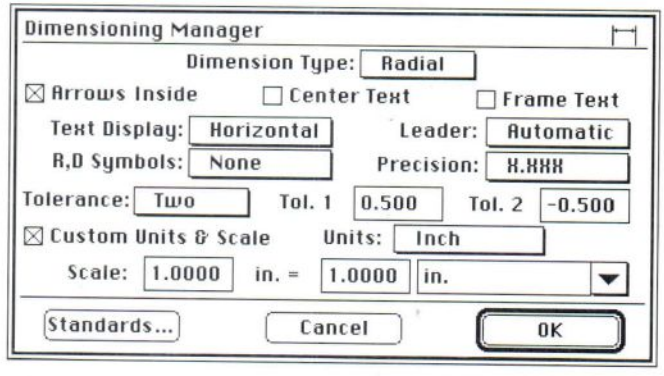


> **User Tip:** To cycle through the four angles created by the intersection of the two selected lines, use the Tab key.

The Dimensioning Manager

The Dimensioning Manager lets you change the default properties of dimension objects. You can open the Dimensioning Manager by double-clicking the Dimensioning tool in the Object Tools palette or by choosing Dimensioning from the Managers submenu in the Edit menu.

Changes you make using the Dimensioning Manager affect subsequent dimension objects you create.



Settings

Canvas separates dimension objects into three categories: linear, radial, and angular. The Dimensioning Manager lets you set the properties for each of these dimension types individually.

The **Dimension Type** pop-up menu lets you choose the type of dimension object you want to customize: linear, radial, or angular.

- **Angular** applies to dimension objects drawn with the Angle option.
- **Radial** applies to dimension objects drawn with the Radius, Diameter, and Center options.
- **Linear** applies to dimension objects drawn with the remaining options.

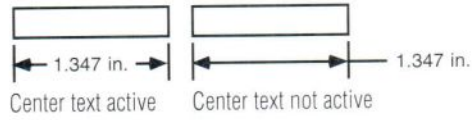
The **Arrows Inside** option causes the dimension arrows to be drawn inside the witness lines when active.

Arrows Inside not active Arrows Inside active

User Tip: You can use the Arrowheads option of the Managers submenu in the Edit menu to customize your arrowheads.

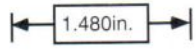
The **Center Text** option causes Canvas to center dimension text between the witness lines, when active. If you do not select Center

Text, dimension text moves in and out of the witness lines with the pointer until you anchor it. If you want to be able to move your dimension text outside the witness lines, do not select this check box.



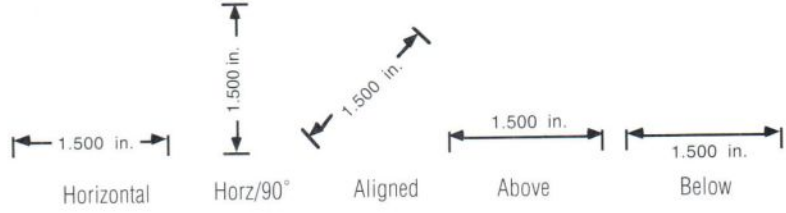
User Tip: If Center Text is not selected, you can center dimension text by holding down the Option key when anchoring the text.

When the **Frame Text** check box is selected Canvas places a rectangle around your dimension text.



Text Display refers to the position of the dimension text in relation to the witness lines. The Text Display pop-up menu options are only enabled when the Dimension Type is Linear. Otherwise Text Display is always set to Horizontal.

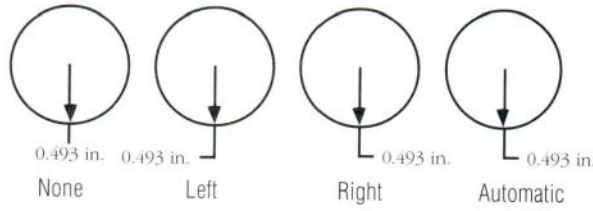
- **Horizontal** places dimension text horizontally.
- **Horz/90°** places dimension text horizontally unless vertical dimension objects are drawn; in this case, text is placed at 90°.
- **Aligned** aligns dimension text with the dimension arrows.
- **Above** places dimension text above the dimension arrows.
- **Below** places dimension text below the dimension arrows.



The **Leader** pop-up menu offers display options for the leader portion of dimensioning objects. The leader points to the dimension text.

These options are available when the Dimension Type is either Linear or Radial.

- **None** displays no leader.
- **Left** displays a left-pointing leader.
- **Right** displays a right-pointing leader.
- **Automatic** is only available when the Dimension Type is Radial. If you choose Automatic, Canvas displays the leader on the left when you place the dimension object on the left side of the object center, or on the right when you place the dimension object either vertically, or on the right side of the object center.



The **R,D Symbols** pop-up menu lets you choose to include radius (R) and diameter (ø) symbols with your dimension text. The R,D Symbols pop-up menu options are only enabled when the Dimension Type is Radial. Otherwise, R,D Symbols is always set to None.

- **None** displays no symbols.
- **Leading** places symbols before the dimension text.
- **Trailing** places symbols after the dimension text.

The **Precision** pop-up menu lets you choose the number of decimal places you want displayed in your dimension text. Your dimension text will display the chosen number of decimal places.

The **Tolerance** pop-up menu options lets you add plus and minus amounts to your dimension text.

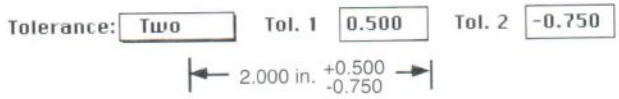
- **None** does not attach an amount to your dimension text.

- **One** lets you attach one amount to both add and subtract from your dimension text.

  When you choose One, the Tol. 1 text box is enabled. Type a number in the text box. The number that you type will appear with your dimension text preceded by a ± sign.

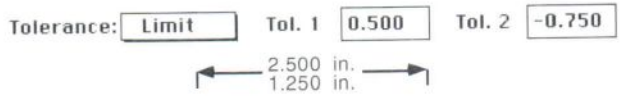
- **Two** lets you attach one amount to add and another amount to subtract from your dimension.

  When you choose Two, the Tol. 1 and Tol. 2 text boxes are enabled. Type a number in each. Type a minus sign (-) next to a number to make it negative. These numbers will appear attached to your dimension text preceded by the appropriate signs.

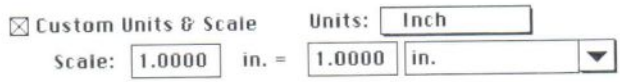


- **Limit** lets you add and subtract tolerances from your dimension text.

  When you choose Limit, the Tol. 1 and Tol. 2 text boxes are enabled. Type a number in each. Type a minus sign (-) next to a number to make it negative. Your dimension text will then consist of two numbers: the dimension plus each tolerance.



Custom Units & Scale lets you choose whether or not to use the scale and units currently specified in the Rulers Specification dialog box. Selecting this option enables the Units and Scale options letting you specify a unit of measure and a scale. When the Dimension Type is Angular, Canvas always uses the units and scale from the Dimensioning Manager since you cannot set angular units in the Rulers Specification dialog box.



The **Units** pop-up menu lets you specify the unit of measure to express your dimensions in. This menu changes depending on whether you are customizing linear, angular, or radial measurements. **Scale** lets you establish a ratio between the real measurements of the object you are illustrating and the measurements of that object in your drawing. For example, one inch in your drawing can represent one foot.

- The first text box is the number of drawing units for each real unit. The units next to it are the units of your drawing that you chose from the Units pop-up menu.
- The second text box displays the number of real units for each drawing unit.
- The third text box is the real unit of measure. Your dimension text appears in these units. You can type your own unit of measure in this text box or choose one from the pop-up menu. The units in this menu change according to the dimension type you are customizing.

Customizing the default settings

To customize the default settings for your dimension objects:

1. **Double-click the Dimensioning tool in the Object Tools palette in the Tool Box or choose Dimensioning from the Managers submenu in the Edit menu.**

   The Dimensioning Manager appears.

2. **Choose the dimension type you want to customize from the Dimension Type pop-up menu.**

   The pop-up boxes, check boxes, and text boxes in the Dimensioning Manager change to display the current settings for the selected dimension type.

3. **Specify the desired settings in the pop-up boxes, check boxes, and text boxes in the Dimensioning Manager as described previously.**

4. **Repeat Steps 2 and 3 for the two remaining choices in the Dimension Type pop-up menu.**

5. **Click OK to accept your changes and close the Dimensioning Manager or click Cancel to disregard your changes. Click Standards to customize the conventions used to create your dimension objects.**

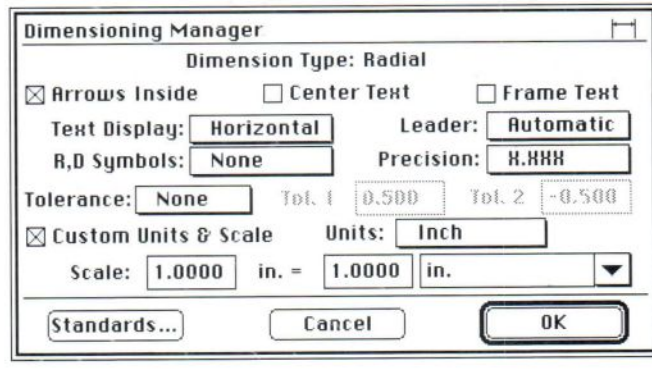
   Clicking Standards opens the Dimensioning Standards dialog box. Follow the instructions outlined in "Settings" on page 11-25 when using this dialog box.

Changing the settings of an existing dimension object

You can also use the Dimensioning Manager to change the properties of an existing dimension object. To do so:

1. **Double-click the existing dimension object that you want to edit.**

   The Dimensioning Manager appears with the Dimension Type set to the type of the selected dimension object. The pop-up boxes, check boxes, and text boxes in the Dimensioning Manager display the current settings for the selected dimension object.



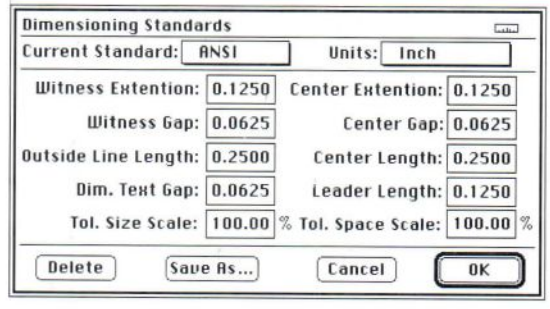
2. **Specify the settings you want using the pop-up boxes, check boxes, and text boxes in the Dimensioning Manager as described previously.**

3. **Click OK to save your changes and close the Dimensioning Manager or click Cancel to disregard your changes. Click Standards to customize the conventions used to create your dimension object.**

   Clicking Standards opens the Dimensioning Standards dialog box. Use the following instructions for this dialog box.

The Dimensioning Standards dialog box

The Dimensioning Standards dialog box lets you customize the individual elements of your dimension objects in the standard measuring system of your preference. It also lets you save and retrieve settings that you create.

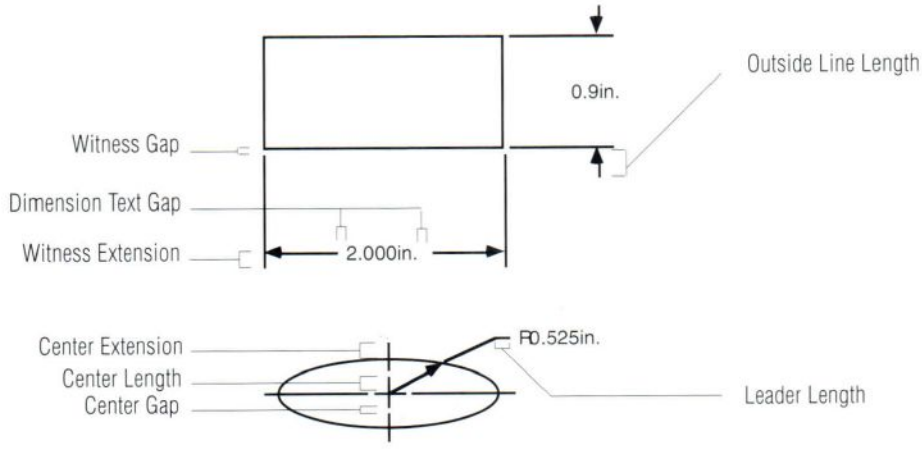


Settings

The **Current Standard** pop-up menu contains a list of five common standard measuring systems: American National Standards Institute (ANSI), British Standards Institute (BS-308), Deutches Institut für Normung (DIN), International Organization for Standardization (ISO), and the Japanese Industrial Standard (JIS). If you have previously saved your own set of standards, they will also appear here. If you change the Current Standard, the text boxes in this dialog box change accordingly.

Units specifies the measuring system for the elements of your dimension. This will initially be set to the units used in the selected Current Standard. Other options are available from the Units pop-up menu. If you change the Units, the values in the text boxes in this dialog box are converted to the chosen unit of measure.

Most of the options in this dialog box contain text boxes where you can type new measurements for the various elements of your dimension objects. The following diagram shows these dimension elements.



Witness Extension is the portion of the witness line that extends past the dimension arrow.

Witness Gap is the space between the object being measured and the start of the witness line.

Outline Line Length is the length of the dimension arrow when Arrows Inside is not selected.

Dimension Text Gap is the distance between the dimension text and the start of dimension arrow shaft.

Tolerance Text Scale is the scale of the tolerance text in proportion to the dimension text.

Center Extension is the distance the dimension object extends beyond the object edge when using the Center option of the Dimensioning tool.

Center Gap is the space between the sections of the dimension lines when using the Center option of the Dimensioning tool.

Center Length is the length of each section of the crosshair that marks the object center when using the Center option of the Dimensioning tool.

Leader Length is the length of the leader extending from radial and linear dimension objects.

Tolerance Downspace is the space (leading) between tolerance text when two tolerance measurements are present.

Creating a custom dimension object standard

To create a custom dimension object standard:

1. **Choose the measuring system in which you want to work using the Current Standard pop-up menu.**

   The values in the text boxes change to reflect your choice.

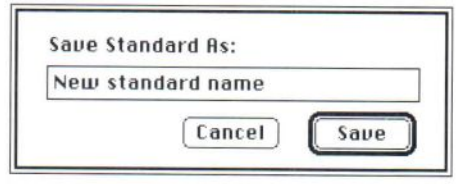
2. **Choose the units you want the standard saved in from the Units pop-up menu.**

   The values in the text boxes are converted to the selected unit of measure.

3. **Type values in the text boxes for your customized dimension objects.**

4. **Click Save As to add your standard to the Current Standards pop-up menu.**

   When you click Save As the following dialog box appears.



5. **Type a name for your custom dimension standard.**

6. **Click Save to save your custom standard or Cancel if you change your mind.**

   If you click Save, your custom standard will appear in the Current Standard pop-up box. If you click Cancel, you return to the Dimensioning Standards dialog box.

7. **Click OK to save your changes and return to the Dimensioning Manager or click Cancel to disregard your changes.**

   If you click OK without having saved a new standard, Canvas presents the following dialog box with the name of the Current Standard in quotes.

- **Discard** disregards the changes you made and returns you to the Dimensioning Manager.
- **Cancel** returns you to the Dimensioning Standards dialog box.
- **Save** accepts the changes you made to an existing, user-defined standard. This option appears dimmed when the Current Standard is one of the default standards. If you modify a default standard, you must save it under a new name.
- **Save As** displays the standard Save As dialog box so you can save your standard under a new name.

Retrieving a dimension standard

To use a previously saved dimension standard:

1. **Choose the standard that you want to use from the Current Standard pop-up menu.**

   The values in the text boxes change to reflect your choice.

2. **Click OK.**

   You return to the Dimensioning Manager.

Deleting a dimension standard

To delete a custom dimension standard:

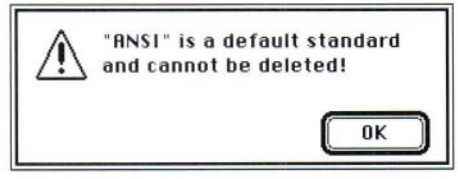
1. **Choose the custom dimension standard that you want to delete from the Current Standard pop-up menu.**

   The values in the text boxes change to reflect your choice.

2. **Click Delete.**

   The custom dimension object is deleted from the Current Standard pop-up menu.

You cannot delete default standards. If you try to, the following dialog box appears with the selected default standard in quotes.



3. **Click OK.**

   You return to the Dimensioning Manager.

Using Hatch Patterns

The Hatch Patterns command fills draw objects with hatch patterns. Hatch patterns can be applied to any draw object except a line. You can edit existing hatch patterns and save new ones using the Hatch Manager. Hatch patterns are useful in illustrations such as cross sections that have more than one dimension or layer.

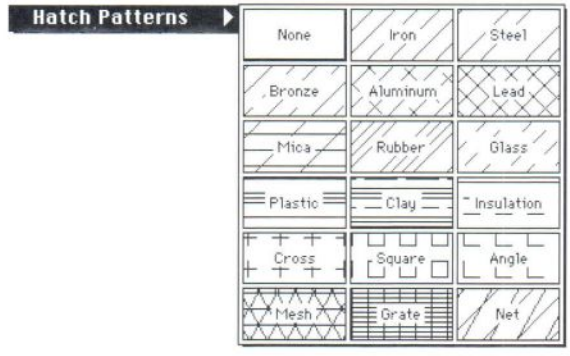
Hatch patterns are available when Hatch Patterns is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Hatch Patterns submenu

To use the Hatch Patterns submenu:

1. **Select the object or objects you want to assign a hatch pattern to.**
2. **Choose Hatch Patterns from the Object menu.**

A submenu of available hatch patterns appears.

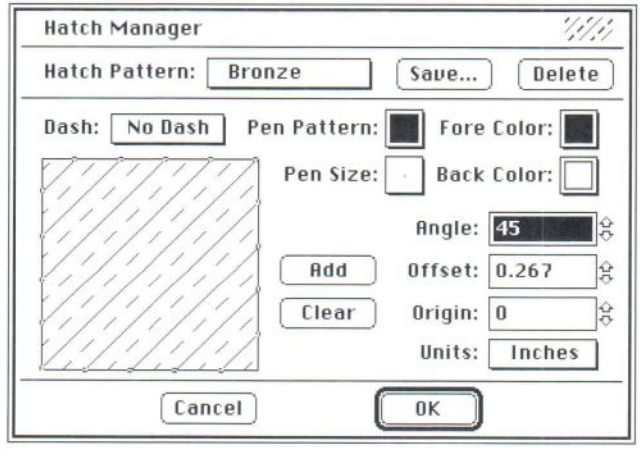


3. Drag to enclose your choice in the selection box.

All selected draw objects are filled with the hatch pattern you chose.

The Hatch Manager

The Hatch Manager lets you design, save, modify, delete, and apply hatch patterns. You can open the Hatch Manager by choosing Hatch from the Managers submenu in the Edit menu.



Settings

Hatch patterns are comprised of line groups. A **line group** is a set of parallel lines with identical properties. The Hatch Manager lets you change the properties of these line groups.

The **Hatch Pattern** pop-up menu contains a list of the existing hatch patterns. These are the same patterns displayed by the Hatch Patterns submenu in the Object menu.

The **edit box** on the left side of the Hatch Manager displays the pattern showing in the Hatch Pattern pop-up box with one line group selected. Selection handles appear where the selected line group intersects the edit box. The properties of the selected line group appear in the appropriate text boxes and pop-up boxes in the Hatch Manager.

You can select a line group by clicking a line from that group in the edit box. You need only click one line to select the entire group. You can also select line groups by pressing the Space bar to cycle through all the line groups in the selected pattern.

If the Hatch Pattern pop-up box reads None, no pattern appears in the edit box and the properties appear dimmed.

The **Pen Pattern, Pen Size, Dash, Fore Color,** and **Back Color** pop-up boxes display the properties of the line group in the edit box that is currently selected. You can change these properties by choosing a different option from the respective pop-up menu. These are the same properties available through the Tool Box palette icons.

You can also use the Color Info Manager to set the foreground and background color of a line group. To do so, hold down the Control and Shift keys and click the Fore Color or Back Color pop-up box. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box.

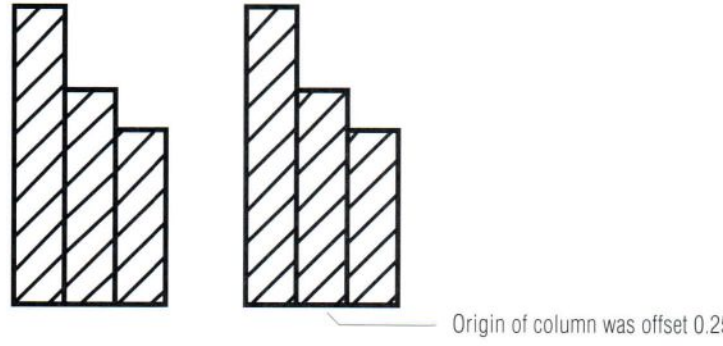
> **User Tip:** Keep the lines in a hatch pattern thinner than the lines of the object so the hatch pattern will not extend beyond the edges of the object.

Angle is the angle at which the selected line group intersects the left side of the edit box. You can change the angle of a line group by typing a new degree measurement in the Angle text box or by using the

up and down arrows on the right side of the Angle text box to increase or decrease the angle.

Offset is the distance between lines in the selected line group. You can change the offset of a line group by typing a new offset value in the Offset text box or by using the up and down arrows on the right side of the Offset text box to increase or decrease the offset.

Origin is the point at which the selected line group begins. You can change the origin of the selected line group by typing a new number in the Origin text box or by using the up and down arrows on the right side of the Origin text box to increase or decrease the origin of the selected line group. You might want to change the origin of a hatch pattern's line groups when using the same hatch patterns for two adjoining objects to prevent their hatch patterns from aligning, thereby making the individual objects more distinguishable.



The **Units** pop-up menu lists unit of measure options for setting the Offset and Origin in the Hatch Pattern Manager. The Units selection remains active until you change it again using this pop-up menu.

The **Add** button lets you add a line group to the currently selected hatch pattern. Line groups are added with the same properties as the currently selected line group, except the Angle is rotated 90° from the selected line group.

User Tip: When adding more than one line group at a time, change the Origin to prevent overlapping an existing line group.

The **Clear** button deletes the selected line group from the hatch pattern.

Designing and saving a new hatch pattern

To design a new hatch pattern using the Hatch Manager:

1. **Choose Hatch from the Managers submenu in the Edit menu.**

   The Hatch Manager appears.

2. **Choose None from the Hatch Pattern pop-up menu.**

   The edit box appears empty and the properties appear dimmed.

3. **Click Add.**

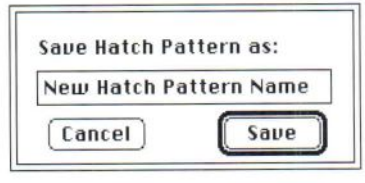
   A line group appears in the edit box with the default properties. All the properties are enabled.

4. **Use the pop-up menus and text boxes to set the properties for the line group.**

5. **Repeat Steps 3 and 4 until you are satisfied with the pattern.**

6. **Click Save.**

   The "Save Hatch Pattern as" dialog box appears.



7. **Type a name for your pattern different from the existing ones.**

8. **Click Save to save your new pattern or Cancel if you change your mind.**

   You will return to the Hatch Manager. If you click Save, your new pattern will appear in the Hatch Pattern pop-up menu of the Hatch Manager and the Hatch Pattern submenu in the Layout menu.

9. **When you have finished using the Hatch Manager, click OK to Save your changes or click Cancel to discard them.**

   The Hatch Manager closes.

Editing an existing Hatch Pattern

To edit an existing hatch pattern:

1. **Choose Hatch from the Managers submenu in the Edit menu.**

   The Hatch Manager appears.

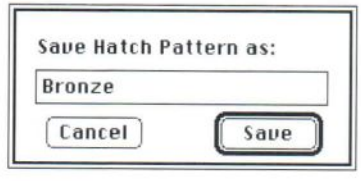
2. **Choose the pattern you want to edit from the Hatch Pattern pop-up menu.**

   The pattern appears in the edit box and the properties of the selected line group appear in the pop-up boxes and text boxes.

3. **Use the Add and Clear buttons, the pop-up menus, and the text boxes to edit the hatch pattern as described previously.**

4. **Click Save.**

   The "Save Hatch Pattern as" dialog box appears with the name of the pattern you are editing in the text box.



   Click Save.

   A second dialog box appears asking you if you want to replace the existing pattern.

5. **Click Yes if you want to replace the existing pattern or click No if you change your mind.**

   If you click Yes you will return to the Hatch Manager; if you click No you return to the "Save Hatch Pattern as" dialog box.

6. **When you have finished using the Hatch Manager, click OK to save your changes or click Cancel to disregard them.**

   The Hatch Manager closes.

Deleting an existing Hatch Pattern

To delete an existing pattern:

1. **Choose Hatch from the Managers submenu in the Edit menu.**

   The Hatch Manager appears.

2. **Select the pattern you want to delete from the Hatch Pattern pop-up menu.**
3. **Click Delete.**

   A dialog box appears which asks if you are sure you want to delete the hatch pattern.

4. **Click Yes to delete or No if you change your mind.**

   You return to the Hatch Manager. If you click Yes, the edit box will then be empty and the Hatch Pattern pop-up box will say None. You can continue to select and delete patterns from the Hatch Pattern pop-up menu or create, edit, and save new patterns.

5. **When you have finished using the Hatch Manager, click OK apply the pattern in the edit box to any currently selected objects and close the Hatch Manager. Click Cancel to close the Hatch Manager without applying the hatch pattern in the edit box to any selected objects.**

Converting hatch patterns to individual lines

Hatch patterns can be converted to object groups, ungrouped, and edited as individual lines using the Convert To submenu. See "Using the Convert To submenu" on page 13-24.

Using the Parallel Lines tool

The Parallel Lines tool is available from the Object Tools palette in the Tool Box. This tool lets you draw parallel line segments along a path you define.

This tool is available when Parallel Lines is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Parallel Lines tool has three drawing options: Line Segment, Polygon, and Smooth Polygon. These options are available from the tool's pop-up palette. You can tear this palette off. See "Tear-off palettes" on page 6-17.

You can specify a fill pattern between the parallel lines when using the Line Segment or Polygon option by using the Fill Pattern palette icon in the Tool Box.

You can use the Parallel Lines Manager to create and save parallel line settings which can have from two to fifty components. Each component can have different properties, and the components can be evenly or unevenly spaced.

Line Segment option

To use the Line Segment option of the Parallel Lines tool:

1. **Select the Parallel Lines tool icon from the Object Tools palette.**

   The Parallel Lines icon is displayed in the Object Tools palette icon as the active Object tool.

2. **Press the Option key and hold down the pointer on the Parallel Lines tool icon in the Tool Box, or hold down the pointer on the Parallel Lines tool icon in the Object Tools palette.**

   The Parallel Lines pop-up palette appears.

3. **Select the Line Segment option.**

   The Object Tools palette icon changes to the Line Segment option and the pointer changes to a small crosshair.

4. **Position the pointer in the Canvas Window where you want to begin drawing a parallel line segment.**

5. **Drag to draw the line.**

   The parallel line segments appears as you drag.

Using the polygon and smooth polygon options

To draw polygonal or smooth polygonal parallel line segments:

1. **Select the Parallel Lines tool icon from the Object Tools palette.**

   The Parallel Lines icon appears in the Object Tools palette icon as the active object tool.

2. **Press the Option key and hold down the pointer on the Parallel Lines tool icon in the Tool Box, or hold down the pointer on the Parallel Lines tool icon in the Object Tools palette.**

   The Parallel Lines palette appears.

3. **Select the Polygon or Smooth Polygon option.**

   The Object Tools palette icon changes to the selected option and the pointer changes to a small crosshair.

   Both options draw in the same manner. Objects drawn with the Smooth Polygon option appear as polygons while you draw them, then are smoothed when they are complete.

4. **Position the pointer in the Canvas Window where you want to begin drawing and click where you want the first line segment to start.**

   Parallel lines appear with one end anchored to the point where you clicked. The other end follows the movement of the pointer.

5. **Move the pointer in the direction you want the segment to grow.**

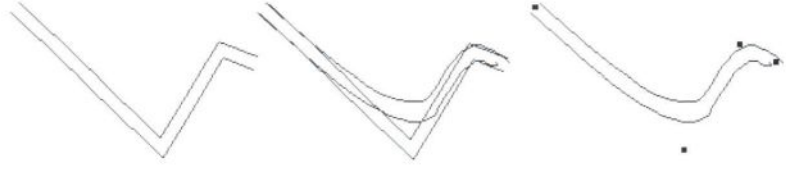
6. **Position the pointer where you want the segment to end and click.**

   The segment is anchored and the next segment appears. Its first end is anchored to the last segment and its free end follows the movement of the pointer.

   Repeat Steps 5-6 to add parallel line segments to your polygon or smooth polygon.

7. **Double-click to complete your shape or press the Enter key.**

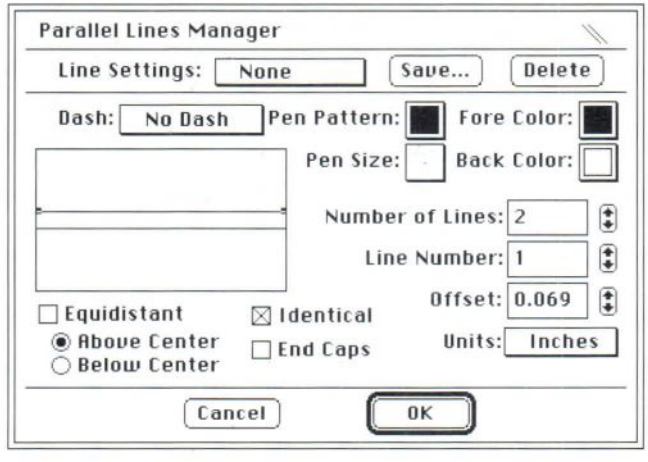
If you are using the Smooth Polygon option, the shape you draw "smooths" itself upon completion, as in the following illustration.



To draw a closed shape, position the pointer on top of the first point and double-click.

Using the Parallel Lines Manager

The Parallel Lines Manager lets you design, edit, save, retrieve, and delete parallel line settings. You can open the Parallel Lines Manager by double-clicking the Parallel Lines tool in the Object Tools palette. Canvas presents the following dialog box.



Double-clicking an existing parallel line object also opens the Parallel Lines Manager and lets you edit the object you clicked. See "Editing the settings of existing parallel lines" on page 11-42.

Settings

The **Line Settings** pop-up box lists previously saved parallel line settings. You can retrieve a parallel line setting by choosing it from this pop-up menu. The retrieved setting will appear in the edit box.

The **edit box**, on the left side of the Parallel Lines Manager, displays the setting you choose from the Line Settings pop-up box. If you do not choose a setting from the Line Settings pop-up box, the edit box displays the last used parallel line setting. One line appears selected and the text boxes, check boxes, and pop-up boxes in the Parallel Lines Manager display its properties.

You can select individual lines by clicking them in the edit box. The properties displayed in the Parallel Lines Manager change accordingly.

The **Pen Pattern, Pen Size, Dash, Fore Color,** and **Back Color** pop-up boxes display the properties of the selected line in the edit box. You can change these properties by selecting from the options available in their pop-up menus. These are the same property options available through the Tool Box palette icons.

You can also use the Color Info Manager to set the foreground and background color. To do so, hold down the Control and Shift keys and click the Fore Color or Back Color pop-up box. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box.

The **Number of Lines** text box shows the number of lines in the setting displayed in the edit box. You can increase or decrease the number of lines in the setting by typing a new number in the text box or using the up and down arrows to the right of the text box.

When you increase the number of lines in the setting, new lines appear at the bottom of the group in the edit box. Added lines have the properties of the currently selected line.

When you decrease the number of lines in the setting, lines are removed from the bottom of the group.

The **Line Number** text box displays the number of the line which is selected in the edit box, with the top line being 1. You can use the Line Number text box to select a line by typing its number in the edit box or by using the up and down arrows on the right side of the text

box. You can also select a line by clicking it in the edit box. Handles appear around the selected line in the edit box.

When **Equidistant** is selected, all the components in the setting are equally spaced.

The **Spacing** text box appears when Equidistant is selected. It displays the distance between the lines in the selected setting. You can change the Spacing amount by typing a new number in the text box or by using the up and down arrows to the right of the text box to increase or decrease the spacing between lines. You can also change the spacing by dragging a line in the edit box.

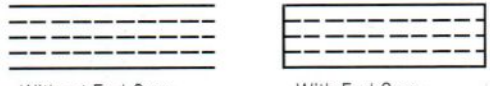
The **Offset** text box appears when Equidistant is not selected. Offset displays the distance of the selected line from the center of the setting.

The center of a setting is defined by the user when dragging to create the parallel line segments. You can change the distance of a selected line from the center of the setting by typing a new distance in the text box or by using the up and down arrows to the right of the text box to increase or decrease this distance. You can also change the offset by dragging a line in the edit box.

Above Center and **Below Center** are enabled when Equidistant is not selected. Select one of these options to indicate in which direction to measure the specified offset of the line from the center of the setting.

The **Identical** check box lets you change the properties of all the lines of the selected setting at once. When you select the Identical check box, all the lines take on the properties of the currently selected line, and any changes you make to Pen Pattern, Pen Size, Dash, Fore Color, and Back Color affect all the lines and not just the selected one.

End Caps, when selected, puts perpendicular lines at each end of the parallel line object.



Without End Caps With End Caps

Save lets you save the setting in the edit box as a line setting.

Delete lets you remove the setting currently displayed in the Line Settings pop-up box from the Line Settings pop-up menu.

The **Units** pop-up menu lets you choose the unit of measure used to set the Offset and Spacing values. The Units selection remains active until you change it again using the Units pop-up menu.

Designing and saving a new setting

To design a parallel line setting that you can retrieve for later use:

1. **Select the Parallel Lines tool icon from the Object Tools palette.**

   The Parallel Lines icon is displayed in the Object Tools palette icon.

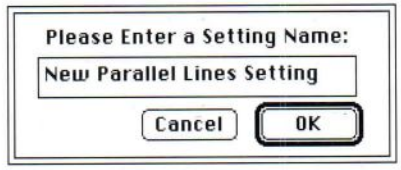
2. **Double-click the Parallel Lines tool icon.**

   The Parallel Lines Manager appears.

3. **Use the edit box, check boxes, and pop-up menus as described previously to design a parallel line setting.**

4. **Click Save.**

   A dialog box appears asking you to name your new setting.



5. **Type a name for your setting.**

6. **Click OK to save your setting or click Cancel if you change your mind.**

   You return to the Parallel Lines Manager. If you click OK, the name you typed for the setting appears in the Line Settings pop-up box.

7. **When you have finished customizing line settings, click OK to save your changes or Cancel to disregard your changes.**

   You return to your illustration.

Deleting a saved setting

You can use the Parallel Lines Manager to delete previously saved settings. To delete a setting from the Line Settings pop-up menu:

1. **Select the Parallel Lines tool icon from the Object Tools palette.**

   The Parallel Lines icon is displayed in the Object Tools palette icon.

2. **Double-click the Parallel Lines tool icon.**

   The Parallel Lines Manager appears.

3. **Choose the name of the setting you want to delete from the Line Settings pop-up menu.**

   The selected setting now appears in the Line Settings pop-up box.

4. **Click Delete.**

   A dialog box appears which asks you if you are certain you want to delete the selected setting.

5. **Click Yes to delete the setting or No if you change your mind.**

   You return to the Parallel Lines Manager.

6. **When you are finished customizing Line Settings, click OK to save your changes or Cancel to disregard your changes.**

   You return to your drawing.

Retrieving a previously saved setting

To retrieve a previously saved setting:

1. **Select the Parallel Lines tool icon from the Object Tools palette.**

   The Parallel Lines icon is displayed in the Object Tools palette icon.

2. **Double-click the Parallel Lines tool icon.**

   The Parallel Lines Manager appears.

3. **Choose the setting you want to retrieve from the Line Settings pop-up menu.**

   The selected setting now appears in the Line Settings pop-up box.

4. **Click OK.**

   The Parallel Lines Manager closes.

5. **Select the desired Parallel Lines option from its pop-up menu.**

6. **Draw your parallel line object.**

   The parallel lines appear in accordance to the setting you retrieved.

Editing the settings of existing parallel lines

To edit existing parallel line objects:

1. **Double-click the parallel line object you want to edit, or select it and choose Parallel Lines from the Managers submenu in the Edit menu.**

The Parallel Lines Manager appears.

2. **Use the edit box, check boxes, and pop-up menus as described previously to edit the parallel line object's settings.**
3. **Click OK to close the Parallel Lines Manager and apply your changes or click Cancel to disregard any changes.**

   The selected parallel line object will be edited accordingly.

Editing parallel-line objects

After a parallel line object has been created, you can edit its shape. To do so:

1. **Select the parallel line object you want to edit with the Arrow tool.**

   Handles appear along the center at each vertex.

2. **Position the pointer over the vertex you want to reposition.**

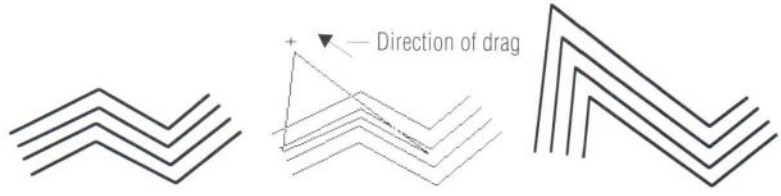
   The pointer becomes a small crosshair when properly positioned.

3. **Drag the vertex to the desired position.**

   The original center and the repositioned center of the segments on either side of the vertex are displayed as you drag.

4. **Release the mouse button when you are satisfied with the position of the vertex.**

   The parallel line object reshapes.



Parallel line objects can be converted to object groups, ungrouped, and edited as individual objects using the Convert To submenu. See "Using the Convert To submenu" on page 13-24.

Chapter

12

MacrObject sets

A MacrObject is a user-created object you use frequently. Canvas lets you create, use, and store MacrObjects in files called **macro set files**. Macro set files can be retrieved in any Canvas document. Once loaded (retrieved), the MacrObjects in the file become an adjunct to the Tool Box. Just as you draw a rectangle with the Rectangle tool, you could choose a company logo MacrObject to draw the company logo, or a pentagon MacrObject to draw perfect pentagons of any size.

The uses for MacrObjects are extensive. Architects and landscape designers can create sets of people, furniture, trees, and shrubs. An electrical engineer might create a set of circuit elements like gates and resistors. Project managers can use sets containing shadowed text boxes to create or customize large flowcharts and organizational charts. MacrObjects can be applied to any field with equally useful results.

A macro set can contain up to 32 MacrObjects. The MacrObjects appear in the Macro menu and are chosen like any other menu command.

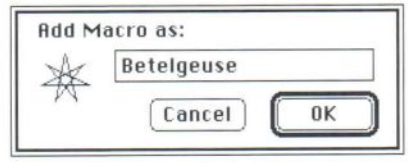
Adding MacrObjects

The Add Macro command (⌘-M) allows you to add an object or object group as a MacrObject to the macro set in the Macro menu. If no macro set is currently loaded, this creates a macro set. You can have up to 32 MacrObjects in any one macro set.

To add an object or group of objects to the Macro menu:

1. **Select the desired object or object group with the Arrow tool.**
2. **Choose Add Macro (⌘-M) from the Macro menu.**

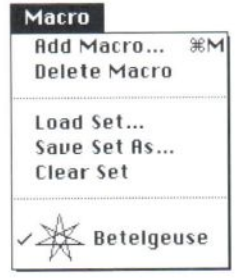
3. **Canvas displays a dialog box asking you to name the new MacrObject.**



Use short names when possible since the menu must be as wide as the length of the longest name.

4. **Click OK or press the Return key to save the new MacrObject and close the dialog box or click Cancel if you change your mind.**

The next time you use the Macro menu, you will see the new MacrObject and a small graphical representation of it in the Macro menu.



Saving a macro set file

You can save the MacrObjects in the Macro menu as a macro set file. To create or save changes to a macro set file:

1. **Choose Save Set As from the Macro menu.**

A standard save dialog box appears.

2. **Type a name for your macro set file and save it to the desired location.**

If you are updating a previously saved set, type the name of the set in the text box and click Save. An alert box appears asking if you want to replace the existing file. Click Yes.

User Tip: Every time you save a document, the contents of the macro set in the Macro menu are saved with the document. The Save Set As command lets you save the macro set as a separate file, letting you use it in other documents.

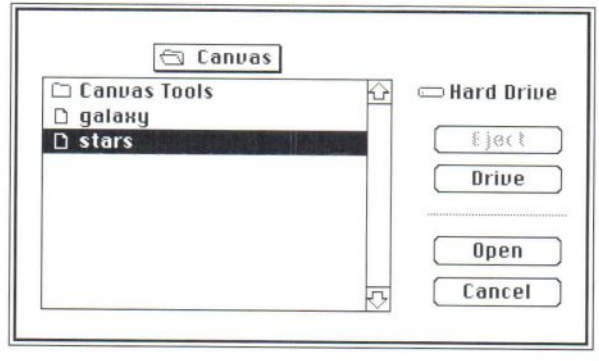
Loading a macro set file

You can open an existing macro set file into the Macro menu using the Load Set command in the Macro menu. Since only one macro set can be open at a given time, Canvas closes the currently loaded set, if there is one. If you have made changes to the currently loaded set which you have not saved, Canvas displays an alert box warning you of the loss of changes if you do not save the set first.

The Load Set command is similar to the Open command in the File menu. To use the Load Set command:

1. **Choose Load Set from the Macro menu.**

   A directory dialog box showing all macro set files in the selected disk or folder appears.



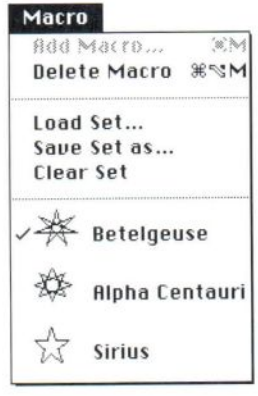
2. **Locate the macro set file you want to load and click Open.**

   The MacrObjects in the file are loaded in the Macro menu. This now becomes the default macro set for the active Canvas document.

Using a MacrObject

Once you load or create a macro set, you can use any of the MacrObjects in the set to create new objects in your illustration. To do so:

1. **Choose the MacrObject you want to use from the Macro menu.**



A check mark appears next to the MacrObject indicating that it is selected.

2. **Click in the Canvas Window to place the MacrObject as it was saved, or hold down the mouse button and drag to draw the MacrObject at the desired size.**

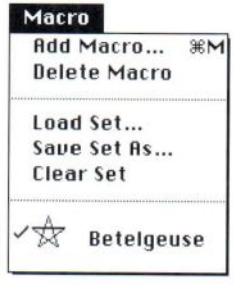
You can maintain the original proportions of the MacrObject by holding down the Shift key as you drag.

Deleting a MacrObject

You can delete unwanted MacrObjects from the active macro set using the Delete Macro command. This action cannot be undone. To delete a MacrObject:

1. **Choose the MacrObject you want to delete from the Macro menu.**

Canvas places a check mark next to the chosen MacrObject.



2. **Choose Delete Macro from the Macro menu.**

   Canvas displays a dialog box confirming the deletion.

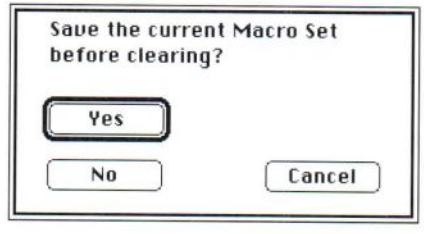
3. **Click Yes or press the Return key to delete the MacrObject, or click No if you change your mind.**

Closing a macro set

You can close a macro set without closing the document. To do so:

1. **Choose Clear Set from the Macro menu.**

   If no changes have been made to the macro set since it was loaded, the MacrObject set will disappear from the Macro menu. If you have made changes, the following dialog box appears letting you save your changes.



   Once a set is cleared, any unsaved changes will be lost.

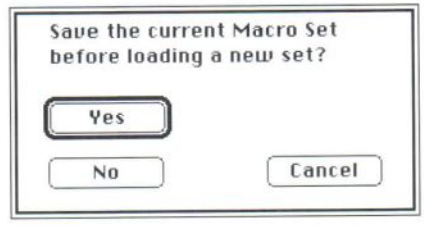
2. **Click No to discard all changes and close the set, click Yes if you want to save the set before clearing it, or click Cancel to disregard the Clear Set command.**

Switching between macro set files

Although Canvas permits only one active macro set at a time, you can switch between sets at any time. To do so:

1. **Choose Load Set from the Macro menu.**

   If you have made any changes or additions to the currently active macro set and have not saved them, Canvas displays the following dialog box:



2. **Click Yes or press the Return key to save your changes to the presently loaded macro set file and load another macro set file, click No if you do not wish to save your changes but still wish to switch macro set files, or click Cancel to continue using the currently open macro set.**

   If you click Yes and have never saved the open set, a Save As dialog box appears for saving the set. If you click No, a directory dialog box appears for locating and opening a macro set file. If you click Cancel, you return to the Canvas Window.

User Tip: You may have multiple Canvas documents open, each with a different macro set loaded. The Macro menu displays only the MacrObjects in the set attached to the active window.

Chapter

13

Editing your drawings

You create drawings in Canvas by manipulating objects you draw using the Canvas tools. Canvas contains many commands designed to assist you in the creation of complex drawings from simple shapes. In this chapter you will learn how to arrange, group, and lock objects in your drawing, as well as learn how to set your own specifications for duplicating, scaling, aligning, and distributing objects.

Using the Undo command

The Undo command reverses your last action. When you choose Undo (⌘-Z) from the Edit menu, Canvas cancels the last change that you made to your document. However, the Undo command cannot reverse any non-editing type actions such as:

- scrolling through your Canvas document.
- selecting or deselecting elements in a Canvas graphic.
- reverting to the last saved version of your document.
- deleting MacrObjects.

You can reverse the undo action by choosing the Undo command again.

Using the Again command

The Again command (⌘-=) lets you repeat the last menu action that you performed. When you choose Again from the Edit menu, you see that the last menu command performed precedes the word *Again*.

Paste Again ⌘=

The Again command is very useful when repeating a command several times.

> **User Tip:** To use the same tool again, hold down the Command (⌘) key and begin to draw.

Using the Cut command

The Cut command removes selected objects, text, or paint areas from your document and places them on the Clipboard. The selection remains in the Clipboard until the next time you use the Cut or Copy command. When a selection is in the Clipboard you can place it in the same document or another document using the Paste command.

To use the Cut command:

1. **Select the elements that you want to remove from your document and place on the Clipboard:**
   - For draw, text, or paint objects, use the Arrow tool to make your selection.
   - For a portion of a paint object, use the Lasso or Marquee tool to make your selection.
   - For a portion of a text object, use the Text tool to highlight your selection.
2. **Choose the Cut command (⌘-X) from the Edit menu.**

   The selection is removed from your document and is placed on the Clipboard.

Modifier key Cut commands

Canvas offers several special Cut commands which appear when you press a specified modifier key before choosing the Edit menu.

- To cut to the Clipboard without banding, press the Shift key and choose **Cut Without Banding** from the Edit menu. Macintosh applications break some large paint objects into pieces, or bands, on the Clipboard. This process is called **banding**. It is possible that when cutting and pasting a paint object between applications, you will paste just the top band of the paint object. If this occurs, you should

use the Cut Without Banding command. If you are working on a Macintosh Plus or earlier, you should not use this command.

- To cut a grouped object, a picture object, or a complex object to the Clipboard as its individual components, press the Option and Shift keys and choose **Cut Without Comments** from the Edit menu. For example, if you select an object created with the Dimensioning tool, choose Cut Without Comments, and then Paste, you will paste the dimension text, arrows, and witness lines as separate objects.

Using the Copy command

The Copy command places a copy of a selected object, text, or paint area on the Clipboard while leaving the originals unchanged. The selection remains on the Clipboard until the next time you use the Cut or Copy command. When a selection is on the Clipboard you can place it in the same document or another document using the Paste command. To use the Copy command:

1. **Select the elements of your document that you want to place on the Clipboard:**
   - For draw, text, or paint objects, use the Arrow tool to make your selection.
   - For a portion of a paint object, use the Lasso or Marquee tool to make your selection.
   - For a portion of a text object, use the Text tool to highlight your selection.
2. **Choose the Copy command (⌘-C) from the Edit menu.**

   The selection is placed on the Clipboard.

Modifier key Copy commands

Canvas offers several special Copy commands which appear when you press a specified modifier key before choosing the Edit menu.

- To copy selected objects to the Clipboard without banding, press the Shift key and choose **Copy Without Banding** from the Edit menu. It is possible that when copying and pasting between applications, you will paste just the top band of the paint object. If this occurs, you should use the Copy Without Banding command. If you are working on a Macintosh Plus or earlier, you should not use this command.
- To copy a grouped object, a picture object, or a complex object to the Clipboard as its individual components, press the Option and Shift keys and choose **Copy Without Comments** from the Edit menu. For example, if you select an arrow created with the line tool, choose Copy Without Comments, and then choose Paste, you will paste the shaft and the arrowhead in your document as separate objects.

- To copy all the guides from one Canvas document to another, press the Tab key and choose **Copy Guides** from the Edit menu. Make the document you want to paste the guides into the active document and choose Paste (⌘-V) from the Edit menu.
- To copy the text from all selected text objects in a Canvas document to paste into a word processing application, press the Option key and choose **Copy Selected Text** from the Edit menu. When you paste the Clipboard's contents into a word processing application, they appear as one continuous block of text. The ordering of the text objects is determined by their drawing order in the Canvas document, with the bottommost object appearing first. All text properties (font, size, justification, and so on) are assigned by the word processing application.

Using the Paste command

The Paste command inserts the contents of the Clipboard into the active document. To use the Paste command:

1. **Choose the Paste (⌘-V) command from the Edit menu.**

   The Clipboard's contents appear in your document as new objects.

- If a paint object is active when you choose Paste, the Clipboard's contents are pasted into it. The pasted image appears surrounded by a blinking dashed line. You can reposition it by dragging or by using the keyboard arrows keys. When you are satisfied with its position, press the Enter key. Pressing the Enter key stamps the pasted image into the active paint object. It can no longer be edited as a separate object.
- If the Clipboard contains text, it will be pasted into your document as a separate text object. You can also paste text into an existing text object. To do so, select the Text tool, positioning the pointer in the text object where you want to insert the Clipboard text, and then choose the Paste command.

You can continue to paste the Clipboard's contents into your documents as many times as you want since it remains on your Clipboard until the next time that you use the Cut or Copy command.

Modifier key Paste commands

Canvas offers several special Paste commands which appear when you press a specified modifier key before choosing the Edit menu.

- When the Clipboard contains a grouped object, a picture object, or a complex object, you can paste the Clipboard's contents into your document as the individual components which comprise it. To do so, press the Shift key and choose **Paste Without Comments** from the Edit menu. For example, if the Clipboard contains an object created with the Parallel Lines tool, choose Paste Without Comments to paste each of the lines which comprise the parallel line object in your document as a separate object.

- To specify the exact placement and size of the Clipboard's contents when pasting them into a document, press the Option key and choose **Paste And Place** from the Edit menu. The Place icon appears.

Position the top left corner of the icon where you want the top left corner of the Clipboard's contents to appear and either click to paste the Clipboard's contents and maintain its size or drag to where you want the bottom right corner to be to resize the Clipboard's contents. The Clipboard's contents are pasted into your document positioned according to your specifications.

- To paste the Clipboard's contents in the exact spot from which it was copied or cut, press the Tab key and choose **Paste In Position** from the Edit menu. Otherwise, Canvas pastes the Clipboard's contents in the center of the screen.

- To place the Clipboard's contents in your document as a picture object, press the Control key and choose **Paste As Picture** from the Edit menu. A **picture object** is a graphic element that is treated as a single object. Defining information is attached to it for creating the image it contains. This information cannot be edited; it must work as a unit. It is, therefore, the most limited object type available in Canvas since its image can only be resized and scaled.

  A valuable feature of picture objects is that they retain their resolution when scaled. If you find that a paint object loses its image resolution when scaled, you can convert it into a picture object before scaling it.

  If a graphic from another application does not transfer well into Canvas, use the Paste As Picture command. Likewise, if a Canvas graphic does not transfer well into another application, use the Object Specifications dialog box to change the object into a picture object, ( ) and then copy it and paste it into the other application.

  If you need to edit a picture object, you must first convert it to another object type. You can change a picture object into a paint object through the Object Specs command, or you can try to break it into individual object parts using the Paste Without Comments command. However, information attached to the picture object can be lost in these conversions.

Using the Clear command

The Clear command (⌘-Option-X) in the Edit menu removes any selected objects, portion of a text object, or paint area from your docu-

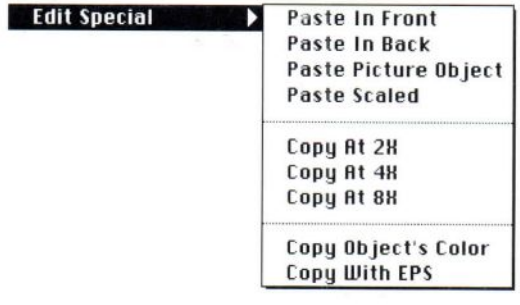
ment without saving it to the Clipboard. Once you clear a selection from a document, you can only retrieve it by choosing Undo (⌘-Z) from the Edit menu before performing any other operations or by choosing Revert from the File menu, provided you have not saved your document since using the Clear command.

You can also clear a selection from your document by pressing the Delete or Backspace key.

Using the Edit Special submenu

The Edit Special command opens a submenu which offers several options for copying and pasting. These options effect placement of pasted objects in a Canvas document's stacking order, and the retention of details when copying and pasting between applications.

The Copy Object's Color option appears in this submenu when PANTONE® Colors is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools. For information on the Copy Object's Color option see page 18-16.



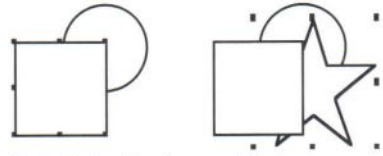
Paste In Front, Paste In Back

The Paste In Front and Paste In Back options let you specify the positioning of the Clipboard's contents in the active document with regard to the stacking order of its existing objects. To use these options:

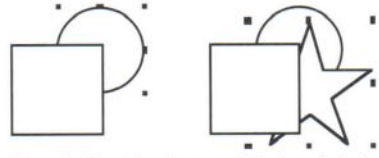
1. **Select the objects you want to cut or copy to the Clipboard.**
2. **Choose Cut (⌘-X) or Copy (⌘-C) from the Edit menu.**
3. **Select the object in your drawing in front or in back of which you want to insert the Clipboard's contents.**

4. **Choose Paste In Front or Paste In Back from the Edit Special submenu in the Edit menu.**

   The Clipboard's contents are pasted in front or in back of the selected objects. After pasting, only the pasted objects remain selected.



Paste In Back is chosen while the square is selected



Paste In Front is chosen while the circle is selected

To paste the star between the square and circle, either select the square and choose Paste In Back or select the circle and choose Paste In Front

Paste Picture Object

The Paste Picture Object option pastes the contents of the Clipboard into your drawing as a picture object. This option is equivalent to holding down the Control key and choosing Paste As Picture from the Edit menu. See page 13-6.

Paste Scaled

The Paste Scaled option adjusts the proportions of the Clipboard's contents to conform with the scale of the active document. Use this option when pasting the Clipboard's contents into a document whose scale differs from the document in which they were created.

Copy At 2X, Copy At 4X, Copy At 8X

The Copy At 2X, 4X, and 8X options place the selected object on the Clipboard at the chosen magnification level. This ensures the maintenance of the object's details when pasting it into a page-layout program. Choose a magnification level based on the printing device you are going to use and the needed precision.

- 2X is representative of the ImageWriter II's resolution level.

- 4X is representative of the LaserWriter's resolution level.
- 8X is representative of the Linotronic's resolution level.

Each magnification level displays WYSIWYG (What You See Is What You Get) when imported to a page-layout program for the designated output device. The image is imported in at the same size but at an increased resolution.

Copy With EPS

Copy With EPS copies the selected objects to the Clipboard and includes their Encapsulated Postscript description. When you choose Copy With EPS, the objects maintain their original quality and high resolution when pasted in PostScript® page-layout programs. This option is useful for pasting graphics into programs such as Microsoft Word™ that do not import Encapsulated PostScript files.

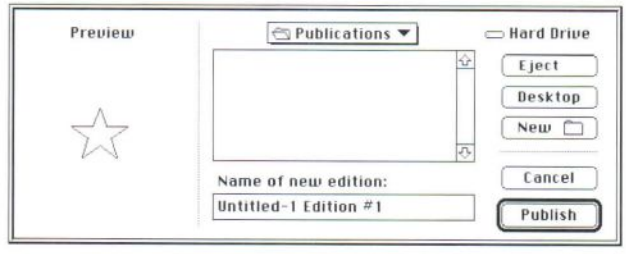
Using Publishers and Subscribers

The Create Publisher, Subscribe To, and Edition Options commands in the edit menu let you publish (export) portions of Canvas documents as editions (linked files) whose contents can be can be subscribed to (imported) by Canvas or other applications.

These commands are available if you are using System 7.0 or later and System 7.0 Options is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Create Publisher command

You must select one or more objects in the Canvas Window to enable the Create Publisher command. Choosing Create Publisher displays a dialog box which lets you publish the selection as an edition.



Settings

The settings in this dialog box are similar to the standard directory dialog box with the addition of the **Preview** section on the left side of the dialog box which displays the selected objects.

Publishing an edition

To publish your selection in an edition file:

1. **Use the arrow tool to select the object or objects you want to publish.**
2. **Choose Create Publisher from the Edit menu.**

   The Create Publisher dialog box appears.
3. **Create a new folder or open an existing folder in which to store the edition.**
4. **Type a name for the edition file in the text box.**
5. **Click Publish to publish the edition.**

The dialog box closes and you return to the Canvas Window. The selection is contained in a gray rectangle called a **publisher**.

The borders of the publisher are indicated by the gray rectangle. The publisher is like a porthole into your document. It can be resized and dragged to new locations. Objects can be moved in and out of the publisher. The gray border is displayed on screen but does not print. You can choose to show or hide this border using the Show/Hide submenu in the Layout menu. See "Publisher Borders and Subscriber Borders" on page 7-42 for instructions.

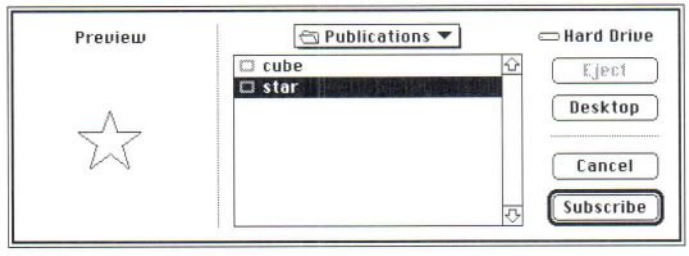
The publisher in Canvas is linked to the edition file. Every time you send an edition, the contents of the publisher at the time you send the edition update the edition file.

The Subscribe To command

The Subscribe To command lets you subscribe to (import) the contents of an edition file which have been published by Canvas or another application into the active Canvas document. The edition file maintains

a link with both the document in which it was created and the document subscribing to it. Each time a publisher sends an edition (updates the edition file), its subscriber in Canvas can get the edition (be updated) as well.

Choosing Subscribe To from the Edit menu opens the following directory dialog box.



Settings

The settings in this dialog box are similar to the standard directory dialog box with the exception of the **Preview** section on the left side of the dialog box which displays the contents of the edition file highlighted in the directory.

Subscribing to an edition

To subscribe to an edition file:

1. **Choose Subscribe To from the Edit menu.**

   The Subscribe To dialog box appears.

2. **Select the name of the edition file you want to subscribe to from the directory.**

   The Preview section displays the contents of the edition file.

3. **Click Subscribe to import the edition.**

   The dialog box closes.

The edition appears in the Canvas Window surrounded by a gray border. This object is called a **subscriber.**

The border of the subscriber is indicated by the gray rectangle. The gray border is displayed on screen but does not print. You can choose to show or hide this border using the Show/Hide submenu in the Layout menu. See "Publisher Borders and Subscriber Borders" on page 7-42 for instructions.

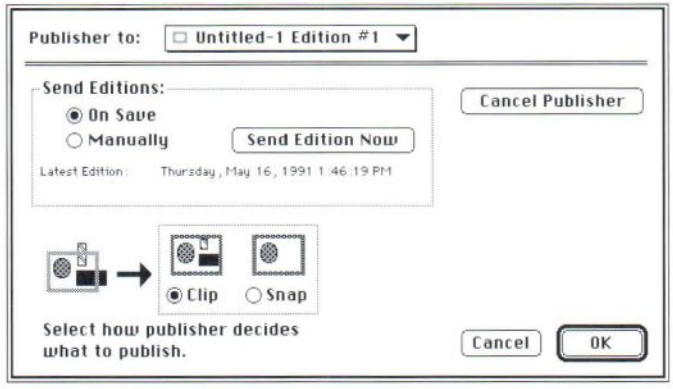
The contents of the subscriber are linked to the edition file. You can resize or move a subscriber. If you resize a subscriber, future editions you get will also appear resized.

The Edition Options submenu

The Edition Options submenu contains options for getting and sending editions. The contents of the submenu vary depending on the current selection in the Canvas Window. If no publisher or subscriber is selected, or if more than one is selected, the first item in the submenu appears dimmed. If a publisher is selected it appears as *Publisher Options* and if a subscriber is selected it appears as *Subscriber Options*.

Publisher Options...

This option is enabled when a publisher is selected. Choosing Publisher Options displays a dialog box which lets you choose how to send editions to the edition file linked to the selected publisher. You can also display this dialog box by double-clicking a publisher's border.



Settings

The **Publisher To** pop-up menu displays the hierarchical location of the edition file linked to the selected publisher.

The **Send Editions** options let you select how to send editions to the edition file which is linked to the selected publisher.

- **On Save:** Select this option if you want the selected publisher to send an edition each time you save the document.
- **Manually:** Select this option if you want to send editions yourself. If you select Manually you have two options for sending editions. You can click the Send Edition Now button in this dialog box or you can choose Send All Now from the Edition Options submenu to send editions to all the edition files which are linked to publishers in the active document.

  Clicking Manually displays the Last Change time below the Latest Edition time.

  - **Latest Edition** is the time the contents of the edition file linked to the selected publisher were sent.
  - **Last Change** is the time of the most recent saving of the selected publisher or the last time the publisher sent an edition.

  Send Edition Now: Click this button to send an edition to the edition file linked to the publisher. Latest Edition and Last Change will update to the current time and the dialog box will close. You can use this button whether you have chosen On Save or Manually.

Click **Cancel Publisher** if you want to break the link between the publisher and the edition file. The edition file will still exist, but you will not be able to send editions to it. If you click this button, an alert box appears confirming that you want to remove this publisher link. Click Yes to confirm and close the dialog box. Click No to cancel the command and return to the Publisher Options dialog box.

Select how you want the publisher to decide what to publish:

- **Clip** publishes everything that appears within the publisher's border including portions of objects. Although the subscriber will only display the portion of the object which is contained within the publisher's border, the entire object is stored in the edition and imported by the subscriber. Therefore, when using this option, it is important not to overlap a portion of a color paint object unintentionally since it will increase the size of the edition considerably.

  When subscribing to a clipped edition in Canvas, you can select to convert it to Canvas objects. In this case, if any portion of an object is within a publisher's border, the entire object is displayed in the subscriber.

- **Snap** publishes only objects which are contained entirely within the publisher's border. This is the default setting.

Using the Publisher Options dialog box

To use the Publisher Options dialog box:

1. **Double-click a publisher or select it and choose Publisher Options from the Edition Options submenu in the Edit menu.**

   The Publisher Options dialog box appears.

2. **Indicate your preferences for sending editions or use the other options available from this dialog box as described previously.**

3. **Indicate how you want the publisher to publish.**

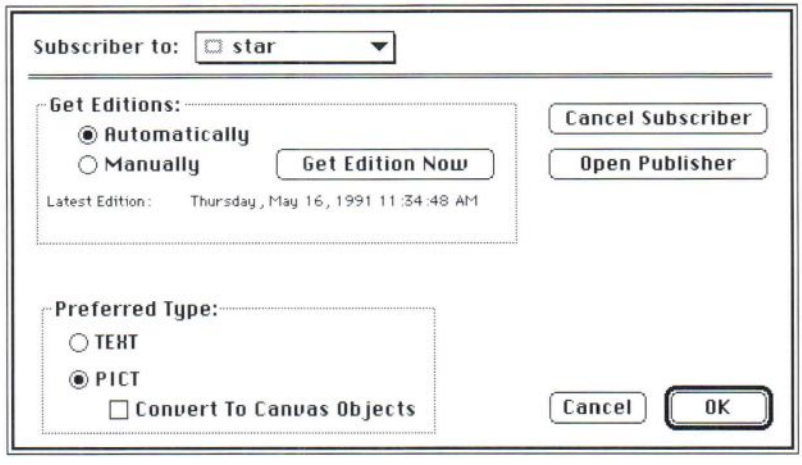
4. **Click OK to save your changes, Cancel to ignore them, or Send Edition Now to update the linked edition.**

   The dialog box closes.

Subscriber Options...

This option is enabled when a subscriber is selected. Choosing Subscriber Options displays a dialog box which lets you choose how to

update the selected subscriber. You can also display this dialog box by double-clicking the border of the subscriber you want to set the update procedure for.



Settings

The **Subscriber To** pop-up menu displays the hierarchical location of the edition file linked to the selected subscriber.

The **Get Editions** section lets you choose how to receive edition updates for the selected subscriber.

- **Automatically:** Select this option to get editions for the subscriber when the document opens and anytime the edition file linked to the selected subscriber is updated.
- **Manually:** Select this option to get editions yourself. If you select Manually you have two options for getting editions. You can click the Get Edition Now button in this dialog box to update the selected subscriber or you can choose Get All Now from the Edition Options submenu in the Edit menu to get editions for all the subscribers in the active document.

  Clicking Manually displays the Last Received date below the Latest Edition date, letting you see if the edition file has been updated since the subscriber received its last edition.

- **Latest Edition** displays the last time the edition in the edition file linked to the selected subscriber was sent.
- **Last Received** displays the last time the selected subscriber received an edition.

Get Edition Now: Click this button to update the selected subscriber to the latest edition. The time in Last Received will update to the Latest Edition time and the dialog box closes.

Cancel Subscriber: Click this button to break the link between the subscriber and the edition file. An alert box appears asking if you are sure you want to remove the subscriber. Click Yes to do so or No if you change your mind. If you click Yes, Canvas removes the subscriber link and returns you to the Canvas Window. The subscriber border disappears and its contents remain in your document as a picture object. If you click No, you cancel the command and return to the Subscriber Options dialog box. See page 13-5 for information on picture objects.

Open Publisher: Click this button to open the document which publishes the edition linked to the selected subscriber. The dialog box closes and the document containing the publisher opens.

Preferred Type lets you select the format in which you would prefer to subscribe. Canvas will use your choice when possible.

- **TEXT** subscribes only to characters included in the edition. Graphic elements included in the edition will not appear in the subscriber. The text will retain its properties.
- **PICT** subscribes to all graphics and text in the edition. Canvas initially subscribes to editions in PICT format by default.

Convert To Canvas Objects is enabled if you select PICT. When an edition is published in Snap format, Canvas subscribes to it with this option selected by default. Convert To Canvas Objects breaks the subscriber into its individual components. When subscribing to an edition which was not published in Canvas, it is possible that the edition contains elements not supported by Canvas. In such cases, a loss of data might occur. If so, update the subscriber without this option selected.

When you convert the contents of a subscriber to Canvas objects, you can **adorn** the subscriber. Adorning a subscriber means adding properties to it such as a fill pattern or a background color. Any adornment you add to a subscriber overrides that property of the edition. Each

property is independent. For example, if you adorn a subscriber by adding a fill pattern to it but do not change its pen size and then get an edition with a new fill pattern and pen size, the subscriber will be updated to the new pen size, but its fill pattern adornment will override the edition's fill pattern. To remove a subscriber's adornments, select the subscriber and choose Remove Effects from the Effects menu.

If you try to adorn a subscriber which has not been converted to Canvas objects, Canvas displays an alert box warning you that the subscriber will be converted to Canvas objects if you change its properties.

Using the Subscriber Options dialog box

To use the Subscriber Options dialog box:

1. **Double-click a subscriber or select it and choose Subscriber Options from the Edition Options submenu in the Edit menu.**

   The Subscriber Options dialog box appears.

2. **Indicate your preferences for getting editions or use the other options available from this dialog box as described previously.**

3. **Click OK to save your changes, Cancel to ignore them, or Open Publisher to open the document in which the edition was published.**

   The dialog box closes.

Send All Now

Choose Send All Now to send editions to all edition files that are linked to publishers in the active document.

Get All Now

Choose Get All Now to update all the subscribers in your document to their latest editions.

Cancel Auto Send

Choose this option to stop publishers from automatically sending editions when you save a document. This option is a toggle menu item. When it is active, a check mark appears to its left and editions can only be sent manually. Choosing this option does not effect a publisher's setting for sending editions; it temporarily overrides it.

Cancel Auto Get

Choose this option to stop subscribers from automatically updating. This option is a toggle menu item. When it is active, a check mark appears to its left and subscribers can only receive editions manually. Choosing this option does not effect a subscriber's setting for getting editions; it temporarily overrides it.

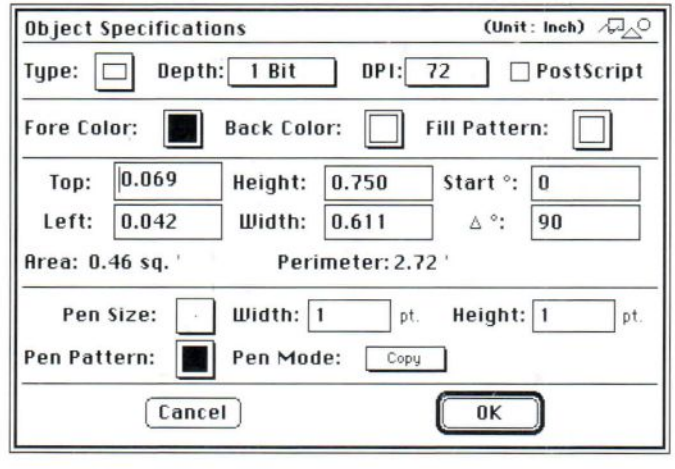
Using the Object Specs command

The Object Specs command in the Object menu is enabled when an object is selected in the Canvas Window. This command opens a dialog box which displays the currently selected object's properties, size, and location on the screen, as well as its type, area, and perimeter.

This command is available when Object Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Object Specifications dialog box

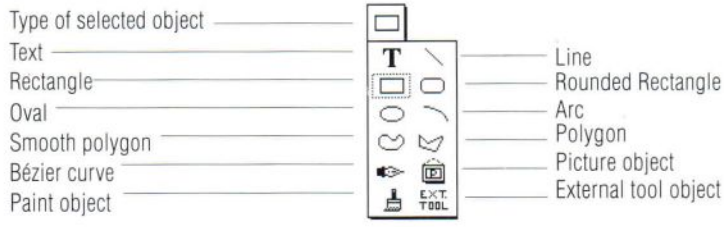
Choosing the Object Specs command in the Object menu when a single object is selected displays the Object Specifications dialog box.



Settings

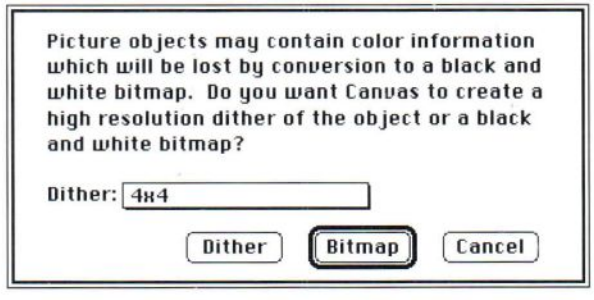
Some of the settings in this dialog box change or dim depending upon the selected object type.

Type displays the object type of the selected object. The pop-up menu lists all the Canvas object types.



You can use this menu to convert the selected object to a different object type. The object type you choose determines which properties you can change in this dialog box.

If you change a picture object into a 1-bit deep paint object, the following dialog box appears.



When converting a color or gray-scale picture object into a bitmap, you may want to dither the bitmap. To do so, choose an option from the dither pop-up menu and click Dither. The bitmap will appear black at 100%. View the bitmap at 400% to get an idea of what the printed results will be. As the number of pixels in the dither pattern increases, the shades of gray increase and the sharpness of the image decreases. 4x4 is sufficient when printing to an ImageWriter®. When printing to a LaserWriter® you can increase the dither. View printouts of the avail-

able options to decide which produces the desired effect. If you do not want to dither the bitmap, click Bitmap or press the Return key.

The **DPI** (dots per inch) pop-up box is enabled when paint object ( ) is the object type. This pop-up menu offers resolution options. (See "Resolution" on page 15-1.) The greater the resolution, the more memory required for the document. If you change the dpi of a paint object, an alert box appears which lets you choose whether or not to maintain the object's size. If you choose Yes, pixels will either be added to or subtracted from the image. If you click No, the pixel count will remain the same, resulting in a larger image when decreasing the dpi or a smaller image when increasing the dpi.

The **Depth** pop-up box is enabled when paint object is the object type. The deeper the paint object, the greater the range of available colors and the more memory required for the document. (See "Depth" on page 15-2 for a discussion on depth of paint objects.)

The **PostScript** check box is enabled when text (**T**) is the object type. Selecting this check box allows you to include PostScript commands in a Canvas document. Canvas will then send the text to the printer as native PostScript.

The **Pen Pattern, Pen Size, Pen Mode, Fill Pattern, Fore Color,** and **Back Color** pop-up boxes display the properties of the selected object. You can change these properties to options available in their respective pop-up palettes. These are the same properties available through the Tool Box palette icons.

You can also use the Color Info Manager to set the foreground and background color. To do so, hold down the Control and Shift keys when you choose the Fore Color or Back Color pop-up box. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box.

In the case of the Pen Size, you can either choose a new size from the pop-up menu or type a custom **Height** and **Width** in the appropriate text boxes.

There are six text boxes that let you modify the size and the placement of your selected object. The text box labels change depending upon the Type of object selected:

- **Top** is the distance from the top of the document, as defined by the ruler origin, to the top of the selected object's bounding rectangle.
- **Left** is the distance from the left side of the document, as defined by the ruler origin, to the left side of the selected object's bounding rectangle.
- **Height** is the distance between the top and bottom of the selected object's bounding rectangle. If you click the word *Height*, it changes to read *Bottom*.
- **Bottom** is the distance from the top of the document, as defined by the ruler origin, to the bottom of the selected object's bounding rectangle.
- **Width** is the distance between the left and right sides of the selected object's bounding rectangle. If you click the word *Width*, it changes to read *Right*.
- **Right** is the distance from the left side of the document, as defined by the ruler origin, to the right side of the selected object's bounding rectangle.
- **Start** ° is displayed when the selected object is an arc; it is the starting point of the arc in degrees with 0° being defined by your Coordinates choice in the Preferences dialog box.
- Δ° is displayed when the selected object is an arc; it is the length of the arc segment in degrees measured from the starting point in the direction specified by your Coordinates choice in the Preferences dialog box.
- **Dia H.** is displayed when the selected object is a rounded rectangle; it is the horizontal diameter of the rounded corners.
- **Dia V.** is displayed when the selected object is a rounded rectangle; it is the vertical diameter of the rounded corners.
- Δ **v** is displayed when the selected object is a line; it is the vertical change from the line's starting point to its endpoint.

- **Δ h** is displayed when the selected object is a line; it is the horizontal change from the line's starting point to its endpoint.

Area displays the area of the selected object, when applicable.

Perimeter displays the perimeter around the selected object, when applicable.

The **Calculate** button appears when the selected object is complex. Since calculating the area and perimeter of the object requires a few seconds of processing time, Canvas only calculates these figures when you click this button.

Using the Object Specifications dialog box

To use the Object Specifications dialog box:

1. **Select an object with the Arrow tool.**
2. **Choose Object Specs (⌘-I) from the Object menu.**

   The Object Specifications dialog box is displayed.
3. **Use the text boxes, pop-up boxes, and check boxes as described previously to edit the selected object.**
4. **Click OK to apply your changes to the selected object and close the dialog box or click Cancel to disregard any changes.**

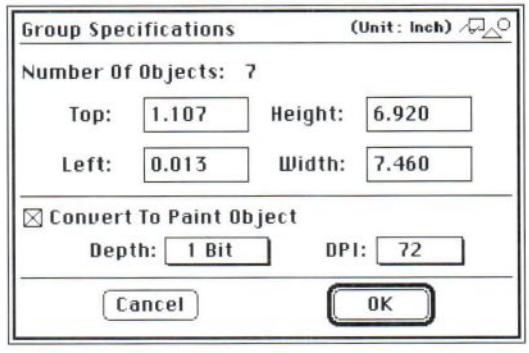
Using the Group Specs command

The Group Specs command in the Object menu is enabled when an object group or more than one object is selected.

This command is available when Object Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on using external tools.

The Group Specifications dialog box

Choosing the Group Specs command in the Object menu when a single object group or multiple objects are selected displays the Group Specifications dialog box.



Settings

The settings in this dialog box let you resize and reposition the objects currently selected in the Canvas Window. You can also convert the entire selection to a paint object.

Number Of Objects displays the number of objects currently selected.

Top is the distance from the top of the document, as defined by the ruler origin, to the top of the selection.

Left is the distance from the left side of the document, as defined by the ruler origin, to the left side of the selection.

Height is the distance between the top and bottom of the selection.

Width is the distance between the left and right sides of the selection.

Selecting **Convert To Paint Object** converts the selection into a paint object and enables the Depth and DPI options.

The **Depth** pop-up box is enabled when Convert To Paint Object is selected. 1 Bit is the only option available if you do not have color capabilities. 32 Bit is only available if you have 32 Bit color capabilities. (See "Depth" on page 15-2 for a discussion on depth of paint objects.) The deeper the paint object, the more memory required for the document.

The **DPI** (dots per inch) pop-up box is enabled when Convert To Paint Object is selected. This pop-up menu offers resolution options. (See "Resolution" on page 15-1 for a discussion on resolution of paint objects.) The greater the resolution, the more memory required for the document.

Using the Group Specifications dialog box

To use the Group Specifications dialog box:

1. **Select an object group or multiple objects with the Arrow tool.**
2. **Choose Group Specs (⌘-I) from the Object menu.**

   The Group Specifications dialog box appears.
3. **Use the text boxes to reposition and/or resize your selection. To convert your selection to a paint object, use the check box and then the pop-up menus to set its depth and resolution.**
4. **Click OK to apply your changes to the selection and close the dialog box or click Cancel to disregard any changes.**

Using the Convert To submenu

The Convert To submenu contains options which convert draw objects to polygons, Bézier curves, or groups, resulting in increased editing flexibility.

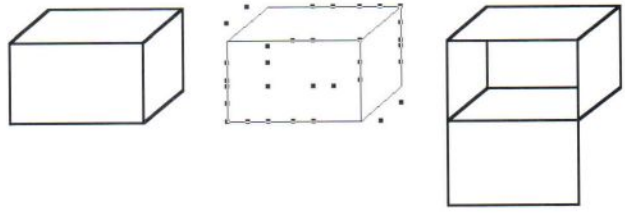
The Convert To command is available when Convert To is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on using external tools.

The Convert To submenu offers several options.

The **Polygon** (⌘-^-P) option is enabled when the selected object is composed of straight lines. Once converted, the object can then be edited as a polygon. For more on editing polygons, see "Placing objects in the Edit mode" on page 9-10.

The **Bézier Curve** (⌘-^-B) option is enabled when the selected object is composed of straight and/or curved lines. Once converted, the object can then be edited as a Bézier curve. For more on editing Bézier curves, see "Placing objects in the Edit mode" on page 9-10.

The **Group** (⌘-^-G) option is enabled when the selected object contains hatch patterns or was created using the Parallel Lines tool, Cube tool, Dimensioning tool, or GridMaker tool. After you convert the object, you can then choose Ungroup (⌘-U) in the Object menu to convert the group into individual elements which can be modified separately. In the following illustration, the Group command was applied to a cube, it was ungrouped, and the front panel was moved.



To use the Convert To tool:

1. **Select one or more objects you want to convert.**
2. **Choose Convert To from the Object menu.**

The Convert To submenu appears.

3. **Drag to highlight your choice.**

Canvas applies the command to the selected objects.

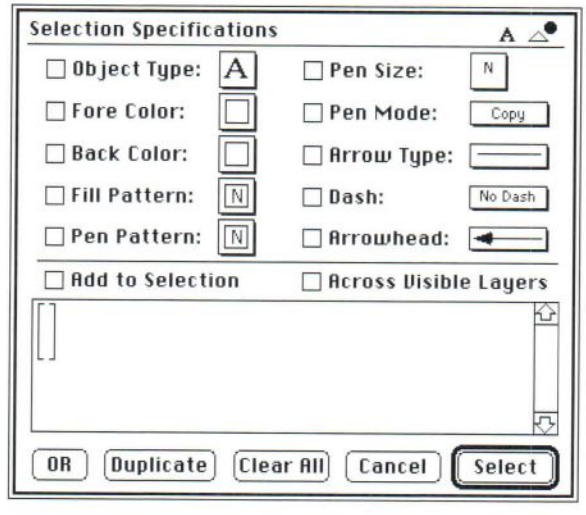
User Tip: To apply the Convert To command to a copy of the object when a single object is selected, hold down the Option key when you choose a Convert To option.

Using the Selection command

The Selection command in the Edit menu lets you specify selection criteria by object type or any combination of properties.

The Selection command is available when Selection Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on using external tools.

Choosing Selection opens the Selection Specifications dialog box.



Settings

The Selection Specifications dialog box lets you specify selection criteria to create selection sets. One or more selection sets can be defined, up to the memory capacity of your computer.

Object Type lets you choose the type of object you want to select. Your choice here determines which pop-up boxes are enabled.

The **Fore Color, Back Color**, **Fill Pattern, Pen Pattern, Pen Size, Pen Mode, Arrow Type, Dash,** and **Arrowhead** pop-up boxes display the same properties available through the Tool Box palette icons. If you want your selection set to contain any of these properties, choose them from these pop-up menus.

For example, if you want to select all objects which have a red foreground color, you would choose red from the Fore Color pop-up menu. Canvas selects the Fore Color check box and adds this requirement to your selection set in the scrolling list. Only objects with a red foreground color will be selected. If you do not want Fore Color to be

part of your selection set criteria, make sure the Fore Color check box is not selected. In this case, if an object meets the selection criteria it will be selected, regardless of its foreground color.

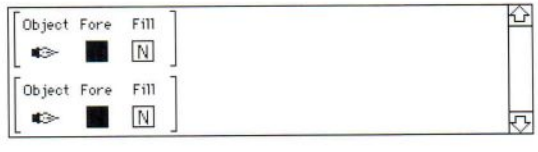
You can also use the Color Info Manager to set the foreground or background color selection criteria. To do so, hold down the Control and Shift keys and click the Fore Color or Back Color pop-up box. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box.

The **scrolling list**, at the bottom of the dialog box, is a list of selection sets. You can select a set by clicking it. When you click a selection set in the scrolling list, X's appear in the check boxes for those properties included in the set and the pop-up boxes display the selection criteria. You can then edit that selection set.

All selection sets in the scrolling list are used when Select is clicked. An object need only meet the selection criteria for one selection set in order to be selected.

OR adds an empty selection set to the selection list.

Duplicate lets you define a selection set which is the same as the selected selection set. Clicking Duplicate copies the selected selection set so that you can then make minor changes.



Clear All removes all the selection sets from the selection list. You can remove a single selection set from the scrolling list by selecting it and pressing the Backspace or Delete key.

Add to Selection includes objects meeting the selection criteria with those objects already selected in your document. Click this check box

when you already have objects selected in the Canvas Window that you want to remain selected. If this option is not selected, any objects that were selected prior to applying the Selection command which do not meet the selection criteria will no longer be selected.

Across Visible Layers selects objects in all the visible layers of your document. If this option is not selected, Canvas limits its selection search to the currently active layer.

Creating selection sets

To use the Selection Specifications dialog box:

1. **Choose Selection (⌘-Option-A) from the Edit menu.**

   The Selection Specifications dialog box appears.

2. **Choose the desired option from the pop-up menu of each property you want to be part of your selection criteria.**

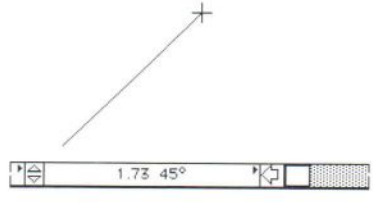
   The pop-up boxes enabled depend on the Object Type you choose. The settings you choose appear in brackets in the scrolling list and Canvas selects the check box of the property.

3. **When creating more than one selection set, click OR and repeat Step 2 for each selection set.**

4. **Click Select to select all objects meeting the selection criteria or Cancel to close the Selection Specifications dialog box and cancel the selection.**

Using the Information Manager

The Information Manager is displayed at the bottom of the Canvas Window when the Info Manager option of the Show/Hide submenu in the Layout menu is active. Info Manager (⌘-Option-Shift-I) is a toggle option; a check mark appears by it in the submenu when it is active.



Using the Information Manager data display

The Information Manager is useful for accurately measuring, sizing, and positioning objects as you work on a drawing in the Canvas Window. The numbers that are displayed in the Information Manager correspond to the measurement system chosen through the Rulers command in the Layout menu. The meaning of the measurements in the Information Manager varies depending upon the action you take:

- Moving the pointer around the Canvas Window displays the pointer's horizontal and vertical distance from the ruler's zero point.
- Drawing or resizing a line displays the angle at which the line was drawn from its starting point, and the length of the line.
- Drawing or resizing a rectangle, rounded rectangle, or oval displays the height and width of the object's bounding rectangle.
- Drawing or resizing an arc displays the height and width of the arc's bounding rectangle. Reshaping an arc displays the angle of the pointer's position and the angle of the arc segment.
- Drawing or reshaping a polygon displays the pointer's location in the Canvas Window. Holding down the mouse button on a polygon displays the height and width of the object's bounding rectangle.
- Resizing or holding down the mouse button on a set of grouped objects displays the total height and width of the bounding rectangle of the object group.
- Free Rotating an object displays the degree of rotation.
- Dragging an object to a new position in the Canvas Window displays the horizontal and vertical distances that the object has moved from its original position.

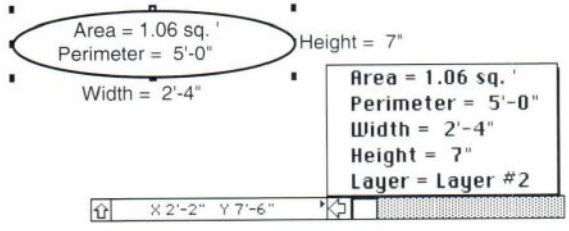
The Information Manager pop-up menu

The Information Manager pop-up menu contains autodimensioning data and gives you access to the layer of the selected object. The autodimensioning data can be pasted next to the selected object.

To use the Information Manager pop-up menu items:

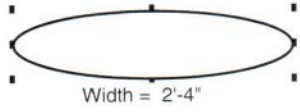
1. **Select the object with the Arrow tool.**
2. **Hold down the pointer on the Information Manager.**

A pop-up menu containing autodimensioning data applicable to the selected object and the name of the layer of the object is displayed.



3. **To attach autodimensioning data to the object, drag to highlight the data you want to attach.**

   Canvas positions the autodimensioning data by the selected object using the currently set text properties.



4. **To go to the layer containing the selected object, drag to highlight the layer.**

   The layer of the selected object becomes the active layer.

The Information Manager always displays real-time statistics. Once you paste autodimensioning data next to an object it becomes static. If you resize the object, you must attach new autodimensioning data using the Information Manager.

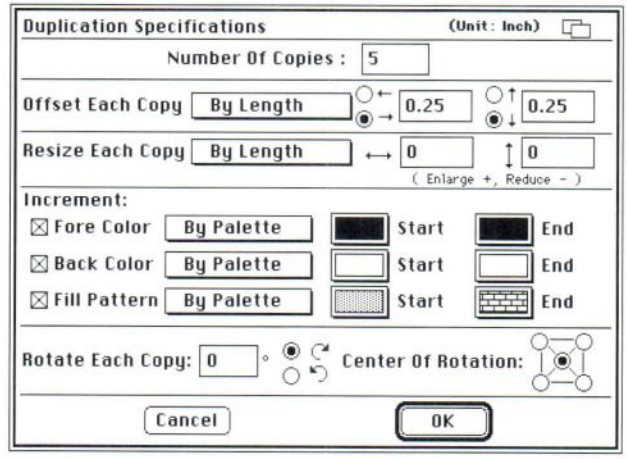
You can edit autodimensioning data like any other text object. For example, you can change the font, size, style, or color.

Using the Duplication command

The Duplication command in the Edit menu provides a number of options for making multiple copies of a selected object.

This command is available when Duplication Specs is active is in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on using external tools.

Choosing the Duplication command opens the Duplication Specifications dialog box.



Settings

The settings you specify in this dialog box control the appearance and positioning of each copy of the original object.

Number Of Copies lets you specify the number of times to duplicate the selected object, up to the memory capacity of your computer.

The **Offset Each Copy** pop-up menu lets you specify the positioning of each copy using one of two methods:

- **By Length** enables the radio buttons and text boxes to the right. These let you type in separate horizontal and vertical offsets, as well as select to offset left or right and up or down.
- **To A Line** lets you draw a line upon closing this dialog box along which your duplications will be evenly spaced.

Resize Each Copy lets you scale each copy by one of two methods: length or percentage.

- **By Length** lets you type in the amount by which to increment each copy using the active ruler units displayed in the top right corner of the dialog box.

- **By Percentage** lets you specify an amount as a percentage of the original by which to increment each copy.

Positive values result in successive enlargements and negative values result in successive reductions. In each method you can enter independent horizontal and vertical scaling factors.

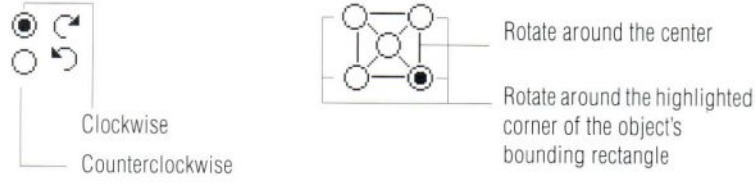
Selecting **Fore Color, Back Color,** or **Fill Pattern** lets you choose how to increment its respective property. If you do not select these check boxes Canvas creates all copies using the same respective property as the original.

- **Constant** creates all copies using the property you select from the adjacent pop-up palette.
- **By Palette** lets you set the palette range by choosing the first copy's property from the Start pop-up palette and the last palette option to assign from the End pop-up palette. Successive copies are assigned the next option from this palette range. When you choose this option, you cannot choose colors using Color Info.

  If you are creating more copies than the number of palette options, Canvas recycles through the chosen range. If you are creating fewer copies, Canvas begins with the Start choice and assigns the succeeding palette items to the copies, regardless of the End choice.
- **By Gradient** lets you assign a Start and End color from the pop-up palettes to the first and last copy, respectively. Intermediate copies are assigned colors by generation of a blend between the Start and End colors. (See "Using the RGB Color Manager" on page 18-4 for information concerning RGB blends.) This option is only available for the Fore Color and Back Color options.

  You can also use the Color Info Manager to set the foreground and background color. To do so, hold down the Control and Shift keys and click the Fore Color or Back Color pop-up box. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box.
- **By Gray Scale** lets you assign a Start and End gray-scale percentage to the first and last copy, respectively. Intermediate copies are assigned incremental percentages according to the number of copies you are creating. This option is only available for Fill Pattern.

- **Rotate Each Copy** lets you specify a degree of rotation for each copy in one degree increments. When this value is greater than zero, the clockwise, counterclockwise, and center of rotation radio buttons are enabled letting you further customize the rotation of each copy.



Using the Duplication Specifications dialog box

To use the Duplication command:

1. **Select the object to duplicate with the Arrow tool.**
2. **Choose the Duplication command (⌘-Option-D) from the Edit menu.**

   The Duplication Specifications dialog box appears.
3. **Enter the desired duplication specifications as explained previously.**
4. **Click OK or press the Return key to duplicate the selected object or click Cancel to close the dialog box and disregard the command.**

   If you have To A Line selected as your Offset Each Copy option, clicking OK closes the dialog box and the pointer becomes a crosshair . To proceed with the duplication:

   - Position the crosshair where you want the first copy to appear.
   - Drag to where you want the last copy to appear.

   Canvas performs the duplication along the line you defined.

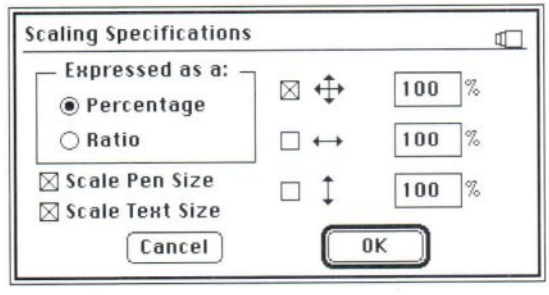
Using the Scale command

The Scale command in the Object menu provides a number of options for scaling objects.

This command is available when Scale Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Choosing the Scale command opens the Scaling Specifications dialog box. This dialog box lets you:

- Scale a selected object either by a percentage or by a ratio.
- Select to scale the selected object proportionally along both the X and Y axes, or disproportionately by defining separate scaling factors for each axis.
- Select whether or not to scale the pen size along with the object.
- Select whether or not to scale text objects.

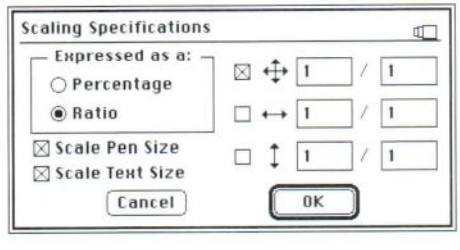


Settings

The settings in this dialog box let you set the proportioning of the objects you scale.

Expressed as a: offers two scaling methods from which to select:

- **Percentage** is the default setting for scaling.
- **Ratio** changes the Scaling Specifications dialog box as follows:



You can select to scale proportionately or specify individual horizontal and/or vertical scaling factors.

Selecting the ✣ check box scales an object proportionally.

Selecting either or both the ↔ or ↕ check boxes lets you simultaneously scale and distort an object by specifying separate horizontal and vertical scaling factors.

Selecting the **Scale Pen Size** check box causes Canvas to scale the pen size along with your object. If this option is not selected, the pen size remains constant when the object is scaled.

Original object

Scaled 400% horizontally with Scale Pen Size selected

Scaled 400% horizontally without Scale Pen Size selected

Selecting the **Scale Text Size** check box causes Canvas to scale selected text. If this option is not selected, the text size remains constant when the remainder of the selection is scaled. If only one text object is selected, its current scaling ratio is displayed in this dialog box.

Using the Scaling Specifications dialog box

To use the Scaling Specifications dialog box:

1. **Use the Arrow tool to select the objects to be scaled.**
2. **Choose Scale (⌘-Option-\) from the Object menu.**

   The Scaling Specifications dialog box appears.
3. **Click the button next to either Percentage or Ratio.**

   The dialog box changes if necessary according to your selection.
4. **Use the text boxes and check boxes as described previously to specify your scaling factors.**

   If a scaling direction's check box not is checked, the selected object will not scale even if percentages or ratios are entered.
5. **Click OK or press the Return key to scale your object, or click Cancel to close the Scaling Specifications dialog box without scaling the object.**

User Tip: When scaling a group of objects, to retain the alignment characteristics of the individual objects, hold down the Option key when you click OK.

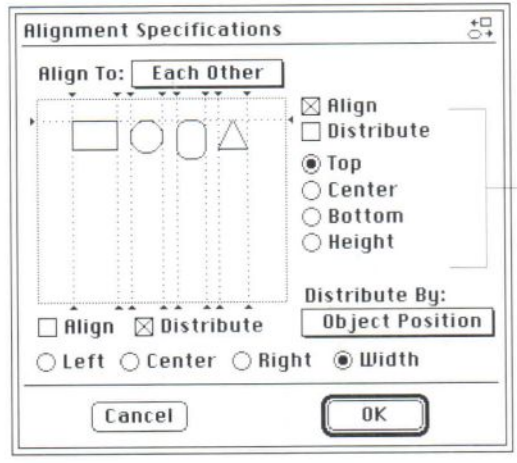
Using the Alignment features

Canvas offers two ways of aligning objects: the Align command in the Object menu and the Align tool in the Tool Box.

The Align command and Align tool are available when Alignment Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on using external tools.

The Align command

The Align command in the Object menu displays the Alignment Specifications dialog box which lets you to specify how you would like selected objects to be aligned and/or distributed.



Settings

The options on the right side of the preview window are for aligning or distributing objects by their vertical axes and the options on the bottom of the preview window are for aligning or distributing objects by their horizontal axes.

The **Align To** pop-up menu at the top of the dialog box lists several alignment/distribution options from which you can choose.

- **Each Other** aligns and/or distributes objects with respect to their position. For example, if you choose to align the selected objects along their tops, Canvas aligns the tops of the selected objects' bounding rectangles with respect to the object whose upper edge is closest to the top of the screen.
- **Line** lets you draw a line upon closing this dialog box along which the objects will be distributed and/or aligned. If you are aligning both horizontally and vertically, this option changes to read Point.
- **Grid** aligns and/or distributes selected objects with the nearest grid increment (as specified in the Grid Specifications dialog box) horizontally, vertically, or both. If one grid increment is the nearest grid increment for more than one of the selected objects, they will each align to the same place and overlap.
- **Page** aligns and/or distributes selected objects on a single page to a specified area on the page.
- **Document** aligns and/or distributes selected objects to a specified area in the document.

The **Align** check boxes let you line up objects horizontally and vertically.

The **Distribute** check boxes let you evenly spread out objects horizontally and vertically.

Distribute By appears if either of the Distribute check boxes is selected. This pop-up box offers options for distributing:

- **Drawing Order** distributes the objects by the order in which they are stacked starting with the bottommost and ending with the topmost.
- **Object Position** distributes the objects according to their position on the screen.

The **preview box** in the center of the dialog box shows you how your alignment options will look.

Vertical alignment/distribution:
The **Top, Center,** and **Bottom** options align objects by their tops, centers, or bottoms according to the object closest to the top, center, or bottom

of the chosen Align To option. These options place equal vertical distances between the tops, centers, or bottoms of the selected objects when Distribute is checked.

Height places objects top to bottom from the shortest to the tallest leaving no vertical distance between the objects when Align is checked. You cannot align by Height when Line (Point) or Grid is the selected Align To option. Height places equal vertical distances between objects when Distribute is checked.

Horizontal alignment/distribution:
The **Left, Center,** and **Right** options align objects by their left sides, centers, or right sides according to the object closest to the left side, center, or right side of the chosen Align To option when Align is checked. These options place equal horizontal distances between the left sides, centers, or right sides of the selected objects when Distribute is checked.

Width places objects left to right from the narrowest to the widest leaving no horizontal distance between the objects when Align is checked. You cannot align by Width when Line (Point) or Grid is the selected Align To option. Width places equal horizontal distances between objects when Distribute is checked.

> **User Tip:** If one of the selected objects is locked, the remaining objects align themselves relative to the locked object.

Using the Align command

To align and/or distribute objects:

1. **Use the Arrow tool to select the object or objects you want to align and/or distribute.**
2. **Choose Align (⌘-Y) from the Object menu or double-click the Align tool in the Tool Box.**

   The Alignment Specifications dialog box appears.
3. **Use the check boxes and pop-up menus as described previously to indicate your alignment and/or distribution specifications.**

   Refer to the preview box to see how your specifications will affect your selected objects.

4. **Click OK or press the Return key to close the Alignment Specifications dialog box and align the selected objects according to your specifications.**

   If you selected Line as your Align To option, the pointer becomes a crosshair . To proceed with the alignment or distribution:

   - Position the crosshair where you want the first object to appear.
   - Drag to where you want the last object to appear.

   Canvas aligns and/or distributes the selected objects along the line defined by these two points.

Objects are aligned and distributed by the center of their pen sizes and not their actual edges. Therefore, objects with different pen sizes are best aligned with guide lines or the keyboard arrow keys.

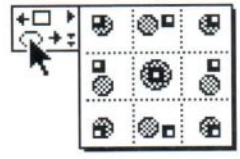
Align tool

The Align tool in the Tool Box displays the Align palette which lets you choose from nine preset alignment options.

To use the Align tool:

1. **Select the objects you want to align.**
2. **Hold down the pointer on the Align tool to display the Align palette.**

A palette containing nine alignment options appears.



Tops and left sides, Tops, Tops and right sides

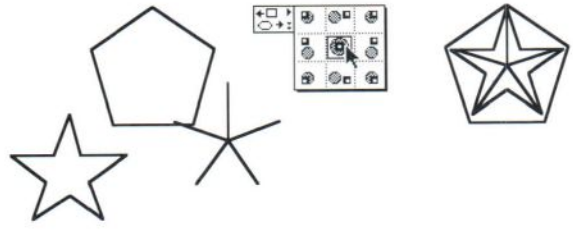
Left sides, Centers, Right sides

Bottoms and left sides, Bottoms, Bottoms and right sides

The icons in the palette indicate how your objects will look after you apply that alignment option.

3. **Drag through the palette to enclose your choice in the selection box.**

The selected objects are aligned in accordance with your selection.



Since the Align palette is a tear-off palette, you can keep it open as you work on your document. See "Tear-off palettes" on page 6-17 for detailed instructions.

User Tip: To apply the last applied alignment specifications to your selected objects, click the Align tool. To open the Alignment Specifications dialog box, double-click the Align tool.

Using multiple layers in a document

A Canvas drawing is built on layers. You can define an unlimited number of layers in a Canvas document. Each layer is like a sheet of glass; it is transparent until it is modified. Simple documents can be created on a single layer, but Canvas's layering ability makes it easy to manage complex drawings by using multiple layers. The layer that you are on is the active layer. When you create a new multi-layer document or open an existing multi-layer Canvas document, your document opens with the bottommost layer active.

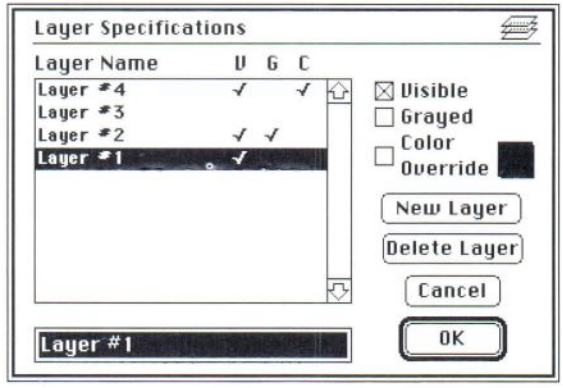
There are three ways of managing the layers in your document:

- the Layer Specs command in the Layout menu
- the Layers submenu in the Layout menu
- the Layer palette icon in the bottom left of the Canvas Window.

The Layer Specs command

The Layer Specs command is available when Layer Specs is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Choosing the Layer Specs command in the Layout menu opens the Layer Specifications dialog box which lets you manage your layers.



You can also open the Layers Specification dialog box using the Layer palette icon at the bottom left of the Canvas Window. See "The Layer palette icon" on page 13-45 for detailed instruction.

Settings

The options in the Layer Specifications dialog box let you name, add, delete, modify, and change the order of the layers in your document; and choose which layer is active.

The **scrolling list** in the top left portion of the dialog box lists all the layers in your document and the status of their properties. The layer's name appears under the Layer Name heading. Check marks under V (visible), G (grayed), and C (color override) indicate which properties

are active for each layer. You can toggle these properties on and off for each layer by clicking under the appropriate heading.

The **active layer** appears highlighted in the scrolling list. You make a different layer active by clicking its name in the scrolling list.

Selecting **Visible** lets you see the objects in a layer and gives you access to the layer. Layers which are not visible cannot be modified and do not print. Clicking the Visible check box is the same as clicking in the scrolling list under the column headed V next to the active layer.

Selecting **Grayed** makes all of the objects in a layer appear grayed. Objects in a grayed layer can be edited but do not print. Clicking the Grayed check box is the same as clicking in the scrolling list under the column headed G next to the active layer.

Selecting **Color Override** causes Canvas to apply the color you choose from the adjoining pop-up palette to all objects in the active layer. This action is reversible. The color change does not actually affect the objects, just the way they appear on screen. This feature is designed to help you keep track of which layer objects are on when working on multilayered drawings. Clicking the Color Override check box is the same as clicking in the scrolling list under the column headed C next to the active layer.

You can also use the Color Info Manager to set the Color Override color. To do so, hold down the Control and Shift keys and click the Color Override pop-up box. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box.

Clicking **New Layer** adds a layer to your document. The properties of the new layer are determined by which check boxes are currently selected. The new layer appears in the scrolling list. Canvas sequentially names each layer you add *Layer #*"_", where the "_" represents the next sequence number for a new layer.

The **layer name text box** at the bottom left of the dialog box displays the name of the active layer. You can change the layer's name by typing a new name in this text box.

The **Delete Layer** button removes the active layer from your document.

Creating new layers

To use the Layer Specifications dialog box to create a new layer:

1. **Choose Layer Specs (⌘-B) from the Layout menu or the Layer palette icon.**

   The Layer Specifications dialog box appears.

2. **Click New Layer.**
3. **Click the Visible, Grayed, and/or Color Override check boxes if desired to define your layer's specifications.**
4. **Repeat Steps 2-3 for each layer you add.**
5. **Click OK or press the Return key to save your changes, or click Cancel to close the Layer Specifications dialog box without saving your changes.**

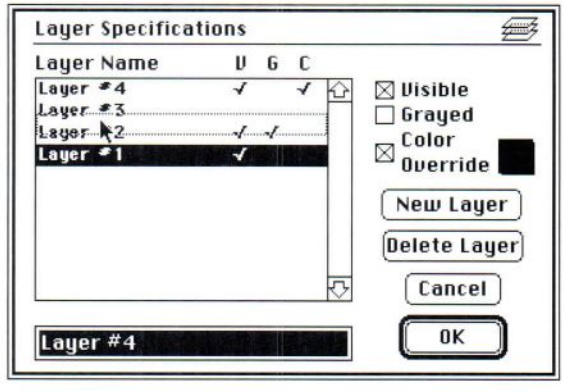
Rearranging layers

To rearrange the order of layers as they appear in a document:

1. **Choose Layer Specs (⌘-B) from the Layout menu or the Layer palette icon.**

   The Layer Specifications dialog box appears.

2. **Drag the layer that you want to reorder to its new location in the scrolling list.**



3. **Click OK or press the Return key to save your changes or click Cancel to leave the layers in their current stacking order.**

   The dialog box closes.

Deleting layers

You can use the Delete Layer button in the Layer Specifications dialog box to remove a selected layer and all objects on that layer. To do so:

1. **Choose Layer Specs (⌘-B) from the Layout menu or the Layer palette icon.**

   The Layer Specifications dialog box appears.

2. **In the scrolling list, click the layer you want to delete.**

   The layer highlights.

3. **Click Delete Layer.**

4. **Repeat Steps 2-3 for each layer you want to delete.**

5. **Click OK or press the Return key to delete the layers or click Cancel to keep all the layers as they were.**

   The Layer Specifications dialog box closes. If you clicked OK, alert boxes appear which ask if you want to delete the layers. Click Yes to delete or No to return to the Layer Specifications dialog box.

Selecting which layer is active

To choose which layer is active using the Layers Specifications dialog box:

1. **Choose Layer Specs (⌘-B) from the Layout menu or the Layer palette icon.**

   The Layer Specifications dialog box appears.

2. **Click the layer's name in the scrolling list that you want to make active.**

   The layer highlights.

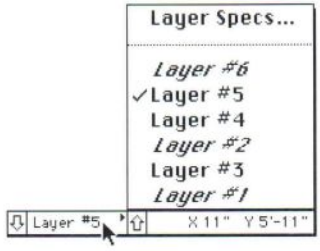
3. **Click OK or press the Return key to go to the selected layer or click Cancel to remain in the currently active layer.**

   The dialog box closes. Since a layer must be visible to be active, if you choose a layer which is not visible, Canvas makes the topmost visible layer active.

The Layer palette icon

The Layer palette icon is located in the bottom left corner of the Canvas Window. This palette icon displays the active layer's name. The pop-up menu gives you access to the Layer Specs dialog box and lists all the layers in your document. A check mark appears to the left of

the active layer's name and the names of invisible layers appear in italics. The Layer palette icon can be used to select which layer is active.



Selecting which layer is active

The arrow icons let you go to the next or previous layer. To go to the next or previous layer:

- Click the up arrow icon ⇧ to go to the next visible layer.
- Click the down arrow icon ⇩ to go to the previous visible layer.
  - To make the next or previous layer visible and active, hold down the Command key (⌘) when you click the up or down arrow icon.
  - To make the next or previous layer visible and active while making the currently active layer invisible, hold down the Option key when you click the up or down arrow icon.

To go to a layer other than the next or previous layer:

1. **Hold down the pointer on the Layer palette icon in the Canvas Window.**

   A pop-up palette listing all the layers in the document appears.

2. **Drag to highlight the layer you want to make active.**

Making layers visible or invisible

To make an invisible layer visible, or make a visible layer invisible, hold down the Shift key and choose its name from the pop-up palette (if you have torn off the Layers palette, Shift-click the layer's name in the palette). The currently active layer remains active.

Opening the Layer Specifications dialog box

To open the Layer Specifications dialog box using the Layer palette icon:

1. **Hold down the pointer on the Layer palette icon.**

   The pop-up palette appears.

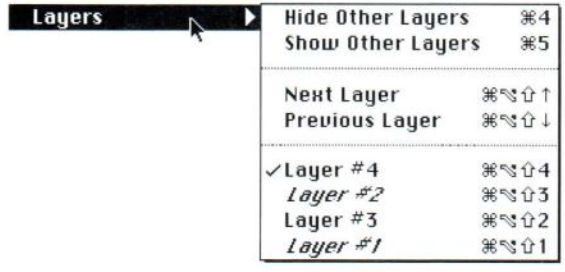
2. **Drag to highlight Layer Specs.**

   The Layer Specifications dialog box appears.

If you have torn off the Layers palette, double-click the palette to open the Layer Specifications dialog box.

The Layers submenu

The Layers command in the Layout menu opens a submenu which lists all the layers in your document. A check mark appears to the left of the active layer's name. The names of invisible layers appear in italics. This submenu also offers options for managing multi-layer documents and choosing which layer is active.



Showing other layers

You can use the Layers submenu to make all layers in a drawing visible. To do so:

1. **Hold down the pointer on the Layers command in the Layout menu.**

   The Layers submenu appears.

2. **Drag to highlight Show Other Layers (⌘-5).**

   Invisible layers will be made visible.

Hiding layers

You can use the Layers submenu to make all the layers except the active layer invisible in a document. To do so:

1. **Hold down the pointer on the Layers command in the Layout menu.**

   The Layers submenu appears.

2. **Drag to highlight Hide Other Layers (⌘-4).**

   Visible layers other than the active layer will be made invisible.

Selecting which layer is active

The Layers submenu lets you go to the first visible layer above the active layer by choosing the **Next Layer (⌘-Option-Shift-↑)** option. You can go to the first visible layer below the active layer by choosing the **Previous Layer (⌘-Option-Shift-↓)** option. To go to a layer other than the next or previous layer:

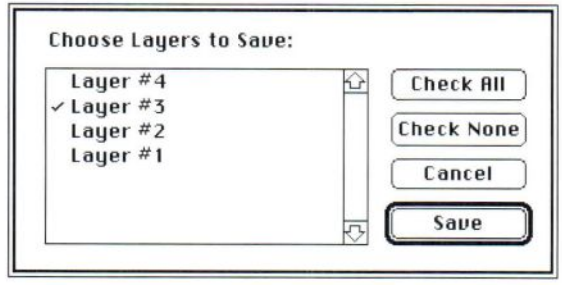
1. **Hold down the pointer on the Layers command in the Layout menu.**

   The Layers submenu listing all the layers in the document appears.

2. **Drag to highlight the layer you want to make active.**

Saving layers

The Save Layer As command in the File menu opens the Choose Layers to Save dialog box which lets you save a copy of an indicated layer or layers of a drawing as a separate document.



Settings

The **scrolling list** on the left side of the dialog box lists all the layers in the active document. Only the layers whose names appear in the

scrolling list with check marks next to them are saved to the separate document.

Check All places a check mark next to each layer name in the scrolling list. Click this button when you want to save most of the layers and then deselect the layers you do not want to include by clicking them.

Check None removes all the check marks from the scrolling list. Click this button when you want to save just a couple of layers. You can then select just the layers you want to include by clicking them.

Using the Save Layer As command

To use the Save Layer As command:

1. **Choose Save Layer As from the File menu.**

   The Choose Layers to Save dialog box appears.

2. **Check the names of the layer or layers you want to save.**

3. **Click OK or press the Return key to proceed with the save operation or Cancel to close the Save Layer As dialog box and return to the Canvas Window.**

   If you click OK or press the Return key, Canvas displays the Save As dialog box. Follow the procedures for using the Save As dialog box. See "The Save As command" on page 7-45 for detailed instructions.

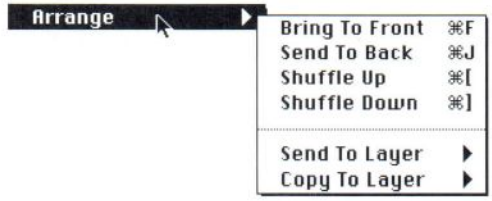
   When you check multiple layers, each layer remains separate in the new document if you save the new document in the Canvas format.

User Tip: To reduce the size of a document, use the Save Layer As command.

Using the Arrange submenu

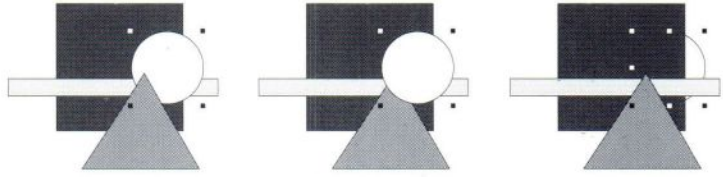
Objects in the Canvas Window can overlap, much like the windows on your Macintosh. Whenever you draw a new object, it is stacked on top of all other objects in the active layer of your document. By arranging objects on top of each other, you can combine many simple objects to produce complex drawings. The Arrange command in the Object menu displays a submenu of options for rearranging the stacking order of the objects in your drawing. These options (Bring To Front, Send To Back, Shuffle Up, and Shuffle Down) are enabled when all selected

objects are on the active layer. The Arrange submenu also contains options which let you send or copy objects to other layers.



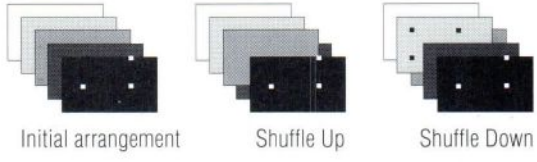
The **Bring To Front** (⌘-F) option moves the selected object to the topmost position in the stack.

The **Send To Back** (⌘-J) option moves the selected object to the bottommost position in the stack.



The **Shuffle Up** (⌘-[) option moves the selected object or objects up one level in the stack.

The **Shuffle Down** (⌘-]) option moves the selected object or objects down one level in the stack.



The **Send To Layer** option sends the selected objects to the layer you choose from the Send To Layer submenu.

The **Copy To Layer** option sends a copy of the selected objects to the layer you choose from the Copy To Layer submenu, while leaving the selected objects intact.

Arranging objects

To use the Arrange submenu:

1. **Select the object or objects using the Arrow tool.**

   Handles appear around the selected object or objects.

2. **Hold down the pointer on the Arrange command in the Object menu.**

   The Arrange submenu is displayed.

3. **Drag to highlight the desired option.**

   When using the Send To Layer and Copy To Layer options, you must then choose a layer from the option's submenu.

Using the Mover tool

The Mover tool lets you reposition all the objects in your document at once without selecting them. The Mover tool moves all the objects in your document, regardless of whether the layer they are in is active, visible, or grayed or whether the objects are locked or unlocked.

The Mover tool is available when the Mover tool is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

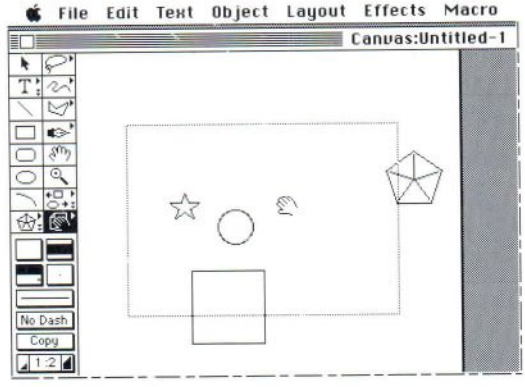
To use the Mover tool:

1. **Select the Mover tool from the Effect Tools palette in the Tool Box.**

   The pointer changes to a sideways hand.

2. **Hold down the pointer inside the document and drag the objects to a new location.**

The objects move along with the pointer.

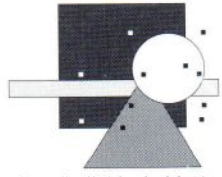


Using the Group command

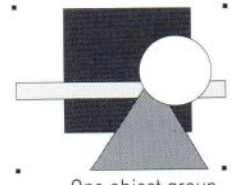
Sometimes it is convenient or necessary to treat two or more objects as one object. Canvas lets you group objects so they can be treated as one object for the application of commands. You can later ungroup the objects and manipulate them individually.

1. **Hold down the Shift key and click the objects that you want to group using the Arrow tool.**
2. **Choose Group (⌘-G) from the Object menu.**

   All of the selected objects now exist on the active layer and act as one combined object and handles appear around the bounding rectangle of the group.



Four individual objects



One object group

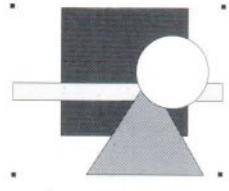
All of the Canvas commands available for an individual object are available for groups.

Ungrouping objects

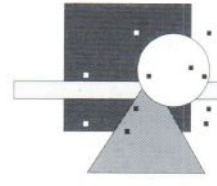
Once you have grouped several objects into a combined object, you cannot select or change the objects individually. Canvas, however, provides the Ungroup command (⌘-U) in the Object menu which separates a group into its individual components, allowing you to edit the objects individually. To use the Ungroup command:

1. **With the Arrow tool, select the object you want to ungroup.**
2. **Choose Ungroup (⌘-U) from the Object menu.**

   Canvas separates the combined image into individual objects, with handles around each one.



One object group



Four individual objects

3. **Click outside of the selected objects to deselect them.**

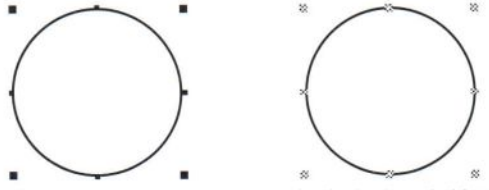
   Now you can select an individual object to modify. If the group contained object groups, they must be ungrouped also before they can be edited as individual objects.

Using the Lock command

The Lock command in the Object menu lets you anchor an object or group of objects in place so that they cannot be moved or changed by accident. When objects are locked, you still have the ability to select them, move them using the Mover tool, or copy them to the Clipboard. However, you cannot cut, clear, flip, move, rotate, or change their properties in any way. To lock an object or group of objects:

1. **Use the Arrow tool to select the object or group of objects to lock.**
2. **Choose Lock (⌘-L) from the Object menu.**

The object's handles appear dimmed.



If you attempt to edit a locked object, Canvas displays the following alert box:

To unlock a locked object:

1. **With the Arrow tool, select the object or group of objects to unlock.**
2. **Choose Unlock (⌘-Option-L) from the Object menu.**

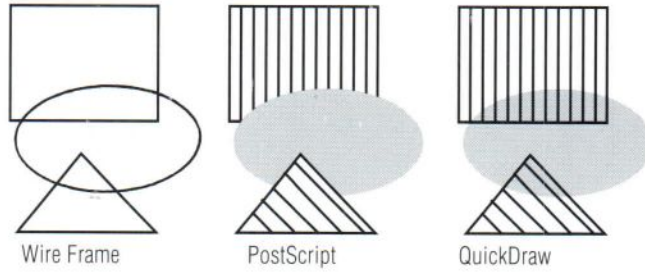
   You can now edit the objects.

Using the Display submenu

The Display submenu provides three display options by which you can view your document in the Canvas Window: Wire Frame, PostScript, or QuickDraw. While these options vary the screen display of your document, they do not change the actual properties (pen size, fill, color, and so on) of the objects.

You can switch between display modes at any time. This is useful in complex documents composed of different patterns, fills, and line shapes since more time is required to display objects in PostScript or QuickDraw mode than in Wire Frame mode. When using pen modes other than *copy*, or lines with zero width, choosing the PostScript

option lets you view your document on screen as it will print on a PostScript® printer.



When You Choose:	You Get:
Wire Frame	Pen Sizes equal to 1 point
(⌘-1)	No Fill Patterns
	No Pen Patterns
	No Color
	Pen Mode equals Copy
PostScript	Pen Sizes as set
(⌘-2)	Fill Pattern as set
	Pen Patterns as set
	Color as set
	Pen Mode equals Copy
QuickDraw	Pen Sizes as set
(⌘-3)	Fill Patterns as set
	Pen Patterns as set
	Color as set
	Pen Mode as set

To switch between display modes:

1. **Hold down the pointer on Display in the Layout menu.**

   The Display submenu appears.

2. **Drag to highlight your display mode choice.**

   The display of the objects in the Canvas Window reflects your choice.

Canvas offers another useful feature when working on complex illustrations which can take a long time to redraw. You can type ⌘-. to stop the screen from redrawing. You can then redraw the screen by choosing Refresh (⌘-K) from the Display submenu.

Using views in Canvas

A **view** is a recording of a screen position and magnification level. Views make it easy to return to a specified area of a document. The Layout menu offers two means of managing the views in a document: the New View command and the Views submenu.

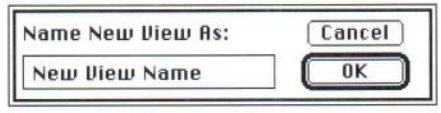
Using the New View command

The New View command in the Layout menu lets you record a view. Once you record a view, you can return to it.

To record a new view:

1. **Move to the area of your document for which you want to create a view.**
2. **Choose the magnification or reduction level at which you want to view the area.**
3. **Choose New View (⌘-Option-N) in the Layout menu.**

   The following dialog box appears.

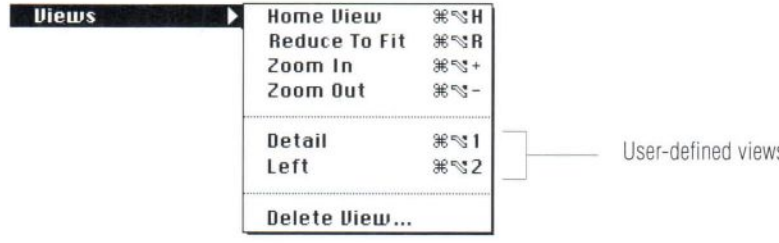


4. **Type a name for your view.**
5. **Click OK or press the Return key to save your view or Cancel to disregard it.**

   The dialog box will close.

Using the Views submenu

Choosing Views in the Layout menu displays a submenu which lists all the available views of the document and options for changing the magnification or reduction level.



Home View (⌘-Option-H) is the upper left corner of the document in the Canvas Window at the 100% magnification level. This is the view that is displayed whenever a document is first opened.

Reduce To Fit (⌘-Option-R) shrinks the document, regardless of its size, to fit into the Canvas Window.

Switching views

To switch views in your document:

1. **Choose Views from the Layout menu.**

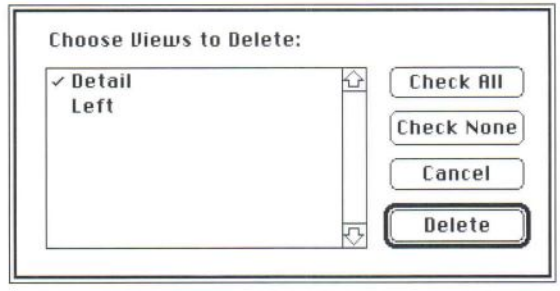
   The Views submenu is displayed.

2. **Drag to highlight Home View, Reduce To Fit, or any user-defined view.**

Deleting a view

You can delete views that you have defined using the Delete View option of the Views submenu. This option is available only after you

have defined a view. Choosing Delete Views opens the Choose Views to Delete dialog box.



The **scrolling list** on the left side of the dialog box lists all the user-defined views in the active document. Only the views whose names appear in the scrolling list with check marks next to them will be deleted.

Check All places a check mark next to each view in the scrolling list. Click this button when you want to delete most of the views and then deselect the views you do not want to delete by clicking them.

Check None removes all the check marks from the scrolling list. Click this button when you want to delete just a couple of views. You can then select just the views you want to delete by clicking them.

To delete one or more views:

1. **Choose the Delete View option in the Views submenu in the Layout menu.**

   The Choose Views to Delete dialog box appears.

2. **Click the view or views you want to discard, or click the Check All button to select all views in the scrolling list.**

   The Check None button is dimmed until a view is selected for removal.

3. **Click OK or press the Return key to discard the checked views or click Cancel to if you do not want to discard any views.**

   The dialog box closes.

Chapter

14

Design Graphics features

Canvas contains several tools and commands which allow for the creation of complex objects and sophisticated drawing effects. In this chapter you will be introduced to tools which create stars, multigons, grids, and cubes as well as commands which combine objects in several different ways and create a series of objects whose shapes and properties progressively blend from one object to another.

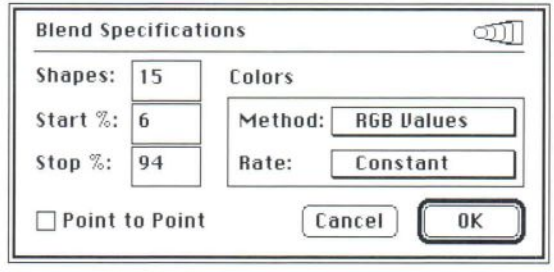
Using the Blend command

The Blend command blends the shapes, colors, fill and pen patterns, and pen sizes of selected draw objects by creating a series of objects between them. You can control the number and position of the shapes in the blend, choose the color method and rate for the blend, and pick the points from which the objects in the blend are defined.

The Blend command is available when Blend Objects is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Objects are blended from bottom to top. The object which you drew first is the bottom object and the one which you drew last is the top object. You can change the order of objects before you blend them with the Arrange submenu options in the Object menu. See "Using the Arrange submenu" on page 13-48.

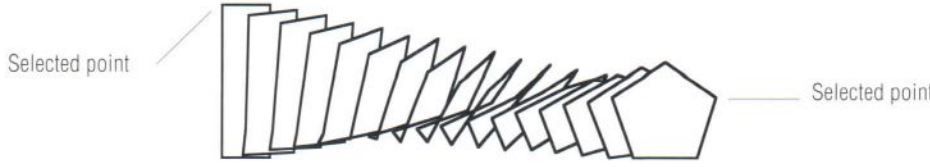
The Blend command is enabled when two or more draw objects are selected. When you choose the Blend command (⌘-Option-B), the Blend Specifications dialog box appears.



Settings

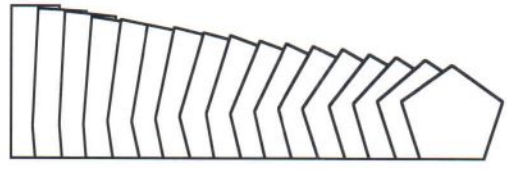
Point to Point is available when only two objects are selected. Selecting Point to Point lets you select a point on the bottom object to blend to a point you select on the top object. Canvas then connects the remaining points on the bottom object to the remaining points on the top object following the same orientation.

You can create a different effect when Point to Point is selected by holding down the Option key as you click the two points. In this case after you select the points on the bottom and top objects, Canvas connects the remaining points on the bottom object to the remaining points on the top object following opposite orientations.



If Point to Point is not selected, Canvas blends the top left of the bottom object to the top left of the top object. Canvas then connects the

remaining points on the bottom object to the remaining points in the top object following the same orientation.



Shapes specifies the number of new objects created between selected objects in the blend. You can type in any number between 1 and 999. When you change the number of Shapes, the Start % and Stop % defaults change accordingly.

Start % specifies the percentage of the distance between the selected objects where you want the first blend object positioned. The positions of the intermediate objects in the blend are affected accordingly.

Stop % specifies the percentage of the distance between the selected objects where you want the last blend object positioned. The positions of the intermediate objects in the blend are affected accordingly.

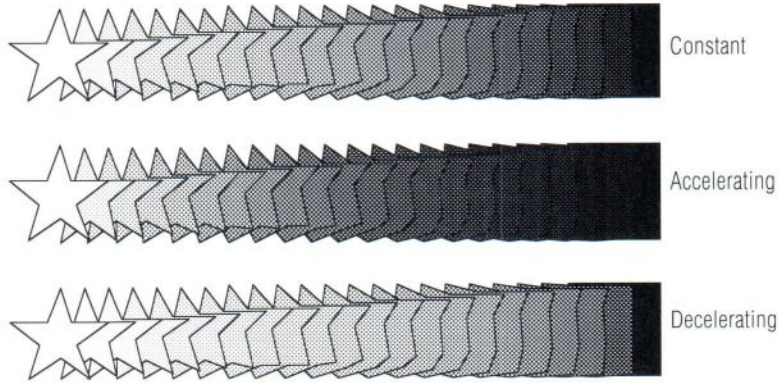
The **Method** pop-up menu contains a list of color application methods which can be applied to the foreground and background colors of the intermediate objects in the blend. For a detailed discussion concerning these methods, see "Using the RGB Color Manager" on page 18-4.

- Choosing **Palette Colors** assigns the palette colors that fall between the colors of the selected objects to the intermediate objects in the blend. To display the active palette, you can use the color palette icons in the Tool Box.
- Choosing **RGB Values** or **CMYK Values** creates an RGB or CMYK blend between the colors of the selected objects. This option reads *RGB Values* unless either the foreground or background color of any of the selected objects was assigned using the CMYK color system, in which case it reads *CMYK Values*. The RGB or CMYK values of the selected objects in the blend will approach each other and be used to create the colors for the blend objects.
- Choosing **HSV Values** creates an HSV blend between the colors of the selected objects. The HSV values of the selected objects in the

blend will approach each other and be used to create the colors for the blend objects.

The **Rate** pop-up menu lists three options for assigning properties to blend objects.

- Choosing **Constant** moves you from the properties of the bottom object to the properties of the top object at an even rate.
- Choosing **Accelerating** emphasizes the bottom object's properties.
- Choosing **Decelerating** emphasizes the top object's properties.



In the above example, the bottom square has a solid black fill pattern and the top star has a solid white fill pattern.

Using the Blend command

To use the Blend command:

1. **Select two or more objects you want to blend.**
2. **Choose Blend (⌘-Option-B) from the Object menu.**

   The Blend Specifications dialog box appears.
3. **Use the text boxes, check box, and pop-up menus as described previously to create the desired blend effect.**
4. **When you have finished customizing the blend, click OK to apply the command or Cancel to disregard it and close the dialog box.**

   If you have selected Point to Point, edit points appear around the selected objects:

- Position the pointer over the desired edit point on the bottom object. The pointer becomes a small crosshair when properly positioned.
- Click once. The handles disappear.
- Position the pointer over the desired edit point on the top object. The pointer becomes a small crosshair when properly positioned.
- Click once. Canvas performs the blend.

Using the Split tool

A draw object can be split into two separate objects by using the Split tool in the Effect Tools palette in the Tool Box.

Splitting an object opens the path at the point where the scissors clip the path. Split objects can be joined to other objects.

The Split tool is available when Split is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

To split an object:

1. **Hold down the pointer on the Effect Tools palette icon in the Tool Box.**

   The Effect Tools palette appears.

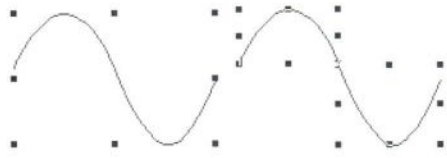
2. **Drag to highlight the Split tool.**

   The pointer changes to a pair of scissors.

3. **Position the scissors where you want to split the object.**

   The scissors become a crosshair when they are on any point or line segment which can be split.

4. **Click once when the crosshair is displayed.**



The path opens. A closed object can be split twice: once to open it and again to split it. You can split an open object only once without reselecting the Split tool from the Effect Tools palette or holding down the Command (⌘) key.

Canvas selects the split paths. Each of the two separate objects can be manipulated individually.

5. **Click outside the objects to deselect them.**

The Split tool is also available when you are in the edit mode. This is useful if you want to split an object on an anchor point or vertex.

Joining objects

The Join option of the Curves submenu in the Object menu is enabled when any combination of two of the following objects are selected: polygons, smooth polygons, lines, arcs, or Bézier curves. The selected objects cannot be closed objects. This command lets you connect the objects' endpoints to create a single object in three different ways: bridging, averaging, or connecting.

Bridging two curves

When you bridge two curves using the Join option, Canvas creates a line segment between the two endpoints. This is the default when the two endpoints are more than 15 screen pixels apart.

When the two endpoints are 15 or fewer screen pixels apart, you can cause Canvas to bridge two curves by holding down the Shift key when you choose Join.

Averaging two curves

When you join two objects that are 15 or fewer screen pixels apart, Canvas extends the two objects to a midpoint between the endpoints.

When two endpoints are more than 15 screen pixels apart, you can cause Canvas to average two objects by holding down the Shift key when you choose Join.

Connecting two curves

Straight line connections are created if the two endpoints are more than 15 screen pixels apart and you hold down the Option key when you choose Join.

Joining two curves by their closest two endpoints

To join two paths at their closest endpoints:

1. **Select the two objects to be joined by clicking them with the Arrow tool.**

   Hold down the Shift key when you click the second object.

2. **Choose Join (⌘-`) from the Curves submenu in the Object menu.**

   Canvas joins the two curves into one object and selects the object.

Joining two curves by selecting the endpoints to join

Canvas, by default, chooses the closest two endpoints to join. However, you have the option of choosing which two endpoints to join. To join two paths at the endpoints that you specify:

1. **Select the two objects to be joined by clicking them with the Arrow tool.**
2. **Choose Edit Curve (⌘-E) from the Object menu.**

   Edit points appear along both curves.

3. **On the first curve, click the endpoint you want to join.**

The endpoint becomes hollow to indicate that it is selected.

4. **Hold down the Shift key and click the endpoint on the second curve you want to join.**

   The endpoint becomes hollow to indicate that it is selected.

5. **Choose Join from the Curves submenu (⌘-`) in the Object menu.**

   - To connect the curves with a straight line, hold down the Option key when you choose Join.
   - To reverse the default choice for bridging or averaging, hold down the Shift key when you choose Join.

   Canvas joins the two objects. The object remains in the edit mode.

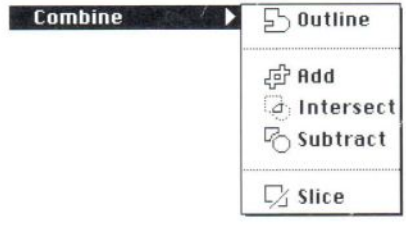
6. **Double-click outside the object, or press the Enter or Return key to exit the edit mode.**

Using the Combine command

The Combine command lets you create new objects by combining existing objects. You can select two or more overlapping draw objects and outline them, merge them, delete all except the intersecting area, subtract the intersecting area, and cut through them using options from the Combine submenu.

The Combine command is available when Combine Objects is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

The Combine command is enabled when two or more objects are selected. When you choose Combine in the Object menu, a submenu of options appears. An icon appears next to each option which illustrates the option's result.



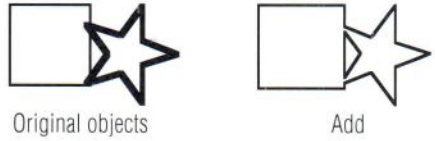
The number, type, and stacking order of objects selected determine which options are enabled. You can reorder the objects using the Arrange command in the Object menu; see "Using the Arrange submenu" on page 13-48 for more information.

User Tip: To reverse the order of two selected objects, hold down the Shift key when you choose the Combine option.

The **Outline** option draws an outline of the perimeter of two or more selected draw objects and replaces the objects with it. The resulting object has the same properties (pen pattern, fill pattern, pen size, and so on) as the topmost object.

User Tip: If your topmost object is a line, the Outline option is dimmed; you must reorder the objects to enable it.

The **Add** option is available when only two objects are selected. The Add option merges the top object into the bottom object. This results in multiple objects when enclosed spaces exist between the selected objects. For example, in the following illustration, the Add option produced a triangle between the square and the star. In the previous illustration for Outline, this triangle was not produced.



The resulting objects have the same properties as the bottom object.

The **Intersect** option removes everything except the top object and those portions of the remaining objects which were under the top object. All objects maintain their original properties.

Original objects

Intersect (resulting objects shown separated)

User Tip: If only two objects are selected and one is a line, the Add and Intersect options appear dimmed.

The **Subtract** option works with two or more selected draw objects. It subtracts from each bottom object the part of the topmost object that overlaps it. The topmost object remains unchanged. All objects retain their properties.

Original objects

Subtract (resulting objects shown separated)

User Tip: Hold down the Option key when you choose Outline, Add, Intersect, or Subtract to perform the command on a copy of the objects, leaving the original objects intact.

With the **Slice** option, the topmost object "slices" through the underlying objects where it overlaps them, splitting each underlying object into separate objects. The topmost object remains unchanged. All objects retain their properties.

Original objects

Intersect (resulting objects shown separated)

To use the Combine submenu options:

1. **Use the draw tools to create at least two draw objects you want to apply a Combine submenu option to.**

   The Outline, Intersect, Subtract, and Slice options can be performed on more than two objects, but in all cases you need at least two.

2. **Arrange the draw objects you want to combine so that each one overlaps at least one other draw object.**

   The Combine submenu options do not work on draw objects that are not overlapping.

3. **Select the overlapping draw objects.**

4. **Choose Combine from the Object menu.**

   The Combine submenu appears. The options you can use depend on the number, types, and stacking order of the selected objects.

5. **Drag through the menu to highlight your choice.**

   Canvas performs the chosen option on the selected objects.

Using the Cube tool

The Cube tool in the Object Tools palette in the Tool Box lets you create cubes.

This tool is available when Cube is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

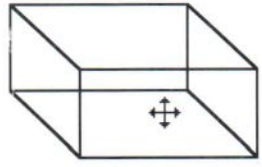
To use the Cube tool:

1. **Select the Cube tool from the Object Tools palette in the Tool Box.**

   The pointer turns into a crosshair.

2. **Position the pointer where you want the cube to begin.**

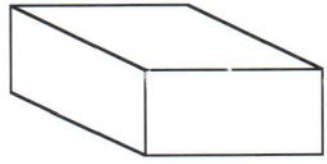
3. **Drag to draw the rectangular back face of the cube and release the mouse button when it is the desired size.**



This establishes the cube's height and width. The cube appears on screen anchored by the back face. The pointer becomes a four-headed arrow and the front face of the cube follows the pointer's movements.

4. **Move the pointer to position the front face of the cube and establish the depth and angle of the cube.**

5. **Click to anchor the front face of the cube.**



Once the cube is created you can change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the palette icons in the Tool Box.

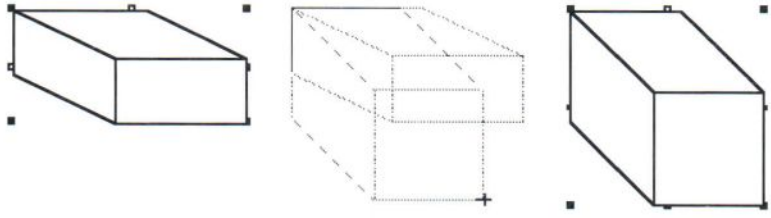
Cube tool modifiers

The following restrictions can be applied to a cube by using modifier keys as you create it.

- To constrain the base of the cube to a square or its depth lines to multiples if 45°, hold down the Shift key while drawing or editing the cube.
- To constrain the depth lines of a cube to angles which are multiples of 60°, hold down the Option key while anchoring it.
- To give the cube a perspective effect, hold down the Command key (⌘) while anchoring it.

Editing a cube

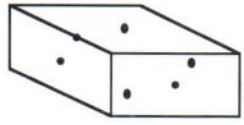
To change the height, width, or depth of a cube, click the cube once to select it and drag a handle.



To reshape a cube by repositioning a side:

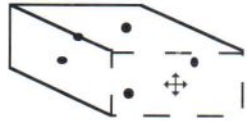
1. **Select the cube and choose Edit Cube (⌘-E) from the Object menu.**

   The cube is placed in the edit mode. Six handles appear, one for each face of the cube, and the pointer turns into a gray arrowhead.



2. **Position the pointer over one of the handles.**

   The pointer becomes a four-headed arrow when properly positioned and the side that corresponds to the handle appears as a flashing dotted outline.



3. **Drag to reposition that side.**

   The remaining sides adjust to conform to the new position for the side you edited and the cube remains in the edit mode letting you continue to edit sides.

4. **When you have finished editing sides, press the Enter key or click outside the cube to exit the edit mode.**

To edit the individual components of a cube, you must convert it to an object group using the Convert To command in the Object menu. For instructions, see "Using the Convert To submenu" on page 13-24.

Using the GridMaker tool

The GridMaker tool in the Object Tools palette in the Tool Box lets you draw grids with varying numbers of rows and columns.

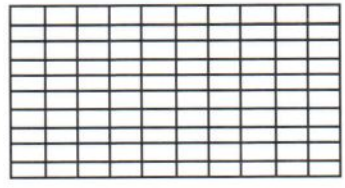
This tool is available when Grid is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

To use the GridMaker tool:

1. **Select the GridMaker tool from the Object Tools palette.**

   Position the pointer where you want to begin creating the grid and drag to create it.

2. **Release the mouse button when you are satisfied with the horizontal and vertical sizes of your grid.**



GridMaker tool modifiers

- To constrain the GridMaker tool to create square grids, hold down the Shift key while dragging.
- To create a grid from the center outwards, hold down the Option key while dragging.

Once you create a grid you can change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the palette icons in the Tool Box.

To edit the individual components of a grid, you must convert it to an object group using the Convert To command in the Object menu. For instructions, see "Using the Convert To submenu" on page 13-24.

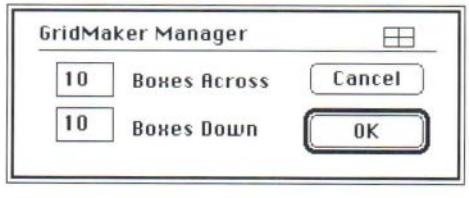
The GridMaker Manager

The GridMaker option of the Managers submenu in the Edit menu displays the GridMaker Manager, which lets you modify grids drawn with the GridMaker tool. You can also set the number of columns and rows you want your grids to have through this dialog box.

To use the GridMaker tool:

1. **Choose GridMaker from the Managers submenu in the Edit menu or double-click the GridMaker tool icon in the Object Tools palette. You can also edit an existing grid by selecting it and choosing Edit GridMaker (⌘-E) in the Object menu.**

   The GridMaker Manager appears:



2. **Type the desired number of columns in the Boxes Across text box.**

   A value of 0 Boxes Across generates only horizontal lines.

3. **Type the desired number of rows in the Boxes Down text box.**

   A value of 0 Boxes Down generates only vertical lines.

4. **Click OK or press the Return key to save your changes; click Cancel if you change your mind.**

   The GridMaker Manager closes. If a grid was selected, it reflects your changes, otherwise you can now create grids with the GridMaker tool according to the settings you just chose.

Using the Multigon tool

The Multigon tool in the Object Tools palette is an external tool that lets you create multigons. A **multigon** is a multisided, closed polygons.

The Multigon tool is available when Multigon is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

To create shapes with the Multigon tool:

1. **Select the Multigon tool from the Object Tools palette in the Tool Box.**

   The pointer becomes a crosshair.

2. **Position the pointer where you want to begin to draw and drag to create the multigon.**

3. **Release the mouse button when the multigon is the desired shape and size.**

Multigon tool modifiers

The following restrictions can be applied to a multigon by using modifier keys as you create it.

- To constrain the multigon tool to create equal segments, hold down the Shift key as you drag.
- For a flowerlike effect, hold down the Command key (⌘) as you release the mouse button to smooth the shape.

Once you create a multigon you can change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the palette icons in the Tool Box.

Since a multigon is a polygon, once it is created, Canvas treats it like any other polygon. See "Using the Polygon tool" on page 9-3 for detailed instructions on editing polygons.

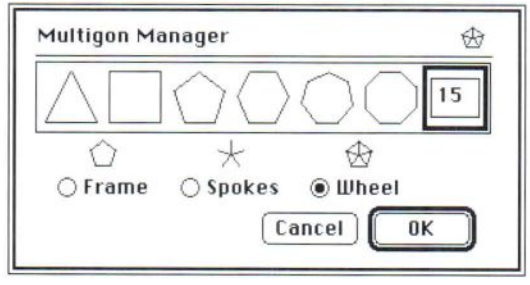
The Multigon Manager

The Multigon option of the Managers submenu in the Edit menu displays the Multigon Manager. This dialog box lets you configure the Multigon tool.

To use the Multigon Manager:

1. **Double-click the Multigon tool icon in the Object Tools palette or choose Multigon from the Managers submenu in the Edit menu.**

   The Multigon Manager appears.



2. **Click one of the predefined figures, use the Tab key to cycle through the options, or type the number of sides or spokes you want your multigon to have in the text box.**

   Canvas can create multigons with up to 100 sides or spokes.

3. **Click the button next to Frame, Spokes, or Wheel to select a style.**

   - Select **Frame** to create an outline of a figure with the number of sides you specify.
   - Select **Spokes** to create a figure with the number of spokes you specify.

- Select **Wheel** to create a figure with spokes and an outline with the number of sides you specify.

4. **Click OK to save your changes, or Cancel if you change your mind.**

   The dialog box closes and you return to your illustration.

Using the Star tool

The Star tool in the Object Tools palette creates star-shaped polygons. The Star tool can be set to create stars with up to 100 vertices. You can set the number of vertices and the style Canvas uses to create stars.

The Star tool is available when Multigon is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

To use the Star tool:

1. **Select the Star tool from the Object Tools palette in the Tool Box.**

   The pointer changes to a crosshair.

2. **Position the pointer where you want your star to begin and drag to create a star.**

   To constrain the Star tool to create equal segments, hold down the Shift key as you drag.

3. **Release the mouse button when you are satisfied with the size and position of your star.**

Once you create a star you can change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color.

Stars are created as polygons and can be edited in the same way you edit polygons drawn with the Polygon tool. See "Using the Polygon tool" on page 9-3 for instructions on editing polygons.

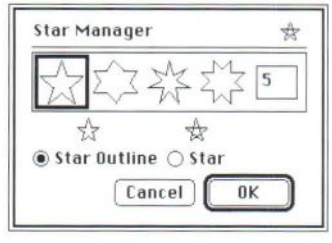
The Star Manager

The Star option of the Managers submenu in the Edit menu displays the Star Manager. Use this dialog box to configure the shape and number of vertices in the stars you create with the Star tool.

To use the Star Manager:

1. **Choose Star from the Managers submenu in the Edit menu or double-click the Star tool icon.**

   The Star Manager appears.



2. **Click a predefined star shape or type the number of vertices in the text box on the right side of the dialog box.**

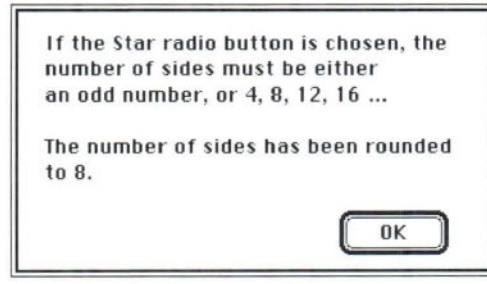
   You can create stars with 3 to 100 rays.

4. **Click the button next to Star Outline or Star to select a design for the star.**

Star

Star Outline

When using the Star option you must specify an odd number of sides, or an even number which is divisible by four. If you do not, the following alert box is displayed.



Canvas rounds up the number of sides you entered to the next even number which is divisible by four.

5. **Click OK to save your changes or Cancel if you change your mind.**

The dialog box closes.

Chapter

15

Painting in Canvas

In addition to letting you create draw objects, Canvas contains several tools and commands for creating and editing paint objects. **Paint objects** are images that are defined as a collection of dots or **pixels**. These pixels are arranged in a grid, much like a mosaic. These pixels are arranged to form images, such as circles or squares. You can edit any pixel without affecting its neighbors.

Paint object properties

There are two important properties unique to paint objects in Canvas. They are resolution and depth.

Resolution

Since paint objects are made up of pixels and pixels are square, the edges of an image can be jagged. The degree of jaggedness depends on the **resolution** of the particular paint object. Paint objects can be created at various resolutions or dots per inch (dpi). The lowest resolution paint object is 72 dpi which is the resolution of your Macintosh screen. This is the default setting at which Canvas creates paint objects. Higher resolutions are available for creating paint objects. The higher the resolution of the paint object, the more memory it occupies. The following formula is an indicator of the amount of memory a paint object occupies:

$$\frac{K}{in^2} = \frac{(dpi^2)\,(depth)}{8192}$$

For example, a one inch square paint object at a resolution of 72 dpi with a depth of one bit occupies .63K of memory. The same paint object at a resolution of 300 dpi occupies 10.98K of memory.

Resolution can be set using the Paint Object Creator tool (see "Using the Paint Object Creator tool" on page 15-7) or changed using the Object Specs command in the Object menu (see "Using the Object Specs command" on page 13-18).

Depth

A pixel's depth is the number of bits used to define it. As the number of bits used to define a pixel increases from 1 to 32, the possible shades for that pixel increases exponentially from 1 to 16.7 million. If you are working on a black and white monitor, you will not be able to see these colors on screen. However, you can print them if you print to a color output device. As shown in the previous equation, as the depth of the paint object increases, so does the memory requirement for the paint object. Using the same example, the paint object which occupied .63K of memory at a depth of 1 bit would require 20.25K of memory at a depth of 32 bits.

Paint objects can have three possible depths: 1-bit, 8-bits, or 32-bits. If you are working on a Macintosh without color QuickDraw you cannot choose the 8-bit option. If you are working on a Macintosh without 32-bit color capabilities, you cannot create 32-bit paint objects.

The following chart shows the memory requirements of a one square inch paint object in kilobytes.

Resolution in dpi	Depth in bits: 1	8	32
72	.63K	5.06K	20.25K
144	2.53K	20.25K	81.00K
216	5.70K	45.56K	182.25K
300	10.98K	87.89K	351.56K
635	49.22K	393.77K	1,575.10K
1270	196.89K	1,575.10K	6,300.39K
2540	787.55K	6,300.39K	25,201.56K

1 bit

In a 1 bit deep paint object, each pixel is either turned on or off. When a pixel is turned on it is a **foreground pixel** and, by default, appears

black. A pixel that is turned off is a **background pixel** and, by default, appears white. When you paint 1-bit images you are assigning a status of ON or OFF to each pixel, resulting in two possible shades. ON pixels are displayed in the foreground color and OFF pixels are displayed in the background color. If you add a color to the paint object that differs from its foreground and background colors, Canvas changes its depth.

8 bits

You can create 8-bit deep paint objects if you have color QuickDraw. An 8-bit deep paint object gives you 256 possible shades per pixel. These shades are displayed in the color palette. There is no ON or OFF status for each pixel. All non-white pixels are considered ON pixels. When using tools such as the Lasso or the Paint Bucket, the white pixels are considered the OFF pixels.

32 bits

You can create 32-bit deep paint objects if you have a 32-bit color video card or a 32-bit QuickDraw file. A 32-bit deep paint object gives you 16.7 million possible shades per pixel. These colors can be assigned using the color palette, Color Info, or the PANTONE® Colors window. There is no ON or OFF status for each pixel. All non-white pixels are considered ON pixels. When using tools such as the Lasso or the Paint Bucket, the white pixels are considered the OFF pixels.

You can set the depth of a paint object using the Object Specifications or Group Specifications dialog box. See "Using the Object Specs command" on page 13-18 or "Using the Group Specs command" on page 13-22.

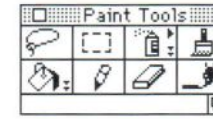
The Paint tools

The Canvas paint tools are especially effective for working on scanned images and illustrations imported from paint applications. The paint tools are contained in the Paint Tools palette, available from the Windows menu or the Tool Box.

There are eight paint tools. They are:

- The **Spray Can tool** which applies a spray of paint in the currently chosen pen pattern and foreground color.
- The **Paint Brush tool** which paints using the currently chosen pen pattern, foreground color, and background color.
- The **Paint Bucket tool** which fills an enclosed portion of a paint object using the currently chosen fill pattern, foreground color, and background color.
- The **Pencil tool** which applies a line of paint one pixel thick and is also used to edit paint objects on a pixel-by-pixel basis. The Pencil tool paints in the currently chosen foreground color unless you begin painting on a foreground colored pixel, in which case it paints in the currently chosen background color.
- The **Eraser tool** which removes parts of a paint object by replacing them with the currently selected background color.
- The **Paint Object Creator tool** which provides easy access to the paint mode and control of a paint object's resolution.
- The remaining two tools, the **Lasso** and **Marquee**, allow you to select a portion of a paint object to move or apply an effect to.

You may find it helpful to tear off the Paint Tools palette when working on a paint image. This provides easy access to all the Paint tools, their managers, and palettes. When you have finished painting you can close the palettes. (See "Tear-off palettes" on page 6-17 for detailed instructions on using tear off palettes.)



When you select a paint tool the pointer appears dimmed until you begin to paint or until you position it over a paint object.

Paint object modes

When working with paint objects, it is important to distinguish between a paint object that is selected and a paint object that is active.

Selected paint objects

Paint objects are selected with the Arrow tool and, when selected, display eight square black handles at the corners and mid-points of their bounding rectangles. With a paint object selected you can apply commands or effects to the entire object; you can move it, cut it, copy it, duplicate, resize it, or change its resolution.

Selected paint object

Active paint object

Active paint objects

When a paint object is active it displays notched handles. You can edit the painted image inside an active paint object with both draw tools and paint tools.

There are two ways to activate a paint object:

- double-click it with the Arrow tool (if Enter Edit Mode is selected as your Double-Clicking option in Preferences).
- select a paint tool, position it over the paint object, and paint.

If you use a draw tool on top of a paint object without activating the paint object, you create a draw object on top of and separate from the paint object. However, if you use a draw tool on top of an active paint object, you paint within the paint object.

While a paint object is active, a tool remains selected until you choose another tool or deactivate the paint object.

Creating paint objects

There are several methods for creating paint objects. You can:

- select Auto-Create Paint Objects in Paint Options in Preferences
- use the Object Specifications or Group Specifications dialog box
- use the Paint Object Creator tool

Using the Paint Options: Auto-Create Paint Objects preference

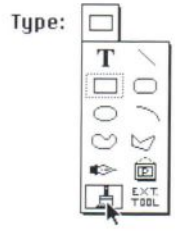
The simplest method for creating paint objects is to select a paint tool from the Paint Tools palette, position it in the illustration area, and paint. This is only possible if Auto-Create Paint Objects of Paint Options in Preferences in the File menu is selected. This is the default setting for this preference.

Using the Object Specs and Group Specs commands

You can also use the Object Specifications and Group Specifications dialog boxes to convert selected objects to a paint object. These dialog boxes offer resolution and depth options for the paint object. To use these dialog boxes to convert your selection to a paint object:

1. **Use the Arrow tool to select the object or objects.**
2. **Choose Object Specs or Group Specs (⌘ -I) from the Object menu.**

   The appropriate dialog box appears.
3. **In the Object Specifications dialog box, choose paint object from the Type pop-up box. In the Group Specifications dialog box, select the Convert To Paint Object option.**



The Depth and DPI pop-up boxes are enabled.

4. **Use the DPI pop-up box to select the desired resolution.**

5. **Use the Depth pop-up box to select the desired depth for your paint object.**
6. **Click OK to accept your changes or click Cancel if you change your mind.**

   The dialog box closes.

Using the Paint Object Creator tool

Paint objects can also be created using the Paint Object Creator tool in the Paint Tools palette.

The Paint Object Creator tool lets you define a paint object area for painting. In addition, this tool also lets you change the default resolution (dpi) at which Canvas creates paint objects. It cannot, however, change the resolution of paint objects that already exist. To do this you must use the Object Specifications dialog box.

Creating a paint object

To use the Paint Object Creator tool to create a paint object:

1. **Select the Paint Object Creator tool from the Paint Tools palette in the Tool Box.**

   The Paint Object Creator tool is displayed in the Tool Box in the Paint Tools palette icon. The pointer becomes a crosshair.
2. **Position the pointer inside the illustration area, hold down the mouse button and drag to create a rectangular paint object.**
3. **Release the mouse button when you are satisfied with the size of the paint object.**

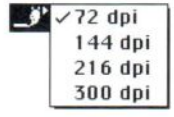
   Canvas activates the paint object you have just drawn and selects the Paint Brush tool so that you can begin painting immediately.

Changing the default resolution

To use the Paint Object Creator tool to change the default resolution at which paint objects are created:

1. **Hold down the mouse button on the Paint Object Creator tool.**

   A pop-up menu of available resolutions appears.



2. **Drag to highlight your choice.**

   All paint objects you create thereafter using paint tools are created at this new resolution.

Using the Paint Brush tool

The Paint Brush tool applies paint strokes in the currently selected brush shape, pen pattern, foreground color, and background color.

To use the Paint Brush:

1. **Select the Paint Brush tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to the current paint brush shape (the default shape is a small circle) and the Paint Brush tool icon is displayed in the Tool Box in the Paint Tools palette icon.

2. **Position the pointer in the illustration area and drag to paint.**

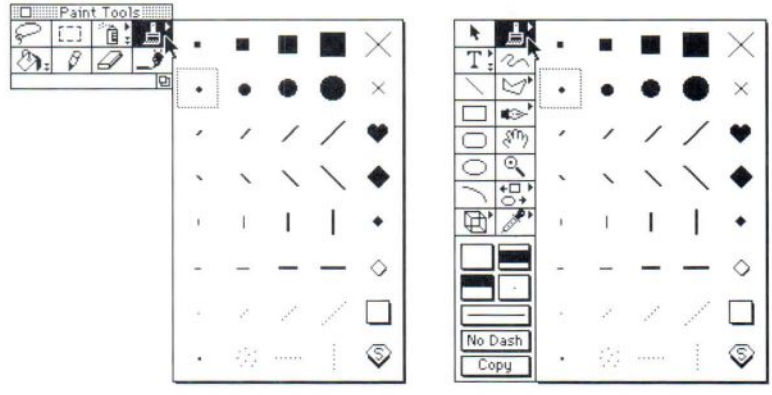
3. **Release the mouse button to stop painting.**

Changing the brush shape

The Paint Brush is a multiplex icon. A palette of 40 brush shapes is available for this tool. To select a brush shape from the palette:

1. **Hold down the pointer on the Paint Brush tool icon in the Paint Tools palette or press the Option key and hold down the pointer on the Paint Brush tool icon in the Tool Box.**

   A palette of available brush shapes appears. You can tear off the Brush Shapes palette (see "Tear-off palettes" on page 6-17).



2. **Drag to enclose your choice in the selection box.**

   The paint brush will paint using the brush shape you select.

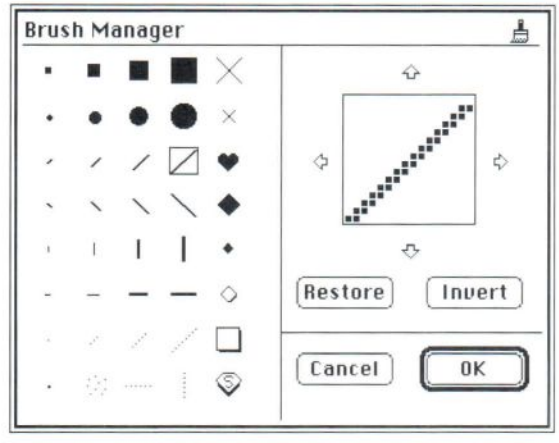
The Brush Manager

You can edit any of the preset brush shapes using the Brush Manager.

The Brush Manager is available when Brush Manager is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Brush Manager appears when you choose Brushes from the Managers submenu in the Edit menu, when you double-click the Paint

Brush tool icon in either the Paint Tools palette or the Tool Box, or when you double-click the Paint Brush palette.



Settings

The **40 brush shapes** available are displayed on the left side of the Brush Manager. These are the same brush shapes displayed in the Paint Brush palette. A selection box encloses the currently selected brush shape.

The **edit box** displays the currently selected brush shape at an 800% magnification level. The brush shape in the edit box can be edited pixel-by-pixel. Clicking a black pixel turns it white. Clicking a white pixel turns it black.

The **arrows** surrounding the edit box scroll the brush shape in the edit box one pixel in the direction of the arrow when clicked.

Restore returns the selected brush shape to its shape when you opened the dialog box.

Invert turns all black pixels white and all white pixels black in the selected brush shape.

Using the Brush Manager

To edit a brush shape:

1. **Choose Brushes from the Managers submenu in the Edit menu, double-click the Paint Brush tool icon, or double-click the Brush Shape palette.**

The Brush Manager appears.

2. **Click the brush shape you want to edit.**

   Your choice appears in the edit box at an 800% magnification.

3. **Edit the brush shape by clicking individual pixels in the edit box or by using the arrows, the Invert button, or the Restore button as described previously.**

4. **Repeat Steps 2-3 to edit other brush shapes.**

5. **When you have finished editing brush shapes, click OK to save your changes or Cancel to discard them.**

Changing the brush pattern

The Paint Brush tool paints in the currently selected pen pattern. To change the brush pattern:

1. **Hold down the pointer in the Pen Pattern palette icon.**

   The Patterns palette appears.

2. **Drag to enclose your choice in the selection box.**

   The paint brush will paint with the pattern you select.

Using the Spray Can tool

The Spray Can tool applies a spray of paint in the currently selected nozzle shape, pen pattern and foreground color.

To use the Spray Can tool:

1. **Select the Spray Can tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to a cluster of dots.

2. **Position the pointer in the illustration area and click to spot spray or drag to apply a continuous flow.**

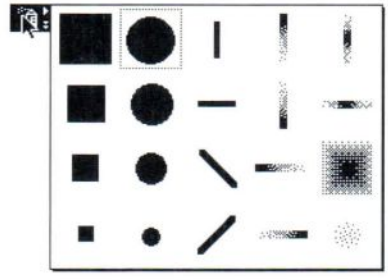
On each pass, the spray can paints part of the selected pattern, at a rate determined by the flow rate setting in the Spray Manager. (See "The Spray Manager" on page 15-12 for information on setting the flow rate.) You can decrease the width of the nozzle by pressing the < key while spraying, or increase the width by pressing the > key while you spray.

Changing the nozzle shape

The Spray Can is a multiplex icon. A palette of 20 nozzle shapes is available from this icon. To select a nozzle shape from the palette:

1. **Hold down the pointer on the Spray Can tool icon in the Paint Tools palette or press the Option key and hold down the pointer on the Paint Brush tool icon in the Tool Box.**

   A palette of available nozzle shapes appears. You can tear off the Spray Can Nozzle palette (see "Tear-off palettes" on page 6-17).



2. **Drag to enclose your choice in the selection box.**

   The spray can will now spray using this nozzle.

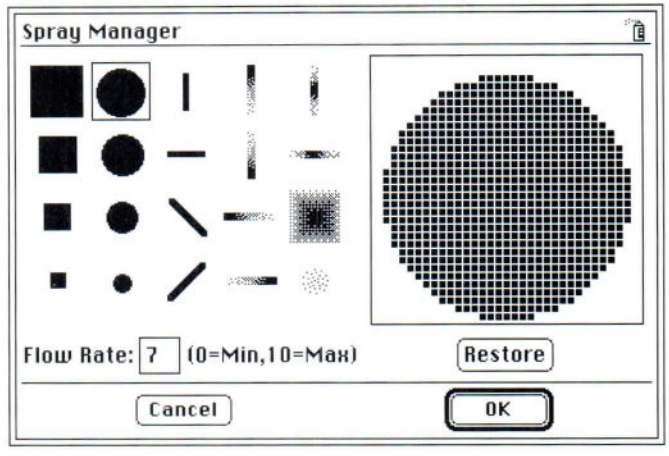
The Spray Manager

You can select or edit a nozzle, or adjust the rate of flow of the Spray Can tool using the Spray Manager.

The Spray Manager is available when Spray Manager is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

The Spray Manager appears when you choose Sprays from the Managers submenu in the Edit menu, when you double-click the Spray Can

tool icon in the Paint Tools palette, or when you double-click the Spray Can Nozzle palette.



Settings

The **20 nozzle shapes** available are displayed on the left side of the Spray Manager. These are the same nozzle shapes displayed in the Spray Can Nozzle palette. A selection box encloses the currently selected nozzle shape.

The **edit box** displays the currently selected nozzle shape at an 800% magnification level. The nozzle shape in the edit box can be edited pixel-by-pixel. Clicking a black pixel turns it white. Clicking a white pixel turns it black.

Restore returns the selected brush shape to its preset shape.

The **Flow Rate** text box specifies the amount of spray emitted from the nozzle.

Using the Spray Manager

To edit a nozzle:

1. **Choose Sprays from the Managers submenu in the Edit menu, double-click the Spray Can tool icon in the Paint Tools palette, or double-click the Spray Can Nozzle palette.**

   The Spray Manager appears.

2. **Click the nozzle you want to edit.**

The nozzle appears in the edit box.

3. **Edit the nozzle by clicking white pixels to turn them black or clicking black pixels to turn them white.**
4. **Repeat Steps 2-3 for each nozzle shape you want to edit.**
5. **Type a value from 0 to 10 in the Flow Rate text box.**

   0 is the minimum flow rate, 10 is the maximum flow rate and sprays solid paint.
6. **Click OK to save your changes, or click Cancel to discard them.**

   The Spray Manager closes.

Changing the spray pattern

To select a new pattern or gray scale value for the Spray Can:

1. **Hold down the pointer in the Pen Pattern palette icon.**

   The Patterns palette appears.
2. **Drag to enclose your choice in the selection box.**

   The Spray Can tool now paints with this pattern or gray scale.

Using the Pencil tool

The Pencil tool paints freehand lines one pixel wide. The Pencil tool paints in the foreground color unless you begin painting on a pixel which is the foreground color, in which case the Pencil tool paints in the background color. You can also use the Pencil tool as a precision paint object editor.

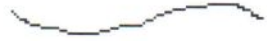
Painting freehand lines with the Pencil tool

To paint a freehand line with the Pencil tool:

1. **Select the Pencil tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to a pencil.
2. **Position the pencil in the illustration area, hold down the mouse button and drag to paint a freehand line.**

3. **Release the mouse button when you are finished using the Pencil tool.**



Editing paint objects with the Pencil tool

To edit paint objects with the Pencil tool:

1. **Select the Pencil tool from the Paint Tools palette in the Tool Box.**

   The pointer becomes a pencil.

2. **Position the Pencil tool on the area of the paint object to be edited.**

3. **Hold down the Command key (⌘).**

   The pointer changes to a magnifying glass .

4. **Click once.**

   The paint object appears at an 800% magnification level, by default, and the 100% view floating window appears in the Canvas Window. This window lets you view the effects of your editing at 100%. The 100% view window can be repositioned, resized or closed. It is only available at magnification levels of 2X or greater.

   You can change the default zoom level for editing with the Pencil tool. To do so, press the Command (⌘), Option, and Shift keys and choose a level from the Zoom In/Zoom Out palette.

5. **Place the tip of the Pencil over the pixel you want to change and click once.**

   Clicking a pixel which is not the foreground color makes it the foreground color; clicking a pixel which is the foreground color makes it the background color. Continue editing individual pixels until you are satisfied with your paint object.

6. **Position the Pencil tool in the illustration area, hold down the Command key (⌘), and click once.**

   You return to a 100% view of your illustration.

Using the Paint Bucket tool

The Paint Bucket tool fills any enclosed paint area using the currently chosen fill pattern, foreground color, and background color.

To use the Paint Bucket tool:

1. **Hold down the pointer in the Fill Pattern palette icon in the Tool Box.**

   The Patterns palette appears.

2. **Drag to enclose your choice in the selection box.**

   The paint bucket will use your pattern or gray scale choice.

3. **Select the Paint Bucket tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to a paint bucket.

4. **Position the paint bucket so that the tip of the pouring paint is inside the area that you want to fill.**

   The paint bucket appears dimmed unless it is over a paint area.

5. **Click once.**

The paint area clicked is filled with the selected pattern. If the tip of the Paint Bucket tool is on a foreground-colored pixel when you click, all adjoining foreground-colored pixels change to the selected pattern. If the tip is in the background, then all adjoining background areas are filled.

If you fill an area and the paint leaks out, there are gaps in the area you filled. To correct a leaked fill:

1. **Choose Undo (⌘-Z) from the Edit menu.**
2. **Find the gap in the border and use the Pencil tool to fix it.**

This is best done at a 400% or 800% magnification level.

3. **Select the Paint Bucket tool again and click the area to refill it.**

> **User Tip:** Hold down the Option key when using the Paint Bucket tool to affect all the pixels in the paint object which are the color you click, whether they are adjoining or not.

You can edit the available fill patterns using the Pattern Manager. See "Editing pattern options" on page 7-23 for detailed instructions.

Using the Eraser tool

You can correct mistakes that you make in a paint object by either choosing Undo (⌘-Z) from the Edit menu or by using the Eraser tool in the Paint Tools palette.

The Undo command works only on the last action performed. The Eraser tool can eliminate mistakes any time it is used within a paint object. The Eraser tool erases using the color shown in the Back Color palette icon in the Tool Box.

To use the Eraser tool:

1. **Select the Eraser tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to an eraser.

2. **Hold down the mouse button and drag the eraser over the area to be eliminated.**

3. **Release the mouse button when you have finished.**

User Tip: To erase an entire active paint object, double-click the Eraser tool icon in the Paint Tools palette.

Using the paint selection tools

Canvas provides two tools for selecting paint areas: the Lasso tool and the Marquee tool. The Lasso tool selects irregularly shaped areas of paint objects, excluding any surrounding background space. The Marquee tool selects rectangular portions of paint objects.

Using the Lasso tool

The Lasso tool selects irregularly shaped areas of paint objects, excluding any surrounding background space.

To use the Lasso tool to select a paint area:

1. **Select the Lasso tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to a lasso.

2. **Position the lasso inside the paint object which contains the area to be selected.**

3. **Hold down the mouse button and drag to encircle the desired area.**

4. **Release the mouse button.**

Canvas completes the boundary and selects the enclosed area. A flashing border surrounds your selection.

- To select everything except the surrounding background area and the color that is directly under the tip of the lasso when you start to press the mouse button, press the Command key (⌘) and

encircle the area with the lasso. This is useful when you want to exclude a color from a selection.

- To select the entire area encircled by the lasso including the surrounding background area, press the Option key while dragging.
- To select an entire contiguous block of color using the Lasso tool, double-click within the color.
- To add to the existing lassoed selection, press the Control key and encircle the area you want to add to the selection.
- To subtract an area from the selection, press the Option and Control keys and encircle the area you want to subtract from the selection.

Using the Marquee tool

You can use the Marquee tool to select a rectangular portion of a paint object.

To do so:

1. **Select the Marquee tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to a dotted crosshair.

2. **Position the pointer at one corner of the area to be selected.**
3. **Hold down the mouse button and drag to the opposite corner to enclose the desired portion of the paint area in a selection rectangle.**
4. **Release the mouse button.**

Canvas selects the enclosed area including any surrounding background space. The rectangle surrounding the selected area flashes to indicate that it is selected.

- To snap the marquee to the object, minimizing the surrounding background area, hold down the Command key (⌘) while using the Marquee tool.
- To select an entire paint object, double-click the Marquee tool within the paint object's bounding rectangle.

Moving a selected paint area

Once you have selected a paint area, you can move it while still using the Lasso or Marquee tool. To do so:

1. **Place the Lasso or Marquee tool inside the selection.**

   The pointer changes to an arrow.

2. **Drag the selection to a new position.**

   Moving a part of a paint object leaves a hole (background pixels) behind. Wherever the moved image is placed, it replaces the pixels that were there.

Moving selected lassoed area

Moving selected marqueed area

- To drag a copy of the selection while the original remains in place, hold down the Option key while dragging.
- To leave a trail of multiple copies when dragging the selection, hold down the Command (⌘) and Option keys while dragging.

Deselecting a selected paint area

You can deselect a lassoed or marqueed area by:

- Clicking outside the selected area.

- Clicking another object.
- Choosing another tool from the Tool Box.

Constraining the paint tools

When you are painting with the Spray Can, Paint Brush, Pencil, or Eraser tool, or when you are moving a lassoed or marqueed selection, Canvas lets you limit your movements horizontally or vertically.

To constrain the movement of your paint tools:

1. **Select a paint tool from the Paint Tools palette in the Tool Box.**
2. **Position the tool in the illustration area at the point where you want to begin painting.**
3. **Hold down the Shift key as you drag.**

   Your painting is limited to either a horizontal or vertical direction.

Chapter

16

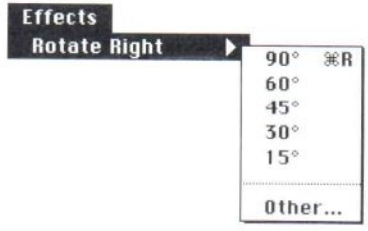
Adding effects

Canvas provides the means for you to transform the objects in your illustration using special effects tools and commands. You can precisely rotate objects by 1° increments, either clockwise or counterclockwise, or flip objects on one or both axes. Trace Edges lets you replace selected areas of paint objects with a tracing of the area, while Invert changes black to white and white to black. The Auto Trace To submenu lets you create a draw object tracing of a paint image with a high degree of accuracy, and the Perspective, Skew, and Distort commands lets you create special effects with an object or group of objects. Since even the greatest of artists make mistakes, Canvas provides you with the Remove Effects command to return an object to its unaffected state.

Using the rotate commands

The Rotate Right and Rotate Left submenus from the Effects menu let you rotate any object, group of objects, or portion of a paint object in increments as small as 1°.

You can choose from several preset angles listed in the Rotate Right and Rotate Left submenus or you can set the angle of rotation in 1° increments by choosing Other.



Rotating by a predefined angle

To use one of the predefined rotation angles (15°, 30°, 45°, 60° or 90°):

1. **Select any object, group of objects, or portion of paint object to enable the rotate commands.**
2. **Choose the Rotate Left or Rotate Right command in the Effects menu.**

   The Rotate submenu appears.
3. **Drag to the highlight the desired rotation angle.**

   Your selection will rotate according to your specification.

Original

Rotate Right 30 °

User Tip: To rotate a copy of the object while leaving the original in place, hold down the Option key when you use the Rotate Left or Rotate Right command.

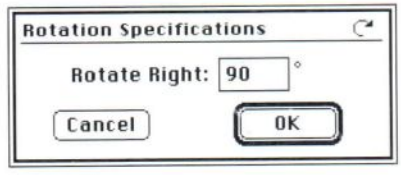
Setting your own angle of rotation

To set your own angle of rotation:

1. **Select any object, group of objects, or portion of a paint object.**
2. **Choose the Rotate Right or Rotate Left command in the Effects menu.**

   The Rotate submenu appears.
3. **Drag to highlight Other.**

   The Rotation Specifications dialog box appears.



4. **Type the number of degrees you want the selection rotated.**

5. **Click OK or press the Return key to close the dialog box and rotate your selection.**

Using the Free Rotate command

The Free Rotate command from the Effects menu lets you freely rotate objects around their centers.

To use the Free Rotate command:

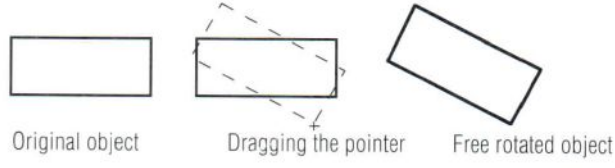
1. **Select any object, group of objects, or portion of a paint object to enable the Free Rotate command.**
2. **Choose the Free Rotate command from the Effects menu.**

   Four handles appear around the object's bounding rectangle.
3. **Position the pointer on one of the handles.**

   The pointer turns into a small crosshair when properly positioned.
4. **Drag the selection to the desired rotation angle.**

   A dashed outline of the bounding rectangle of the rotated object appears as you drag.
5. **Release the mouse button.**

   Your selection rotates according to your movement.



If necessary, you can repeat Steps 3-5 until you achieve the desired angle. When you are satisfied with the angle:

6. **Click outside the bounding rectangle to exit the rotation mode.**

User Tip: To rotate a copy of the object while leaving the original in place, hold down the Option key when you choose Free Rotate.

Using the Point Rotate tool

The Point Rotate tool in Effect Tools palette lets you rotate objects around a point you specify. This tool is available when Point Rotate is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

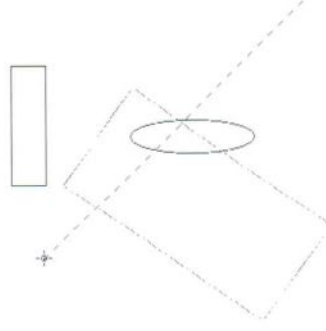
The Point Rotate tool rotates objects in one-degree increments. You can rotate objects clockwise or counterclockwise.

To use the Point Rotate tool:

1. **Select the object or objects you want to rotate.**
2. **Select the Point Rotate tool from the Effect Tools palette in the Tool Box.**

   The pointer changes to a crosshair with a circle in the center.
3. **Position the pointer at any point in the Canvas Window around which you want to rotate your selection.**
4. **Drag to rotate the selection.**

   As you start to drag, Canvas displays a line showing your movement from the initial pivot point and a rectangle representing the selection. These are displayed throughout the rotation for reference.

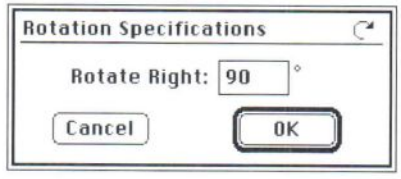


User Tip: To rotate a copy of the object while leaving the original in place, hold down the Option key when you use the Point Rotate tool.

You can also type in the number of degrees of rotation using the Rotation Specifications dialog box. To do so:

1. **Select the object or objects you want to rotate.**
2. **Select the Point Rotate tool from the Effect Tools palette in the Tool Box.**

   The pointer changes to a crosshair with a circle in the center.
3. **Position the pointer anywhere in the Canvas Window at the point around which you want to rotate.**
4. **Hold down the Shift key and click.**
5. **The Rotation Specifications dialog box appears.**



6. **Type the number of degrees that you want to rotate in the text box.**

   Positive numbers rotate objects right (clockwise). To rotate objects left (counterclockwise), precede the number with a minus sign.
7. **Click OK to rotate the selection and close the dialog box or click Cancel if you change your mind.**

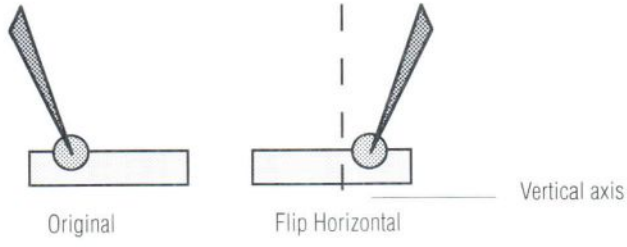
Using the flip commands

Any object, group of objects, or portion of a paint object can be flipped along its horizontal or vertical axis or along both axes. The commands for flipping objects are found in the Effects menu.

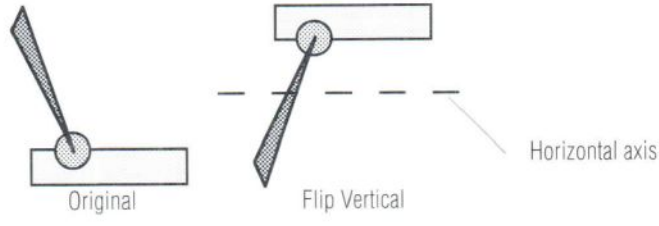
To flip an object:

1. **Select any object, group of objects, or portion of a paint object to enable the Flip commands.**
2. **Choose the desired Flip command from the Effects menu.**

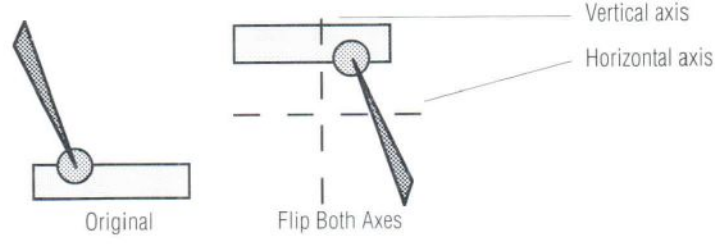
- Choosing **Flip Horizontal** flips the selection's horizontal coordinates around its vertical axis while maintaining the selection's vertical coordinates.



- Choosing **Flip Vertical** flips the selection's vertical coordinates around the its horizontal axis while maintaining the selection's horizontal coordinates.



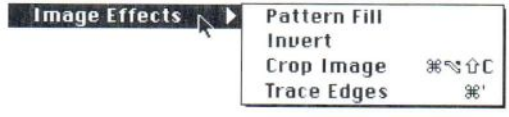
- Choosing **Flip Both Axes** flips the selection's horizontal coordinates around its vertical axis and its vertical coordinates around its horizontal axis.



User Tip: When flipping multiple objects, hold down the Option key to flip them around the center of the selection instead of flipping each object around its center.

Using the Image Effects submenu

The Image Effects command in the Effects menu displays a submenu of effects you can apply to selected paint objects or paint areas.



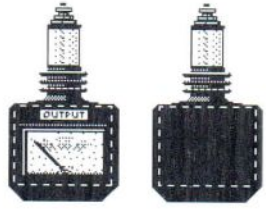
Pattern Fill

The Pattern Fill option can be applied only to portions of paint objects selected with the Lasso or Marquee tool. The Pattern Fill option replaces the selected paint area with the active fill pattern.

To fill an area of a paint object:

1. **Select a fill pattern from the Fill Pattern palette icon in the Tool Box.**
2. **Using either the Lasso or Marquee tool, select the area of your object to fill.**
3. **Choose Pattern Fill from the Image Effects submenu in the Effects menu.**

   The selected area is filled with the pattern.



Invert

The Invert option converts black to white and white to black. Colors are changed to the color opposite them on the color wheel (their contrast color). The Invert option can only be applied to portions of paint objects selected with the Lasso or Marquee tool.

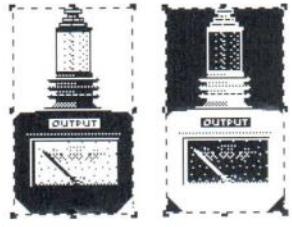
To Invert an area of a paint object:

1. **Using either the Lasso or Marquee tool, select the area of your paint object to invert.**

To select an entire paint object, double-click the Marquee tool icon in the Tool Box when the paint object is active.

2. **Choose the Invert option from the Image Effects submenu.**

   The selected area will be inverted.



Crop Image

The Crop Image option reduces the bounding rectangle around your paint object by eliminating surrounding white space. This option can be applied only to paint objects selected with the Arrow tool.

To use the Crop Image option:

1. **With the Arrow tool, select the paint object to crop.**
2. **Choose Crop Image (⌘-Option-Shift-C) from the Image Effects submenu.**

   The selected paint object will be cropped.

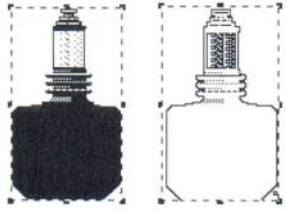
Trace Edges

The Trace Edges option traces the perimeter of non-white pixel masses in the selection and replaces them with a painted outline. This option can be applied only to portions of paint objects selected with the Marquee tool.

To use the Trace Edges option:

1. **Using the Marquee tool, select the area of your paint object to trace.**
2. **Choose Trace Edges from the Image Effects submenu in the Effects menu.**

   Canvas paints a tracing around the edges of the selected area.



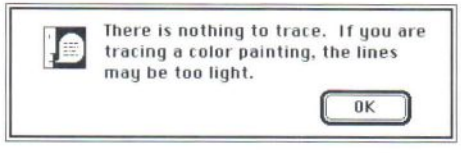
Using the Auto Trace To submenu

The Auto Trace To command in the Effects menu lets you trace a selected paint object or paint area, creating a line drawing of the original composed of Bézier curves, polygons, or smooth polygons.

The Auto Trace To command is available when Auto Trace is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

The Auto Trace To options trace foreground color pixel masses in 1-bit deep paint objects. When tracing a paint object which is 8- or 32-bits deep, Canvas first reduces it to a depth of 1 bit and then traces all foreground colored pixel masses.

If you attempt to auto trace a paint object with light colors, the following dialog box may be displayed since light colors are often classified as white and cannot be traced.



To see how the colors in an 8- or 32- bit deep paint object will appear when reduced to a depth of 1 bit, use the Object Specs command (⌘-I) in the Object menu to change the depth of the paint object.

Choosing the Auto Trace To command in the Effects menu displays a submenu of tracing options.

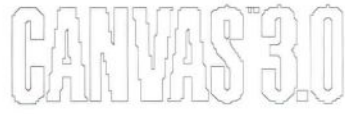
The **Bézier Curve** option results in the fewest edit points. It also offers more editing options and generally produces the smoothest printout.

The **Polygon** option results in the most exact trace. Since the edges of paint objects are often jagged, this option can result in a jagged tracing. Auto tracing to polygons results in a greater number of points to edit than does auto tracing to either smooth polygons or Bézier curves.

The **Smooth Polygon** option traces a smoother line around the paint image than a polygon tracing and results in a tracing with fewer points to edit.

Original

Bézier Curve auto trace



Polygon auto trace

Smooth Polygon auto trace

To use the Auto Trace To submenu:

1. **Either use the Arrow tool to select the entire paint object, or use the Lasso or Marquee tool to select a portion of the paint object to trace.**
2. **Choose Auto Trace To from the Effects menu.**

   The Auto Trace To submenu is displayed.

4. Drag to highlight the desired tracing option.

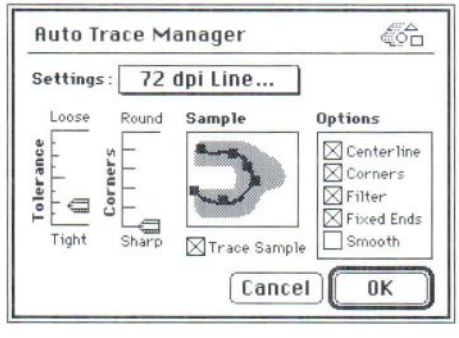
Canvas traces the paint image with draw objects of the chosen type.

When the auto trace is complete your selection is superimposed with a series of selected points. These will be anchor points if you chose the Bézier Curve option or vertices if you chose either the Polygon or Smooth Polygon options.

To separate the original paint object from the new tracing, hold down the Option key and press the down arrow on your keyboard until the tracing is completely separated from the image.

The Auto Trace Manager

You can customize the settings for your auto traces using the Auto Trace Manager. To display this dialog box, choose Auto Trace from the Managers submenu in the Edit menu.



Settings

This dialog box lets you control the factors that set the precision of a Bézier Curve trace and the centerline and filtering options for all the

Auto Trace To options. You can preview the effect created by your choices and save the choices as a custom setting.

The **Tolerance** scale lets you determine how closely the tracing follows the edges of the paint object when using the Bézier Curve option. A tight tolerance results in a more exact trace with more anchor points. A loose tolerance results in a less exact trace with fewer anchor points.

The **Corners** scale is enabled when the Corners option is selected. Canvas then places anchor points at angular areas of your image (corners) to create a more precise trace. This scale lets you set the sharpness requirement for part of the image to be considered a corner when auto tracing to Bézier Curves. The sharper the setting, the more angular an area must be to be considered a corner.

The **Options** let you further customize auto traces.

- Selecting **Centerline** traces the selected object through its center when using any of the Auto Trace To submenu options.
- Selecting **Corners** lets you trace angular areas of your selection more exactly by placing anchor points at them. Selecting both Corners and Smooth results in a more precise trace with fewer points, making it easier to edit. Selecting Corners enables the Corners scale. The Corners option only applies to the Bézier Curve option.
- Selecting **Filter** prevents the tracing of small, random elements that can appear in the paint object. Filter applies to all of the Auto Trace To submenu options.
- Selecting **Fix Ends** causes the tracing to align exactly with any endpoints in the original painting when using the Bézier Curve tracing option. Fixed Ends is especially helpful when the Tolerance is loose.
- Selecting **Smooth** disallows the use of cusp anchor points when using the Bézier Curve tracing option. If both Smooth and Corners are enabled, however, cusps that fall within the range of the Corners scale are allowed. This results in a more precise trace with fewer anchor points, making it easier to edit.

Selecting **Trace Sample** lets you preview the effect of your settings on the tracing in the preview box. Each time you edit the settings, Canvas retraces the preview box sample. You can temporarily disable the tracing of the sample by holding down the Option key when you change a

setting. If you have a lasso or marquee selection in the Canvas Window it will appear in the Sample preview box.

Using the Auto Trace Manager

To use the Auto Trace Manager:

1. **Choose Auto Trace from the Manager submenu in the Edit menu.**

   The Auto Trace Manager appears.

2. **Use the check boxes and scales as described previously to indicate the desired trace specifications.**

   If Trace Sample is selected, the Sample box indicates the effect of your settings.

3. **Click OK to save your settings or click Cancel to disregard them.**

If you clicked OK, the settings you specified will be used each time you choose one of the Auto Trace To options in the Effects menu.

Retrieving a Setting

The **Settings** pop-up box displays a menu of previously saved settings. This pop-up menu also offers options for adding and deleting settings.

To retrieve a setting from the Settings pop-up menu:

1. **Hold down the pointer on the Settings pop-up box.**

   The Settings pop-up menu appears.

2. **Drag to highlight the name of the setting you want to retrieve.**

- Choose **300 dpi Scan** for optimal results when tracing a 300 dpi scanned image.
- Choose **72 dpi Line Art** for optimal results when tracing line art.
- Choose **Freehand Curve** for optimal results when tracing a painting created using freehand paint tools.
- Choose a setting you have previously saved.

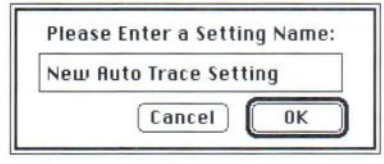
Canvas then updates the options in the dialog box to their values in the retrieved setting.

Adding a Setting

To add a setting to the Settings pop-up menu:

1. **Configure the options in the Auto Trace Manager as described previously.**
2. **Choose Add from the Settings pop-up menu.**

   A dialog box appears asking you to name your setting.



3. **Type a name for your new setting.**
4. **Click OK or press the Return key to save your setting. Click Cancel if you change your mind.**

Deleting a Setting

To delete a setting from the Settings pop-up menu:

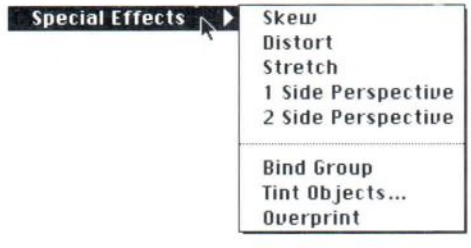
1. **Choose the setting you want to delete from the Settings pop-up menu.**

   The setting's name appears in the Settings pop-up box.

2. **Choose Delete from the Settings pop-up menu.**

Using the Special Effects submenu

The Special Effects command in the Effects menu displays a submenu of effects you can apply to selected objects.



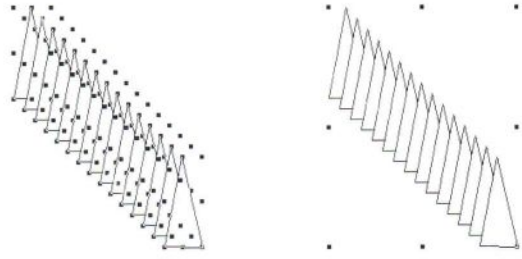
Bind Group

The Bind Group option lets you bind a group of objects to any object created with a core draw tool, the Star tool, the Multigon tool, or to the bounding rectangle of a paint object. The bound object group and the object can then be modified individually or as a unit.

The Bind Group option is available when Bind is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

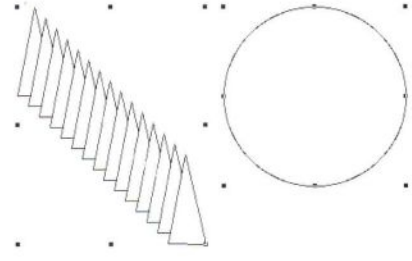
To bind an object group to another object:

1. **Use the Arrow tool to select the objects you want to bind to the other object.**
2. **Choose Group (⌘-G) from the Object menu to group the objects.**



3. **Hold down the Shift key and select the object you want to bind the group to.**

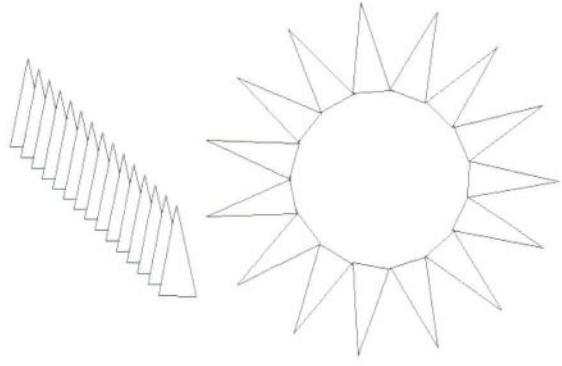
   The group and the object you want to bind it to should be selected.



4. **Choose Bind Group from the Special Effects submenu in the Effects menu.**

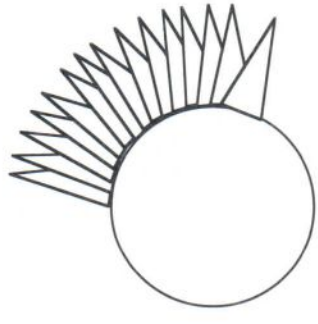
   Canvas binds a copy of each object in the group to the path of the selected object starting at its origin. The original object group remains unchanged so you can bind it to other objects.

In the following example, the sun's rays (a group of triangles) have been bound to the sun (a circle).



The new objects that Canvas creates are bound to the path as a group. You can apply effects to them as a unit or ungroup them using Ungroup command (⌘-U) and edit them individually.

Canvas binds the objects to the path side by side. If you want to maintain the spacing between the grouped objects, such as when binding Bézier text or a blend object series, hold down the Option key when you choose Bind Group from the Special Effects submenu.



Perspective

The Special Effects submenu offers two effects which create the illusion of depth in an illustration; the 1 Side and 2 Side Perspective effects. These effects can be applied to a single object, group of objects, or selected portion of a paint object.

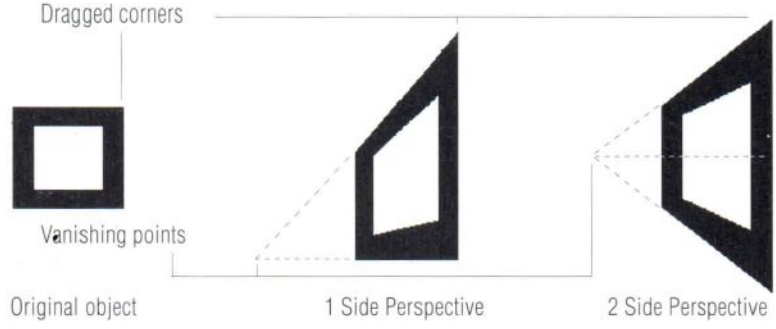
The **1 Side Perspective** option lets you extend one corner of an object's bounding rectangle. The extended corner's adjacent sides are elongated, and lines appears to converge in a vanishing point behind the corner opposite the selected corner.

The **2 Side Perspective** option lets you extend one corner of an object's bounding rectangle. The side that was originally parallel is also extended equally, but in the opposite direction. Lines appears to converge in a vanishing point that lies along a line midway between the two extended sides.

To use the 1 Side Perspective option of the Special Effects submenu:

1. **Select an object or a portion of a paint object to add one-sided perspective to.**
2. **Choose 1 Side Perspective from the Special Effects submenu.**

   Handles appear around your selection.
3. **Drag a handle to create a perspective effect by slanting one side of your selection.**



The 2 Side Perspective option creates a different illusion of depth than the 1 Side Perspective option, with results similar to those found in interior architectural perspective drawings.

To use the 2 Side Perspective option of the Special Effects submenu:

1. **Select an object or a portion of a paint object to add two-sided perspective to.**
2. **Choose 2 Side Perspective from the Special Effects submenu.**

   Handles appear around your selection.

3. **Drag a handle to create a perspective effect which will slant two opposite sides of your selection.**

   Canvas slants the side opposite the side you drag by an equal amount, but in the opposite direction.

Stretch

The Stretch option lets you resize a selected paint object or paint area by adding pixels to the image instead of just resizing the bounding rectangle. Applying the Stretch option to draw objects is the same as dragging one of its selection handles.

To use the Stretch option:

1. **Select a paint object or a portion of a paint object to stretch.**
2. **Choose Stretch from the Special Effects submenu in the Effects menu.**

   Handles appear around your selection.

3. **Drag one of the handles to resize your selection.**

   Canvas stretches the image.

Skew

The Skew option lets you slant an object, group of objects, or selected paint area.

To use the Skew option:

1. **Select an object or a portion of a paint object to skew.**
2. **Choose Skew from the Special Effects submenu in the Effects menu.**

   Handles appear around your selection.

3. **Drag one of the handles to slant a side of your selection.**

Canvas slants the opposite side for you by an amount equal to and in the same direction as the one you dragged.

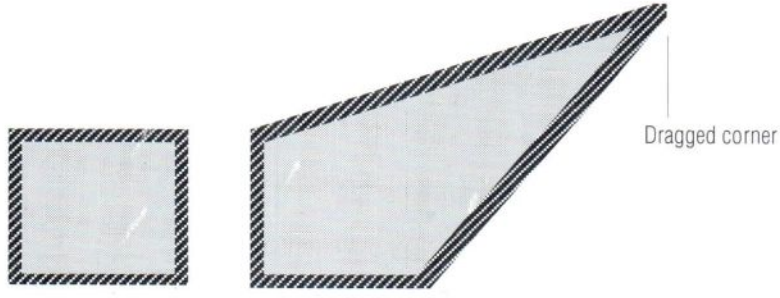
Distort

The Distort option lets you stretch an object, group of objects, or selected paint area in any direction. The results are similar drawing on a piece of rubber and pulling on one corner.

To use the Distort option:

1. **Select an object or a portion of a paint object to distort.**
2. **Choose Distort from the Special Effects submenu in the Effects menu.**

   Handles appear around your selection.
3. **Drag one of these handles to distort your selection.**



Using the Remove Effects command

Since several options in the Effects menu modify the selected object, group of objects, or paint area, Canvas performs them on a copy of the original. The effects performed on copies are: all the rotate commands with the exception of Rotate 90°, Skew, Distort, 1 Side Perspective, and 2 Side Perspective in the Special Effects submenu.

You can also use this command to remove adornments from subscribers. See "Subscriber Options..." on page 13-14 for information on adorning subscribers.

You can remove these effects from an object to which they have been applied using the Remove Effects command in the Effects menu.

To do so:

1. **Select the object to which the effect has been applied.**
2. **Choose Remove Effects from the Effects menu.**

The effects are removed.

Chapter

17

Going to press

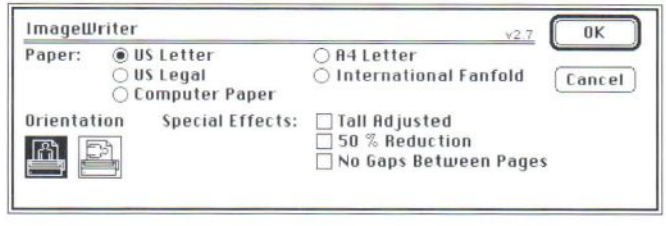
Canvas works with all Macintosh-compatible printers, including the LaserWriter and ImageWriter series of printers. The program also works well with other output devices such as QuickDraw color printers and slide-imaging devices. The files are compatible with professional typesetting devices such as the Linotronic family of printers. Canvas files can also be output to plotters using the MacPlots™ printer driver and to CAMM-1™ ME desktop sign makers using the PLOTTERgeist™ printer driver. Canvas uses the standard Macintosh system interface for printing documents.

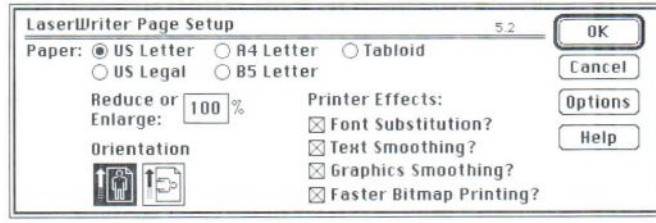
Using the Page Setup command

The Page Setup command opens a dialog box which lets you customize the print functions of Canvas. As with most Macintosh programs, Canvas lets you define the size and orientation of the printed pages. The options you select here can affect the rulers, page breaks, drawing size, and dimensions of your illustration.

All settings apply only to the active (or topmost) document. Whenever you save a document, all Page Setup settings are saved with it.

Choosing Page Setup displays one of the following dialog boxes, depending upon the printer you have chosen in the Chooser.





Settings

Paper offers five options for the paper size your printer uses. They are US Letter, US Legal, Computer Paper, A4 Letter, or International Fanfold when using an ImageWriter, and US Letter, US Legal, A4 Letter, B5 Letter, or Tabloid when using an LaserWriter. Select the size of the paper which is currently loaded in your printer.

Orientation offer two options for placing the image on the paper. The image can be printed upright (Portrait) or sideways (Landscape).

Special Effects lists several options which effect the printed document.

- **Tall Adjusted** keeps all printed dots square, just like they appear on the screen. Make sure this option is always selected when printing Canvas documents.
- **50% reduction** scales the illustration by 50%.
- **No gaps between pages** is useful when printing large multipage charts or graphs since it reduces the number of edges that have to be pasted together.

Reduce or Enlarge lets you scale your printout by entering a percentage.

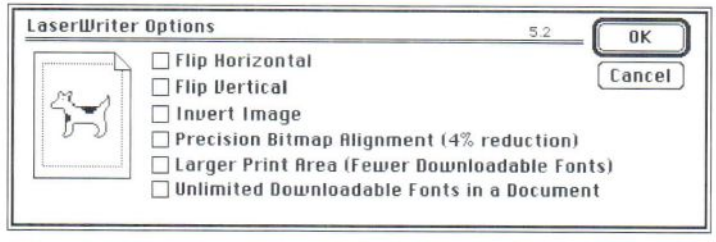
If you are using a LaserWriter printer there are some additional **Printer Effects** options you should be familiar with.

- **Font substitution** tells the LaserWriter to substitute any font it does not recognize with the closest available LaserWriter font. Otherwise, these fonts print at ImageWriter resolution.
- **Text Smoothing** and **Graphics Smoothing**, when selected, tell the LaserWriter to process the drawing to decrease the jaggedness of diagonal lines. This slows down the printing of paint objects consid-

erably. Try printing the same document with the Smoothing options on and off and see which you prefer.

- **Faster Bitmap Printing** preprocesses your bitmaps (paint objects) before printing them, which results in faster printing.

The LaserWriter driver version 5.2 or later also includes several important options. Clicking **Options** opens the following dialog box:



Precise Bitmap Alignment must not be selected. Canvas has been optimized to print on the LaserWriter with this option off. Paint objects, particularly at 300 dpi, do not print correctly if this option is selected.

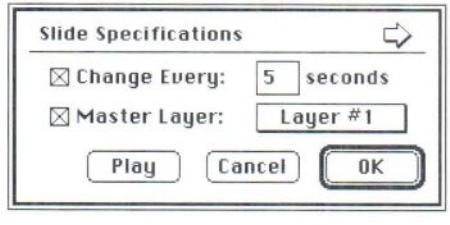
If precise dimensions are important in your drawing, set Printer to LaserWriter in the Ruler Specifications dialog box before you print.

Using the Slides command

The Slides command (⌘-Option->) in the Layout menu lets you create slide show presentations that can be printed or displayed.

The Slides command is available when Slides is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

When you choose the Slides command, the Slide Specifications dialog box appears.



Settings

Canvas uses each layer in your document as a slide to compose a slide show. This dialog box lets you select whether to cycle through the slides manually or automatically at a rate you specify. You can also select to use one of the layers as a backdrop for the remaining slides.

Selecting **Change Every...seconds** causes Canvas to continuously play the slide show when Play is clicked. Selecting this check box enables the text box, letting you enter the desired interval for changing slides. When this check box is not selected, clicking Play lets you cycle through your slide show once manually.

Selecting **Master Layer** lets you designate one of the layers as a background layer which appears and prints with all slides in the show. Selecting this check box enables the adjacent pop-up menu from which you can choose a master layer.

Clicking **Play** cycles through your slides continuously if Change Every is selected. You can stop the slide show by clicking the mouse button.

If Change Every is not selected, you can cycle through your slides once by clicking each time you want the slide to change. You can also use the keyboard arrows to change slides (next →, previous ←, first ↑, and last ↓) without returning to the Canvas Window after cycling through once.

Clicking **OK** saves your slide show configuration, closes the Slide Specifications dialog box, and puts you into the slide edit mode.

Configuring a slide show

To use the Slide Specifications dialog box:

1. **Choose Slides (⌘-Option->) from the Layout menu.**

   The Slides Specifications dialog box appears.

2. **Use the check boxes, text box, and pop-up menu as described previously to customize the performance of your slide presentation.**

3. **Click OK to save your settings and enter the slide edit mode, Cancel to return to the Canvas Window, or Play to cause Canvas to run through your slide presentation.**

The slide edit mode

If you click OK in the Slides Specifications dialog box, the Slides floating window appears, showing that you are in the slide edit mode.

In the slide edit mode, all layers of your document other than the current layer, and the master layer, if there is one, are hidden (not visible). This window lets you cycle through the slides to view or edit them.

Clicking **Last** displays the previous slide.

Clicking **Next** displays the following slide.

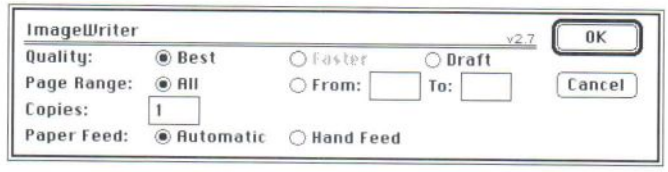
Clicking **Play** puts you in the slide presentation mode. You cycle through the slide show according to the settings designated in the Slides Specifications dialog box.

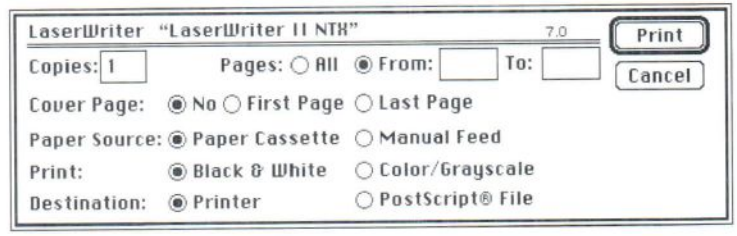
You can add layers to your document while in the slide edit mode. Each layer you add will be a new slide. See "The Layer palette icon" on page 13-44 for shortcuts for making layers visible or invisible which are helpful when editing slide shows.

To leave the slide edit mode, click the close box in the upper right corner of the Slides window to close it. To make all the layers visible, choose Show Other Layers (⌘-5) from the Layers submenu in the Layout menu.

Using the Print command

The Print command in the File menu prints the active (topmost) document to the printer currently selected in Chooser. Choosing the Print command displays one of the following dialog boxes, depending on the printer currently selected.





Settings

Print **Quality** options for the ImageWriter include: Best, Faster, or Draft. The higher the quality, the longer it takes to print your document. The LaserWriter always prints at the highest quality; there are no quality options to set.

Page Range to print:

- **All** (the default) prints the entire document.
- If you specify **From**, you must type in the first and last pages to print in the From and To text boxes. The page ordering is determined by your Printing Order selection in the Drawing Size Specifications dialog box (see "Changing the drawing size" on page 7-6). To print only one page, type its number in both text boxes.

The **Copies** text box lets you specify the number of copies to print of each page.

Paper Source (**Paper Feed**) can be set to either the Paper Cassette (Automatic) or Manual Feed (Hand Feed).

Print can be set to either **Color/Grayscale** or **Black & White** for the LaserWriter. Choosing Black & White speeds up the printing process considerably and is useful when printing proofs.

Destination (this option appears when you are using System 7.0 or later) lets you send your file to the printer or save it as a PostScript® file. If you choose PostScript®, the Save As dialog box appears for you to save the file.

Printing a document

To print a document:

1. **Choose Print (⌘-P) from the File menu.**

   The appropriate Print dialog box appears.

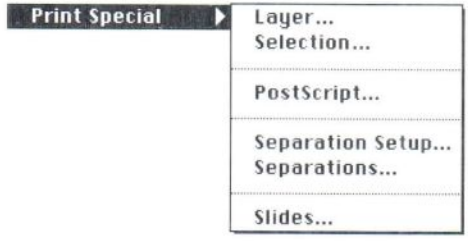
3. **Use the text boxes and radio buttons as described previously to set your print specifications.**

4. **Click OK to print your document or Cancel if you change your mind.**

   You return to the Canvas Window. If you click OK, Canvas prints your document.

Using the Print Special options

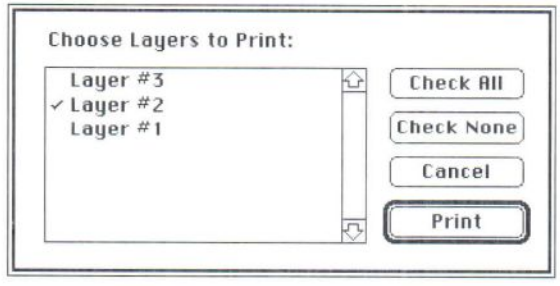
The Print Special command in the File menu displays a submenu which lists several printing options.



You can print selected layers of your document, selected objects in your document, or color separations of your document. You can also customize color separations and print files in Encapsulated PostScript.

Layer...

When there is more than one layer in your document, the Layer option of the Print Special submenu is enabled. This option is useful for printing proofs of your document. Choosing Layer opens a dialog box that lets you specify which layers to print.



Settings

The **scrolling list** lists all the layers in the active document. Clicking a layer's name in the scrolling list places a check mark next to it if no check mark was already there. If a check mark appears next to the layer's name, clicking the layer's name removes the check mark. All layers with a check mark next to their name will print.

Check All puts a check mark by every layer in the scrolling list. This option is useful when you want to print most or all of the layers in the document. You can then deselect layers you do not want to print.

Check None removes all check marks from the scrolling list. This option is useful when you want to print only a couple layers in your document. You can then select just the layers you want to print.

Printing layers of a document

To print specified layers of your document:

1. **Choose Print Special from the Edit menu.**

   The Print Special submenu appears.

2. **Drag to highlight Layer.**

   A scrolling list dialog box appears.

3. **Use the Check All and Check None buttons, and the scrolling list as described previously to select all the layers you want to print.**

   The pointer becomes a check mark when placed in the scrolling list.

4. **Click Print to open the print dialog box or click Cancel to cancel the print operation and return to your document.**

   See "Using the Print command" on page 17-5 for instructions concerning the print dialog box.

Canvas prints the selected layers together, regardless of whether any are grayed or invisible.

Selection...

This option lets you print only selected objects. This option is useful for printing proofs of your illustration. To use the Selection option of the Print Special submenu:

1. **Select the objects you want to print.**

2. **Choose the Selection option of the Print Special submenu.**

   The appropriate print dialog box appears. See "Using the Print command" on page 17-5 for instructions on using the print dialog box.

PostScript...

The **PostScript** option of the Print Special submenu causes Canvas to perform a PostScript conversion of a file before printing it to a PostScript printer. Normally the system performs the conversion. Having Canvas do it may end in slightly different results. You may want to use this option when you are unsatisfied with your printout.

The PostScript option is available when Separations is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

This option is useful when saving a file as an Encapsulated PostScript format (EPSF) file for export purposes. (See "File Formats" on page 7-45 for information on EPSF files.) The PostScript option lets you print a file as if it were in EPSF to see what it will look like when printed from a desktop publishing program.

To use the PostScript option:

1. **Choose PostScript from the Print Special submenu.**

   The appropriate print dialog box appears. See "Using the Print command" on page 17-5 for instructions on using the print dialog box.

   The file prints the way it would if you had saved it as an EPSF file, imported it to a desktop publishing program, and printed it.

2. **Proof your output.**

   Make any necessary corrections to your drawing.

3. **Continue printing using the PostScript option until you are satisfied with the output.**

Separation Setup...

Canvas lets you create color separations of your Canvas files which can be sent to a print shop. You can edit and customize the separations so that they conform to the inks and screens used by your print shop using the Separation Setup option of the Print Special submenu.

The Separation Setup option is available when Separations is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

The process color printing method

Print shops use a method called process color to print color illustrations. With this method, a single piece of paper is run through a printing press over four different ink plates. Each ink plate has varying percentages of one color on it: cyan (C), magenta (M), yellow (Y), or black (K). As these colors print over each other in varying percentages, new colors are created. Print shops make the ink plates for your drawing based on the separations you make in Canvas.

Choosing the Separation Setup option opens the Separation Setup dialog box. If you have not yet chosen a PPD file, a directory dialog box appears first. See "Customizing color separations" on page 17-15 for locating a PPD file.

Settings

This dialog box lets you separate each color in your illustration into percentages of cyan, magenta, yellow, and black (CMYK). These separations are used to make the four ink plates for the printing press. You can adjust color percentages, allow overprinting, and change screen angles using this dialog box.

The **Printer Type** pop-up box displays the printer which you chose your PPD file for. The bottom left corner of the dialog box tells whether the printer is a black and white or color device. Make sure the printer in this box matches the device which will print your final document.

The **Halftone** pop-up menu lists the screen rulings available for the printer chosen under Printer Type. These screen rulings, measured in

lines per inch (lpi) and dots per inch (dpi), create the halftone patterns that determine the number of gray shades in your printed illustration. The default halftone setting is based on your Printer Type and can be found in the printer's owner's manual.

Screen rulings create halftone patterns by determining the size of each halftone cell. A halftone cell is a matrix of the pixels which make up a printed illustration. The size of a halftone cell is expressed in pixels and is derived from the equation $(dpi/lpi)^2$, where dpi is the number of printed dots per inch. A high-lpi illustration has fewer shades of gray and sharper-edged colors; individual pixels are not easily visible. A low-lpi illustration has more shades of gray and soft-edged colors; individual pixels are more easily visible. Halftone effects are only visible on the printed document and not on screen.

Paper Size lists the page sizes available for the printer chosen under Printer Type and the Use Page Setup option. You should choose a page size that is large enough to accommodate your entire illustration since separations cannot exceed one page. Choose Use Page Setup to use the specifications set in Page Setup. When necessary, use the Scale text box to scale your illustration.

The **Orientation** options places the elements on your page horizontally or vertically. Tall orientation places all text and graphics on the page vertically; wide orientation places the objects horizontally. Object orientation is only apparent on the printed document; the screen image is not affected by it. If you have chosen Use Page Setup under Paper Size, this option appears dimmed since Canvas uses the orientation from the Page Setup dialog box.

Scale lets you type a percentage to reduce or enlarge the size of your illustration proportionally. This option is useful when accommodating large illustrations on one page. The size change is only apparent on the printed image; the document itself is not affected by it. If you have chosen Use Page Setup under Paper Size this option appears dimmed since Canvas uses the scale from the Page Setup dialog box.

Image offers options that let you create separations to suit your output device.

- **Negative** prints an inverted image of your document.

- **Emulsion Down** prints a mirror image of your document. **Emulsion** refers to the photosensitive layer of a piece of film.

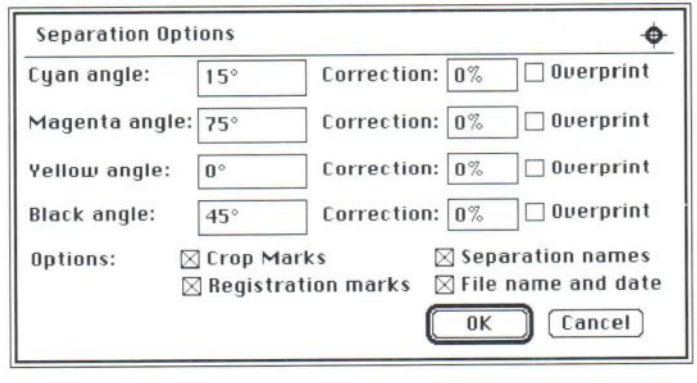
  If you want to print your separations to film, select both Negative and Emulsion Down. Choosing these options prints your illustration inverted and mirrored, like a photographic negative. If you print your separations to paper and want them to resemble the screen image, choose neither of these options.

The **Plates to Print** options specify which separations to print when using the Separations option of the Print Special submenu, and which separations to save when saving a file using the Separations file format. Canvas prints or saves a separation for each color selected. If you select **Composite**, Canvas prints or saves the unseparated document. If you select one or more colors and Composite, Canvas prints or saves the unseparated document and a separation for each color selected.

If you want to further customize your separations, click Options to open the Separation Options dialog box. If you have finished modifying your separations, close the dialog box by clicking OK to keep your changes or Cancel to disregard them.

Separation Options dialog box

Clicking Options opens the Separation Options dialog box which offers options that let you adjust your separations to account for inconsistencies between print shops as well as including other information on the separations.



Angles controls the degree of rotation of the halftone cells on a separation. The angle of the halftone cells on each separation, in relation to the other separations, is a factor in creating the final colors. The color's angle controls the position of the color on its separation. If these angles are the same on each plate, all the halftone cells "turn on" in the same place, forming moiré patterns that disrupt the continuity of color. For best results keep the screen angles at their default settings unless the print shop advises otherwise. To change existing screen angles, highlight the text box and type in a new angle.

The **Correction** text boxes are used to adjust the percentages of the separations. This helps you match the colors you see on your screen to the printed colors. One separation can have several different percentages of its color on it. Correction increases or decreases the percentages throughout the separation. Increasing the percentage of the cyan separation, for example, adds more cyan to the entire image. Correction is not apparent on screen; the print shop will advise you when a change is necessary. Ask the print shop for color proofs if you want to make sure the printed colors are correct.

Overprint is used with overlapping objects. Normally, when objects in an illustration overlap, only the topmost object prints in the overlapping area. The CMYK percentages of the topmost object hide the CMYK percentages of the underlying objects in the overlapping area. When the topmost object is missing (has a zero value for) any of its CMYK components, you can choose to let that component of the underlying object "show through." For example, if a square with no yellow component overlaps a circle having all four CMYK components, you can choose to overprint the yellow component. The yellow percentage from the circle prints in the overlapping area along with the square's cyan, magenta, and black percentages.

You can determine a color's CMYK percentages using the Color Info option of the Managers submenu under the Edit menu or by printing the individual separations to see if an object is missing from a separation and therefore lacking that component. Select Overprint for each color you want to overprint. Overprint affects all applicable overlapping areas in an illustration. If you only want to overprint certain objects, use the Overprint command. See "Using the Overprint option for selected objects" on page 17-18 for instructions. The overprint

effect is not visible on your screen; ask the print shop for color proofs to preview the results.

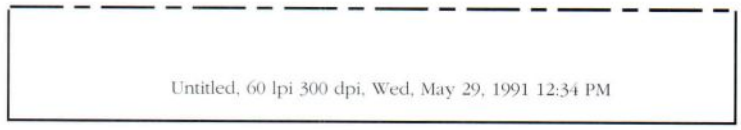
Crop Marks places crop marks in the corners of your illustration. Crop marks show the boundaries of the illustration. These marks show where the printer will cut the pages. Crop marks are recommended to indicate the size of the illustration on the printed page.

Registration Marks places registration marks in the corners of printed separations and negatives. Print shops use registration marks to align the negatives to a device that makes ink plates for the printing press. Proper alignment of the negatives ensures precise alignment of color on the ink plates and therefore on the illustration as well. These marks are not apparent on screen and do not appear on the final color printout. Registration marks are recommended to ensure exact placement of color and objects in an illustration.

Separation Names places color names on printed separations and negatives. Separations are named by their colors (cyan, magenta, yellow, or black) so that print shops can easily identify them. This text is not apparent on screen and does not appear on the final color printout. Separation names are recommended to make it easier to identify each color separation.

File Name and Date places the document's name, date and time of printing, and lpi measurement on printed separations and negatives. This

text is not apparent on screen and does not appear on the final printout. Choose this option to make printed separations easily identifiable.

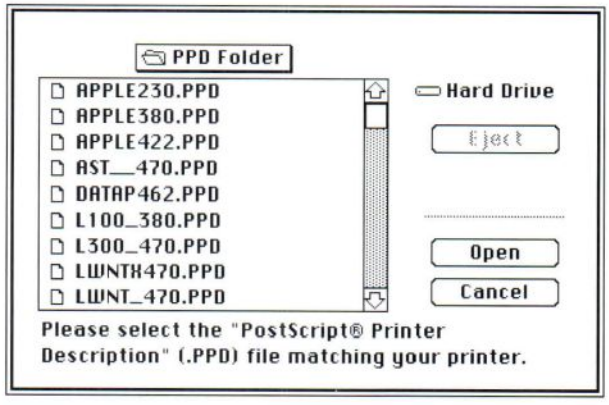


Customizing color separations

To use Separation Setup to customize how Canvas saves and prints your color separations:

1. **Select Separation Setup from the Print Special submenu in the File menu.**

   If you have not yet chosen a PostScript Printer Description (PPD) file, a directory dialog box appears asking you to select one.



2. **Choose the PPD file that corresponds to the printer that will print your final document.**

   The Separation Setup dialog box appears.

3. **Use the pop-up menus, check boxes, text boxes, and Separations Options dialog box as described previously to customize specifications for saving or printing separations.**

4. **Click OK to save your changes or click Cancel to disregard any changes.**

   You will return to your document.

Canvas uses your new Separation Setup whenever you choose Separations from Print Special, and whenever you save a document in the Separations file format, until the next time you change these settings using the Separation Setup dialog box.

Separations...

This option displays the Print dialog box so you can print color separations of your document. The appearance and number of separations printed is determined by the active settings of the Separation Setup dialog box. See "Separation Setup..." on page 17-9.

The Separations option is available when Separations is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

To print your separations:

1. **Choose Separation Setup from the Print Special submenu in the File menu and customize your separations.**

   Be sure you click the check boxes next to Plates to Print to indicate which separations you want to print.

> **User Tip:** If you are printing your separations to proof, it is best not to check Negative.

2. **Choose Separations from the Print Special submenu in the File menu.**

   The print dialog box appears.

   Proof the printouts of your separations. If you are not satisfied with the results, repeat Steps 1-2 until the printout is satisfactory. You are then ready to save your separations.

Saving your separations

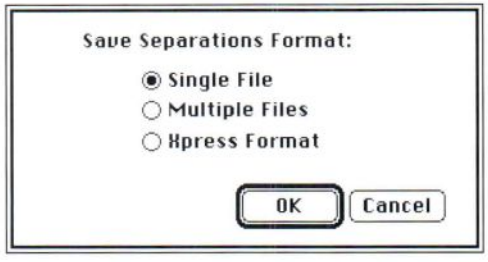
To save color separations of a document that will be printed using the process-color method, use the Separations file format. Once created, these files cannot be opened or printed from Canvas.

To save color separations of your document:

1. **Choose Save As from the File menu.**
2. **Choose Separations from the File Format pop-up box, and specify a location and filename for your separations.**

3. Click Save.

A dialog box appears asking you which format you would like to save you separations in.



4. Select a format for saving your separations.

The separations you save in Canvas are used by prepress service bureaus to make photographic negatives. These negatives are used by a print shop to make ink plates for the printing press.

- **One File** saves all the separations in a single file from which the negatives are made as a group.
- **Multiple Files** saves each separation as a separate file which is made into a negative individually. Multiple filenames end with the extensions ".C", ".M", ".Y", and ".K", and the composite filename ends with the extension ".comp".
- **XPress Format** (also known as Desktop Color Separation or DCS) is designed for illustrations that will be placed in the desktop-publishing program Quark XPress™. XPress Format saves the separations as five Quark XPress documents, regardless of the number checked under Plates to Print in the Separation Setup dialog box. These filenames end with the extensions ".C", ".M", ".Y", ".K", and ".Main." You can place the ".Main" file in Quark XPress and see the illustration as you modify it. You can also individually print each separation or make negatives.

User Tip: When you click Save, an alert box might appear indicating that you cannot save separations if you have chosen Use Page Setup under Page Size in the Separation Setup dialog box. You must choose a different Paper Size before you can save.

Slides...

This option prints all the slides (layers) in your document individually. If you specified one layer to be a master layer in the Slides Specifications dialog box, it will print in the background of every slide. See "Using the Slides command" on page 17-3 for more information on creating slide shows in Canvas. When you choose the Slides option, the Print dialog box appears. Each layer is considered one page and the printing order is determined by the order of the layers in the Layer Specifications dialog box. (When the drawing size is larger than one page, multiple pages will print for each layer page.) Set your print specifications and click Print to print your slides.

This option is available when Slides is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

Using the Overprint option for selected objects

The Overprint option of the Special Effects submenu in the Effects menu lets you overprint a selected object or objects on your color separations. Overprint is a toggle menu item. A check mark appears next to the command name when it is active for the current selection.

This option is available when Separations is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on the external tools in this folder.

Normally, when objects in an illustration overlap, only the topmost object prints in the overlapping area because it erases any underlying objects. Selecting Overprint stops the topmost object from erasing the underlying objects, thereby letting the bottom objects show through. The overprint effect is not visible on your screen; ask the print shop for color proofs to preview the results.

To use the Overprint option:

1. **Select the object or objects you want to Overprint.**

2. Choose Overprint from the Special Effects submenu in the Effects menu.

If a check mark appears by Overprint in the Special Effects submenu, choosing Overprint turns overprinting off for the selected objects. If no check mark appears by this option, choosing Overprint turns on overprinting for the selected objects.

User Tip: The Overprint option in the Separation Options dialog box lets you overprint cyan, magenta, yellow, or black throughout a document. See page 17-13 for more information.

Using the Registration Marks tool

The Registration Marks tool in the Object Tools palette in the Tool Box lets you place registration marks in a document.

The Registration Marks tool is available when the Registration Marks is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

This tool is useful, for example, when you want to place several drawings on one negative. If each drawing on the negative is surrounded by its own registrations marks, the print shop can align each drawing to its own set of ink plates.

One color image takes four separate color plates to print. Print shops use registration marks to align the color plates. These plates must be lined up exactly to ensures precise alignment of the colors on printed drawing. The printer removes these marks so they are not visible in the

final printout. Therefore, you should place the registration marks on white areas so they can be easily removed. For more information on color separations and registration marks, see "Separation Setup..." on page 17-9.

To use the Registration Marks tool:

1. **Select the Registration Marks tool icon from the Object Tools palette in the Tool Box.**
2. **Position the pointer where you want to place a registration mark and click.**

   A registration mark appears.

> **User Tip:** To place registration marks on multiple layers in the same position, use the Copy To Layer option of the Arrange submenu in the Object menu.

Chapter

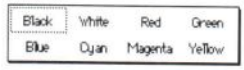
18

Using color in Canvas

Canvas's color capabilities let you create complex, full-color illustrations, whether you are creating images to be displayed on your monitor or you will be sending work out to a print shop. The control center for color screen work is the RGB Color Manager which is available from the Managers command in the Edit menu. The control center for preparing illustrations to be sent to a professional printer is the PANTONE® Colors window available from the Windows menu.

Regardless of the type of Macintosh on which you are working or the number of colors you monitor displays, Canvas lets you assign colors from the 16.7 million colors available. The number of colors Canvas can display at one time on screen depends on which Macintosh video system you are using and the number of colors you have set your screen to display using Monitors in the Control Panel. Canvas adjusts the Color palette to match your video display.

If you have a Macintosh Plus, SE, Portable, or a Macintosh II (with the 1-bit video card), or if you have set your monitor to display two colors, you can choose colors from the following 8-color palette.



All colors will appear black or white on screen but will print in color if printed to a color output device. To assign colors other than the ones appearing in this palette, you must use Color Info (see "Using the Color Info Manager" on page 18-10) or the PANTONE® Colors window (see "Using the PANTONE® Colors window" on page 18-14).

If you have a Macintosh with an 8- or 32-bit color card and have set your monitor to display at least 256 colors, Canvas displays the following 256 color palette.

These are the only colors that are accurately represented on screen. Other colors will be represented on screen by dithering. When printed, however, there should be no difference in the quality of palette colors versus dithered colors. To assign colors other than the ones appearing in this palette, you must use Color Info (see "Using the Color Info Manager" on page 18-10) or the PANTONE® Colors window (see "Using the PANTONE® Colors window" on page 18-14).

Assigning colors by palette colors

The colors in the color palette are ordered starting at the top left corner of the palette and going across, then down, until you reach the bottom right corner of the palette. This order is used whenever you select Palette Colors as the means for incrementing colors, as in the Duplication Specifications dialog box, the Blend Objects Specifications dialog box, and the Gradient Fill Manager. The starting color choice is the first color, and the subsequent colors are assigned by proceeding through the palette.

The palette is also used for pen modes when working in color. When working in 1-, 4-, or 8- bit color mode, a color's inverse is found by determining the color's position from the top of the palette, and identifying the color in the same position from the bottom of the palette.

Understanding the properties of color

In order to use Canvas's color capabilities fully, you should have a basic understanding of the principles of light. Color is a property of light. Light can be either transmitted, such as by your computer screen, or reflected such as by the surface of a painting.

Transmitted light is composed of three primary colors: red, green, and blue. A **primary color** is like a prime number. It is a color that cannot be created by combining other colors. Combining equal portions of any two primary colors produces the secondary colors: cyan, magenta, and yellow. The absence of all three primary colors is black, full intensities of all three primary colors create white, and shades of gray are achieved by having all three primaries present at equal intensities.

In contrast, reflected light is composed of three primary colors which, for the printing industry, are cyan, magenta, and yellow. Combining any two of these primary colors produces the secondary colors red, green, and blue. The absence of all three primary colors is white, full intensities of all three primary colors create black, and shades of gray are achieved by having all three primaries present at equal intensities.

Simply stated, the primary colors of transmitted light are the secondary colors of reflected light. Conversely, the primary colors of reflected light are the secondary colors of transmitted light. You can see these color combinations in the following illustration of the color wheel.

The color wheel is a two-dimensional view of colors. Color has more than two dimensions or properties.

When viewing the color wheel, **hue** is the position of a color on the wheel. As you circle the wheel counter-clockwise, the hue changes from 0, at red, to 65536 which brings you back to red. If you move in and out along a radius of the wheel, the hue remains constant.

Another property of color is **saturation**. Saturation can be visualized by a bucket full of water and red dye. If you put a drop of red dye into the bucket of water, the bucket contains a very low saturation of red. If you empty out the water and fill it with the red dye, the bucket contains a fully saturated red. If you circle the color wheel without changing your distance from its center, the saturation remains constant. If you follow a radius of the color wheel, the saturation goes from full saturation (65535) at the outer edge to no saturation (0) at the center.

Lightness is a third color property. Lightness is how black or white a color appears. Similarly, **value (brightness)** is a measurement of the amount of black in a color where 0 appears black and 65535 appears as the color with no black.

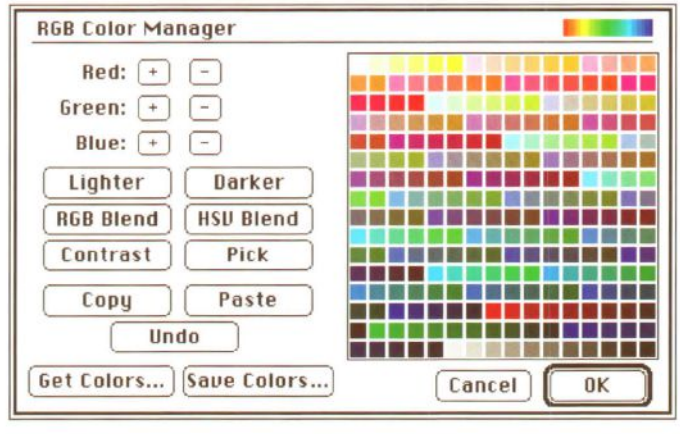
Lightness scale

Brightness scale

Using the RGB Color Manager

Choosing RGB Colors from the Managers submenu in the Edit menu opens the RGB Color Manager. The RGB Color Manager contains the active color palette and options for picking and modifying colors.

The RGB Color Manager is available when RGB Color Manager is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.



You can use the RGB Color Manager in a variety of ways:

- to modify a single color in the color palette
- to modify multiple colors in the color palette
- to load a different color palette
- to save your changes to a color palette as a new color palette file
- to open the Color Picker dialog box

Settings

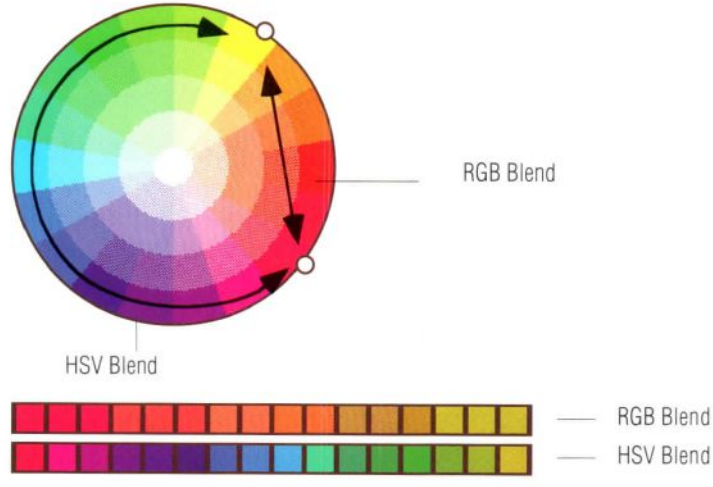
The **color palette** is displayed in the right half of the RGB Color Manager. You can select a color by clicking it, or select multiple colors by dragging across the colors you want to select. The actions you perform using the RGB Color Manager are applied to the selected colors.

The **+** and **-** buttons next to the **Red, Green,** and **Blue** options increase or decrease the red, green, or blue values of the selected colors.

Lighter increases the RGB values evenly.

Darker decreases the RGB values evenly.

RGB Blend is enabled when more than one color is selected. **RGB Blend** replaces the selected colors with colors that lie along a straight line connecting the first and last selected colors on the color wheel.



HSV Blend is enabled when more than one color is selected. **HSV Blend** replaces the selected colors with colors that lie along a curve around the color wheel connecting the first and last selected colors.

Contrast replaces each selected color with the color located directly opposite it on the color wheel.

Pick is enabled when one color is selected in the color palette. Clicking Pick opens the Color Picker dialog box with the selected color displayed in the preview box. See "Using the Color Picker" on page 18-8 for instructions on using the Color Picker. You can also open the Color Picker by double-clicking a color in the palette.

Copy copies the selected colors to the Clipboard. Once a selection has been copied to the Clipboard, it can be pasted into the active color palette or, if you switch color palettes, into a different color palette.

Paste replaces the selected colors with colors you have previously copied to the Clipboard. If no colors have been copied to the Clipboard, the Paste button appears dimmed.

Undo cancels the last action you performed in the RGB Color Manager.

Get Colors lets you load a different color palette file.

Save Colors lets you save the active color palette as a color palette file. This file can then be loaded into other Canvas documents.

Working with one color

To use the RGB Color Manager on a single color:

1. **Select a color in the color palette by clicking it.**

   A border appears around the color to indicate that it is selected.

2. **Use the Red +/-, Green +/-, and Blue +/-, Lighter, Darker, and Contrast buttons as described previously to edit the color, or click Pick to open the Color Picker with the selected color active.**

Working with multiple colors

To use the RGB Color Manager on multiple colors:

1. **Hold down the pointer on the first color you want to select in the palette.**

2. **Shift-click or drag across the color palette to the last color that you want to modify.**

   A border appears around each of the colors to indicate that they are selected.

3. **Use the Red +/-, Green +/-, and Blue +/-, Lighter, Darker, Contrast, RGB Blend, or HSV Blend button as described previously to edit the colors.**

Changing color palettes

There is only one color palette open in Canvas at a time. It is the active color palette. The active color palette has many functions in Canvas. You use it to select the Fore Color and Back Color from the Tool Box and the Object Specifications dialog box. You also use it in the Duplication Specifications dialog box, the Tint Specifications dialog box, the Gradient Fill Manager, the Hatch Manager, the Parallel Lines Manager, the Layers Specifications dialog box, and the Selection Specifications dialog box.

Canvas is shipped with nine color palette files in a folder called Color Tables. You can change the active color palette using the Get Colors button. The color palette which is active when you save your document will be saved with your document.

To change the active color palette:

1. **Click Get Colors.**

   A directory dialog box appears.

2. **Locate and open the Color Tables folder.**

   The available color palette files appear in the directory.

3. **Open the color palette you want to use with the current document.**

You return to the RGB Color Manager with the palette you open as the active color palette. This palette will be saved with the file.

Saving a color palette

Once you have modified a color palette, you can save it as you would any Macintosh file. To save a color palette:

1. **Click Save Colors.**

   A standard Save As dialog box appears.

2. **Type a name for your color palette.**

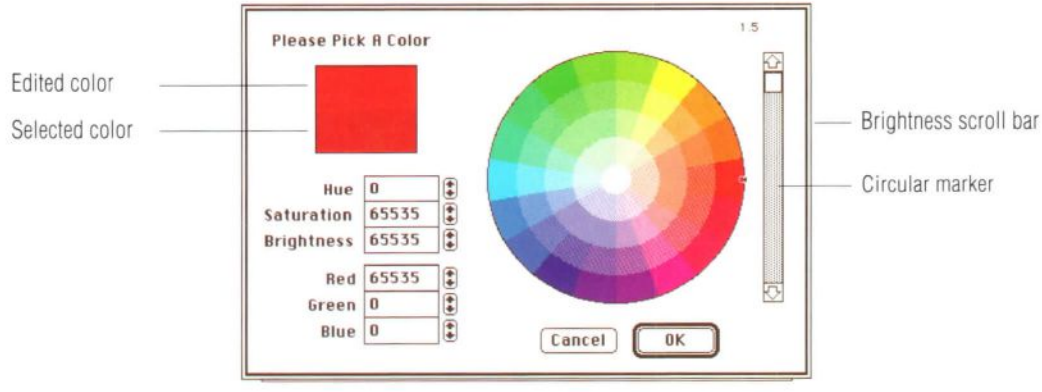
3. **Click OK to save your palette or click Cancel if you change your mind.**

   You return to the RGB Color Manager.

Using the Color Picker

The Color Picker dialog box lets you edit a selected color with the aid of a color wheel. You can select the color you want to edit from either the Colors palette in the Canvas Window, or the color palette in the RGB Color Manager.

When using the RGB Color Manager, the Pick button is enabled when you have one color selected in the color palette. Clicking the Pick button or double-clicking a color in the palette opens the Color Picker.



When the Colors palette is open, you can open the Color Picker by double-clicking the color that you want to edit. You can also open the Color Picker by holding down the Control key and clicking the Fore Color or Back Color palette icon in the Tool Box or the color selection pop-up boxes in the following dialog boxes: Tint Specifications, Object Specifications, Layer Specification, Selection Specifications, Duplication, Gradient Fill Manager, Hatch Manager, or Parallel Lines Manager.

Settings

The **color wheel** displays a circular array of the colors of the spectrum at the currently selected brightness level.

The **preview box** displays the selected color from the color palette. As you make changes, the top half of the preview box displays the edited color and the bottom continues to display the color as it appeared when you selected it. Once you have made changes, you can revert to the original color by clicking the lower half of the preview window.

The **circular marker** shows the position on the color wheel of the color you are editing. You can edit the color either by dragging this marker or by changing the values in the text boxes. Moving the marker in a circular path around the color wheel changes the color's hue while the saturation remains constant. Moving the marker along a radius of the color wheel changes the saturation while the hue remains constant.

The **Hue, Saturation, Brightness, Red, Green,** and **Blue** text boxes and arrow buttons let you edit the selected color. Changing the amount of Hue, Saturation, or Brightness can cause changes to the Red, Green, or Blue amounts. Likewise, changing the amount of Red, Green, or Blue can cause changes to the Hue, Saturation, or Brightness amounts.

The **Brightness scroll bar** controls the amount of black added to the colors in the color wheel. This scroll bar works in conjunction with the Brightness text box. The top of the scroll bar is equivalent to 65535 in the text box and the bottom of the scroll bar is equivalent to 0. The Brightness amount is always equal to the greatest of the Red, Green, and Blue values.

Editing a color

To edit a color using the Color Picker:

1. **Select the color from the color palette in the RGB Color Manager and click Pick, or double-click the color in the Colors palette in the Canvas Window.**

   The Color Picker dialog box appears.

2. **Use the circular marker; the Brightness scroll bar; and the Hue, Saturation, Brightness, Red, Green, and Blue text boxes as previously described to edit the selected color.**

   The color in the top half of the preview box reflects your changes.

3. **Click OK to replace the selected color with the new color or click Cancel to leave the color unchanged.**

   Clicking OK closes the Color Picker and returns you to the RGB Color Manager or the Canvas Window, depending upon how you entered the Color Picker.

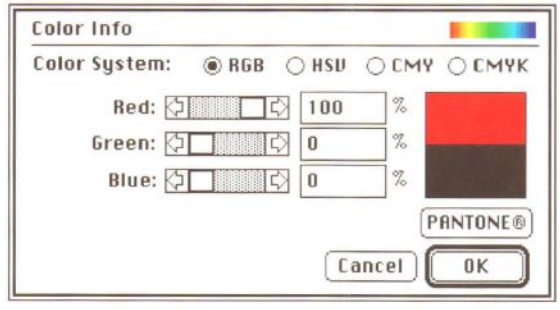
Using the Color Info Manager

The Color Info Manager lets you change the default foreground or background color, get information on the foreground or background color of a selected object, edit the foreground or background color of a selected object, or translate the foreground or background color of a selected object into its values in one of four color systems.

The Color Info Manager is available when PANTONE® Colors is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for more information on loading external tools.

When you choose Color Info from the Managers submenu in the Edit menu, the Color Info Manager appears. You can also open the Color Info Manager by holding down the Shift and Control keys when choosing colors from the pop-up palette in the following locations: the Tool Box, the Object Specifications dialog box, the Gradient Fill Manager, the Tint Specifications dialog box, the Hatch Manager, the Parallel

Lines Manager, the Duplication Specifications dialog box, the Selection Specifications dialog box and the Layer Specifications dialog box.



Settings

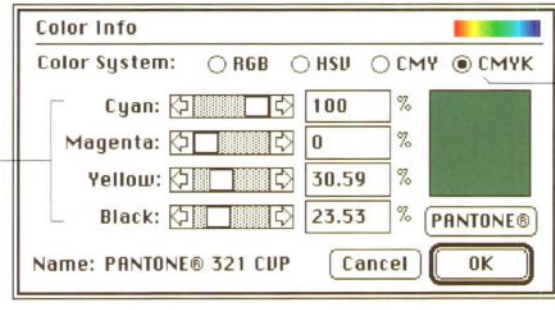
The **preview box** displays the default foreground color if no object is selected. If an object is selected, its foreground color appears in the preview box. If you hold down the Option key when you choose Color Info, the selected object's background color or the default background color appears in the preview box. As you make changes, the top half of the preview box displays the edited color and the bottom remains the same.

Color System offers four color systems from which to select. (Refer to "Understanding the properties of color" on page 18-2 if necessary.)

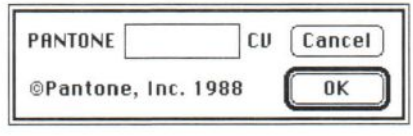
- **RGB** (red, green, blue) is the default color system. Your computer monitor uses the RGB color system. Set Color System to RGB if your illustration will be shown on RGB monitors, or will be photographed from the monitor.
- The **HSV** [hue, saturation, value (brightness)] system is based on properties of colors. This system is useful when you want to key colors in your drawing to each other. For example, you may want to vary the hues but keep the saturations constant to give a harmonious feel to a drawing. Once you achieve the desired color you can switch to the RGB or CMYK system if you need to know the values of the color's components in one of these color systems.
- Use **CMY** (cyan, magenta, yellow) and **CMYK** (cyan, magenta, yellow, black) when you are sending your document to a print shop. Since the printing industry has found it difficult to achieve true

black from full intensities of cyan, magenta, and yellow, the CMYK color system was developed. In this system a portion of the cyan, magenta, and yellow is replaced by black. In one case you have richer colors (CMY) and in the other you have stronger blacks (CMYK). Your choice between these two color systems will change with the needs of each illustration.

When you select a color system, Canvas displays the components of the selected system in the center of the dialog box. Each component has a text box and scroll bar. You can edit each component by typing a new percentage in the text box or by using the scroll bar.



The **PANTONE**® button lets you select a color from the PANTONE® set. Clicking PANTONE® opens a dialog box which lets you enter the name of the PANTONE® color you want to choose.



Type the name of the color in the text box and click OK. The color appears in the top portion of the Color Info preview box.

Name displays the PANTONE® name of the selected color if it is part of the PANTONE® set or if it is a CMYK color from a color set which you created.

Using the Color Info Manager

To change the default foreground or background color, or the foreground or background color of a selected object:

1. **Select the objects whose colors you want to set.**

   If no objects are selected, you will set the default color.

2. **Choose Color Info from the Managers submenu in the Edit menu if you want to set the foreground color. If you want to set the background color, hold down the Option key when you choose Color Info. You can also display the Color Info Manager by pressing Control-Shift and clicking either the Fore Color or Back Color palette icon in the Tool Box.**

   The Color Info Manager appears.

3. **Select a color system by clicking the button next to the one you want.**

   The components of the system appear in the center of the dialog box with adjoining text boxes and scroll bars for editing purposes.

4. **Use the scroll bars or type percentages in the text boxes to edit the color.**

   The preview box on the right changes to reflect your editing.

5. **Click OK to accept your changes or click Cancel if you change your mind.**

   If you click OK, Canvas changes the foreground or background color of any selected objects. If no objects are selected, Canvas changes the default foreground or background color.

To choose a PANTONE® color:

1. **Follow Steps 1-2 as outlined above.**

2. **Click PANTONE®.**

   A dialog box appears asking you to enter the number of the PANTONE® color you want.

3. **Type the name of the PANTONE® color you want to use.**

4. **Click OK to return to the Color Info Manager with the selected PANTONE® color in the preview box, or click Cancel to close the dialog box and return to the Color Info Manager without making any changes.**

   Proceed as outlined above.

Using the PANTONE® Colors window

The PANTONE® Colors window is your color control center when creating drawings which will be printed professionally. You can use the PANTONE® Colors window to create, edit, load, and save custom color sets. The active color set becomes your equivalent of the color palette. You can use the colors in the active color set to change the foreground and background colors of selected draw objects.

The PANTONE® Colors window is available when PANTONE® Colors is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Canvas is shipped with one color set: the PANTONE® set. This set contains colors developed by PANTONE®, Inc. for process colors, uncalibrated Trinitron Monitors, and 150 line ImageSetter output devices. You can add colors to this set, or copy colors from the set, but you cannot modify the colors in the PANTONE® set.

Choosing PANTONE® Colors from the Windows menu displays the PANTONE® Colors window.

Settings

The **scrolling list** in the center of the window displays the name and color icon of up to 14 colors from the active color set.

The **scroll bar** at the bottom of the window lets you scroll the colors of the color set displayed in the scrolling list.

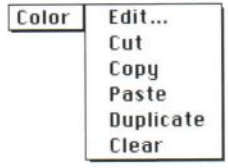
The **color bar** bordering the right edge of the PANTONE® Colors window displays all the colors in the color set. By clicking a color in the color bar, you can scroll the scrolling list to display that color.

The **Color Sets** pop-up menu lists options that let you manage your color sets.

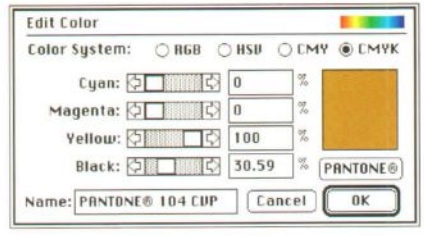
- **Save** writes changes to the active color set to disk.
- **Save As** saves the active color set by a different name or to a different location. A dialog box appears asking you to name the set. Choose the folder and disk you want to save the color set file to and type the set name in the text box. Click Save and the dialog box closes.
- **Load** opens a previously saved color set. Choosing Load opens a directory dialog box from which you can choose a color set to load. Locate the color set file you want to use and click Open.
- **New** closes the color set in the window and starts a new, empty set. If you have not yet saved the color set in the window, an alert box appears letting you save your changes. Next a directory dialog box appears for you to name your new set. Choose the folder and disk you want to save the color set file to and type the set name in the text box. Click Save and the directory dialog box closes.
- **Remove** removes the currently selected set from the Color Sets pop-up menu.
- The lower portion of the pop-up menu contains all the color sets that you have loaded. You can quickly load one of these by selecting its name from the menu. If you have not saved the current color set, Canvas gives you the opportunity to do so.

The **Color** pop-up menu displays color editing options. You can edit, cut, copy, paste, clear, or duplicate multiple colors. Select the color or colors from the active color set on which to perform one of the Color pop-up menu options. Hold down the Shift key when selecting multi-

ple adjoining colors or the Command (⌘) and Shift keys for a discontinuous multiple color selection.



- **Edit** displays the Edit Color dialog box with the selected color displayed in the preview box.

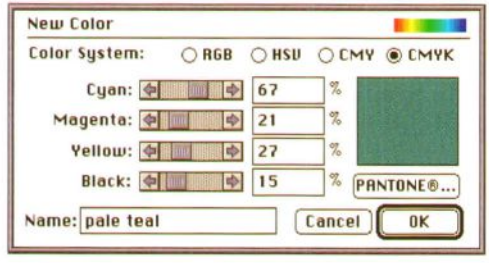


  The Edit Color dialog box is a variation of the Color Info Manager. See "Using the Color Info Manager" on page 18-10 for descriptions of the options offered in this dialog box. Edit the selected color and click OK to replace all selected colors with the color shown in the top half of the preview box, or click Cancel to close the dialog box without changing the selected colors.

- **Cut** removes selected colors from the color set and puts them on the Clipboard. You can then paste them into another color set.
- **Copy** places a copy of the selected colors on the Clipboard; you can then paste them into different color sets.
- **Paste** pastes the colors from the Clipboard into the active color set. Paste also lets you paste the colors of existing objects into the active color set so you can apply them to other objects. To do so, you must first select the objects and choose Copy Object's Color from the Edit Special submenu in the Edit menu before choosing Paste from the Color pop-up menu.
- **Duplicate** adds a copy of the selected colors to the active color set.

- **Clear** removes the selected colors from the color set without copying them to the Clipboard.

Add lets you add a color to the active color set. Clicking Add displays the New Color dialog box.

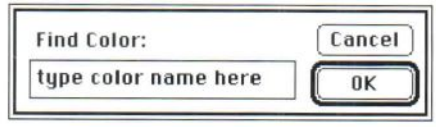


The New Color dialog box is a variation of the Color Info Manager. See "Using the Color Info Manager" on page 18-10 for instructions for using this dialog box. In addition, you can type a name for your color in the Name text box.

The **Find** button lets you locate a color by its name. Find starts searching from your current location in the active color set. If you use this command repeatedly you will continue to find the next occurrence of the string for which you are searching. To use Find:

1. **Click Find.**

   The Find Color dialog box appears.



2. **Type the name or portion of the name of the color you want to display.**

   The next occurrence of a color whose name contains the text string entered in the text box appears in the PANTONE® Colors window scrolling list.

3. **Continue to click Find and press the Return key until the color for which you are searching appears in the scrolling list.**

You can then select the color to edit, copy, apply to an object, and so on.

Changing the default foreground or background color

You can change the default foreground or background color or the foreground or background color of selected draw objects to a color in the PANTONE® Colors window. To do so:

1. **Select the draw objects whose foreground or background color you want to change.**

   If no objects are selected, you will change the default foreground or background color.

2. **Click the color in the PANTONE® Colors window that you want to be the new foreground color, or hold down the Option key and click the color that you want to be the new background color.**

   The foreground color or background color of all selected objects will change to the color you select from the color set. If no objects are selected, the default foreground or background color will change to the color you select from the color set.

Using gradient fills

The Gradient command in the Object menu offers a menu of preset gradient fills which can be applied to draw objects. You can also design your own gradient fills and add them to the Gradient command submenu using the Gradient Fill Manager.

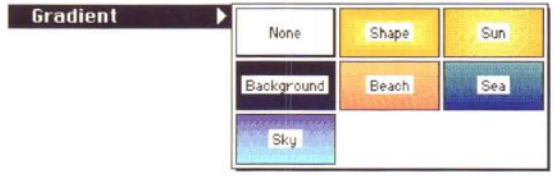
The Gradient command and the Gradient Fill Manager are available when Gradient Fill is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Using the Gradient command

To apply a previously saved gradient fill setting to a selected draw object or group of draw objects:

1. **Select the draw objects to which you want to apply a gradient fill.**
2. **Choose Gradient from the Object menu.**

A pop-up menu of gradient fill settings appears.

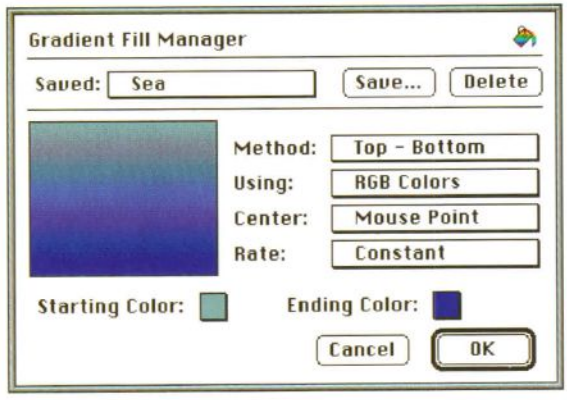


3. Drag to highlight your choice.

- If the setting uses the Center set to Mouse Point, the pointer changes to a crosshair labeled *Pick Center*. Click where you want the gradient fill centered to execute the command. The center does not need to be within the selection.
- If the setting uses the Method set to Directional and the Center set to Object Center, a line appears beginning at the center of your selection. Move in the direction you want the gradient to fill. A line follows your movements. Click the mouse button to execute the command.
- If the setting uses the Center set to Mouse Point and the Method set to Directional, the pointer changes to a crosshair labeled *Pick Center*. Position the pointer where you want the gradient to begin, hold down the mouse button and drag in the direction you want the gradient to fill. Click the mouse button to execute the command.
- If none of the above situations are applicable, Canvas performs the gradient fill when you choose the fill option.

Using the Gradient Fill Manager

The Gradient Fill Manager lets you design, save, delete, and apply gradient fills. When you choose the Gradient Fill option of the Managers submenu in the Edit menu, the Gradient Fill Manager appears.



Settings

The **Saved** pop-up menu lists previously saved gradient fill settings. These are the same settings displayed by the Gradient command in the Object menu. You can retrieve a gradient fill setting by choosing it from this pop-up menu. The retrieved setting will appear in the preview box and the pop-up boxes will update to display its properties. You can then edit the setting and apply it to any selected objects.

The **preview box** on the left side of the dialog box shows you how the fill will look using the options you choose.

Starting Color refers to the first color in your blend. You can select the starting shade of your fill using this pop-up palette.

Ending Color refers to the last color in your blend. You can select the ending shade of your fill using this pop-up palette.

You can also use the Color Info Manager to set the starting and ending colors. To do so, hold down the Control and Shift keys and click the Starting Color or Ending Color pop-up box. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions concerning the use of this dialog box.

Method refers to the manner in which an object is to be filled: Top-Bottom, Bottom-Top, Left-Right, Right-Left, Circular, Elliptical, Rectangular, Directional, and Shape. Use this pop-up menu to choose a fill method. The preview window will display its effect. When you choose Directional, Canvas prompts you to draw a line specifying the direction of the gradient each time you use the gradient.

The **Using** pop-up menu lets you choose how the colors in the fill are generated.

- **Palette Colors** creates fills using a dithering of the colors in the color palette that fall between the chosen starting and ending colors.
- **RGB/CMYK Colors** creates dithered fills using an RGB or CMYK blend of the Starting Color and Ending Color. This option appears as *RGB Colors* unless you have used the CYMK color system in Color Info to choose a starting or ending color. If so, this option appears as *CMYK Colors* and Canvas uses both colors' CMYK values to perform the blend. See "Using the RGB Color Manager" on page 18-4 for information on RGB blends.
- **Dithered Pattern** creates fills using a dithering of the Starting Color and the Ending Color. This is the only option available if you are working on a black-and-white monitor.

Center lets you select where the center of the fill will be.

- **Object Center** uses the true center of the object.
- **Mouse Point** lets you specify the center of the fill by clicking a point inside the object. When you use a gradient fill whose Center is set

to Mouse Point, the pointer changes to a crosshair labeled *Pick Center*. Mouse Point is the default setting.

The **Rate** pop-up menu lists three options for the application of the shades in the fill:

- **Constant** blends the fill at an even rate from the Starting Color to the Ending Color.
- **Dual Blend** blends the fill from the Starting Color to the Ending Color, and then blends back to the Starting Color.
- **Accelerating** gradually steps through the shades at the beginning, then increases sharply towards the end.

Designing and saving a gradient fill setting

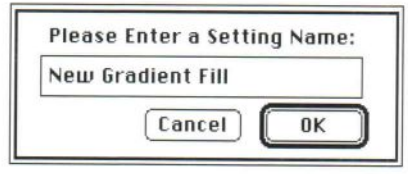
To design and save a gradient fill setting:

1. **Choose Gradient Fill from the Managers submenu in the Edit menu.**

   The Gradient Fill Manager appears.

2. **Use the pop-up menus as described previously to design a gradient fill.**
3. **Click Save.**

   A dialog box appears asking you to name your gradient fill.



4. **Type a name for your gradient fill.**
5. **Click OK to save your fill and return to the Gradient Fill Manager or click Cancel if you change your mind.**

   If you click OK, your new fill appears in the Saved pop-up box. It will also appear in the submenu of the Gradient command in the Object menu.

6. **Repeat Steps 2-5 to create additional gradient fills.**
7. **When you have finished creating gradient fills, click OK or Cancel to close the Gradient Fill Manager.**

If any objects are selected, clicking OK applies the current gradient fill settings to them. Clicking Cancel leaves the selection unchanged.

Deleting a gradient fill setting

To delete a previously saved gradient fill setting:

1. **Choose Gradient Fill from the Managers submenu in the Edit menu.**

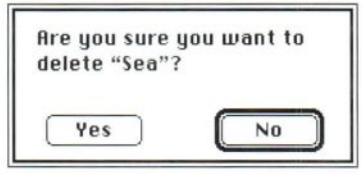
   The Gradient Fill Manager appears.

2. **Choose the setting you want to delete from the Saved pop-up menu.**

   The setting appears in the Saved pop-up box.

3. **Click Delete.**

   The following dialog box appears with the name of the setting in quotes.



4. **Click Yes to delete the setting or No if you change your mind.**

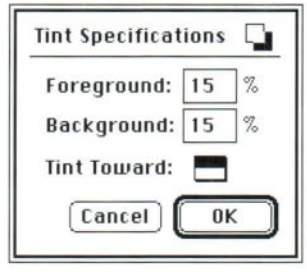
   The setting will be removed from both the Saved pop-up menu in the Gradient Fill Manager and the Gradient submenu in the Object menu.

Using the Tint Objects option

The Tint Objects option of the Special Effects submenu lets you assign color tinting to selected objects. Tint colors can be chosen using either the color palette or the Color Info Manager. You can specify the percentage by which to tint and choose independent foreground and background tint colors.

The Tint Objects option is available when the Object Tint tool is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

Choosing Tint Objects from the Special Effects submenu in the Effects menu when one or more objects is selected opens the Tint Specifications dialog box.



Settings

Foreground and **Background** let you set the percentage of the foreground and background tint colors you want to apply to the selected objects. Typing 0 applies a transparent tint which leaves the original colors unchanged. Typing 100 applies an opaque tint which completely blocks out the original colors and replaces them with the tint color. And typing 50 applies a 50%-transparent tint to all selected objects. The effect is similar to looking through a colored lens.

The **Tint Toward** icon lets you choose independent tint colors to be applied to the foreground and background colors of the selected objects. Like the Fore and Back Colors icon in the Tool Box, the top portion is used to choose the foreground tint color and the bottom portion is used to choose a background tint color.

Hold down the pointer on either portion of the icon to bring up the color palette and choose a tint color. You can also use the Color Info Manager to choose tint colors. To do so, press the Shift and Control keys and click the appropriate portion of the Tint Toward icon. The Color Info Manager appears. See "Using the Color Info Manager" on page 18-10 for instructions on using this dialog box.

Using the Tint Specifications dialog box

To use the Tint Specifications dialog box:

1. **Select the objects you want to tint.**
2. **Choose Tint Objects from the Special Effects command in the Effects menu.**

   The Tint Specifications dialog box appears.
3. **Type a number in the Foreground text box which will determine how opaque the foreground tint will be.**
4. **Type a number in the Background text box which will determine how opaque the background tint will be.**
5. **Choose the foreground and background tint colors using the Tint Toward icon as described previously.**
6. **Click OK to tint the selected objects or Cancel to leave them unchanged.**

   The dialog box closes. If you click OK, the selected objects will be tinted according to your specifications.

Using the Dropper tool

The Dropper tool offers an easy, efficient means of choosing colors.

The Dropper tool is available when Dropper is active in your Canvas Tools folder. See "Using the ToolPicker" on page 6-7 for information on loading external tools.

This tool lets you change the default foreground or background color to any color appearing in your illustration without using the color palette or a color set. This is especially useful for precisely matching colors in your illustration.

To use the Dropper tool to change the default foreground or background color:

1. **Select the Dropper tool from the Effect Tools palette in the Tool Box.**

   The pointer becomes a dropper.

2. **Position the dropper so that the tip is touching the color in your illustration that you want to select.**
3. **Click once to set the default foreground color, or hold down the Shift key as you click to set the default background color.**

You can switch to the Dropper tool from any other tool using the keyboard. To do so:

1. **Hold down the Option and ~ (tilde) keys.**

   The pointer changes to a dropper.

2. **Select a foreground and/or a background color as described previously.**
3. **Release the keyboard keys.**

   The tool you had been using becomes selected again.

The new foreground and background colors will be applied to the next objects you create.

You can also use the Dropper tool to apply the current foreground or background color to objects in the Canvas Window. To do so:

1. **Select the object to which you want to apply the foreground or background color displayed in the Fore Color or Back Color palette icon.**
2. **To apply the foreground color, hold down the Command key (⌘) and click the Dropper tool icon. To apply the background color, hold down the Command (⌘) and Shift keys and click the Dropper tool icon.**

   The appropriate color is applied.

Section Four
Reference

Chapter

19

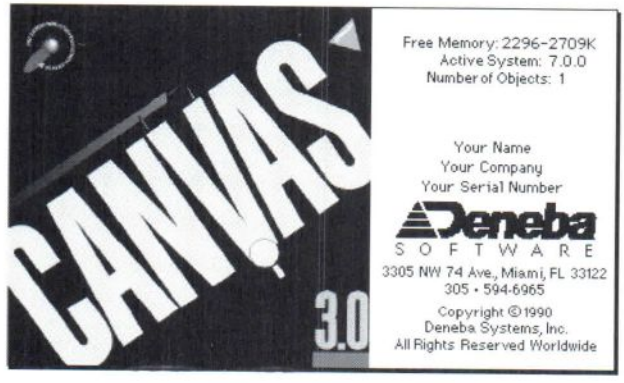
Reference

This section of the *Canvas* manual is an alphabetical reference guide with descriptions of the tools, commands, and features available in your Canvas program. For more information on the items listed in this section, see the appropriate chapter in the *Using* section.

About Canvas™...

The About Canvas™ command in the Apple menu displays the Canvas title block. The title block indicates how much contiguous and total free memory you have, the versions of Canvas and system software you are using, and the number of objects in the active layer of your document. It also displays the serial number for your copy of Canvas and the registered user's name and organization.

Choose About Canvas in the Apple menu to display the title block. Click the mouse button to close it.

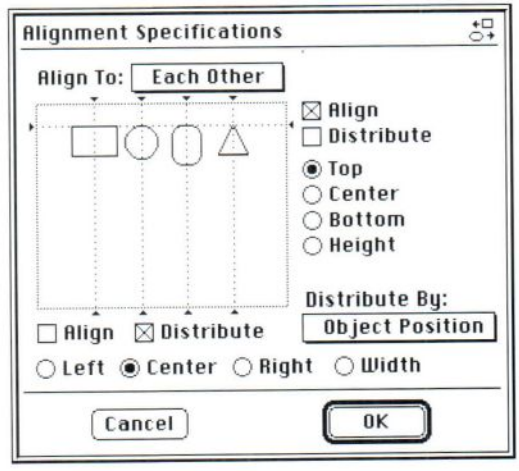


Again

The Again command (⌘-=) in the Edit menu repeats your last menu command. The Again command reads differently depending on the action performed last. For example, if the last command you chose was the Copy command, the Again command reads Copy Again.

Align...

The Align command (⌘-Y) in the Object menu displays the Alignment Specifications dialog box. Use this dialog box to specify how you would like selected objects to be aligned and/or distributed.



The Alignment Specifications dialog box is available when Alignment Specs is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

User Tip: Since objects are aligned by their bounding rectangles and not their actual edges, object groups and objects with different pen sizes might not line up as expected and are best aligned using the keyboard arrow keys.

To align and/or distribute objects:

1. **Use the Arrow tool to select the object or objects you want to align and/or distribute.**
2. **Choose Align (⌘-Y) from the Object menu or double-click the Align tool in the Tool Box.**

   The Alignment Specifications dialog box appears.
3. **Select the settings in the dialog box to align the selected objects.**

Alignment Specifications dialog box settings

Align To: The Align To pop-up menu at the top of the dialog box contains the alignment/distribution options. You can align objects to each other, to a line, to the grid, to the page, or to a specific area of the document.

- Choose **Each Other** to align or distribute objects with respect to their positions. For example, if you align the selected objects along their tops, Canvas aligns the tops of the selected objects' bounding rectangles with respect to the object whose upper edge is closest to the top of the screen.
- Choose **Line** if you want to draw a line along which to distribute or align the selected objects. When you close the Alignment Specifications dialog box, the pointer changes to a crosshair so you can draw a line along which to distribute or align selected objects. The Line option becomes **Point** when both the horizontal and vertical Align check boxes are selected.
- Choose **Grid** to align selected objects with the nearest grid increment as specified in the Grid Specifications dialog box. If multiple selected objects are near the same grid increment, they will align to the same place and overlap.
- Choose **Page** to align selected objects on a single page to a specified area on the page. For example, you can align selected objects by their right sides to align them to the right side of the page. When working on a multi-page document, all selected objects must be on the same page when using this option.
- Choose **Document** to align selected objects to a specified area in the document. For example, you can align objects horizontally and ver-

tically by their centers to center them in the document. For a single-page document, this option is equivalent to the Page option.

The **Align** and **Distribute** check boxes let you align and distribute objects horizontally and vertically. The options on the right side of the preview box are for aligning or distributing objects vertically and the options on the bottom of the preview box are for aligning or distributing objects horizontally. The preview box in the center of the dialog box shows the effect of your alignment options on several objects.

> **User Tip:** If one of the selected objects is locked, the remaining objects align themselves relative to the locked object according to your specifications.

Distribute By: If you select either of the Distribute check boxes, the Distribute By pop-up box appears.

- Choose **Drawing Order** to distribute the selected objects equally between the bottommost and topmost selected objects.
- Choose **Object Position** to distribute the selected objects equally with regard to their position on screen.

Top, Center, Bottom: Aligning by Top, Center, or Bottom aligns objects by their tops, centers, or bottoms according to the object closest to the top, center, or bottom of the page. Distributing by Top, Center, or Bottom places equal vertical distances between the tops, centers, or bottoms of the selected objects.

Height: Aligning objects by Height leaves no vertical distance between the selected objects. Distributing objects by Height places equal vertical distances between the objects.

Left, Center, Right: Aligning by Left, Center, or Right aligns objects by their left sides, centers, or right sides according to the object closest to the left side, center, or right side of the page. Distributing by Left, Center, or Right places equal horizontal distances between the left sides, centers, or right sides of the selected objects.

Width: Aligning objects by Width leaves no horizontal distance between the selected objects. Distributing objects by Width places equal horizontal distances between the objects.

Click OK or press the Return key to close the Alignment Specifications dialog box and align the selected objects according to your specifications. Click Cancel to disregard the Align command.

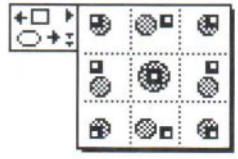
> **User Tip:** If the selected objects disappear from the illustration area after you click OK, change their location on the screen by choosing Group Specs (⌘-I) from the Object menu and typing new numbers in the Top and Left text boxes.

Align tool

The Align tool in the Tool Box displays the Align palette. This palette contains nine preset alignment options. To use the Align tool:

1. **Select the objects you want to align.**
2. **Hold down the pointer on the Align tool in the Tool Box to display the Align palette.**

   The icons in the palette illustrate the tool's alignment options.

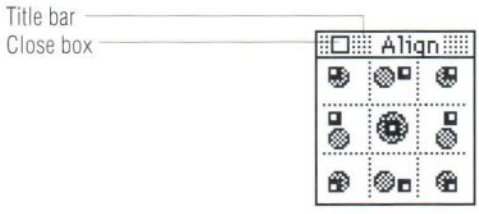


3. **Drag through the palette to enclose your choice in the selection box.**

   The selected objects align accordingly.

Align tear-off palette

You can also keep the Align palette open as you work on your document. To do so, hold down the pointer on the Align tool and drag through the Align palette to tear it away from the Tool Box. The next time you want to align objects you can use this palette instead of choosing the icon in the Tool Box.



You can move this palette anywhere in the Canvas Window by dragging it by its title bar. To close the palette, click the close box in its upper left corner. You can also double-click the Align palette or the Align tool icon to open the Alignment Specifications dialog box and align your selected objects.

User Tip: To apply the last used alignment option to your selected objects, click the Align tool.

Apple menu

The Apple menu in the Canvas menu bar is a standard Macintosh® feature that contains two Canvas commands: Help and About Canvas™. The other items in the Apple menu depend on the version of system software you are using, whether or not you are using MultiFinder, and the desk accessories you have installed in your System.

Arc tool

The Arc tool draws quarter-oval arc segments. To draw an arc:

1. **Select the Arc tool from the Tool Box.**

2. **Position the pointer inside the Canvas Window where you want the arc to begin.**

3. **Drag in the direction that you want the arc to grow.**
4. **Release the mouse button when the arc is the desired shape and size.**

   The arc appears selected.

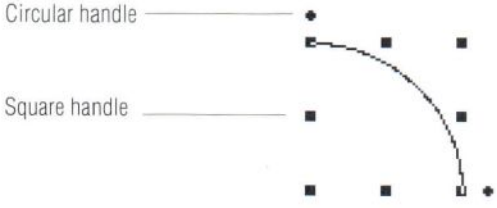
Editing arcs

You can change a selected arc's properties and color using the palette icons in the Tool Box. You can also edit its colors using the PANTONE® Colors window and the Color Info Manager; both items are explained separately in this section.

You can also change the size and shape of your arc. To do so:

1. **Select the arc with the Arrow tool.**

   Circular and square selection handles appear around the arc.



2. **Position the pointer on a handle.**

   The pointer changes to a small crosshair when properly placed.

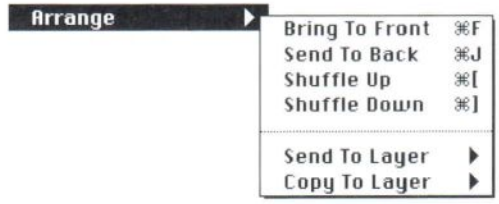
3. **Drag the handle to achieve the desired effect.**

   - Drag a square selection handle to change the arc's height, width, or radius.
   - Drag a circular handle to change the length of the arc segment.
   - Hold down the Shift key and drag a circular handle to constrain the length of the arc to quarter-circle segments.

Arrange

The Arrange submenu in the Object menu displays object placement options: Bring To Front, Send To Back, Shuffle Up, Shuffle Down,

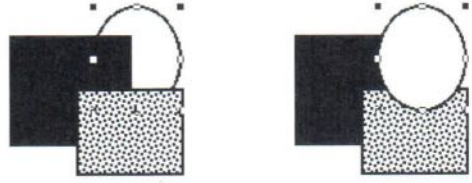
Send To Layer, and Copy To Layer. Use these options to change the order of the objects in your document.



The objects you create in a layer are placed in a stacking order; the first object you draw is the bottommost object and the last object you draw is the topmost object. Use the Bring To Front, Send To Back, Shuffle Up, and Shuffle Down options to change the stacking order of the objects in the active layer of your document.

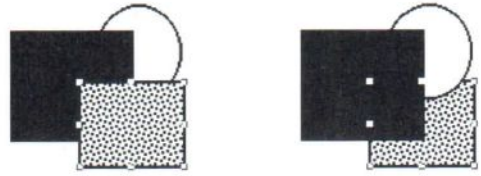
Bring To Front

The Bring To Front option (⌘-F) moves selected objects in front of all other objects in the active layer.



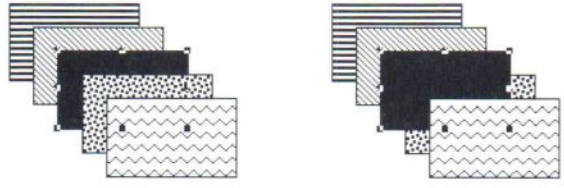
Send To Back

The Send To Back option (⌘-J) pushes selected objects behind all other objects in the active layer.



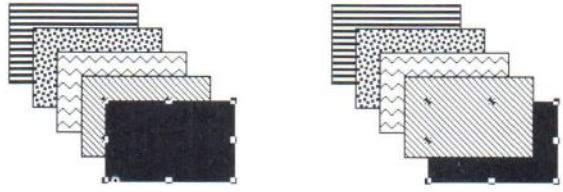
Shuffle Up

The Shuffle Up (⌘-[) option moves a selected object on the active layer ahead of the object directly in front of it on the active layer.



Shuffle Down

The Shuffle Down (⌘-]) option moves a selected object on the active layer behind the object directly underneath it on the active layer.



To use Bring To Front, Send To Back, Shuffle Up, or Shuffle Down:

1. **Select the objects on the active layer to be reordered.**
2. **Choose Bring To Front, Send To Back, Shuffle Up, or Shuffle Down from the Arrange submenu in the Object menu.**

   The selected objects move accordingly.

Send To Layer

The Send To Layer option is enabled when your document contains more than one layer. This option lets you send selected objects to another layer in your document. Send To Layer displays a submenu which lists the layers in your document and lets you choose one to send your objects to.

To move objects to another layer in your document:

1. **Select the objects to be moved.**

2. **Choose Send To Layer from the Arrange submenu in the Object menu.**

3. **Drag through the submenu to choose the desired layer.**

   The selected objects move to the layer you choose.

Copy To Layer

The Copy to Layer submenu lists all the layers in your document and is enabled when your document contains more than one layer. It lets you place copies of selected objects in another layer of your document, leaving the originals in place.

To move copies of objects to another layer:

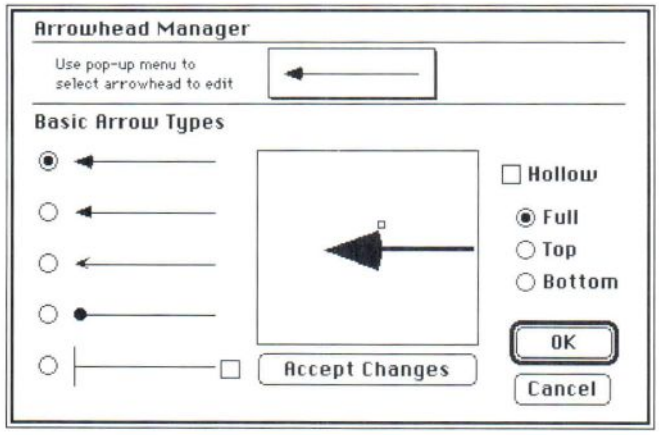
1. **Select the objects to be copied and moved.**
2. **Choose Copy To Layer from the Arrange submenu in the Object menu.**
3. **Drag through the submenu to choose the desired layer.**

   Copies of the selected objects are placed in the layer you choose. The original objects remain in place.

Arrowheads...

The Arrowheads option of the Managers submenu in the Edit menu displays the Arrowhead Manager. The Arrowhead Manager lets you design your own arrowheads. You can change the arrowhead on a selected draw object or change the default arrowhead styles which appear in the Arrowheads palette.

Arrowheads can be placed on the endpoints and vertices of lines, arcs, polygons, smooth polygons, and Bézier curves depending on the Arrow Type (see page 19-14) you select. Although the arrows in the Arrowhead Manager are left-pointing, Canvas uses the chosen arrowhead style on arrows pointing in any direction. Canvas also adjusts the arrowhead to match the pen size of the object.



This dialog box is available when Arrowhead Manager is active in your Canvas Tools folder. See page 19-92 for information on the external tools in this folder.

Choosing an arrowhead to edit

Choose an arrowhead to edit from the pop-up menu at the top of the dialog box. You can replace the arrowhead from this pop-up menu with the one you change in the edit box. These arrowheads also appear in the Arrowheads palette in the Tool Box.

Choose one of the Basic Arrow Types on the left side of the dialog box, if desired, to use as a basis for your editing. The arrowhead you choose appears in the edit box at the 8X magnification level.

Editing the arrowhead

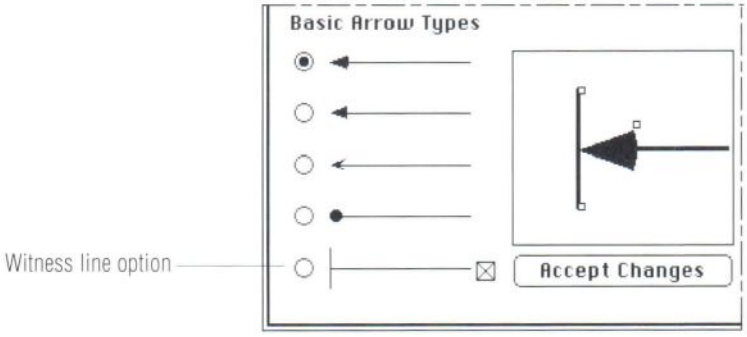
Drag the hollow square handles on the arrowhead in the edit box to modify its size and width. Select Hollow, Full, Top, or Bottom (depending on the desired style of the arrowhead) to further modify it.

Hollow: Select Hollow to outline the arrowhead.

Full: Select Full to create an arrowhead with a top and a bottom.

Top, **Bottom:** Select Top or Bottom to create an arrowhead with a top or a bottom only.

Witness line option: Select the witness line option to include a witness line with your arrowhead. The witness line option appears to the left of the Accept Changes button and is the last Basic Arrow Type.



Click the radio button to use the Witness Line option as your Basic Arrow Type. Click the check box to add a witness line to the arrowhead in the edit box.

Accept Changes: Click Accept Changes to replace the arrowhead in the pop-up box at the top of the Arrowhead Manager with the arrowhead in the edit box. The new arrowhead will also appear in the Arrowheads palette.

Click OK to apply the arrowhead in the edit box to the draw objects you have selected and close the Arrowhead Manager. If no draw objects were selected, your new arrowhead replaces the arrowhead in the Arrowheads palette. Click Cancel to close the Arrowhead Manager without saving your changes.

Arrow keys

Use the arrow keys on your keyboard for precise movement of one or more selected objects or a selected paint area. Press the left, right, up, or down arrow keys to move a selection one pixel at a time.

Moving the text cursor with arrow keys

The arrow keys also move the text cursor to assist in text editing.

- To move to the beginning or end of a line, hold down the Control key and press the up or down arrow key respectively.

- To move to the beginning or end of a word, hold down the Control key and press the left or right arrow key respectively.
- To highlight individual text characters, hold down the Shift key and press the right or left arrow key.

Arrow key modifiers

You can use the Command and Option keys with the arrow keys to move a selected object more than one pixel at a time. You can change these distances through the Moving option in the Preferences dialog box.

Hold down the Command key (⌘) or the Option key (⌥) when you press an arrow key to move a selection a specified number of pixels.

Select the Auto Scroll To Selection option under Moving in the Preferences dialog box to scroll the Canvas Window as you move selected objects with the arrow keys.

Arrow tool

The Arrow tool is used to select, edit, and reposition objects. After you use a core or external draw tool, Canvas defaults to the Arrow tool unless the Retain Selected Tool option under General in the Preferences dialog box is selected.

To use the Arrow tool, select it from the Tool Box.

Arrow tool functions

You can use the Arrow tool to select objects and place them in the edit mode depending on the settings in the Preferences dialog box. When an object is selected or in the edit mode, you can edit it.

You can select objects on multiple layers when Select Across All Visible Layers under Selection Options is selected; otherwise you must hold down the Control and Tab keys to do so. You can place objects in the edit mode when Enter Edit Mode under Double-Clicking is selected. See page 19-211 for more information on these preferences.

Selecting objects with the Arrow tool

- To select an object, click it once with the Arrow tool.
- To select multiple objects, hold down the Shift key and click each object with the Arrow tool.
- To select multiple objects, use the Arrow tool to drag a selection rectangle around them and enclose them. If you hold down the Option key as you drag the selection rectangle, you need only touch the objects with the rectangle to select them.

Placing objects in the edit mode

To place a paint object, polygon, Bézier curve, or smooth polygon in the edit mode, click it twice with the Arrow tool. Notched handles appear around a paint object's bounding rectangle; square handles appear at each edit point of a polygon, Bézier curve, or smooth polygon. This feature is available when Enter Edit Mode is selected in the Preferences dialog box.

Moving objects with the Arrow tool

To move an object, place the Arrow tool on the object and drag the object to its new position. To move multiple objects, select the objects, place the Arrow tool on one of the objects, and drag the objects to a new position.

Resizing objects with the Arrow tool

To resize a draw object or the bounding rectangle of a paint object, click it once with the Arrow tool to select it, position the pointer over a selection handle, and when the pointer changes to a crosshair, drag the handle to achieve the desired size.

Arrow Type palette icon

The Arrow Type palette icon in the Tool Box lets you choose different arrow types and arrowheads. You can create lines, arcs, polygons, smooth polygons (including those created with the Multigon and Star tools), and Bézier curves with arrowheads. You can select left- or right-facing arrows, two-way arrows, and arrows with dimensions. The Dashes palette is also available from this icon.

The Arrow Type, Arrowheads, and Dashes palettes can be displayed from the Tool Box or be torn off and kept open as you work on your documents.

Arrow Type palette icon

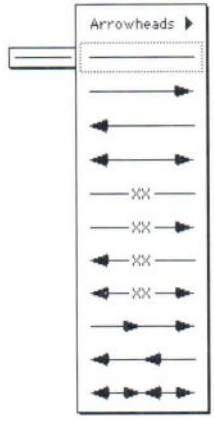
Changing Arrow types

To change arrow types with the Arrow Type palette:

1. **Select the lines, polygons, smooth polygons, Bézier curves, and arcs, if any, whose arrowheads you want to change.**

   If you do not select any objects, the default settings change and succeeding objects you create will have the styles you select.

2. **Hold down the pointer on the Arrow Type palette icon to display the Arrow Type palette.**



   All the arrow types in this palette place left-facing, right-facing, or two-way arrowheads on the endpoints of lines, arcs, polygons, smooth polygons, and Bézier curves. Those with "XX" in the center display autodimensioning data for lines and arcs. The last three styles place left-facing, right-facing, or two-way arrowheads on each segment of a polygon, smooth polygon, or Bézier curve.

3. **Drag through the palette to enclose your choice in the selection box.**

The arrow type you select is applied to selected draw objects. If no draw objects are selected, this style becomes the default setting.

Changing arrowhead styles

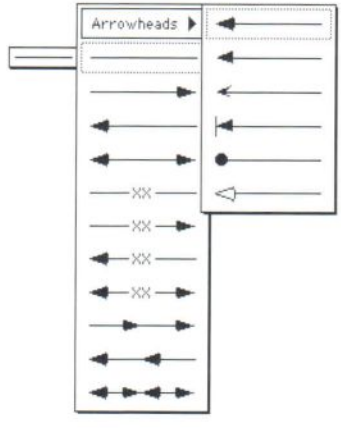
You can also use the Arrow Type palette icon to change arrowhead styles.

1. **Select the draw objects, if any, whose arrowheads you want to change.**

   If you do not select any draw objects, the default arrowhead setting changes.

1. **Select the Arrow Type palette icon in the Tool Box.**
2. **Drag through the palette to choose the Arrowheads option.**

   A second palette appears with arrowhead styles.



3. **Drag through the palette to enclose your choice in the selection box.**

   The arrowhead you choose is applied to selected draw objects or becomes the default setting if no objects are selected. This arrowhead also appears on each arrow in the Arrow Type palette.

You can also display the Arrowheads palette by pressing the Shift key and holding down the pointer on the Arrow Type palette icon. To edit these arrowheads, use the Arrowhead Manager; see "Arrowheads..." on page 19-10 for more information.

Changing dashed line styles

Hold down the Option key and select the Arrow Type palette icon to display the Dashes palette. These dashed lines are also available through the Dash palette icon (see page 19-59). You can edit these dashes using the Dash Manager; see "Dashes..." on page 19-60 for more information.

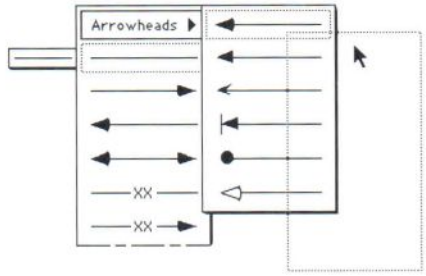
Tear-off palettes

To keep the Arrow Type, Arrowheads, or Dashes palette open while you work on your document:

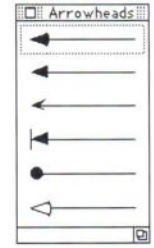
1. **Use the Arrow Type palette icon to display the Arrow Type, Arrowheads, or Dashes palette.**

   Use the appropriate key if necessary.

2. **Drag through the palette to tear it away from the Tool Box.**

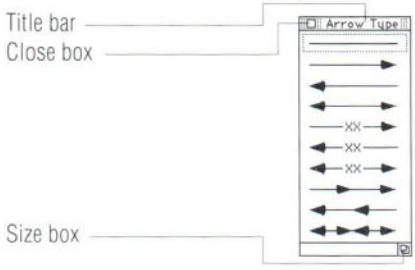


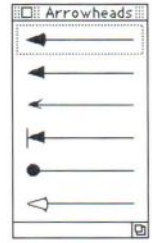
Arrowheads palette being torn off

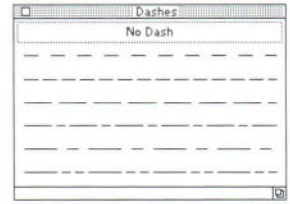


Arrowheads tear-off palette

You can use these palettes the next time you want to change arrow types, dashes, or arrowheads.





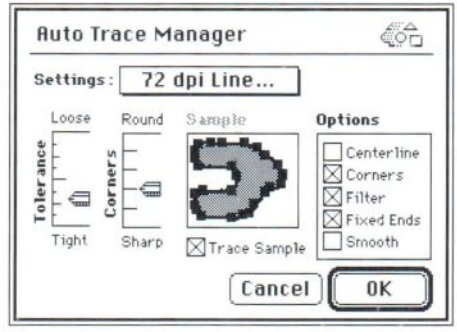


To reposition a palette, drag it by the title bar. To change the shape of a palette, drag the size box in the lower right corner. To close a palette, click the close box in the upper left corner.

> **User Tip:** Double-click the Arrowheads or Arrow Type tear-off palette to open the Arrowhead Manager and edit the arrowhead styles. Double-click the Dashes palette to open the Dash Manager and edit the dashed line styles.

Auto Trace...

The Auto Trace option of the Managers submenu in the Edit menu displays the Auto Trace Manager. Use this dialog box to establish the settings used by the Auto Trace To submenu options in the Effects menu.



All the options in the Auto Trace Manager affect auto traces to a Bézier curve; two of the options (Centerline and Filter) also affect auto traces to a polygon or smooth polygon. You can preview the effect created by your settings and save your settings.

The Auto Trace Manager is available when Auto Trace is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Auto Trace Manager settings

Tolerance: The Tolerance scale lets you set how closely the tracing follows the edge of the painting. A tight Tolerance results in a more exact

trace with more points. A loose Tolerance results in a less exact trace with fewer points.

Corners: The Corners scale determines how sharp a corner must be to be traced as a cusp. To enable the Corners scale, select the Corners check box under Options in the Auto Trace Manager.

The sharper the setting, the more angular a corner must be to be traced as a cusp. Cusps let you modify one side of a Bézier curve segment without affecting the other.

Options: The Auto Trace Manager contains six options to customize auto traces. Select the check box by each option you want to use.

- **Centerline** traces the selected object through its center. Centerline traces lines as solids rather than as objects with two edges. It uses the largest pen size or brush shape in the object to trace the elements. This option affects polygon, smooth polygon, and Bézier curve auto traces.
- **Corners** enables the Corners scale and allows you to trace corners. Tracing corners results in a more precise trace with fewer points, which is easier to edit.
- **Filter** prevents the tracing of small, random elements, such as tiny lines and dots, that appear in the paint object but are not part of the object itself. For example, if you erase part of a paint object but miss some pixels, these pixels won't be traced. This option affects polygon, smooth polygon, and Bézier curve auto traces.
- **Fixed Ends** causes the tracing to align exactly with the endpoints of the original painting. This option is especially helpful when the Tolerance is loose.
- **Smooth** creates a Bézier curve tracing without cusps when Corners is not checked. If both Smooth and Corners are checked, however, corners that fall within the Corners range are traced as cusps.

Trace Sample: Trace Sample lets you preview the effects of your settings on the tracing in the sample box. If you select a paint area with the Lasso or Marquee tool, the selection will appear in the sample box.

Settings: Choose the Settings pop-up box to display a pop-up menu of setting choices and commands. When you choose a setting, the remaining options in the dialog box change accordingly.

- Choose **300 dpi Scan**, **72 dpi Line Art**, or **Freehand Curve** to produce optimal results when tracing a 300 dpi scanned image, 72 dpi line art, or paintings created using freehand paint tools.
- To add a setting, first configure the options in the Auto Trace Manager and then choose **Add** from the Settings pop-up menu. A dialog box appears; type a name for your new setting in the text box and click OK or press the Return key to save your setting. Click Cancel if you change your mind.
- To delete a setting, choose it from the Settings pop-up menu so that it appears in the pop-up box, then choose **Delete** from the Settings pop-up menu.

When you are done, click OK to save your settings and close the Auto Trace Manager. The next auto trace you perform will be executed with these settings.

Auto Trace To

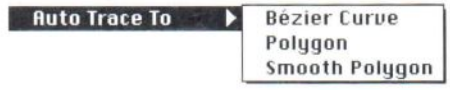
The Auto Trace To submenu in the Effects menu lets you trace an outline of a paint object or paint area to a draw object composed of Bézier curves, polygons, or smooth polygons.

The Auto Trace To submenu is available when Auto Trace is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Auto Trace To submenu:

1. **Use the Arrow tool to select an entire paint object, or use the Lasso or Marquee tool to select a paint area to trace.**

2. Choose Polygon, Smooth Polygon, or Bézier Curve from the Auto Trace To submenu in the Effects menu.



- Auto tracing to a **Bézier Curve** results in the fewest points to edit. It offers greater ease of editing and tends to print the smoothest on a PostScript printer.

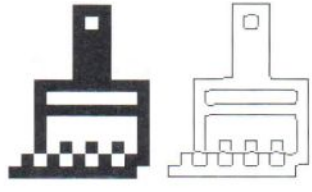
  You can choose the settings for your Bézier Curve auto trace with the Auto Trace Manager. To display this dialog box, choose Auto Trace from the Managers submenu in the Edit menu. See page 19-18 for more information.

- Auto tracing to a **Polygon** results in the most exact trace. Since paint objects are jagged by nature, however, this option can cause a jagged tracing. This option produces the most edit points.

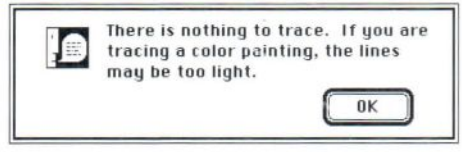
- Auto tracing to a **Smooth Polygon** traces a smoother line around the paint object and results in a tracing with fewer points than a polygon tracing.

  The Centerline and Filter options in the Auto Trace Manager let you modify your Polygon and Smooth Polygon auto traces. Choose Auto Trace from the Managers submenu in the Edit menu to display this dialog box. See page 19-18 for more information.

The trace is complete when your selection is superimposed with a series of selected objects. The new traced objects are selected; drag the tracing away or use the arrow keys to separate it from the original paint object.



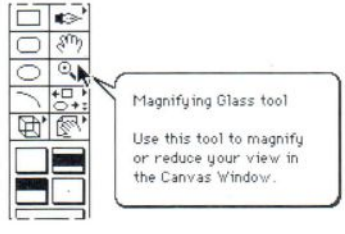
If you choose Auto Trace To when a paint object with light colors is selected, the following dialog box might be displayed.



The Auto Trace To submenu options trace foreground color pixels in 1-bit paint objects. When auto tracing 8- or 32-bit paint objects, Canvas analyzes the colors for foreground and background pixels. Light colors might be classified as white and not traced. To see how the colors in your paint object are classified, use the Object Specs command in the Object menu to change the depth of your paint object to 1-bit; choose the Undo command (⌘-Z) in the Edit menu to cancel this change.

Balloon Help

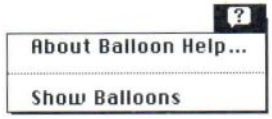
Balloon Help is a feature available to users with System 7.0 or later. Users with this system will have a balloon-shaped help menu in the top right corner of their screens which lets them show or hide balloons. A balloon explains what an item or command is in the Canvas Window when the pointer is placed on it.

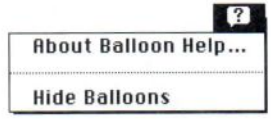


The Canvas help balloons are available when you are using System 7.0 and Balloon Help is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

Show Balloons/Hide Balloons: Choose Show Balloons or Hide Balloons to show or hide the help balloons. This command reads *Show Balloons*

when balloons are not showing and *Hide Balloons* when balloons are showing. You can use Canvas while the help balloons are showing.





About Balloon Help: Choose About Balloon Help to display a dialog box with information about balloon help. Click OK to close the dialog box.

Bézier Curve tool

The Bézier Curve tool creates a path of curve segments that are defined mathematically by four points: two anchor points (displayed as square handles) and two direction points (displayed as round handles). A Bézier curve forms a smooth curve from these points. The anchor points define where the curve segment starts and ends. The direction points determine the shape of the curve segment. You can combine multiple Bézier curve segments to create complex effects.

To use the Bézier curve tool:

1. **Select the Bézier curve tool from the Tool Box.**

2. **Position the tool in the Canvas Window where you want to begin drawing.**

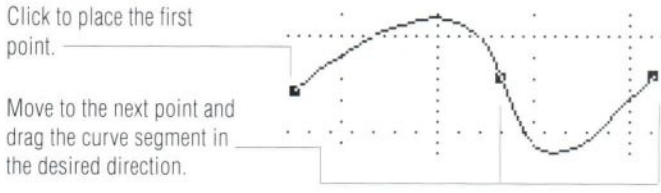
   The pointer changes to a crosshair.

3. **Click once for the first anchor point.**

4. **Move to where the second anchor point should be and drag to establish the curve's direction.**

   Continue moving to and dragging new points to create multiple Bézier curve segments. Double-click to complete an open Bezier

curve or click once to complete a closed Bézier curve. The shape appears selected with handles around its bounding rectangle.



You can also create Bézier curves freehand style with the Freehand tool. See "Freehand tool" on page 19-102 for more information.

Editing Bézier curves

When you create a Bézier curve as described in the preceding steps, you can select it and change its properties using the appropriate palette icons. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

To resize a Bézier curve, select it and drag a selection handle. To move the curve to another location, drag it or select it and reposition it with the keyboard arrow keys. To retain the object's original proportions, hold down the Shift key as you resize it.

Placing the curve in the edit mode

You can also edit a Bézier curve by modifying individual points and segments and adding cusps to the curve. Before you can edit a Bézier curve's points, paths, or cusps, you must place it in the edit mode.

Selected Bézier curve Bézier curve in the edit mode

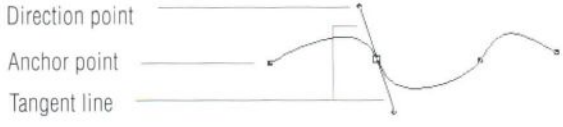
There are several ways you can place a Bézier curve in the edit mode.

- Double-click the Bézier curve.
- Select the Bézier curve and choose Edit Curve (⌘-E) from the Curves submenu in the Object menu.

- Select the Bézier curve, select the Bézier curve tool icon in the Tool Box, and choose an editing option from the pop-up menu.
- Select the Arrow tool after placing the last anchor point while creating a curve.
- Select Automatically Enter Edit Mode under Bézier & Polygon in the Preferences dialog box (see page 19-209). Bézier curves will be placed in the edit mode when you select them.

Editing points

When a Bézier curve is in the edit mode, you can edit its anchor points, tangent lines, and direction points. To display an anchor point's tangent lines and direction points, click the anchor point to select it.



There are several ways you can select anchor points.

- Hold down the Shift key and click multiple anchor points.
- Use the Arrow tool to draw a selection rectangle around the points you want to select.
- Choose Select All Anchors (⌘-Option-Shift-A) from the Curves submenu in the Object menu.
- Click a curve segment to select the anchor points on either side of it.

You can reshape a curve by dragging an anchor point or a direction point. To do so, first place the curve in the edit mode, then position the pointer on the anchor point or the direction point and drag to move the point. When you drag a direction point you can change the angle of the tangent line as you reshape the curve. Dragging an anchor point reshapes the curve segment without changing the angle of the tangent line.

Drag a direction point to reshape the curve

Drag an anchor point to reshape the curve

When you are done, click outside the curve or press the Enter key to exit the edit mode.

When you have selected one or more anchor points on a Bézier curve you can edit them in the following manner.

- Choose Copy (⌘-C) from the Edit menu to copy the selected anchor points to the Clipboard. Choose Paste (⌘-V) to place this new curve in your document.
- Use the Skew, Distort, Perspective, and other options of the Special Effects submenu in the Effects menu to edit a selected anchor point.

Editing segments

You can also edit the segments of a Bézier curve in the edit mode. Place the pointer on a segment of the curve (between anchor points). When the pointer changes to a gray arrowhead, drag the segment to reshape it.

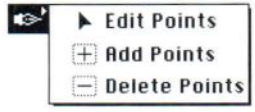
Click outside the curve or press the Enter key when you are done.

Multiplex icon

The Bézier curve tool in the Tool Box is a multiplex icon that contains a pop-up menu of editing options. These options let you add, delete, and edit points and segments.

To edit a Bézier curve with this menu, select the Bézier curve you want to edit and select the Bézier curve tool icon. Drag through the menu to

highlight your choice. The curve is placed in the edit mode and the pointer changes to the icon displayed in the menu.



- Choose **Edit Points** when you want to edit the points or segments in your curve. The pointer changes to a gray arrowhead when you place it on a segment and to a small crosshair when you place it on a point. Refer to "Editing points" and "Editing segments" in the *Reference* section for information on editing points and segments.
- Choose **Add Points** to add a point to the Bézier curve. Place the pointer on the segment where you want to insert the point and it changes to a small crosshair. Click and a new point appears. Continue in this manner to add more points.

  You can also add points to a Bézier curve in the edit mode by holding down the Option key and clicking the curve at the location where you want to add the point. Or, you can hold down the Option key and drag an existing point to insert a new point between the one you drag and the next one in sequence.
- Choose **Delete Points** to remove a point on the Bézier curve. Place the pointer on the point you want to delete; the pointer becomes a small crosshair when properly positioned. Click to delete the point.

  There are several other ways you can delete one or more points from one or more Bézier curves in the edit mode.

  - Hold down the Shift and Option keys, place the pointer over each point you want to delete, and click.
  - Use the Arrow tool to select one or more points and press the Delete key to remove them.

Editing options while drawing Bézier curves

Canvas also lets you perform several editing functions while you are drawing a Bézier curve.

- To remove the last segment drawn, press the Delete or Backspace key.

- To constrain the tangent line of a Bézier curve segment to an angle that is a multiple of 45°, hold down the Shift key while creating that segment.
- To edit any point along a Bézier curve you are creating, hold down the Control key, edit the desired point, release the Control key, and then continue creating your curve. (This option is not available on a Macintosh Plus.)
- To join a Bézier curve you are creating to an existing Bézier curve, click the end of the existing curve.
- To create a straight line segment of a Bézier curve, hold down the Command key (⌘) as you create the second anchor point for the segment. This causes the anchor to be a no-direction point cusp and the preceding anchor to be a one-direction point cusp.
- To create a segment independent of the preceding anchor point, hold down the Option key while creating the segment. This causes the preceding anchor point to become a one-direction point cusp.

Editing options for completed Bézier curves

Use the following options to edit completed Bézier curves that have been placed in the edit mode.

- To add segments to a Bézier curve in the edit mode:
  - Select the Bézier curve tool from the Tool Box, and proceed to add segments to the curve.
  - Select the Bézier curve tool from the Tool Box, click the existing curve's endpoint and proceed to add segments to the curve.
- To simultaneously edit both direction points of a regular anchor point, hold down the Command (⌘) key while you drag one direction point. The second direction point will reflect your movement.
- To resize a tangent line without changing its angle, hold down the Command (⌘) and Option keys as you drag its direction point.

Adding cusps

You can change a Bézier curve's anchor points to cusps. A cusp is an anchor point that does not have a straight tangent line between its direction points. When an anchor point is changed to a cusp, you can

edit each side of the curve segment independently. There are three types of cusps: one-direction point cusps, two-direction point cusps, and no-direction point cusps. Refer to the *Using* section for more information.

If you select Always Create Cusps in the Preferences dialog box (see page 19-210), all your Bézier curves will be created with cusps. You can also convert an existing anchor point to a cusp.

To change an anchor point to a two-direction point cusp:

1. **Select a Bézier curve and place it in the edit mode.**
2. **Click the anchor point you want to change to a cusp.**

   The tangent line appears with direction points on each end.
3. **Hold down the Tab key and drag a direction point.**

   The tangent line breaks at the anchor point.

You can also change an anchor point to a one- or no-direction point cusp by deleting direction points. To do so, hold down the Command (⌘) and Tab keys and click a direction point to delete it.

To change a cusp to a standard anchor point:

1. **Place the Bézier curve in the edit mode.**
2. **Select the cusp you want to change.**
3. **Hold down the Tab key and drag a direction point until the tangent line is aligned between the direction points.**

   You can also hold down the Tab key and click a direction point and the tangent line will align itself between the two direction points.

Opening and closing Bézier curves

To close an open Bézier curve, place the curve in the edit mode, hold down the Command key (⌘), and click an endpoint. A new segment is drawn to connect the two endpoints. Hold down the Command (⌘)

and Option keys as you click an endpoint to close the curve with a straight line segment.

To open a closed Bézier curve in the edit mode, place the curve in the edit mode, hold down the Command key (⌘), and click the point at the location you want to open the curve. A new anchor point appears and the curve opens.

For information on editing curve segments with cusps, removing and restoring tangent lines, and other advanced Bézier curve editing options, refer to the Bézier curve tool in the *Using* section.

Bind Text

The Bind Text command in the Text menu binds text to an object. The "bound" text and the object can then be modified individually or grouped and modified as a unit.

The Bind Text command is available when Bind is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

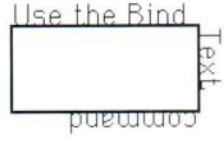
To bind text to an object:

1. **Select a text object with the Arrow tool.**
2. **Hold down the Shift key and select the object you want to bind the text to.**

   You can bind text to a paint object's bounding rectangle or a draw object created with a core tool, the Multigon tool, or the Star tool.
3. **Choose Bind Text from the Text menu.**

   The selected text binds to the selected object.

   Text starts binding to a draw object at the object's origin and follows the object's path until the path ends or there is no more text to bind.



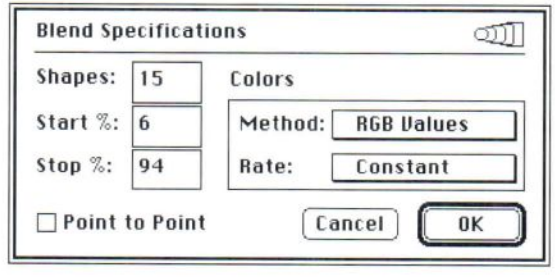
Text characters bind to an object in the order that they are typed (left to right), starting at the object's origin. Therefore, the direction in

which the object is drawn determines how the text appears once it binds to the object. You can reverse the direction of the object using the flip commands and other commands in the Effects menu.

You can change the font, size, style, justification, and other properties of the text with submenu options in the Text menu. You can ungroup the text and edit each character separately. You can also group the text with the object and modify them together. Choose Remove Effects from the Effects menu to restore the text to its original state.

Blend...

The Blend command (⌘-Option-B) in the Object menu displays the Blend Specifications dialog box. Use this dialog box to blend the shapes, colors, fill patterns, pen patterns, and pen sizes of two or more selected draw objects by creating a series of objects between them.



The Blend command is available when Blend Objects is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Blend Specifications dialog box:

1. **Select two or more draw objects you want to blend.**
2. **Choose Blend from the Object menu.**

   The Blend Specifications dialog box appears.
3. **Choose the desired settings for your blend and click OK to proceed with the blend or Cancel to disregard it.**

   See "Blend options" for information on how blends are created.

Blend Specifications dialog box settings

Shapes: Shapes specifies the number of new objects created between the selected objects in the blend. Type the number of shapes you want in this text box; choose a number between 1 and 200. When you change the number of Shapes, the Start % and Stop % change accordingly.

Start % and Stop %: Start % and Stop % specify a range for the positions of the intermediate objects in the blend. In the following example, the same number of Shapes are created with the same Stop % and different Start %'s. When the Start % is 50, the blend starts halfway between the path of the selected objects. The positions and shapes of the intermediate objects in the blend are affected accordingly.

Start % = 50
Stop % = 94

Start % = 6
Stop % = 94

Method: The Method pop-up menu contains a list of color methods which apply to both the foreground color and background color of the intermediate objects in the blend when these colors are different.

- **RGB or CMYK Values** creates an RGB or CMYK blend between the colors of the bottom and top objects. The command reads *RGB Values* unless at least one selected object contains a CMYK color. The RGB or CMYK values of the color of the bottom object approach the RGB or CMYK values of the color of the top object and vice versa. These changing colors fill the intermediate objects.
- **HSV Values** creates an HSV blend between the colors of the bottom and top objects. The HSV values of the color of the bottom object approach the HSV values of the color of the top object and vice versa. These changing colors fill the intermediate objects.
- **Palette Colors** assigns the palette colors that fall between the colors of the selected objects to the intermediate objects in the blend.

Rate: The Rate pop-up menu lists three rates at which the properties of the blend can be applied. If you have assigned different fill patterns, pen patterns, colors, or pen sizes to the selected objects, the intermedi-

ate objects in the blend are assigned the patterns, colors, and sizes that fall between the selected ones in the appropriate palette.

- **Constant** evenly blends the properties of the intermediate objects.
- **Accelerating** blends the intermediate objects more strongly toward the bottom object's properties than the top object's properties.
- **Decelerating** blends the intermediate objects more strongly toward the top object's properties than the bottom object's properties.

Point to Point: Select the Point to Point check box to blend two selected draw objects according to a point you specify on each. This option is enabled only when two objects are selected.

Blend options

Objects are blended from bottom to top. Of the selected objects, the one which was drawn first is considered the bottom object and the one which was drawn last is considered the top object. You can change the order of objects before you blend them with the Bring To Front, Send To Back, Shuffle Up, and Shuffle Down options in the Arrange submenu under the Object menu.

Completing a Point to Point blend

If you checked Point to Point in the Blend Specifications dialog box, you must choose the points for the blend.

1. **Click OK in the Blend Specifications dialog box.**

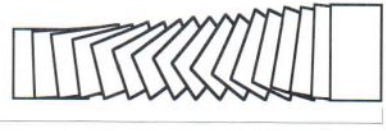
   The dialog box closes.

2. **Position the pointer on the first object and when it changes to a small crosshair, click.**

3. **Click a point on the second selected draw object.**

   The point you select on the bottom object blends toward the point you select on the top object and the remaining points in the bottom object move with the same orientation.

Point to Point: click a point on each object to create the blend

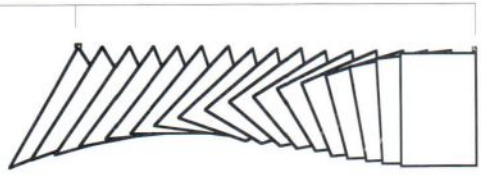


User Tip: To change the orientation of the intermediate objects in a Point to Point blend, hold down the Option key as you click your points.

Completing a regular blend

If you did not check Point to Point, the selected objects will blend according to their corresponding points. For example, points on the top right of the bottom object blend towards points on the top right of the top object. Regular blends can be performed on more than two selected draw objects.

Corresponding points blend toward each other in a regular blend



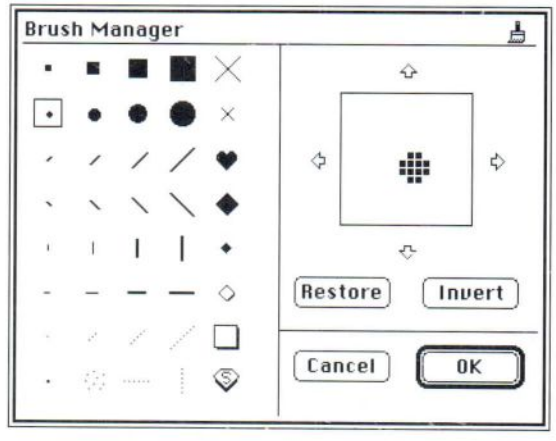
To repeat a blend on a new set of selected objects, hold down the Shift key and choose Blend from the Object menu. The selected objects blend according to the last specified settings in the Blend Specifications dialog box.

Brushes...

The Brushes option of the Managers submenu in the Edit menu opens the Brush Manager. Use this dialog box to select from and edit the 40 preset brush shapes for the Paint Brush tool.

The Brush Manager is available when Brush Manager is active in your Canvas Tools folder. For more information on the external tools in this folder, see page 19-92.

To open the Brush Manager, double-click the Paint Brush tool icon in the Paint Tools palette in the Tool Box or choose Brushes from the Managers submenu in the Edit menu.



Click the desired brush shape on the left side of the Brush Manager to select it. A selection rectangle encloses your choice and the brush shape appears at the 8X magnification level in the edit box.

The brush shape in the edit box can be edited pixel-by-pixel. The black pixels make up the actual brush.

- Click a white pixel to turn it black and click a black pixel to turn it white. Dragging over white or black pixels has the same effect.
- Click one of the four arrows surrounding the edit box to scroll the brush shape one pixel in the direction shown by that arrow.
- Click **Invert** to turn black pixels white and white pixels black.
- Click **Restore** to return the brush to its shape prior to editing.

Click OK or press the Return key to replace the original brush shape you chose in the Brush Manager with your new one. The Brush Manager closes. Click Cancel to close the Brush Manager without saving your changes. The next time you select the Paint Brush tool it will use the last shape you chose in the Brush Manager.

Canvas Prefs file

The Canvas Prefs file that is included with the program contains the default settings for new Canvas documents. Every time that you choose

the New command (⌘-N) from the File menu, the settings in the Canvas Prefs file are used to create a new, untitled document.

Creating your own Canvas Prefs file

You can also create your own Canvas Prefs file to use as a template for future documents. To do so:

1. **Choose New from the File menu.**
2. **Set up the Canvas Window, the Preferences dialog box, and the Commands in the Layout menu to the desired settings.**
3. **Choose Save As from the File menu.**

   The Save As dialog box appears.
4. **Choose Canvas Prefs from the File Format pop-up menu.**
5. **Type a name for your Canvas Prefs file in the text box and click Save.**

   If you save your new Canvas Prefs file under the name "Canvas Prefs" you will override the original.

Using a custom Canvas Prefs file

To use one of your custom Canvas Prefs files as a template for a new document:

- Hold down the Shift key when you launch Canvas. A directory dialog box appears asking you to open a Canvas Prefs file. Select the Canvas Prefs file you want from the directory and click Open. A new, untitled document opens with thes settings of that Canvas Prefs file.
- Double-click the Canvas Prefs file icon. A new, untitled document opens with all the settings from that Canvas Prefs file.
- To use a Canvas Prefs file while in Canvas, choose Open from the File menu and select a Canvas Prefs file to open. A new, untitled document opens with all the settings from that Canvas Prefs file.

Canvas Prefs file settings

The following are the default settings contained in the Canvas Prefs document that is shipped with the program:

Tool Box: Freehand tool: Make Bézier Curves

Paint Object Creator tool resolution: 72 dpi
Brush shape (Paint Brush tool): Small, round
Spray Can: Large, round nozzle; Flow Rate = 7
Fill Pattern: Solid white
Pen Pattern: Solid black
Background Color: White
Foreground Color: Black
Pen Mode: Copy
Pen Size: 1-point x 1-point
Dash: No dash
Arrow Type: No arrow
Arrowhead: Topmost Basic Arrow Type
Zoom In/Zoom Out: 1X

File Menu:

New: untitled document opens with settings of the active Canvas Prefs file.

Page Setup:

- Paper: US Letter
- Reduce or Enlarge: 100%
- Orientation: Upright
- Printer Effects: All selected
- LaserWriter options: None selected

Print:

- Quality (ImageWriter): Best
- Copies: 1
- Range: All
- Cover Page (LaserWriter): None
- Paper Feed (Source): Automatic (Paper Cassette)
- Print (LaserWriter): Color/Grayscale

Preferences:

- Bézier & Polygon:
  - Canvas 2.1 Polygon Creation: Off
  - Automatically Enter Edit Mode: Off
  - Show Original Curve When Editing: Off
  - Always Create Cusps: Off
  - Freehand Tolerance: Middle Option

Coord System: Clockwise from 12 o'clock
Double-Clicking: Enter Edit Mode
Dragging: Both
Show Original Object: Off
Duplication: 10 pixels X and Y
General:
Retain Selected Tool: Off
No Background Updates: Off
Smooth Text Edit: On
Smooth Redraw: On
Dithered Redraw: Off
Info Mgr Display: i.xx
Moving:
Command Key: 10 pixels
Option Key: 50 pixels
Auto Scroll To Selection: Off
Paint Options:
Auto-Create Paint Objects: On
Auto-Expand Paint Objects: On
Print Options:
Resolution: Maximum
Fractional Character Widths: On
Selection Options:
Select Across All Visible Layers: Off
Resize Multiple Objects: Off

Edit Menu: Duplications:
Number of Copies: 10
Offset: By Length, .25" x .25"
Resize: By Percentage, 0%, 0%
Fore Color, Back Color, Fill pattern: As Is
Rotation Angle: 0°
Center Of Rotation: Object center

Text Menu: Font: Geneva
Size: 12 points

Justification: Left
Style: Plain
Leading: Single Space
Kerning: Normal
Spell Check Interactive: Off
Position (Type Specs): Normal
Scale (Type Specs): Horizontal and vertical 100%

Object menu:
Scale:
Scale Pen Size: Off
Scale Text Size: On

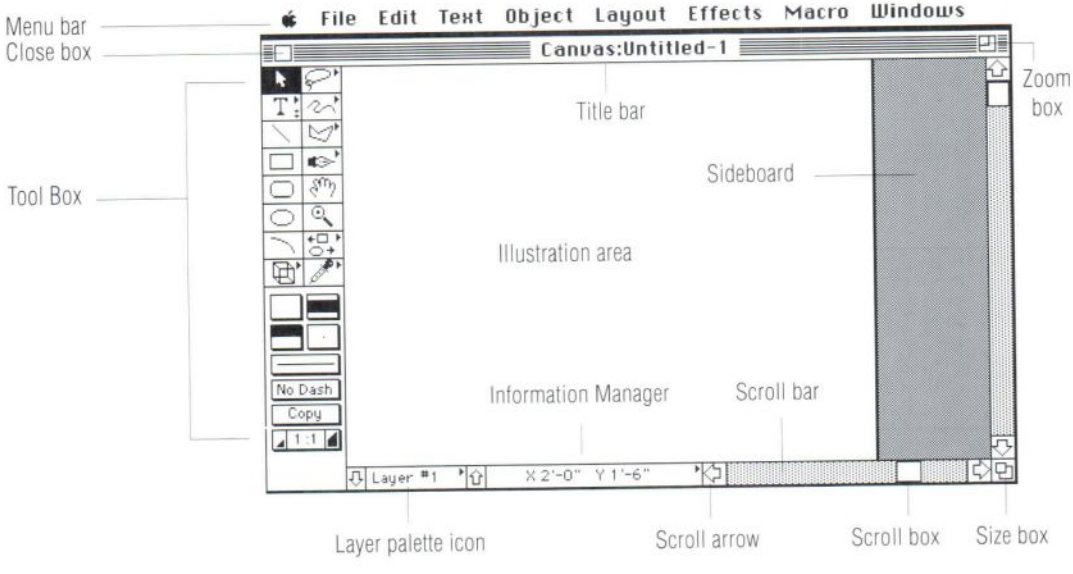
Layout menu:
Rulers:
Ruler #: 1
Units: Inches
Scale: 1"=1'
Minor Divisions: 16
Printer: ImageWriter
Display: QuickDraw
Show/Hide:
Info Manager: On
Grid: Off
Rulers: Off
Page Breaks: On
Size: Off
Publisher Borders: On
Subscriber Borders: On
Snap To Grid: Off
Guides: On
Smart Mouse: Off
Drawing Size:
One Page
Horizontal Overlap: 0
Vertical Overlap: 0
Print Order: Vertical
Spool Before Printing: On

Canvas Rescue files

You should save your Canvas documents often to maintain the most current changes. However, in the unlikely event of a system error, you cannot save before quitting. The Macintosh System Error dialog box opens with a button labeled Resume. When you click Resume, Canvas saves all active documents into files titled *Canvas Rescue 1*, *Canvas Rescue 2*, and so on, and exits to the Finder. These files can prevent loss of data under most circumstances.

Canvas Window

When you start Canvas, the Canvas Window is displayed. It is a unique, feature-laden window which contains your electronic drafting table with all the necessary tools and commands for creating and editing illustrations. The items in the Canvas Window are discussed separately in the *Using* and *Reference* sections.



The Canvas Window can be moved, resized, zoomed, closed, and scrolled. You can open as many windows (documents) as the memory capacity of your computer allows.

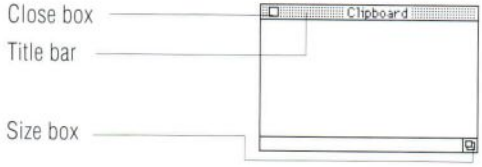
All drawing and painting in the illustration area will print. New documents are sized according to the page size specified in the Page Setup dialog box, but you can create an illustration up to 9-feet by 9-feet. Canvas also lets you move around your illustration with different views and magnification levels to refine details and preview the document.

Clear

The Clear command (⌘-Option-X) in the Edit menu removes a selected object, group of objects, paint area, or highlighted text from your illustration without saving it to the Clipboard. You can also clear a selection from your illustration by pressing the Delete or Backspace key.

Clipboard

The Clipboard command from the Windows menu displays the Clipboard window. This floating window displays the selections you copy or cut from your Canvas document.



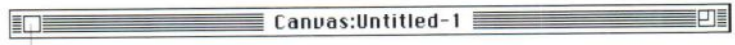
To move the Clipboard window, drag it by the title bar. To reshape the window, drag the size box in the bottom right corner. To close the window, click the close box in the upper left corner.

Close

The Close command (⌘-W) in the File menu closes the active document. If you have made any changes to the document since it was last saved, or if it is a new document, a dialog box asks if you want to save before closing. Choosing the Close command is equivalent to clicking the close box in the upper left corner of the Canvas Window.

Close box

The close box is located in the left corner of the title bar. Click the close box to close the active Canvas document. If you have not saved the document, Canvas asks if you want to save it before closing. Clicking the close box is equivalent to choosing the Close command from the File menu.



Close box

Color Info...

The Color Info option of the Managers submenu in the Edit menu displays the Color Info Manager. Use this dialog box to specify or change the RGB, HSV, CMY, or CMYK values of a color, change the default foreground color or background color, and edit a color.

The Color Info Manager is available when PANTONE® Colors is active in your Canvas Tools folder. For more information on the external tools in this folder, see page 19-92.

To use the Color Info Manager:

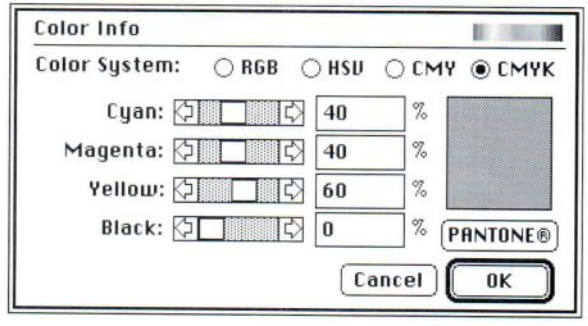
1. **Select a draw object or 1-bit paint object, if any, whose foreground color or background color you want to analyze.**

   If you do not select an object, the Color Info Manager analyzes the default foreground color or background color.

2. **Choose Color Info from the Managers submenu in the Edit menu; hold down the Option key when choosing Color Info to analyze the selected object's or the default background color.**

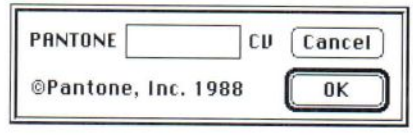
   You can also display the Color Info Manager by holding down the Shift and Control keys and clicking the Fore Color or Back Color palette icon to analyze the default or the object's foreground or background color respectively.

   The Color Info Manager opens. The selected color appears in the preview box. If the color is a PANTONE® color, its PANTONE® name or number appears at the bottom of the dialog box.



3. **Click PANTONE® to display a dialog box in which you can type a PANTONE® color number or name.**

   The PANTONE® dialog box appears. Use this dialog box to locate a PANTONE® color to display in the Color Info Manager. You can then edit the color or use it to change the selected object's color or the default foreground or background color.



   Type the name or number of the PANTONE® color you want and click OK. The PANTONE® dialog box closes and your PANTONE® color appears in the preview box of the Color Info Manager.

4. **Select a color system by clicking the button next to it.**

   You can edit or determine the values for your color in several different color systems. Select RGB, HSV, CMY, or CMYK depending on how your document is going to be produced. When you select a color system, the scroll boxes and text boxes in the Color Info Manager change accordingly.

   RGB: The RGB (Red, Green, Blue) color system is the system used to display color on your computer monitor. It calculates the amount of the primary colors red, green, and blue that make up the selected color. Select RGB if your document is going to be displayed on or photographed from an RGB monitor.

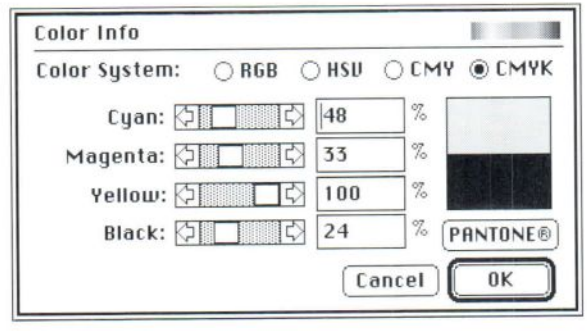
HSV: The HSV (Hue, Saturation, Value) color system calculates the hue, saturation, and value (brightness) of the selected color. Select HSV when, for example, you want to vary the hues of your colors but keep the saturation or value constant, giving a harmonious feel to your colors.

CMY, CMYK: The CMY (Cyan, Magenta, Yellow) and CMYK (Cyan, Magenta, Yellow, Black) color systems calculate combinations of the primary colors cyan, magenta, yellow, and (in the case of CMYK) black in the selected color. Select CMYK if you are going to take your document to a print shop, since print shops often use these values to print color documents. The colors in the PANTONE® Set are in CMYK values.

Print shops often find it difficult to achieve true black from full intensities of cyan, magenta, and yellow use CMYK instead of CMY.

5. **Drag the arrows in the scroll boxes or type a percentage in each text box.**

   The new color appears in the top half of the preview box.



6. **Click OK or press the Return key to accept your color.**

   The Color Info Manager closes and the default foreground or background color or the foreground or background color of the selected object changes accordingly.

User Tip: You can change a color's RGB values without changing its CMYK values. This feature is useful when you want to optimize the look of the color your RGB monitor without changing the CMYK color of the printout.

Editing colors in a dialog box

You can also open the Color Info Manger by holding down the Shift and Control keys and clicking a color pop-up box within a dialog box. You can do so in the following dialog boxes:

Duplication Specifications dialog box	Hatch Manager
Object Specifications dialog box	Parallel Lines Manager
Selection Specifications dialog box	Gradient Fill Manager
Layer Specifications dialog box	Tint Specifications dialog box

1. **Select the foreground or background color in the dialog box that you want to edit using the Color Info Manager.**
2. **Hold down the Shift and Control keys and click the color pop-up box.**

   The Color Info Manager opens with the color from the pop-up box in its preview box. Edit the color as desired.

Combine

The Combine submenu in the Object menu lets you make new shapes from overlapping draw objects. With this submenu you can select two or more overlapping draw objects and outline them, delete all except the overlapping area, subtract the overlapping area, and more.

The Combine submenu is available when Combine Objects is active in your Canvas Tools folder. See page 19-92 for more on the external tools in this folder.

To combine objects:

1. **Arrange at least two draw objects to which you will apply a Combine option.**

   With certain Combine options you can use more than two objects, but in all cases you need at least two.

2. **Make sure each object overlaps at least one other object.**

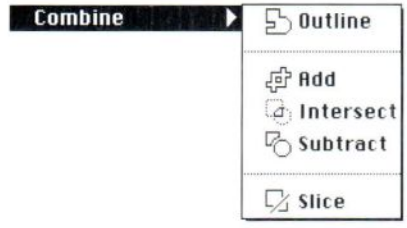
   The Combine submenu options do not work on draw objects that do not overlap.

3. **Select the overlapping draw objects.**

   The combine options which are enabled depend on the number and types of draw objects you selected.

4. **Choose Combine from the Object menu.**

   A submenu of Combine options appears.



5. **Drag through the submenu to highlight your choice.**

Combine submenu options

The stacking order of the selected objects influences the effect of the options. The topmost object is the last object drawn or the one on top of the object stack. You can reorder the objects using the Arrange submenu in the Object menu.

- **Outline** draws an outline of two or more selected draw objects and replaces the objects with it. The outline has the same properties as the topmost object. If your topmost object is a line, the Outline option is dimmed; you must reorder the objects to enable it.

Individual objects before Outline

Single object after Outline

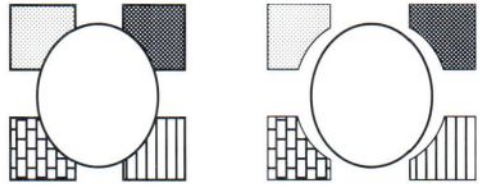
- **Add** joins two objects where they overlap, creating one or more objects. These objects have the same properties (pen pattern, fill pattern, pen size, and so on) as the bottom object. If either of the selected objects is a line, the Add option is dimmed.

Original objects Objects after Add (shown separated)

- **Intersect** removes everything except the shared portion of two or more overlapping draw objects and the topmost object itself. All objects retain their original properties and the topmost object remains unchanged. If either of the selected objects is a line, the Intersect option is dimmed.

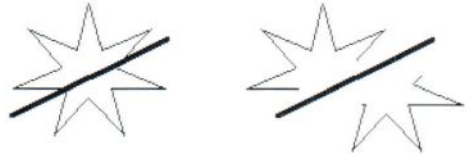
Original objects: triangle overlaps rectangle Objects after Intersect (shown separated)

- **Subtract** works with two or more selected draw objects. It subtracts from each bottom object the area of the topmost object that overlaps it. The topmost object remains unchanged. All objects retain their original properties.



Original objects Objects (shown separated) after Subtract

- With the **Slice** option, the topmost object "slices" through the bottom objects where it overlaps them, thereby splitting each bottom object into separate objects. The topmost object remains unchanged and all objects retain their original properties.



Original objects: line overlaps star

Objects after Slice

Combine option modifiers

When you choose Outline, Add, Intersect, or Subtract, use the following modifier keys for different effects.

- To perform the option on a copy of the objects, leaving the original objects intact, hold down the Option key when you choose Outline, Add, Intersect, or Subtract.
- To reverse the order of two selected objects, hold down the Shift key when you choose Outline, Add, Intersect, or Subtract.

Convert To

The Convert To submenu in the Object menu converts a selected draw object to a Bézier curve, polygon, or object group. Convert To works on most Canvas draw objects. Straight-line objects can be converted to polygons or Bézier curves. Curved-line objects can be converted to Bézier curves. Draw objects made with the Cube tool, Dimensioning tool, Parallel Lines tool, GridMaker tool, and hatch patterns can be converted to groups and their components edited separately.

The Convert To submenu is available when Convert To is active in your Canvas Tools folder. For more information on the external tools in this folder, see page 19-92.

To use Convert To:

1. **Select the draw objects you want to convert.**
2. **Choose Convert To from the Object menu.**

The Convert To submenu has three options: Bézier Curve, Polygon, and Group.

3. **Drag to highlight your choice and apply the option to the selected objects.**

   Choose **Bézier Curve** (⌘-Control-B) from the Convert To submenu to convert any selected draw object into a Bézier curve. You can then manipulate each curve segment individually, add cusps, and add or delete anchor points. Refer to the Bézier curve tool in the *Using* and *Reference* sections for information on editing Bézier curves.

   Choose **Polygon** (⌘-Control-P) from the Convert To submenu to convert selected draw objects into polygons. The Polygon option is enabled when the selected object is composed of straight lines. Polygons have numerous editing options. Unlike rectangles and lines, you can control each vertex of a polygon and edit, add, or subtract individual vertices. You can also open, close, smooth, and add segments to polygons.

   Choose **Group** (⌘-Control-G) from the Convert To submenu to convert objects with hatch patterns and objects made with the Cube tool, Dimensioning tool, GridMaker tool, and Parallel Lines tool into a group of individual elements that can be modified separately. To separate the elements, select the object group and choose Ungroup (⌘-U) from the Object menu. Selection handles appear around each element so you can edit and reposition it as desired.

User Tip: To perform a Convert To option on a copy of an object, hold down the Option key when you choose a Convert To option. You can drag the new object away from the original. The Option key will not convert copies of multiple selected objects when the Group option is selected and will instead convert the originals.

Copy

The Copy command (⌘-C) in the Edit menu places a copy of a selected object, group of objects, paint area, or highlighted text into the Clipboard without removing the original from your document. The selection remains in the Clipboard until the next time that you use the Cut or Copy command. Use the Copy command when you want to paste a selection somewhere else without deleting the original.

Copy command modifiers

Use the indicated modifier keys with the Copy command to make the following options available:

Copy Without Banding: Hold down the Shift key and choose Copy Without Banding from the Edit menu to prevent banding when copying paint objects into the Clipboard. Banding is a process by which some large paint objects are broken into pieces, or bands, on the Clipboard. It can cause only portions of the object to be pasted later. If you paste just the top band of a Canvas paint object into another application, use the Copy Without Banding command. If you are working on a Macintosh Plus or earlier, you should not use this command.

Copy Without Comments: Hold down the Shift and Option keys and choose Copy Without Comments from the Edit menu to copy a grouped object, a picture object, or an object created with any of the Object Tools palette tools to the Clipboard as its individual components. For example, if you select a dimension object and choose Copy Without Comments, when you paste the dimension object, the arrows, text, and the witness lines are pasted as separate objects.

Copy Selected Text: Hold down the Option key and choose Copy Selected Text from the Edit menu to copy all selected text objects onto the Clipboard so that they can be pasted into a word processing program in a single text object. The text is pasted in the order in which it appears in the Canvas document, with the bottommost text appearing first. All text properties (font, size, justification, and so on) are assigned by the word processing application.

Copy Guides: Hold down the Tab key and choose Copy Guides from the Edit menu to copy all the guide lines from one Canvas document to another. Make the document you want to paste the guide lines into the active document, then choose Paste (⌘-V) from the Edit menu.

Create Béziers

The Create Béziers submenu in the Text menu displays options which let you convert text characters in a TrueType or PostScript Type 1 printer font to Bézier curves.

The Create Béziers submenu is available when Bézier Text is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Create Béziers submenu:

1. **Highlight text characters or select a text object with the Arrow tool.**

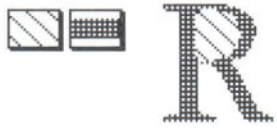
   If you highlight text characters, the option is performed on a copy of the text.

2. **Choose Create Béziers from the Text menu and drag through the submenu to highlight your choice.**

Choose **Hollow** to create an outline of the text with Bézier curves using the currently selected pen pattern and pen size.

Text converted to "Hollow" Bézier curves

Choose **Filled** to convert the text to Bézier curves filled with the currently selected pen pattern. Areas that normally appear white, such as the loop of an "R," fill with the currently selected fill pattern. Canvas uses a zero pen size to create Filled Bézier text.



Text converted to "Filled" Bézier curves

3. **Drag the new Bézier text away from the original, if necessary.**

   If the selected text was highlighted with the Text tool, Canvas performs the option on a copy of the original. In this case you need to drag the new Bézier curves from the original text. You can then continue to convert the same text to Bézier curves.

   If the selected text is not a TrueType or PostScript Type 1 printer font, an alert box appears indicating this. You must change the font to perform the command. If the alert box indicates that a particular printer font is needed, locate the font and place it with your other printer fonts so that Canvas can recognize it.

You can ungroup the Bézier curves and edit the new objects individually or leave them grouped to edit them as a whole. You can edit Bézier text as Bézier curves, not as text. See "Editing Bézier curves" on page 19-24 for more information.

Create Publisher...

The Create Publisher command in the Edit menu displays a dialog box which lets you "publish" a selected object as an edition. An edition is stored in an edition file which maintains a link with the original publisher in Canvas. You can then "subscribe" to this edition (import it) in other documents. Subsequent changes you make to the publisher can then be updated in all the documents which subscribe to it.

This command is available when you are using System 7.0 or later and System 7.0 Options is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

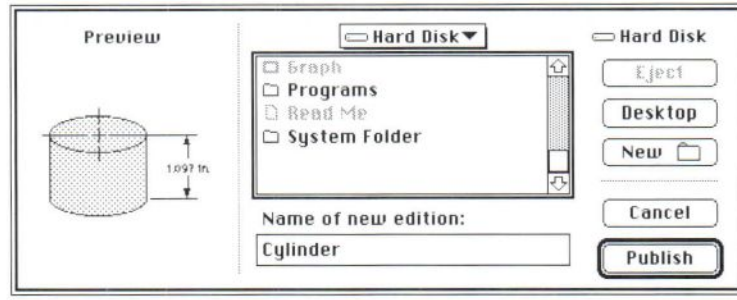
To publish an object:

1. **Use the Arrow tool to select the object or objects you want to publish.**

   You cannot publish selected paint areas.

2. **Choose Create Publisher from the Edit menu.**

   The Create Publisher dialog box appears.



The Preview section displays the selected objects.

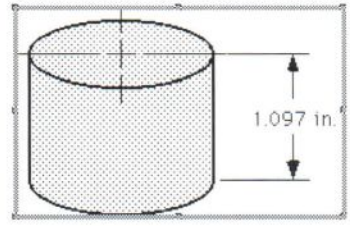
3. **Choose a location from the scrolling list in which to store the objects.**

   The selected objects will be stored in an edition file. Click New to create a new folder in which to store the edition file.

4. **Type a name for the edition file in the text box.**

5. **Click Publish to create a publisher.**

   The dialog box closes and you return to the Canvas Window. The selected objects are surrounded by a gray border.



This border does not print although it appears on screen. To hide the border, choose the Publisher Borders option from the Show/Hide submenu in the Layout menu. When this option is not active, the borders do not show.

Editing the publisher

You can edit the objects in a publisher as you would any draw or paint object. You can drag objects in and out of it, edit the objects individually or as a group, and resize the publisher to accommodate the objects. The publisher is like a porthole in your document; when you

update the edition linked to it, whatever is contained within its borders is saved in the edition.

Updating the edition

You can update the edition that is linked to a publisher automatically or manually. If the edition has been subscribed to by other documents, the other documents can be updated as well. You do not have to copy and paste the objects each time you change them.

To update a publisher's edition, select the publisher and choose Publisher Options from the Edition Options submenu in the Edit menu or double-click the publisher's gray border. A dialog box opens which lets you choose how to update the publisher's edition. See page 19-84 for more information.

You can also update all the editions linked to the publishers in your document by choosing Send All Now from the Edition Options submenu in the Edit menu. The contents of the edition files will be updated to reflect any changes you have made to the publishers in the active document. See page 19-89 for more information.

Cube tool

The Cube tool in the Object Tools palette creates cubes. This tool is available when Cube is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Cube tool:

1. **Select the Cube tool from the Object Tools palette in the Tool Box.**

   The pointer turns into a crosshair.

2. **Position the pointer where you want the cube to begin.**
3. **Drag to draw the rectangular back face of the cube and release the mouse button when it is the desired size.**

   The rectangle becomes an unanchored cube that follows the pointer's movements. The pointer becomes a four-headed arrow.

4. **Move the pointer to achieve the desired depth and angle for the cube.**
5. **Click to anchor the cube.**

   The cube appears selected.

Cube tool modifiers

Use the following modifier keys to constrain a cube as you create it.

- To restrain the base of the cube to a square and its height to straight vertical, horizontal, or 45° lines, hold down the Shift key while drawing the cube or dragging a selection handle.
- To constrain the cube to 60° angles, hold down the Option key while positioning it (before you click to anchor it).
- To give the cube a perspective effect, hold down the Command key (⌘) while positioning it (before you click to anchor it).

Editing a cube

When you create a cube as described in the preceding steps, you can select it and change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the Tool Box palette icons. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

To change the height or width of a cube, click the cube once to select it and drag a corner handle.

To reshape a cube by repositioning a side:

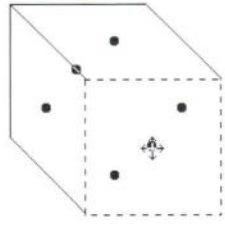
1. **Select the cube and choose Edit Cube (⌘-E) from the Edit menu to place it in the edit mode.**

   You can double-click the cube to place it in the edit mode if you have chosen Enter Edit Mode under Double-Clicking in the Preferences dialog box.

   Six handles appear, one for each face of the cube.

2. **Position the pointer over one of the handles.**

The side that corresponds to the handle appears as a flashing dotted outline and the pointer changes to a four-headed arrow.



3. **Drag to reposition that side.**

Curves

The Curves submenu in the Object menu contains options you can apply to selected polygons, smooth polygons, and Bézier curves.

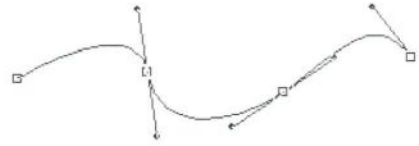
Select All Anchors

The Select All Anchors option (⌘-Option-Shift-A) selects all the vertices of a polygon or smooth polygon, or all anchor points of a Bézier curve, that has been placed in the edit mode.

To use the Select All Anchors option:

1. **Place the polygon or Bézier curve whose vertices you want to display in the edit mode.**
2. **Choose Select All Anchors from the Curves submenu in the Object menu.**

   Hollow square handles appear on each edit point. Bézier curve anchor points also display tangent lines and direction points.



Join

The Join option (⌘-`) joins two or more open and selected polygons, Bézier curves, smooth polygons, lines, or arcs. You can select the points that will join or have the objects join automatically.

To join objects without choosing points:

1. **Select the objects to be joined.**
2. **Choose Join from the Curves submenu in the Object menu.**

   The selected objects are joined at their closest points and become one object.

Join links objects with a new segment or, if the points being joined are within 15 screen pixels of each other, by extending the existing lines.

Hold down the Option key when you choose Join to connect the objects with a cusp. Canvas joins the objects with a straight line; the anchor points at either end of the line are cusps.

To join objects by specified points:

1. **Select the objects you want to join.**
2. **Choose Edit Polygon/Edit Curve (⌘-E) from the Object menu.**

   The objects are placed in the edit mode.
3. **Click an endpoint on each object that you want to join.**
4. **Choose Join from the Curves submenu in the Object menu.**

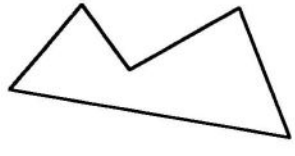
   The objects join at the points you clicked.

Smooth

The Smooth option (⌘-Shift-`) is used to convert a polygon to a smooth polygon, giving it a rounder look.

To smooth a polygon:

1. **Select the polygon to smooth.**



2. **Choose Smooth from the Curves submenu in the Object menu.**

   The selected polygon becomes a smooth polygon.

Unsmooth

The Unsmooth option (⌘-Option-Shift-`) converts a smoothed polygon to a regular polygon.

To unsmooth a polygon:

1. **Select the polygon to unsmooth.**
2. **Choose Unsmooth from the Curves submenu in the Object menu.**

   The smooth polygon is converted to a regular polygon.

Cut

The Cut command (⌘-X) in the edit menu removes a selected object, group of objects, highlighted text, or paint area from your illustration and places it into the Clipboard. The selection remains in the Clipboard until the Cut or Copy command is used again. When a selection is in the Clipboard you can place it in the same document or another document with the Paste command.

Cut command modifiers

Use the indicated modifier keys with the Cut command to make the following options available.

Cut Without Banding: Hold down the Shift key and choose Cut Without Banding from the Edit menu to remove an object from your document and copy it to the Clipboard without banding. Banding is a process by which some large paint objects are broken into pieces, or bands, on the Clipboard. It can cause only portions of the object to be pasted later. If you paste just the top band of a Canvas paint object into another application, use the Cut Without Banding command. If you are working on a Mac Plus or earlier you should not use this command.

Cut Without Comments: Hold down the Shift and Option keys and choose Cut Without Comments to cut a grouped object, a picture object, or an object created with any of the Object Tools palette tools to the Clipboard as its individual components. For example, if you select an object created with the Dimensioning tool and choose Cut Without Comments, when you paste the dimension object, the arrows and the witness lines are pasted as separate objects.

Dash palette icon

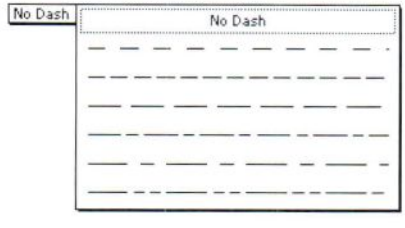
The Dash palette icon in the Tool Box contains the Dashes palette. Use the Dashes palette to change the dashed-line style of selected draw objects or to change the default dashed-line style. You can change the dashed line style of any selected draw object except those created with the Dimensioning, Cube, Parallel Lines, or GridMaker tools.

To select a new dashed-line style:

1. **Select the draw objects, if any, whose dashed lines you want to change.**

   If you do not select a draw object, the default dashed-line style, which is applied to succeeding objects you create, changes.

2. **Hold down the pointer on the Dash palette icon in the Tool Box to display the Dashes palette.**



3. **Drag through the palette to enclose your choice in the selection box.**

   Select No Dash to create a solid line.

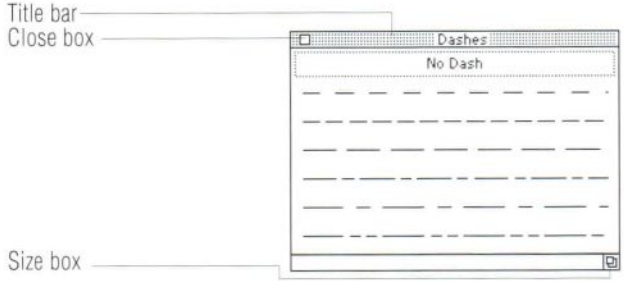
   The new dashed-line style is applied to all selected draw objects. If you did not select a draw object, the dashed-line style you chose appears in the Dash palette icon.

You can edit the dashes in this palette with the Dash Manager (see "Dashes..." on page 19-60).

Dashes tear-off palette

To keep the Dashes palette open while you work on your document:

1. **Hold down the pointer on the Dash palette icon in the Tool Box.**
2. **Drag through the palette to tear it away from the Tool Box.**



The next time you want to change dashed-line styles you can use this palette instead of choosing the icon in the Tool Box.

User Tip: Double-click the Dashes tear-off palette to open the Dash Manager and edit the dashed line styles.

You can move this palette anywhere in the document by dragging it by its title bar. To reshape the palette, drag the size box in the lower right corner. To close the palette, click the close box in its upper left corner.

Dashes...

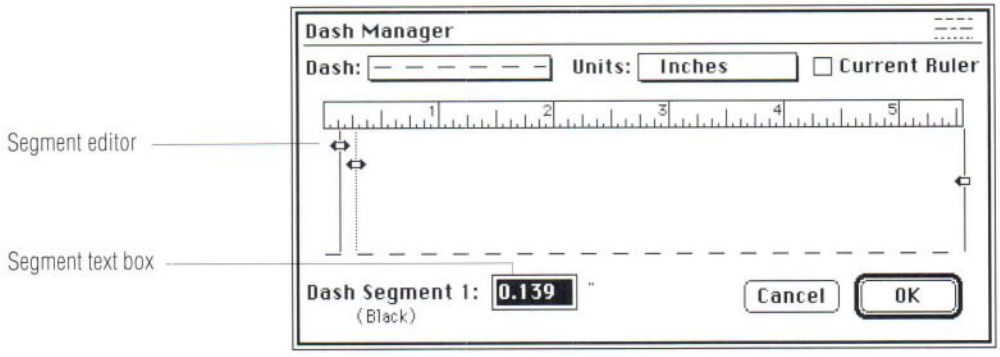
The Dashes option of the Managers submenu in the Edit menu opens the Dash Manager. This dialog box lets you edit any of the six dashed-line types available from the Dash palette icon in the Tool Box.

This dialog box is available when Dash Manager is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To edit a dashed-line style:

1. **Select the draw objects, if any, whose dashed lines you want to edit.**
2. **Choose the Dashes option of the Managers submenu in the Edit menu.**

The Dash Manager appears.



3. **Choose the dashed line style you wish to edit from the Dash pop-up menu.**

   The chosen line appears below the ruler in the dialog box.

4. **Select the Current Ruler check box if you want to measure your dashed-line segments according to the active ruler.**

   You can change the active ruler by choosing Rulers in the Layout menu. When you select Current Ruler, the Units pop-up menu dims.

5. **Choose the Units pop-up menu to select a unit of measurement for the segments of your dashed line.**

   This pop-up menu is enabled when the Current Ruler check box is not checked. Choose Inches, Points, Centimeters, or Picas and the ruler in the dialog box changes accordingly.

6. **To adjust the length of the first segment, type the length of the first segment in the Dash Segment text box or drag the first segment editor.**

   The dashed line adjusts itself to reflect the new length.

7. **To adjust the length of the second segment (a white segment), press the Tab key to change the Dash Segment 1 (black) text box to Dash Segment 2 (white) and type the desired length or drag the second segment editor.**

8. **To add a segment to your dashed line, drag the segment editor on the far right end towards the left side of the dialog box.**

   Continue in this manner to edit the remaining segments of the line. You can have up to 10 segments in your dashed line.

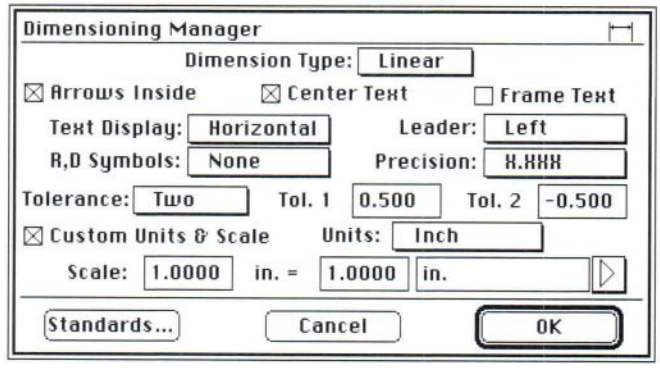
9. **When you are done, click OK or press the Return key to save your changes. Click Cancel if you change your mind.**

   Your new dashed line is applied to the selected draw object. If no draw objects were selected, the new dashed line replaces the one that was selected in the Dashes palette.

Dimensioning...

The Dimensioning option of the Managers submenu in the Edit menu displays the Dimensioning Manager. This dialog box controls the settings for the Dimensioning tool. It is available when Dimensioning is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To open the Dimensioning Manager, choose Dimensioning from the Managers submenu in the Edit menu or double-click the Dimensioning tool icon in the Object Tools palette. The next dimension objects you create will be made according to the settings in this dialog box.



You can also use the Dimensioning Manager to change the properties of an existing dimension object. Double-click a dimension object or select it and choose Edit Dimensioning (⌘-E) from the Edit menu to open the Dimensioning Manager. The changes you make affect the selected dimension object only.

Dimension Type: Choose the Dimension Type pop-up menu and select the type of dimension object you want to customize: linear, radial, or angular. When you are editing an existing dimension object, the

Dimension Type pop-up box displays the type of dimension object you are editing; the pop-up menu is not available.

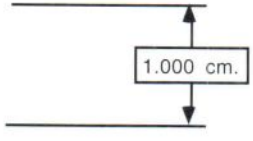
- Choose **Angular** to change the properties of dimension objects drawn with the Angle option of the Dimensioning tool.
- Choose **Radial** to change the properties of dimensioning objects drawn with the Radius, Diameter, and Center options of the Dimensioning tool.
- Choose **Linear** to change the properties of the remaining options of the Dimensioning tool.

Arrows Inside: Select the Arrows Inside check box if you want the dimension arrows to be drawn inside the witness lines.

Center Text: Select Center Text to center dimension text between the witness lines of linear dimension objects. If you want to move your dimension text outside the witness lines, do not check this box.

You can also hold down the Option key as you position a dimension object to center the dimension text.

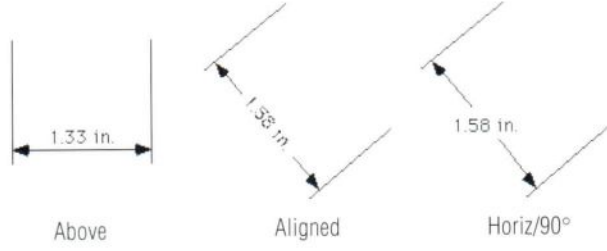
Frame Text: Select the Frame Text check box to place a box around your dimension text.



Text Display: Text Display refers to the position of the dimension text in relation to the witness lines. The Text Display options are only available when the selected Dimension Type is Linear.

- Choose **Horizontal** to always place dimension text horizontally.
- Choose **Horiz/90°** to place dimension text horizontally unless vertical dimension objects are drawn; in this case, text is placed parallel to the dimension object.

- Choose **Aligned** to align dimension text with the dimension lines.
- Choose **Above** or **Below** to place dimension text above or below and parallel to the dimension arrows.



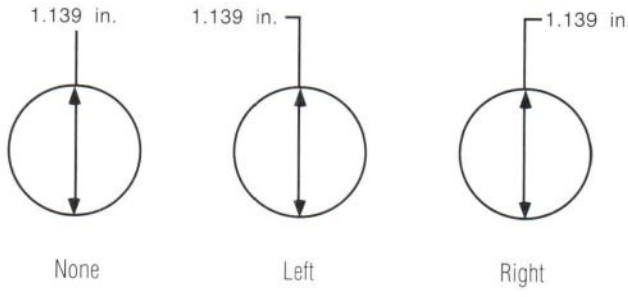
R,D Symbol: Choose the R,D Symbol pop-up menu to select an option for displaying radius (R) and diameter (ø) symbols with your dimension text.

- Choose **None** if you do not want symbols with you dimension text.
- Choose **Leading** to place symbols before the dimension text. This option is only available when the selected dimension type is Radial.
- Choose **Trailing** to place symbols after the dimension text. This option is only available when the selected dimension type is Radial.

Leader: Choose the Leader pop-up menu to select a display option for the leader portion of a dimension object. None of these options are available when the selected Dimension Type is Angular.

- Choose **None** if you do not want to display a leader.
- Choose **Left** to display a left-pointing leader.
- Choose **Right** to display a right-pointing leader.
- Choose **Automatic** if you want Canvas to position the leader to the left when you position the dimension object to the left of the object, or to the right when you position the dimension object vertically or

to the right of the object. This option is only available when the selected Dimension Type is Radial.



Precision: Choose the Precision pop-up menu to select the number of decimal places you want displayed in your dimension text. Your dimension text will be accurate to the number of decimal places you choose here.

Tolerance: The Tolerance option lets you include plus/minus amounts (tolerance) with your dimension text.

- Choose **None** if you do not want tolerance included with your dimension text.
- Choose **One** if you want a single ± tolerance included with your dimension text. When the "Tol. 1" text box is enabled in the dialog box, type a number in it and this tolerance appears with your dimension text.
- Choose **Two** if you want two tolerances included with your dimension text. When the "Tol. 1" and "Tol. 2" text boxes are enabled in the dialog box, type a number in each. Type a minus sign (-) next to a number to make it negative. These tolerances appear with your dimension text.
- Choose **Limit** to express your dimension text with the tolerance calculated into it. When the "Tol. 1" and "Tol. 2" text boxes appear in the dialog box, type a number in each. Type a minus sign (-) next to

a number to make it negative. Your dimension text then consists of two numbers: the dimension plus each tolerance.

Custom Units & Scale: Click this check box to enable the Units pop-up menu and the Scale text boxes. This option allows you to set the units of measurement and scale for your dimension objects. If this option is not checked, dimension objects use the units and scale of the active ruler. This option is always enabled for the Angle Dimension Type.

Units: Choose this pop-up menu to specify the unit of measurement you want your dimensions expressed in. The available units change depending on the Dimension Type you are customizing.

Scale: Scale lets you establish a ratio between the dimension's measurement units and your drawing. For example, one inch in your drawing can represent one mile.

The first text box and the units next to it are the representative units that you chose from the Units pop-up menu. The second text box displays the ratio of real units to the representative units. The third text box contains the real units; your dimension text appears in these units.

To change the scale of your dimension text:

1. **Change the representative units from the Units pop-up menu.**

   The units in this menu depend on the Dimension Type you are customizing.

2. **Type a number in the first scale text box to change the proportion of representative units.**

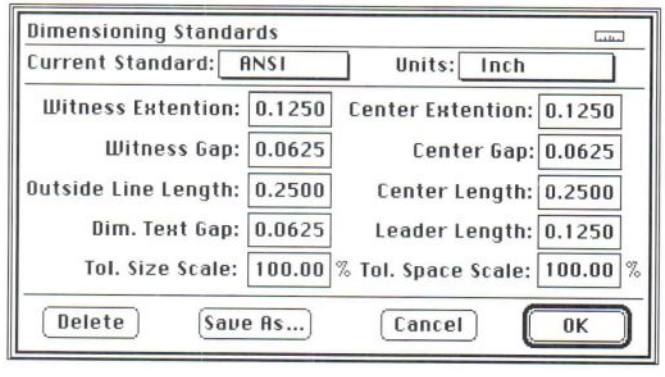
3. **Type a number in the adjacent scale text box to change the proportion of real units.**

   You can also change the real units by choosing the indicator to the right of the text box and dragging through the menu to highlight your choice.

You can continue to customize your dimension objects by clicking Standards or you can close the Dimensioning Manager dialog box by clicking OK to save your changes or Cancel to disregard them.

Dimensioning Standards dialog box

If you want to customize the individual elements of your dimension objects, click Standards in the Dimensioning Manager. The Dimensioning Standards nested dialog box appears where you can change the standards for the dimension objects you draw.



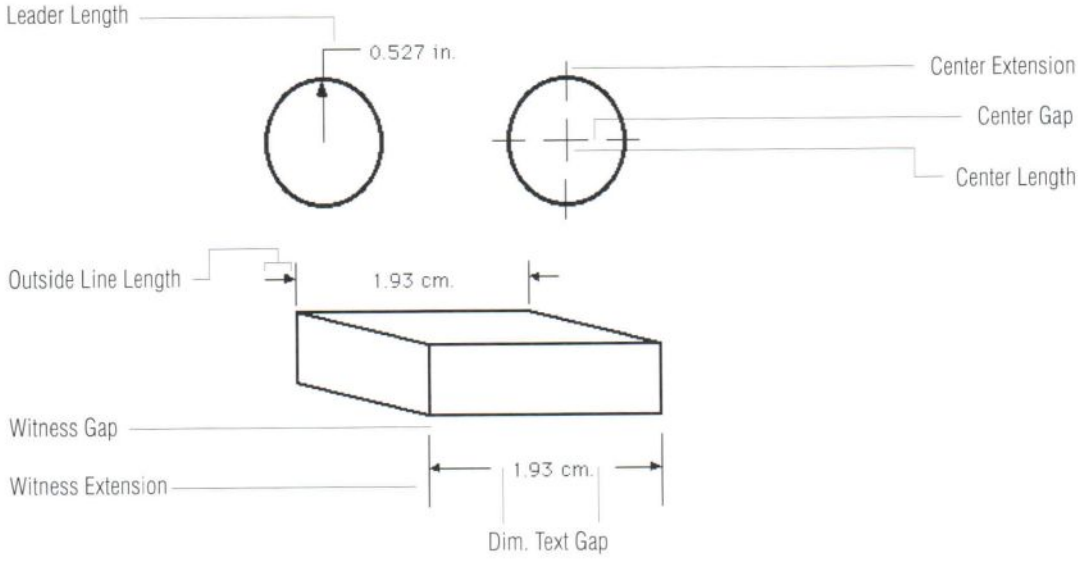
Current Standards: The Current Standards pop-up menu contains a list of five standard measurement systems for customizing the elements of your dimensions:

- American National Standards Institute (ANSI)
- British Standards Institute (BS-308)
- Deutches Institut für Normung (DIN)
- International Organization for Standardization (ISO)
- Japanese Industrial Standard (JIS)

You can also add your own settings to this menu (see "Saving a custom standard" on page 19-68).

Units: Units specifies the measuring system for the elements of your dimension.

Most of the remaining options in the Dimensioning Standards dialog box contain text boxes where you can type new measurements for the various components of your dimension objects. The following diagram shows these elements. Some elements affect only specific dimension types.



Tolerance Text Scale: Tolerance Text Scale lets you specify a percentage to scale the Tolerance text you include with your dimension text.

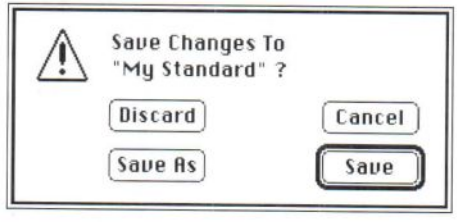
Tolerance Downspace: Tolerance Downspace refers to the line spacing (leading) between tolerance text when two amounts are present.

Saving a custom standard

Click Save As to add a standard you have created to the Current Standards pop-up menu. The Save Standard As dialog box appears. Type the name of your standard in the text box and click OK to save your standard or Cancel if you change your mind.

To delete a standard from the Current Standards pop-up menu, choose it from the Current Standards pop-up menu and click Delete. You can not delete the default standards in the Current Standards pop-up menu.

When you are done creating custom dimension standards, click OK to close the Dimensioning Standards dialog box and return to the Dimensioning Manager. If you have not saved your changes, the following dialog box appears:



Discard: Returns you to the Dimensioning Manager and discards your changes.

Cancel: Returns you to the Dimensioning Standards dialog box.

Save As: Displays the Save Standard As dialog box so you can save your changes as a new standard.

Save: Save is enabled when you have made changes to a non-default existing standard; click it to save the standard under the same name.

Dimensioning tool

The Dimensioning tool in the Object Tools palette is used to add precise dimensions to your Canvas illustrations. This tool is available when Dimensioning is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

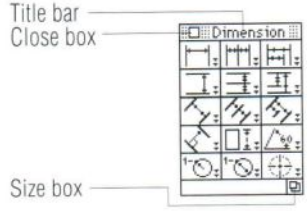
To use the Dimensioning tool:

1. **Select the Dimensioning tool from the Object Tools palette in the Tool Box.**

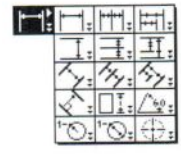
2. **Press the Option key and hold down the pointer on the Dimensioning tool in the Object Tools palette to display a palette of options.**

If the Object Tools palette has been torn off from the Tool Box, you do not need to press the Option key to display this palette.

You can tear off the Dimension palette and keep it open as you work on your document. To reshape it, drag the size box in the lower right corner. To close it, click the close box.



Dimension palette torn off



Dimensioning tool displaying palette

3. Drag through the menu to choose a tool option.

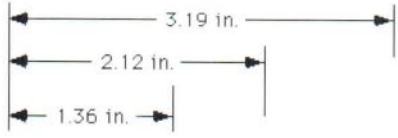
Creating dimension objects

After you select a Dimensioning tool option, the pointer changes into a crosshair with text indicating what you should do next. Follow the instructions of this text to create a dimension object. For example, if the pointer text says *Click First Pt*, click the first point in the distance you are dimensioning. When the pointer text changes to *Anchor*, click once, press the Return key, or press the Enter key to anchor the dimension object.

User Tip: Hold down the Option key while you position your dimension object to center the dimension text.

Some Dimensioning tool options let you create a series of dimension objects originating from the same or different base points. After you click the first point, the pointer text changes to *Anchor*; click once to anchor that dimension object. Continue clicking new points and click-

ing to anchor each dimension object. When you are done, click twice, press the Return key, or press the Enter key.



Editing dimension objects

When you create a dimension object as described in the preceding steps, you can select it and change its pen size, pen pattern, pen mode, and foreground color using the Tool Box palette icons. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

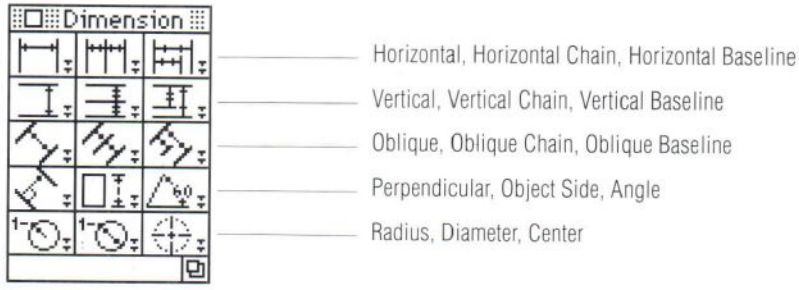
You can modify a selected dimension object's text using submenus from the Text menu. You can size it by dragging a selection handle; this will change the dimension text as well.

Smart Mouse constraints and dimension objects

Smart Mouse constraints can be helpful when used in conjunction with the Dimensioning tool. For example, you might want to make sure the points you select snap to the object you are dimensioning. For more information on using Smart Mouse constraints, refer to "Smart Mouse" on page 19-262 and to the *Using* section.

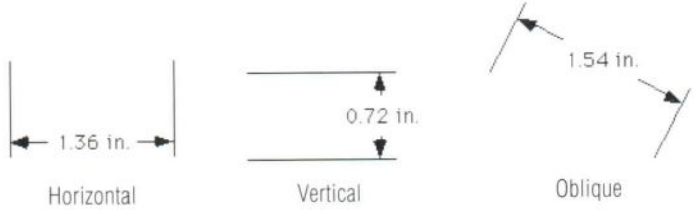
Dimensioning tool options

The Dimensioning tool pop-up palette contains 15 options for creating dimension objects. The following diagram shows which option each icon represents.



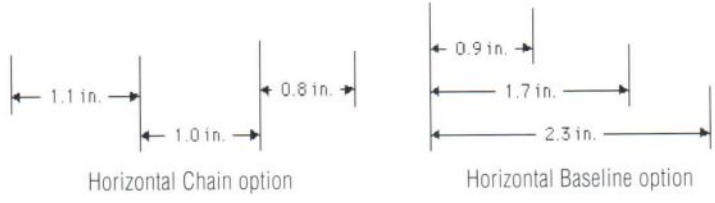
Horizontal, Vertical, and Oblique

The Horizontal, Vertical, and Oblique options measure the horizontal, vertical, or oblique distance between two points.



Horizontal Chain, Vertical Chain, and Oblique Chain
Horizontal Baseline, Vertical Baseline, and Oblique Baseline

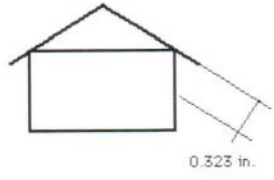
The Horizontal, Vertical, and Oblique Chain and Baseline options create a series of horizontal, vertical, or oblique dimension objects parallel to each other from different starting points (Chain) or from the same starting point (Baseline).



User Tip: For the Horizontal, Vertical, and Oblique Chain options, hold down the Shift key while anchoring each dimension object to align the bottoms of the dimension objects.

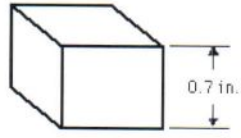
Perpendicular

The Perpendicular option measures the perpendicular distance between a line and a point.



Object Side

The Object Side option dimensions a segment of a draw object or the diameter of a circle when you click it.



Center, Radius, Diameter

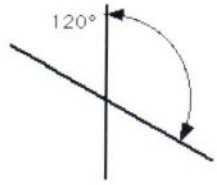
The Center, Radius, and Diameter options measure the center, radius, and diameter of arcs and ellipses. Click the edge of the arc or ellipse you want to measure and a dimension object appears.

The Center option marks the ellipse's center with a cross mark. The Radius and Diameter options place radial or diametrical dimension objects respectively in the ellipse; as you move around the ellipse, the dimension text reflects the radius or diameter of that part of the ellipse.

User Tip: To constrain a Center, Radius, or Diameter dimension object to a 45° angle, hold down the Shift key when positioning the dimension object.

Angle

The Angle option measures the angle between two lines. Click both lines and a dimension object appears.



To scroll through all the available angles of the intersecting lines, press the Tab key. Click to anchor the desired angle dimension object.

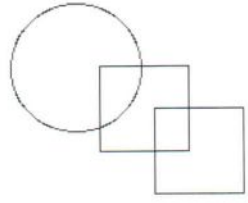
The Dimensioning Manager

The Dimensioning Manager is a dialog box that lets you edit dimension objects. To change the default properties of dimension objects, double-click the Dimensioning tool icon or choose Dimensioning from the Managers submenu in the Edit menu. The Dimensioning Manager opens and your changes will affect all subsequent dimension objects you create. See "Dimensioning..." on page 19-62 for more information.

To edit an existing dimension object, double-click the dimension object or select it and choose Edit Dimensioning (⌘-E) from the Edit menu. The Dimensioning Manager opens and your changes will affect the selected object only.

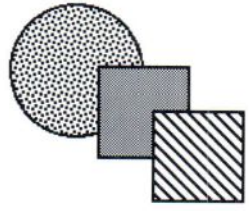
Display

The Display submenu in the Layout menu lists three display modes: Wire Frame (⌘-1), PostScript (⌘-2), and QuickDraw (⌘-3). Display modes change the appearance of the objects in your document without changing their properties. Your document will still print according to the properties defined for the objects and your printer's capabilities.

When you choose...	You get...
Wire Frame	
	Pen Sizes of 1 point No Fill Patterns No Pen Patterns No Color Copy pen mode

Wire Frame is useful when you want to view your illustration without waiting for the screen to redraw all the pen sizes and fill patterns.

PostScript



Pen Sizes as set

Fill Patterns as set

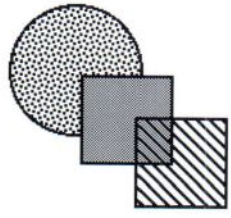
Pen Patterns as set

Color as set

Copy pen mode

Choose PostScript when you want to see how your document will print in the PostScript® printer-description language.

QuickDraw



Pen Sizes as set

Fill Patterns as set

Pen Patterns as set

Color as set

All pen modes

QuickDraw shows you how your Canvas document will print on a QuickDraw printer. QuickDraw is the default setting and displays all available pen sizes, patterns, copy modes, and so on.

Drawing Size...

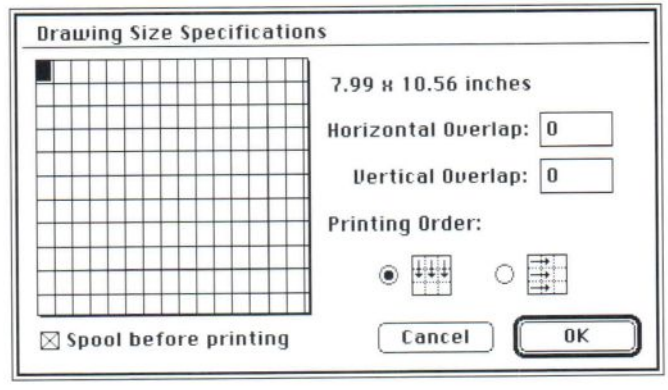
The Drawing Size command (⌘-\) in the Layout menu displays the Drawing Size Specifications dialog box. The current document size is highlighted across the grid.

The Drawing Size Specifications dialog box is available when Drawing Size Specs is active in your Canvas Tools folder. For more information on the external tools in this folder, see page 19-92.

To change the drawing size of a document:

1. **Choose Drawing Size from the Layout menu.**

The Drawing Size Specifications dialog box appears. The measurements at the top of the dialog box (7.99 x 10.56 inches in the following illustration) are the dimensions of the current document, displayed in the units of the active ruler.



2. **Drag inside the grid to highlight the desired number of pages or click the lower right page of your document.**

   Each rectangle in the grid represents one page as defined by the Page Setup command in the File menu (see page 19-166). As you change the size of the drawing area, the dimensions of the document (displayed at the top of the dialog box) change accordingly.

3. **Type a Horizontal and/or Vertical Overlap amount in the text boxes.**

   Overlap is the amount of your document that is repeated on adjoining pages when the pages are printed. This is extremely useful for precise alignment when assembling multi-page illustrations. Horizontal Overlap and Vertical Overlap are measured in the active ruler's units.

4. **Click a Printing Order choice.**

   You can print the pages of your document horizontally across rows or vertically down columns. Printing Order is useful when you need to print specific pages from a large document.

5. **Select the Spool Before Printing check box to return to the Canvas Window sooner after choosing the Print command.**

This option affects documents printed on an ImageWriter; it spools the document to a disk file and prints in the background.

6. **Click OK or press the Return key when you are done to close the Drawing Size Specifications dialog box and save your changes. Click Cancel to disregard your changes.**

Dropper tool

The Dropper tool in the Effect Tools palette lets you change the default foreground color or background color to a color you select from a draw or paint object in your document.

This tool is available when Dropper is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

Using the Dropper tool

To use the Dropper tool to change the default foreground or background color:

1. **Select the Dropper tool from the Effect Tools palette in the Tool Box.**

   The pointer becomes a dropper.

2. **Position the dropper on an object's color in your illustration.**

   If the object is a draw object, click it to select its foreground color. Hold down the Shift key and click it to select its background color. The color you select becomes the new default foreground color or background color.

   If the object is a paint object, click a color on the object to select it as the default foreground color. Hold down the Shift key and click the color to select it as the default background color.

   The new default foreground color or background color appears in the Fore Color/Back Color palette icon in the Tool Box. Subsequent objects you create will be made with these colors.

You can also switch to the Dropper tool from the keyboard while using another tool. For example, if you are painting with the Paint

Brush tool, you can change the default setting of the foreground color or background color with the Dropper tool. To do so:

1. **Hold down the Option and ~ (tilde) keys.**

   The pointer changes to a dropper.

2. **Click a color to make it the new foreground color or hold down the Shift key and click to make it the background color.**

   The new color appears in the Color palette icon in the Tool Box as the default foreground color or background color.

3. **Release the keyboard keys to regain use of whatever tool you were previously using.**

Duplicate

The Duplicate command (⌘-D) in the Edit menu copies selected objects and pastes them in relation to the originals according to the Duplication options in the Preferences dialog box (see page 19-211).

To use the Duplicate command, select the objects you want to duplicate and choose Duplicate from the Edit menu. Exact copies of the selected objects are pasted in the document.

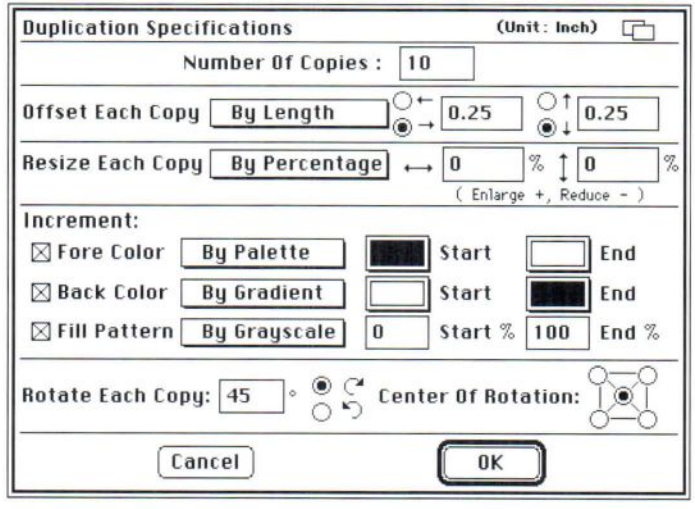
If you want to create more than one copy at a time or change the size and offset of the copies, use the Duplication command (see "Dimensioning tool" on page 19-69).

Duplication...

The Duplication command (⌘-Option-D) in the Edit menu displays the Duplication Specifications dialog box in which you can specify parameters for the duplications of objects. You can make multiple copies

while simultaneously shrinking, expanding, rotating, offsetting, and changing the fill pattern and color of each successive copy.

This command is available when Duplication Specs is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.



Number Of Copies lets you specify the number of times you want to duplicate the selected object. You can create as many duplications as the memory capacity of your computer allows.

Offset Each Copy lets you specify the positioning of each copy from the top left corner of the previous object. The offset is independent of any resizing factor. The offset units are those of the active ruler, as specified in the Ruler Specifications dialog box, and are displayed in the top right corner of the dialog box. The offset can be specified using one of two methods.

- **By Length** enables the radio buttons and text boxes to the right of it. You can type separate horizontal and vertical offsets and select to offset left or right and up or down respectively.
- **To A Line** lets you draw a line along which your duplications are evenly spaced. When you close the dialog box the pointer becomes a labeled crosshair. Drag to draw a line in the Canvas Window along which the copies are placed.

Resize Each Copy lets you scale each copy by length or as a percentage. Positive values create successive enlargements and negative values create successive reductions. In each method you can enter independent horizontal and vertical scaling factors.

- **By Length** lets you type in the amount to increment each copy by measurement. This option uses the units of the active ruler which are shown in the top right corner of the dialog box.
- **By Percentage** lets you type in the amount to scale each copy as a percentage.

Fore Color, Back Color, and **Fill Pattern** let you choose how to increment the properties of the duplications. Select the check box next to each option to enable it.

- **Constant** results in no incrementing. It uses the Start colors and patterns on each copy. The End colors and patterns are dimmed.
- **By Palette** lets you select the first copy's property from the **Start** pop-up palette and the last copy's property from the **End** pop-up palette. Successive copies are assigned the next option from the pop-up menu. If you have more copies specified than properties between the Start and End choices, Canvas recycles through the chosen properties. If you have less copies specified than properties between the Start and End choices, Canvas assigns the Start property to the first copy and assigns subsequent palette options to the successive copies, regardless of what the End choice is.
- **By Gradient** lets you assign a Start and End color from the pop-up palettes to the first and last copy, respectively. Intermediate copies are assigned colors by generation of a blend (gradation) between the Start and End colors.

  If you choose Constant or By Gradient, you can create custom Start and End colors using the Color Info Manager or the color wheel.

  - To display the Color Info Manager, hold down the Shift and Control keys and click the Start or End pop-up box.
  - To display the color wheel, hold down the Control key and click the Start or End pop-up box.

    The Color Info Manager or the Canvas color wheel dialog box appears. Choose a custom color for your Start or End color. For

more information on the Color Info Manager, see page 19-42. See page 19-229 for more information on the color wheel.

- **By Gray Scale** lets you assign a Start and End gray scale percentage to the first and last copy, respectively. Intermediate copies are assigned percentages accordingly.
- **Rotate Each Copy** lets you specify a degree of rotation for each copy in 1° increments. When this value is greater than zero, the **clockwise, counter clockwise,** and **Center Of Rotation** radio buttons are enabled letting you further customize the rotation of each copy.

Click OK to close the Duplication Specifications dialog box and duplicate selected objects according to your specifications. Click Cancel to close the Duplication Specifications dialog box and cancel the Duplication command. Canvas keeps the settings in the Duplication Specifications dialog box until you change them again.

Edit command

The Edit command in the Object menu (⌘-E) places a selected object in the edit mode or displays a tool manager so you can modify the object. This command reads differently depending on what kind of object you select. If you select Enter Edit Mode under Double-Clicking in the Preferences dialog box, choosing this command is equivalent to double-clicking the selected object.

Edit Polygon	⌘E
Edit Curve	⌘E
Edit Cube	⌘E

To use the Edit command:

1. **Use the Arrow tool to select the object you want to edit.**
2. **Choose Edit "___" from the Object menu.**

   The object is placed in the edit mode or the manager for the tool which created it opens.

3. **Edit the object using the Arrow tool or the dialog box.**

   Refer to the tool itself in the *Reference* and *Using* sections for more information on editing an object.

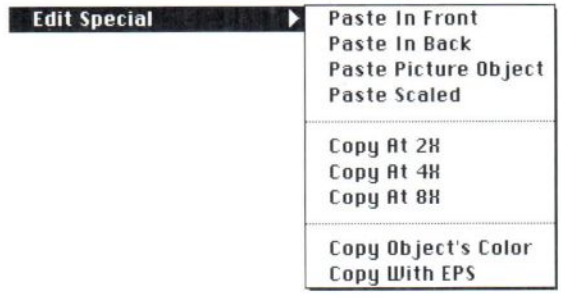
4. Close the dialog box, if necessary.
5. Double-click outside the object or press the Enter key to exit the edit mode.

Edit menu

The Edit menu lists the standard Macintosh editing commands—Undo, Cut, Copy, Paste, and Clear—plus several unique editing functions. From this menu you can select specific objects in your illustration, duplicate objects, paste objects in front or in back of selected objects, and more. The Managers submenu lets you configure many of the Canvas tools and commands. Users with System 7.0 or later can also use the Subscribe and Publish options.

Edit Special

The Edit Special submenu in the Edit menu gives you options for copying selected objects and pasting the Clipboard's contents.



Paste In Front, Paste In Back

Choose Paste In Front or Paste In Back to paste the contents of the Clipboard in front or in back of a selected object in your illustration. To use these options:

1. Select an object and choose Cut or Copy from the Edit menu.
2. Select the object in your illustration in front or in back of which you want to paste the Clipboard's contents.
3. Choose Paste In Front or Paste In Back from the Edit Special submenu in the Edit menu.

The Clipboard's contents are pasted in front or in back of the selected object.

Paste Picture Object

Choose Paste Picture Object to paste the contents of the Clipboard into your illustration as a picture object. This option is equivalent to holding down the Control key and choosing Paste As Picture from the Edit menu. If a graphic from another application does not look right when you paste it into Canvas, you can try pasting it in as a picture object.

A picture object is a graphic element that is treated as a single object. Defining information is attached to it for creating the image it contains. This information can not be edited; it must work as a unit. It is, therefore, the most limited object type available in Canvas since its image can only be resized and scaled.

Paste Scaled

Choose Paste Scaled to paste an object into a document that has a different scale than the document in which it was created. Paste Scaled adjusts the dimensions of the object to conform to the active document's scale.

Copy At 2X, Copy At 4X, Copy At 8X

The Copy At 2X, 4X, and 8X options place the selected object into the Clipboard at the specified magnification level. This ensures the maintenance of details in an illustration when pasting into page-layout programs. Choose a magnification level based on the printing device you are going to use.

- **2X** is representative of the ImageWriter II's resolution level.
- **4X** is representative of the LaserWriter's resolution level.
- **8X** is representative of the Linotronic's resolution level.

Each magnification level displays WYSIWYG (What You See Is What You Get) when imported to a page-layout program for the designated output device.

Copy Object's Color

The Copy Object's Color option lets you copy colors from selected objects so they can be pasted into a set in the PANTONE® Colors window. To use this option:

1. **Select the object or objects whose colors you want to copy.**
2. **Choose Copy Object's Color from the Edit Special submenu in the Edit menu.**
3. **Choose PANTONE® Colors from the Windows menu.**

   The PANTONE® Colors window appears.

4. **Load the color set you want to paste your colors into or create a new set.**

   See "PANTONE® Colors" on page 19-177 for more information.

5. **Choose Paste from the Colors pop-up menu in the PANTONE® Colors window.**

   The colors you copied are pasted into the active set.

Copy With EPS

Copy With EPS copies selected objects onto the Clipboard and attaches their Encapsulated Postscript descriptions. It is useful for pasting graphics into programs that do not import Encapsulated PostScript files. Encapsulated Postscript is a format that contains the commands necessary to print objects created in the QuickDraw graphics language in the PostScript® page-description language. When you choose Copy With EPS, the selected object maintains its original quality and high resolution when pasted in a PostScript page-layout program.

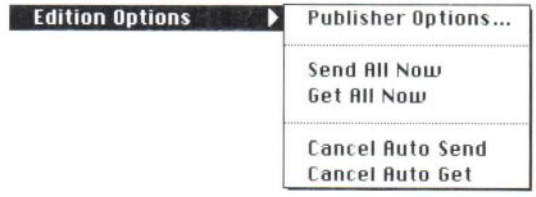
Edition Options...

The Edition Options submenu in the Edit menu displays options for getting and sending editions. It is enabled when you are using System 7.0 or later and System 7.0 Options is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

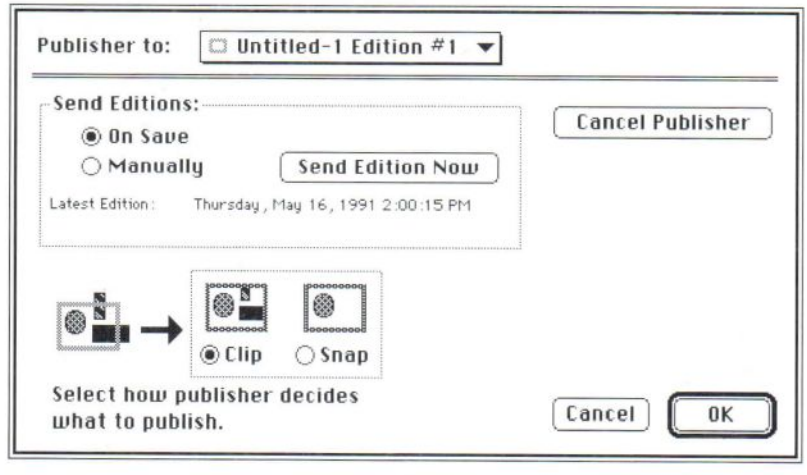
Publisher Options...

This option reads *Publisher Options* when a publisher is selected and *Subscriber Options* when a subscriber is selected. Publisher Options

displays a dialog box which lets you choose how a publisher sends its editions.



Select a publisher and choose Publisher Options or double-click a publisher's border to display the following dialog box.



The **Publisher to** pop-up menu displays the hierarchical location of the file which contains the selected publisher.

Send Editions lets you choose how to update the edition which is linked to the selected publisher. The Latest Edition time at the bottom of this section is the last time the edition linked to the selected publisher was updated.

- **On Save:** Select this option to update the edition linked to the selected publisher when you save your document.
- **Manually:** Select this option when you want to update the edition linked to the selected publisher yourself by clicking Send Edition

Now or choosing Send All Now from the Edition Options submenu in the Edit menu.

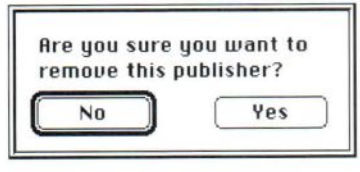
When you click Manually, the Last Change time appears below the Latest Edition time. Last Change is the last time the selected publisher was saved or the last time an edition was sent. Clicking Send Edition Now or choosing Send All Now from the Edition Options submenu in the Edit menu updates the edition linked to the publisher.

Send Edition Now: Click this button to update the edition linked to the selected publisher.

Select how publisher decides what to publish lets you decide which items contained in the publisher's border will be sent to the edition.

- Select **Clip** to publish all objects found inside the publisher's border, and portions of objects within the border.
- Select **Snap** to publish only those objects that are contained entirely within the publisher's border.

Cancel Publisher: Click this button to break the link between the selected publisher and its edition file. Although the edition file will still exist you will not be able to update it. When you click Cancel Publisher a dialog box appears asking if you are sure you want to remove the publisher.



Click Yes to do so or No if you change your mind. If you click Yes, the publisher's border disappears from the selection.

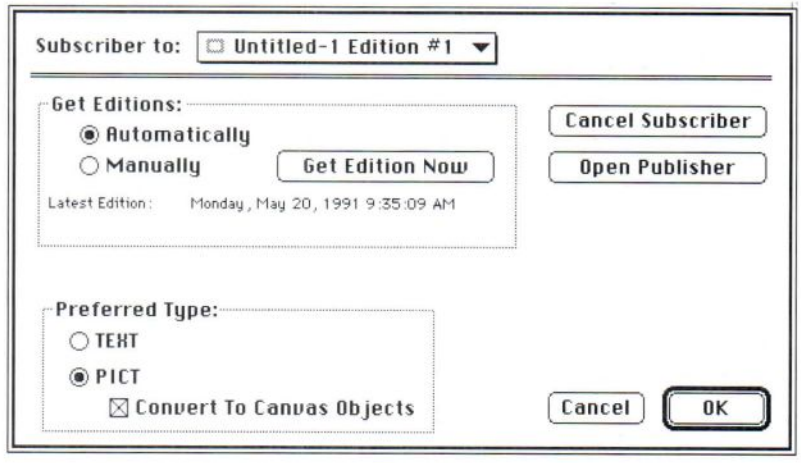
When you are done using the Publisher Options dialog box, click OK to save your changes or Cancel to disregard them. The dialog box closes and you return to the Canvas Window.

Subscriber Options...

Subscriber Options displays a dialog box which lets you choose how to update a selected subscriber. It also lets you choose the format in which to receive its editions and break the link with its edition.

This option reads *Subscriber Options* when a subscriber is selected and *Publisher Options* when a publisher is selected.

Select a subscriber and choose Subscriber Options or double-click a subscriber to display the following dialog box.

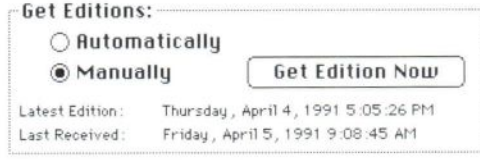


Subscriber to: This pop-up menu shows the location of the edition linked to the selected subscriber.

Get Editions lets you choose how to update the selected subscriber. The Latest Edition time at the bottom of this section is the time the edition which is linked to the selected subscriber was last updated.

- **Automatically:** Select this option to update the selected subscriber when the document opens and any time the linked edition is updated.
- **Manually:** Select this option to update the selected subscriber with its edition only when you click Get Edition Now or choose Get All Now from the Edition Options submenu in the Edit menu.

  When you select this option, the Last Received time appears below the Latest Edition time. Last Received is the last time the selected subscriber was updated.



Get Edition Now: Click Get Edition Now to update the selected subscriber with its edition. The edition linked to the selected subscriber updates the selected subscriber.

Preferred Type lets you choose which of the items in the edition file you want to subscribe to.

- Choose **TEXT** if you only want to subscribe to the text contained in the edition file. If the edition file does not contain text, Canvas defaults to PICT.
- Choose **PICT** to subscribe to all the items contained in the edition file.

  To break the subscriber into individual components which can be adorned separately, choose **Convert To Canvas Objects**; otherwise the edition file is subscribed to as a picture object. This item is dimmed when TEXT is selected.

Cancel Subscriber: Click this button to convert the selected subscriber to a picture object, breaking its link with its edition. A dialog box appears asking if you are sure you want to remove the subscriber.

Click Yes to do so or No if you change your mind. If you click Yes and you chose Convert To Canvas Objects under Preferred Type, you can edit it by its individual components. If you chose PICT only, you can edit it as a picture object.

> **User Tip:** To convert a picture object to its original components, choose Copy Without Comments and Paste Without Comments from the Edit menu. See page 19-50 and page 19-187 respectively for more information.

Open Publisher: Click this button to open the document containing the publisher which is linked to the selected subscriber's edition.

Send All Now

Choose Send All Now to update all the editions that are linked to the publishers in the active document.

Get All Now

Choose Get All Now to update all the subscribers in the active document according to their latest editions.

Cancel Auto Send

Choose Cancel Auto Send to temporarily stop publishers from automatically sending editions each time you save the document. When this option is active, a check mark appears next to it and you can only send editions manually.

Cancel Auto Get

Choose Cancel Auto Get to temporarily stop subscribers from receiving editions automatically when their editions update. When this option is active, a check mark appears next to it and you can only receive editions manually.

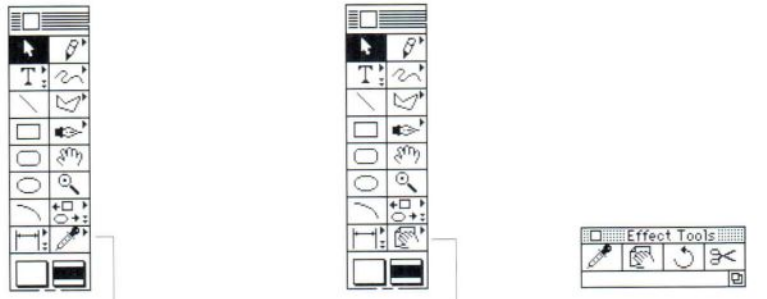
Effects menu

The Effects menu commands let you rotate, flip, and trace selected objects and selected paint areas. You can choose Remove Effects to remove many of the effects applied to selected objects. The Special Effects submenu options let you modify selected draw and paint objects. The Image Effects submenu options let you edit selected paint objects and paint areas.

Effect Tools palette icon

The Effect Tools palette icon displays a palette of tools used for editing your illustrations. If these tools are in your Canvas Tools folder and have not been turned off in the ToolPicker dialog box, they appear in the Effect Tools palette: the Dropper tool, the Mover tool, the Point Rotate tool, and the Split tool.

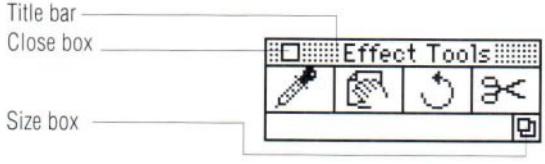
The Effect Tools palette icon changes each time you select a new Effects tool. The indicator (▶) on the palette icon shows that the Effect Tools palette is displayed when the pointer is held down on the icon.



Effect Tools tear-off palette

You can tear the Effect Tools palette away from the Tool Box and keep it open as you work on your documents. To do so, select the Effect Tools palette icon and drag through the palette to tear it away from the

Tool Box. You can also display this palette by choosing the Effect Tools command from the Windows menu.



To move the palette to another location, drag it by its title bar. Use the size box in the lower right corner to reshape the palette. Click the close box in the upper left corner to close the palette.

Eraser tool

The Eraser tool lets you remove part of a paint object by deleting the image within the paint object over which you drag the Eraser. You can use the Eraser tool to edit paint objects created in Canvas or other applications and to modify scanned images.

To use the Eraser tool:

1. **Select the Eraser tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to a gray outlined square.

   Make sure the default background color is white. Otherwise the Eraser tool "paints" the area it is dragged over using the current background color.

2. **Position the eraser inside a paint object and drag to erase the area underneath it.**

You can also double-click the Eraser tool icon in the Tool Box to erase the image from an active paint object. If you make a mistake, choose Undo (⌘-Z) from the Edit menu to undo your last action.

Modifier: Hold down the Shift key as you drag to restrict the Eraser tool to a straight horizontal or vertical path.

External tools

There are two types of tools in Canvas: core tools and external tools. Core tools are tools such as the Rectangle tool that appears as a tool icon in the Tool Box and is used to create and modify objects. These tools are always active.

External tools are extensions of the core program. They are not only used to create and modify objects, but to display dialog boxes and menu commands as well. The Object Tools palette (see page 19-149) and the Effect Tools palette (see page 19-90) contain the external tools that create and modify draw and paint objects. The remaining external tools display dialog boxes and enable menu commands.

External tools can be turned on or off with the ToolPicker dialog box; see "ToolPicker" on page 19-300 for more information.

Using external tools

The external tools are available when they are inside a designated folder on the Finder desktop. This folder is called Canvas Tools although you can change its name. There can only be one tool folder active at one time and all the tools you want to use must be together in this folder.

The tools listed below are in your Canvas Tools folder. When these tools are active (that is, if they have not been turned off in the ToolPicker dialog box), they perform the stated function. Refer to the command and tool names themselves in the *Reference* and *Using* sections for more information on the functions of these tools.

ToolPicker: provides the ToolPicker dialog box when you hold down the Space bar while launching Canvas.

The ToolPicker name in the Canvas Tools folder is preceded by a space. Do not delete this space. It is vital for the proper functioning of ToolPicker.

Alignment Specs: provides the Alignment Specifications dialog box from the Align command in the Object menu and the Align tool in the Tool Box.

Arrowhead Manager: provides the Arrowheads option of the Managers submenu in the Edit menu.

Auto Trace: enables the Auto Trace To submenu in the Effects menu when a paint object is selected and the Auto Trace option of the Managers submenu in the Edit menu. Also provides the Bézier Curve and Polygon options of the Freehand tool.

Balloon Help: provides the balloon help mode under System 7.0.

Bézier Text: provides the Create Béziers submenu in the Text menu.

Bind: provides the Bind Text command in the Text menu and the Bind Group option of the Special Effects submenu in the Effects menu.

Blend Objects: provides the Blend command in the Object menu.

Brush Manager: provides the Brushes option of the Managers submenu in the Edit menu.

Canvas 1.0 I/O: provides the Canvas 1.0 option in the File Format pop-up menu of the Open dialog box.

Canvas 2.1 I/O: provides the Canvas 2.1 option in the File Format pop-up menu of the Save As dialog box.

CGM I/O: provides the CGM (Computer Graphics Metafile) File Format in the Save As dialog box and the Open dialog box.

Combine Objects: provides the Combine submenu in the Object menu.

Convert To: provides the Convert To submenu in the Object menu.

Cube: provides the Cube tool in the Object Tools palette.

Dash Manager: provides the Dashes option of the Managers submenu in the Edit menu.

Dimensioning: provides the Dimensioning tool in the Object Tools palette and the Dimensioning option of the Managers submenu in the Edit menu.

Drawing Size Specs: provides the Drawing Size Specifications dialog box from the Drawing Size command in the Layout menu.

Dropper: provides the Dropper tool in the Effect Tools palette.

Duplication Specs: provides the Duplication Specifications dialog box from the Duplication command in the Edit menu.

DXF I/O: provides the DXF (Drawing Exchange File Format) option in the File Format pop-up menu of the Save As dialog box and the Open dialog box.

Gradient Fill: provides the Gradient submenu in the Object menu and the Gradient Fill option of the Managers submenu in the Edit menu.

Grid Specs: provides the Grid Specifications dialog box from the Grids command in the Layout menu.

GridMaker: provides the GridMaker tool in the Object Tools palette and the GridMaker option of the Managers submenu in the Edit menu.

Hatch Patterns: provides the Hatch Patterns submenu in the Object menu and the Hatch option of the Managers submenu in the Edit menu.

IGES I/O: provides the IGES (Initial Graphics Exchange Standard) option in the File Format pop-up menu of the Save As dialog box and the Open dialog box.

Illustrator I/O: provides the Illustrator 88, Illustrator 1.1, and EPSF File Formats in the Open directory dialog box.

Layer Specs: provides the Layer Specifications dialog box from the Layer Specs command in the Layout menu and Layer palette icon.

MacDraw I/O: provides the MacDraw I and MacDraw II options in the File Format pop-up menu of the Open dialog box.

MacPaint I/O: provides the MacPaint option in the File Format pop-up menus of the Open and Save As dialog boxes.

Mover: provides the Mover tool in the Effect tools palette.

Multigon: provides the Multigon tool and the Star tool in the Object Tools palette; also provides the Multigon and Star options of the Managers submenu in the Edit menu.

Object Specs: provides the Object and Group Specifications dialog boxes from the Object Specs and Group Specs commands in the Object menu.

Object Tint: provides the Tint Objects option of the Special Effects submenu in the Effects menu.

PANTONE® Colors: provides the PANTONE® Colors command in the Windows menu, the Color Info option of the Managers submenu in the Edit menu, and Copy Object's Color option of the Edit Special submenu in the Edit menu.

Parallel Lines: provides the Parallel Lines tool in the Object Tools palette and the Parallel Lines option of the Managers submenu in the Edit menu.

Pattern Manager: provides the Patterns option of the Managers submenu in the Edit menu.

Pen Manager: provides the Pens option of the Managers submenu in the Edit menu.

Place: enables the Place command in the Edit menu.

Point Rotate: provides the Point Rotate tool in the Effect Tools palette.

Preferences: enables the Preferences command in the File menu.

Registration Marks: provides the Registration Marks tool in the Object Tools palette.

RGB Color Manager: provides the RGB Colors option of the Managers submenu in the Edit menu.

Ruler Specs: provides the Ruler Specifications dialog box from the Rulers command in the Layout menu.

Scale Specs: provides the Scale Specifications dialog box from the Scale command in the Object menu.

Search & Replace: provides the Search & Replace command in the Text menu.

Selection Specs: provides the Selection Specifications dialog box from the Selection command in the Edit menu.

Separations: provides the PostScript, Separation Setup, and Separations options of the Print Special submenu in the File menu. It also provides the Separations, Illustrator 1.1, Illustrator 88, and EPSF File Formats in the Save As dialog box and the Overprint option of the Special Effects submenu in the Effects menu.

Slides: provides the Slides command in the Layout menu and the Slides option of the Print Special submenu in the File menu.

Smart Mouse: provides the Smart Mouse Window command in the Windows menu, the Smart Mouse option of the Managers submenu in the Edit menu, and the Smart Mouse command in the Layout menu.

Spelling: provides the Spell Check submenu in the Text menu.

Split: provides the Split tool in the Effect Tools palette.

Spray Manager: provides the Sprays option of the Managers submenu in the Edit menu.

StartupScreen I/O: provides the StartupScreen File Format in the Save As and Open dialog boxes.

System 7.0 Options: enables the Create Publisher, Subscribe To, and Edition Options commands in the Edit menu and the Publisher Borders and Subscriber Borders options of the Show/Hide submenu in the Layout menu under System 7.0.

Text Ruler: provides the Text Ruler command in the Text menu.

Text Utilities: provides the Type command and the Wrap submenu in the Text menu.

TIFF I/O: provides the TIFF File Format in the Save As and Open dialog boxes.

Tool Information: Tool Information is not an external tool, but a file that is updated each time you launch Canvas. Tool Information records information about the tools you load. It launches Canvas quickly when no changes have been made to the Canvas Tools folder or the ToolPicker has not activated or deactivated any tools.

UltraPaint I/O: provides the UltraPaint File Format in the Save As and Open dialog boxes.

Deneba notifies all registered Canvas users several times a year of new tools and enhancements to existing tools as they become available. Therefore it is important to return your registration card so that you can be notified of such changes.

File menu

From the File menu you can create a new document and open, close, save, or print an existing document. You can place an existing document into your active document, save a particular layer of a document as a separate document, revert to the last-saved version of a document, change the page setup, and print selected objects or a particular layer. This menu also contains the commands for customizing color separations. Choose Quit from the File menu to quit Canvas.

Fill Pattern palette icon

The Fill Pattern palette icon in the Tool Box displays the active pattern palette which you can use to fill draw and paint objects.

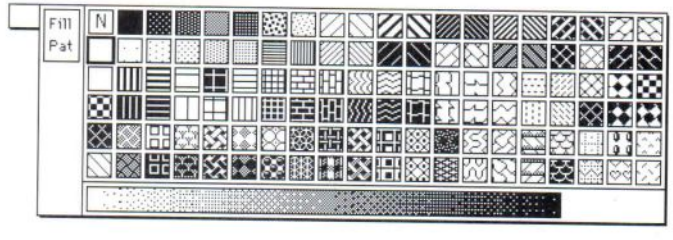
To use the Fill Pattern palette:

1. **Select the objects, if any, you want to fill.**

   If you do not select any draw objects, the default fill pattern changes and all succeeding draw objects will be created with this fill pattern.

2. **Hold down the pointer on the Fill Pattern palette icon to display the Patterns palette.**

   The current default fill pattern appears as the icon.



3. **Drag through the palette to enclose your choice in the selection box.**

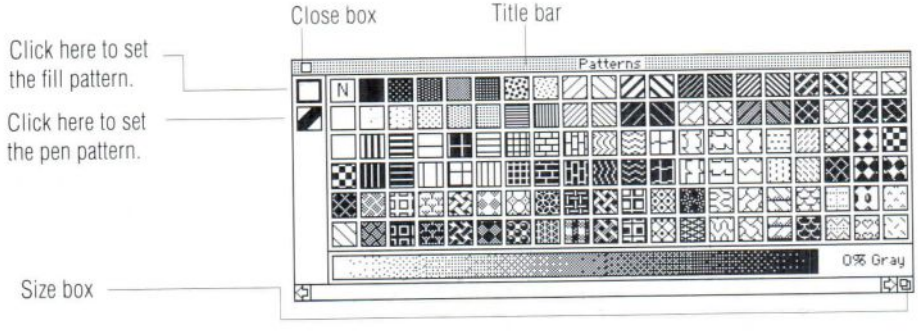
   All selected draw objects fill with this pattern.

Patterns tear-off palette

You can also keep the Patterns palette open as you work on your document. To do so:

1. **Hold down the pointer on the Fill Pattern palette icon in the Tool Box to display the Patterns palette.**
2. **Drag through the palette to tear it away from the Tool Box.**

   The next time you want to select a new fill pattern or pen pattern, you can use this palette instead of choosing the Fill Pattern palette icon in the Tool Box.



To set the fill pattern, click the solid square in the left side of the palette. To set the pen pattern, click the striped square on the left side of the palette.

You can move this palette anywhere in the document by dragging it by its title bar. To reshape the palette, drag the size box in the lower right corner. To close the palette, click the close box.

To edit the patterns in the Pattern palette, use the Pattern Manager. Choose Patterns from the Managers submenu in the Edit menu or double-click the Paint Bucket tool icon or the Patterns tear-off palette to open this dialog box. See "Patterns..." on page 19-188 for more information.

Flip Both Axes

The Flip Both Axes command in the Effects menu flips selected objects, object groups, or paint areas horizontally and vertically. The new objects appear as upside-down mirror images of the originals.

Flipping objects as a group

To flip multiple selected objects as a group, hold down the Option key when you choose Flip Both Axes, Flip Horizontal, or Flip Vertical.

Hold down the Option key and choose a flip command to flip selected objects as a group.

Flip Horizontal

The Flip Horizontal command in the Effects menu flips selected objects, object groups, and paint areas around their vertical axes. The new objects appear as mirror images of the originals.

To flip multiple selected objects as a group, hold down the Option key when you choose Flip Horizontal. See "Flipping objects as a group" on page 19-99.

Flip Vertical

The Flip Vertical command in the Effects menu turns selected objects, object groups, or paint areas upside down, flipping them around their horizontal axes.

To flip multiple selected objects as a group, hold down the Option key when you choose Flip Vertical. See "Flipping objects as a group" on page 19-99.

Font

The Font submenu in the Text menu displays the fonts that are currently installed in your system. A check mark appears next to the default font or the font of selected text (if all selected text is of the same font).

To choose a font:

1. **Select the text object or highlight the text characters, if any, whose font you want to change.**

   If no text is selected you will change the default font and all succeeding text you type will be created in that font.

2. **Choose Font from the Text menu.**

3. **Drag through the submenu to highlight your choice.**

   The selected text changes to the font you choose.

You can also display the Font menu by holding down the Command key (⌘) and choosing the Text tool icon in the Tool Box.

Fore Color/Back Color palette icon

The Fore Color/Back Color palette icon in the Tool Box contains the active Color palette. The default foreground color is shown in the top

half of the icon and the default background color is shown in the bottom half of the icon.

You can use this palette to change the color of selected draw objects and 1-bit paint objects and to change the default foreground and background color.

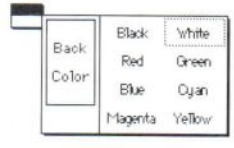
To select a new foreground color or background color:

1. **Select the draw objects or 1-bit paint objects, if any, whose colors you want to change.**

   If you do not select a draw object or 1-bit paint object, the default foreground color and background color change and will be applied to succeeding objects you create.

2. **Hold down the pointer on the Fore Color or Back Color palette icon in the Tool Box to display the pop-up palette.**

   Select the top half of the icon to set the foreground color. Select the bottom half of the icon to set the background color.



3. **Drag through the palette to enclose your choice in the selection box.**

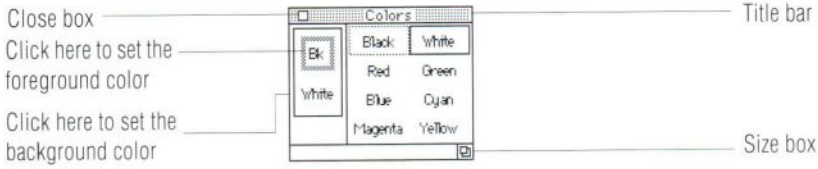
   The new color is applied to all selected objects. If no objects are selected, the color you choose becomes the default foreground or background color and appears in the top or bottom half of the Fore Color/Back Color palette icon.

Colors tear-off palette

To keep the Colors palette open while you work on your document:

1. **Hold down the pointer on the Fore Color or Back Color palette icon in the Tool Box.**

2. Drag through the palette to tear it away from the Tool Box.



The next time you want to change colors you can use this palette instead of choosing the icon in the Tool Box. Click the solid box on the left side of the palette and choose a foreground color. Click the outlined box surrounding it and choose a background color.

You can move this palette anywhere in the document by dragging it by its title bar. To reshape the palette, drag the size box in the lower right corner. To close the palette, click the close box in its upper left corner.

Modifying a color

When you double-click a color in the Colors palette, the Color Picker dialog box showing the position of the color on the color wheel is displayed. Use this dialog box to change the amount of red, green, and blue, or the hue, saturation, and value (brightness) of the selected color. See "Pick" on page 19-229 for more information on using this dialog box.

You can also use the Color Info Manager to edit the default foreground or background color displayed by the Fore Color or Back Color palette icon. To do so, hold down the Shift and Control keys and click the Fore Color or Back Color palette icon. The Color Info Manager opens, displaying the default foreground or background color. See page 19-42 for more information on using this dialog box.

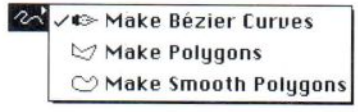
Freehand tool

The Freehand tool lets you create Bézier curves, polygons, or smooth polygons as you would with a pen or pencil on a sheet of paper.

The Freehand tool pop-up menu is available when Auto Trace is active in your Canvas Tools folder. When this tool is not active, the Freehand tool only draws smooth polygons. See page 19-92 for more information on external tools.

To use the Freehand tool:

1. **Hold down the pointer on the Freehand tool icon in the Tool Box to display its pop-up menu.**
2. **Drag through the pop-up menu to highlight your choice.**



A check mark appears next to the currently selected option in the menu.

Choose **Make Bézier Curves, Make Polygons**, or **Make Smooth Polygons**, depending on the type of object you want. The next objects you create with the Freehand tool will be polygons, smooth polygons, or Bézier curves depending on your selection.

3. **Position the pointer in the Canvas Window where you want to begin drawing and drag to create your shape.**

   As you drag, a line follows your movements.

4. **Release the mouse button when you are done.**

   The object is selected. Click outside the object to deselect it; the selection handles disappear.

Adjusting the tolerance

Use the Freehand Tolerance setting of the Bézier & Polygon option in the Preferences dialog box to set the tolerance of the Bézier curves you create with the Freehand tool. Tolerance controls how tightly your freehand Bézier curves follow what you draw with the pointer. The tighter the tolerance, the more precisely the resulting object will resemble what you create before releasing the mouse button.

Editing freehand polygons and Bézier curves

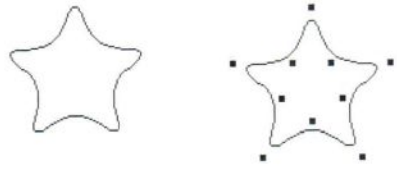
Freehand polygons and Bézier curves are edited as regular polygons and Bézier curves. See "Editing Bézier curves" on page 19-24 and "Editing polygons" on page 19-205 for more information.

Editing smooth polygons

When you create a freehand smooth polygon as described in the preceding steps, you can select it and change its pen pattern, pen size, fill pattern, and other properties using the palette icons in the Tool Box or the Object Specs command in the Object menu. You can also edit its colors with the PANTONE® Colors window and the Color Info Manager; both items are explained separately in this section.

You can also edit a smooth polygon by resizing it, repositioning it, or placing it in the edit mode and editing its vertices and segments.

- To resize a smooth polygon, select it and drag a selection handle. The entire object is reshaped.
- To reposition a smooth polygon, drag it to a new location or select it and use the keyboard arrow keys to reposition it.
- To edit a smooth polygon's points, you must first place it in the edit mode. To do so, select the smooth polygon and choose Edit Curve (⌘-E) from the Curves submenu in the Object menu. The smooth polygon's vertices become selected.

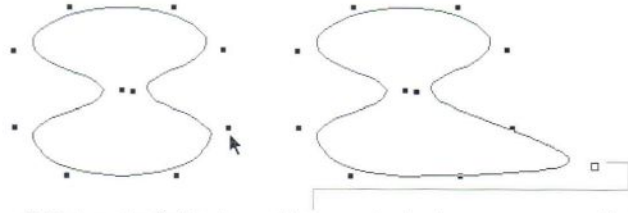


Smooth polygon Smooth polygon in the edit mode

You can also place a smooth polygon in the edit mode by double-clicking it. This option is available when you select Enter Edit Mode under Double-Clicking in the Preferences dialog box.

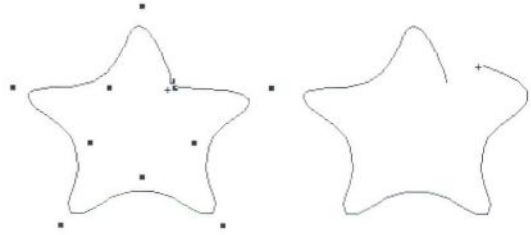
- To reshape a smooth polygon segment, drag a vertex. Drag the endpoints to lengthen or shorten segments.

- To add a point to a smooth polygon, hold down the Option key and drag an existing vertex. A new vertex is inserted between the one you dragged and the next point in sequence.



Hold down the Option key and drag a vertex to place a new one next to it

- To open a closed smooth polygon by adding a new vertex, hold down the Command key (⌘) as you click a vertex.



- To remove a point from a smooth polygon, hold down the Shift and Option keys and click the vertex.
- To close an open smooth polygon, hold down the Command key (⌘) as you click an endpoint. A new segment joins the endpoints.

Adding cusps

You can also add cusps (pointed corners) to smooth polygons; these cusps do not smooth. To add a cusp to a smooth polygon in the edit mode, hold down the Option key and click the vertex you want to change to a cusp. When you drag this vertex it remains sharp.

Click outside the smooth polygon, press the Return key, or press the Enter key when you have finished editing to exit the edit mode.

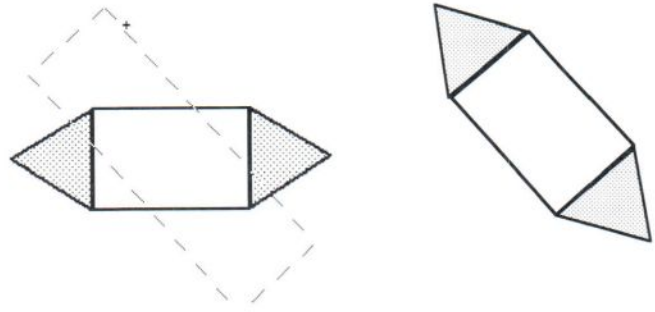
Free Rotate

The Free Rotate command in the Effects menu lets you move an object, object group, or paint area about its center in one-degree increments. To use the Free Rotate command:

1. **Select the object you want to rotate.**
2. **Choose Free Rotate from the Effects menu.**

   Four selection handles appear around the object (two if the object is a line).
3. **Drag the object in the desired direction.**

   An outline of the object follows your movement. To view an image of the object as it rotates, rather than an outline, hold down the Option key as you rotate it.



4. **When you have finished rotating the object, click outside it to deselect it.**

User Tip: To rotate a copy of the object, hold down the Option key when you choose Free Rotate.

Gradient

The Gradient submenu in the Object menu displays gradient fills you can apply to draw objects. These gradient fills are created and can be edited with the Gradient Fill Manager (see page 19-107).

The Gradient submenu is available when Gradient Fill is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Gradient submenu:

1. **Use the Arrow tool to select the draw objects you want to fill.**
2. **Choose Gradient from the Object menu.**
3. **Drag through the submenu to enclose your choice in the selection box.**

   Choose None to remove a gradient fill from a selected object.

The fill you choose is applied to all selected draw objects. If the fill is set to use Mouse Point as its center or Directional as its Method, you must apply the fill manually.

- If the fill uses the Mouse Point option for its Center, the pointer changes to a crosshair with the words *Pick center.* Click the desired center of the object to apply the fill.
- If your fill uses the Directional option for its Method, the pointer changes to a crosshair. Drag inside the object in the direction you want the fill to radiate.

Gradient Fill...

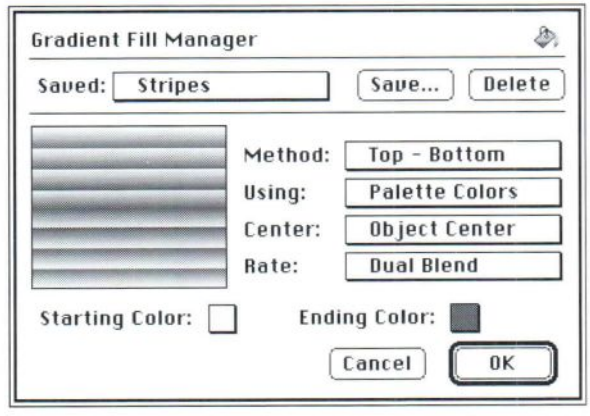
The Gradient Fill option of the Managers submenu in the Edit menu displays the Gradient Fill Manager. The Gradient Fill Manager is used to configure the fill patterns which appear in the Gradient submenu in the Object menu. These patterns are used to fill selected draw objects with gradient color or gray scale fills.

The Gradient Fill Manager is available when Gradient Fill is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Gradient Fill Manager:

1. **Select the draw objects, if any, you want to fill or whose fill you want to edit.**
2. **Choose Gradient Fill from the Managers submenu in the Edit menu.**

The Gradient Fill Manager appears.



The preview box on the left side of the dialog box displays the gradient fill you are editing.

3. **Choose a Starting Color and an Ending Color for the gradient from the pop-up boxes at the bottom of the dialog box.**

   These are the first and last colors in your blended fill.

   You can also use the Color Info Manager to edit these colors. To do so, hold down the Shift and Control keys and click the Starting Color and/or Ending Color pop-up boxes. The Color Info Manager opens, displaying the Starting Color or Ending Color. See page 19-42 for more information on using this dialog box.

4. **Choose a fill direction from the Method pop-up menu.**

   Method refers to the direction of the fill. The Methods are:

Top - Bottom	**Bottom - Top**	**Left - Right**
Right - Left	**Circular**	**Elliptical**
Rectangular	**Shape**	**Directional**

   If you choose Directional, the pointer turns into a crosshair when you close the Gradient Fill Manager so you can draw a line in the object indicating the direction of the gradation.

5. **Choose a Using option from the pop-up menu.**

The Using pop-up menu lets you select how the colors of the fill are generated.

Palette Colors uses the Starting Color, Ending Color, and the colors in the color palette that fall between them to create the gradient.

RGB Colors/CMYK Colors creates an RGB or CMYK blend between the Starting Color and Ending Color. This option reads *RGB Colors* unless the Starting Color and/or Ending Color are CMYK colors as specified in the Color Info Manager (see step 3 on page 19-108).

The RGB or CMYK values of the Starting Color and the Ending Color approach each other to create the intermediate colors in the gradient. See "RGB Colors..." on page 19-227 for more information on color properties.

Dithered Pattern creates a dithered blend between the Starting Color and the Ending Color. Dithering is a visual effect which arranges a small number of pixels in a pattern to give the appearance of a broader range of colors. Instead of showing bands of each color, the individual colors are dithered, making the transition from one color to another smoother.

6. **Choose a Center option.**

   Center refers to the center of the fill. Only the Object Center option is apparent in the preview box.

   Object Center fills the object from its mathematical center.

   Mouse Point lets you click, after you close the Gradient Fill Manager, on the point from which the fill will radiate.

7. **Choose a Rate for the progression of the blend.**

   Rate refers to the linearity of the fill colors.

   Constant blends the fill at an even rate from the Starting Color to the Ending Color.

   Accelerating gradually steps through the colors at the beginning then increases sharply towards the end. More of the Starting Color is used than the Ending Color.

   Dual Blend begins with the Starting Color, blends to the Ending Color, and then blends back to the Starting Color.

8. **When you have finished configuring your setting, click OK to apply it to selected draw objects. Click Cancel to disregard your changes.**

Saving and deleting settings

To save a custom gradient fill:

1. **Configure the fill in the Gradient Fill Manager.**
2. **Click Save.**

   A dialog box appears asking you to name your setting.

3. **Type a name for your setting in the text box and click OK; click Cancel if you change your mind.**

   You return to the Gradient Fill Manager. This setting appears in the Saved pop-up menu of the Gradient Fill Manager and in the Gradient submenu in the Object menu.

To delete a setting, choose it from the Saved pop-up menu so its name appears in the pop-up box and click Delete.

When you are done saving and deleting gradient fills, click OK to apply the current Gradient Fill settings to any selected objects or Cancel to leave the objects unfilled. If you have saved any settings, they remain saved whether you click OK or Cancel. The Gradient Fill Manager closes.

GridMaker...

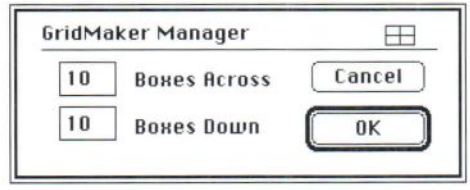
The GridMaker option of the Managers submenu in the Edit menu displays the GridMaker Manager which lets you modify grids drawn with the GridMaker tool. You can specify the number of boxes and lines you want your grids to have through this dialog box.

This dialog box is available when GridMaker is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To configure the GridMaker tool:

1. **Choose GridMaker from the Managers submenu in the Edit menu or double-click the GridMaker tool icon in the Object Tools palette.**

The following dialog box appears:



2. **Type the desired values in the Boxes Across and Boxes Down text boxes.**

   A value of 0 Boxes Across generates only horizontal lines. A value of 0 Boxes Down generates only vertical lines.

3. **Click OK or press the Return key to save your changes; click Cancel if you change your mind.**

   The GridMaker Manager closes. You can now create grids with the GridMaker tool according to the settings you just chose.

Editing existing grids

You can change the number of cells in an existing grid by double-clicking the grid. The Edit GridMaker dialog box opens so you can change the number of boxes across and boxes down in the grid. This feature is available when you have selected Enter Edit Mode under Double-Clicking in the Preferences dialog box.

GridMaker tool

The GridMaker tool in the Object Tools palette in the Tool Box lets you draw grids with varying numbers of boxes horizontally and vertically.

This tool is available when GridMaker is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the GridMaker tool:

1. **Select the GridMaker tool from the Object Tools palette.**

2. **Position the pointer in the document and drag to begin creating the grid.**
3. **Release the mouse button when you are done.**

GridMaker tool modifiers

To constrain the GridMaker tool to create square grids, hold down the Shift key while dragging. To create a grid from the center outwards, hold down the Option key while dragging.

Editing Grids

When you create grids as described in the preceding steps, you create them as draw objects. When they are selected, you can change their pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the Tool Box palette icons. You can also edit their colors using the PANTONE® Colors window and the Color Info Manager; these items are explained separately in the *Reference* section.

To change the number of cells in an existing grid, double-click the grid. The Edit GridMaker dialog box opens so you can change the number of boxes across and boxes down in the grid. This feature is available when you have selected Enter Edit Mode under Double-Clicking in the Preferences dialog box.

You can also reposition and edit the individual lines in a grid using the Group option from the Convert To submenu in the Object menu. See "Convert To" on page 19-48 for more information.

Grids...

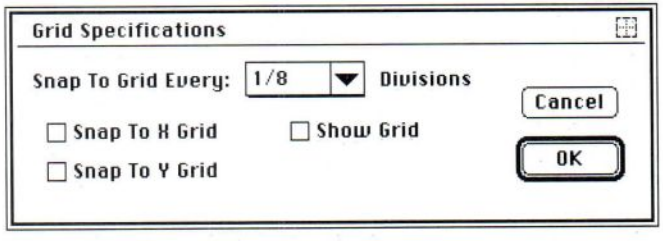
The Grids command (⌘-Option-G) in the Layout menu displays the Grid Specifications dialog box, a dialog box that lets you design your own autogrid. You can choose a predefined grid interval or enter your own. The autogrid can be activated for the x-axis, y-axis, or both.

The Grid Specifications dialog box is available when Grid Specs is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To create a custom autogrid:

1. **Choose Grids from the Layout menu.**

   The Grid Specifications dialog box appears.



2. **Type a grid interval in the "Snap To Grid Every...Divisions" text box OR**

3. **Hold down the pointer on the indicator next to this text box and choose an option from the pop-up menu.**

   Choose 1 to snap to major divisions or choose a fraction of the major division to snap to.

4. **Click the Snap To X Grid, Snap To Y Grid, or both check boxes.**

   Click Snap To X Grid to snap to the horizontal axis. Click Snap To Y Grid to snap to the vertical axis. Click both options to snap to both axes. You must select at least one of these options to activate the autogrid when you choose Snap To Grid in the Layout menu.

5. **Click the Show Grid check box to display grid lines on the screen.**

   This option is equivalent to choosing Grid from the Show/Hide submenu in the Layout menu.

6. **Click OK or press the Return key to close the Grid Specifications dialog box and save your specifications. Click Cancel if you change your mind.**

The next time you create or drag objects in your Canvas document, they will snap to the grid intervals you specify in this dialog box.

Group

The Group command (⌘-G) in the Object menu groups selected objects into a single element. Individual objects retain their properties until the properties of the group change; object groups are selected, repositioned, and edited as single objects. You can ungroup an object group using the Ungroup command (⌘-U) in the Object menu; the objects can then be edited separately.

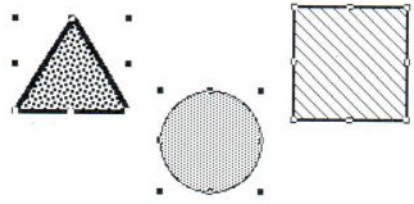
To create an object group:

1. **Arrange and edit the objects you want to group.**

   Once the objects are grouped they cannot be edited individually.

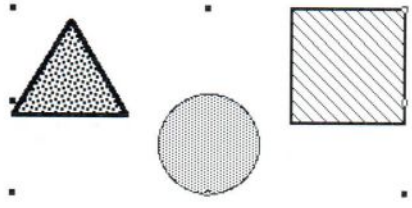
2. **Select the objects you want to group.**

   Selection handles appear around each object.



3. **Choose Group from the Object menu.**

   The selected objects are converted to a single object group. A new set of handles surrounds the entire group.



If you group objects that are on different layers, the object group is brought to the active layer.

To learn the size and location of an object group or convert it to a paint object, use the Group Specs command in the Object menu (see page 19-115).

Group Specs...

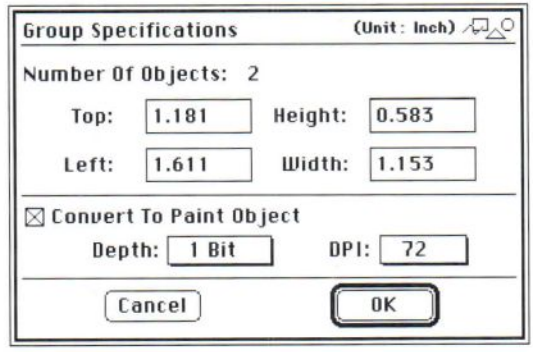
The Group Specs command (⌘-I) in the Object menu displays the Group Specifications dialog box. This dialog box displays data for multiple selected objects and lets you convert them to a paint object.

The Group Specs command reads *Object Specs* when a single object is selected. Both commands are available when Object Specs is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Group Specifications dialog box:

1. **Select more than one object or select an object group.**
2. **Choose Group Specs (⌘-I) from the Object menu.**

   The Group Specifications dialog box appears.



   Use the text boxes and check boxes to modify the object group.

Top, Left: The Top and Left text boxes indicate the position of the object group from the top and left side of the Canvas Window. Type new numbers in these text boxes to change the location of the objects or object group.

Height, Width: The Height and Width text boxes indicate the height and width of the bounding rectangle of the objects. Type new numbers in these text boxes to change the size of the objects or object group. If you checked Convert To Paint Object, changing the object's height and width might delete part of the paint object itself.

Convert To Paint Object: Select the Convert To Paint Object check box to convert your object group into a paint object. Each individual object becomes part of the paint object and can be edited pixel-by-pixel. When you convert an object group to a 1-Bit paint object, all colored pixels are converted to black.

Depth: The Depth pop-up menu is enabled when Convert To Paint Object is checked and you are using a Macintosh with an 8-bit color system or higher. It lets you set the depth of a paint object. Choose 1 Bit, 8 Bit, or 32 Bit. The depth of a paint object specifies how many bits are used to define each pixel. The greater the depth, the more possible shades can be displayed by each pixel and the more memory required for the paint object.

DPI: The DPI (dots-per-inch) pop-up box is enabled when Convert To Paint Object is checked and lists resolution options. The greater the resolution, the more memory required for the paint object.

When you are done, click OK to apply your changes to the selected objects or click Cancel to disregard them. The dialog box closes.

Guides

The Guides command in the Layout menu lets you display guides in your document. Guides are lines used to help you align objects. A check mark appears next to this command when it is active.

You can add guides by dragging them from the rulers in the Canvas Window with the Arrow tool when the command is active. The Guides command also lets you show or hide these lines on screen; when the command is active, the lines are showing. Although visible on screen, guides do not print in your illustration.

Adding guides to a document

To add guides to a document:

1. **Choose Rulers (⌘-Option-Shift-R) from the Show/Hide submenu in the Layout menu if the rulers in your document are not already showing.**

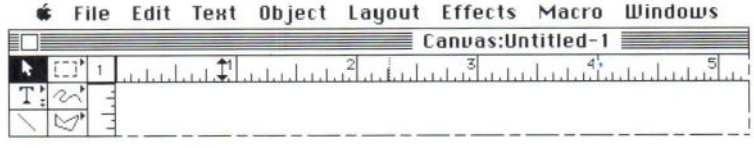
   The rulers must be visible to add guides.

2. **Choose Guides from the Layout menu.**

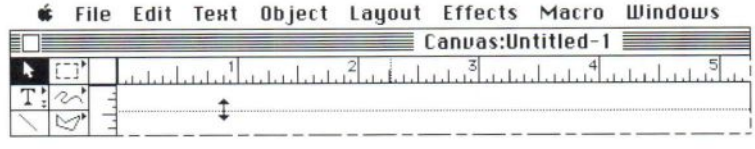
   A check mark appears next to the command in the Layout menu.

3. **Select the Arrow tool and place the pointer inside either ruler.**

   The pointer changes to a two-headed arrow.



4. **Drag a horizontal or vertical guide into your illustration.**



To remove a guide, drag it out of the illustration area with the Arrow tool. To hide all the guides in the illustration area, choose the Guides command again. The check mark next to it disappears and the guides disappear until you choose the command again.

Hand tool

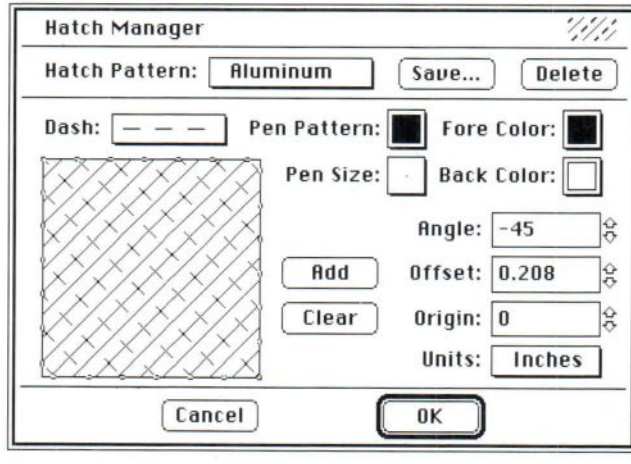
The Hand tool is used to scroll the Canvas Window. It is available from the Tool Box or by holding down the Space bar. Select the Hand tool from the Tool Box and the pointer changes to a hand. Drag inside the illustration area in any direction that you like and the document scrolls in that direction.

You can temporarily switch to the Hand tool while using another Canvas tool by holding down the Space bar. Release the Space bar to return to the previously selected tool.

Hatch...

The Hatch option of the Managers submenu in the Edit menu displays the Hatch Manager, a dialog box that lets you create, save, modify, and delete Hatch patterns.

The Hatch Manager is available when Hatch Patterns is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.



Editing a hatch pattern

Hatch patterns are comprised of line groups which can be edited individually. Selection handles appear where the selected line group intersects the edit box of the Hatch Manager. To select a line group, click a line in the edit box and selection handles appear on each line in that group. You can cycle through a pattern's line groups by pressing the Space bar until the desired line group is selected.

User Tip: If a hatch pattern overlaps the edges of an object, decrease the pen size of the hatch pattern to make it smaller than the pen size of the object.

The **Hatch Pattern** pop-up menu contains the names of all the available Hatch patterns. The pattern you choose appears in the edit box with one line group selected. The properties of the selected line group appear in the text boxes and pop-up boxes in the Hatch Manager.

You can change the **Dash, Pen Pattern**, **Pen Size**, **Fore Color**, and **Back Color** of the selected line group by choosing the appropriate pop-up box. These are the same properties that are available from the palette icons in the Tool Box. You can edit them with the Dashes, Patterns, Pens, and RGB Colors options respectively of the Managers submenu in the Edit menu.

Angle: The Angle text box specifies in degrees the angle of the selected line group as it intersects with the left side of the edit box, with 0° at 12 o'clock or 3 o'clock, depending on the coordinate system you choose in the Preferences dialog box (see page 19-210). Type a new degree measurement in the text box or use the up and down arrows on the right side of the text box to increase or decrease the angle.

Offset: Offset is the distance between lines in the selected line group. Type a new number in the text box or use the up and down arrows on the right side of the text box to increase or decrease the offset.

Origin: The Origin text box specifies the point where the selected line group begins. Type a new number in the text box or use the up and down arrows on the right side of the text box to increase or decrease the starting point.

Units: The Units pop-up menu lists the units of measurement for the Offset and Origin of the hatch pattern.

Adding and deleting line groups

To add a line group to the selected hatch pattern, click Add. Line groups are added with the same properties as the currently selected line groups but are rotated 90° from the selected line group.

To delete line groups from the selected hatch pattern, select the line group you want to delete and click Clear. The line group you selected then disappears from the edit box.

Saving a pattern

Click Save to save your settings as a new hatch pattern. The "Save Hatch Pattern as" dialog box appears asking you to name your new hatch pattern. Type a name for your pattern and click Save to save your pattern and return to the Hatch Manager. Click Cancel to return to the Hatch Manager without saving your pattern.

To delete an existing pattern, select the pattern you want to delete from the Hatch Pattern pop-up menu and click Delete.

When you are done customizing your hatch patterns, click OK to apply the pattern in the edit box to all selected objects and close the Hatch Manager. Click Cancel to close the Hatch Manager without applying the hatch pattern in the edit box to selected objects.

Hatch Patterns

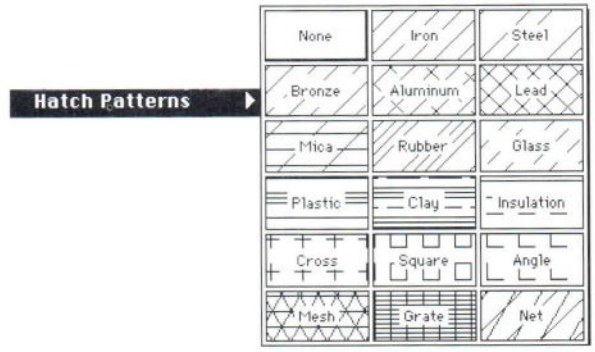
The Hatch Patterns submenu in the Object menu displays hatch patterns for draw objects. Hatch patterns are useful in illustrations such as cross sections of objects made of several materials. Hatch patterns can be applied to objects created with any Canvas draw tool except the Line tool.

This submenu is available when Hatch Patterns is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To apply a hatch pattern to a draw object:

1. **Select the draw objects you want to assign a hatch pattern to.**
2. **Choose Hatch Patterns from the Object menu.**

   A pop-up palette of hatch patterns appears.



3. Drag to enclose your choice in the selection box.

The hatch pattern you choose is assigned to all selected draw objects.

You can create your own hatch patterns through the Hatch Manager. The Hatch Manager is displayed by the Hatch option of the Managers submenu in the Edit menu. See "Hatch..." on page 19-118 for more information.

Help...

The Help command (⌘-?) in the Apple menu displays the Home Card of a dialog box which functions like HyperCard®. This dialog box provides information on the Canvas tools and commands with a series of help cards you flip through.

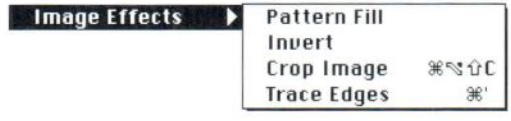
The pointer changes to a pointing hand as you move it around the Help dialog box.

Follow the instructions in the Home Card to get information about a tool or menu. The right and left scroll arrows in the lower right corner of each card let you move forward or backward through the Canvas help stack. Click the Home icon in the upper right corner of each card to return to the Home Card.

Users with System 7.0 or later can also use Balloon Help. See "Balloon Help" on page 19-22 for more information.

Image Effects

The Image Effects submenu in the Effects menu displays options you can apply to selected paint objects or paint areas. To use these options, select the appropriate area and drag through the Image Effects submenu in the Effects menu to highlight your choice.



Crop Image/Crop Images can be applied to paint objects selected with the Arrow tool. Pattern Fill and Invert can be applied to paint areas selected with the Lasso or Marquee tool. Trace Edges can be applied to paint areas selected with the Marquee tool.

User Tip: To select all connected color areas in a paint object, double-click the area with the Lasso tool.

Pattern Fill

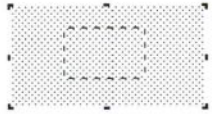
The Pattern Fill option is an effect which applies the active fill pattern shown in the Tool Box to a selected paint area.

Selected paint area Selected area after Pattern Fill

Invert

The Invert option is an effect that replaces each pixel in a selected paint area with its inverse according to the active color palette. A col-

or's inverse is the color directly opposite it on the color wheel. See "RGB Colors..." on page 19-227 for information on color properties.



Selected paint area

Selected area after Invert

Crop Image/Crop Images

The Crop Image/Crop Images option (⌘-Option-Shift-C) reduces the bounding rectangle of a selected paint object (depicted by eight square handles) by removing white space inside it. The option reads Crop Image when one paint object is selected and Crop Images when more than one paint object is selected.

To crop a paint object, select it with the Arrow tool and choose Crop Image/Crop Images from the Effects menu.

Paint object before Crop Image

Paint object after Crop Image

Trace Edges

The Trace Edges option (⌘-') traces a paint area selected with the Marquee tool and replaces it with an outline of the image. To select an entire paint object with the Marquee tool, double-click the paint object with the Marquee tool icon.

Selected paint area

Paint area after Trace Edges

Information Manager

The Information Manager on the left side of the horizontal scroll bar in the Canvas Window, displays autodimensioning data based on the pointer's movements.

Information Manager

These dimensions are based on the active ruler's units. The Information Manager is useful for accurately measuring, sizing, and positioning objects as you work on an illustration in the Canvas Window.

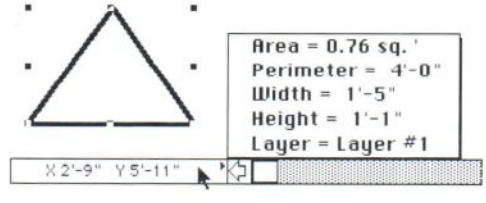
To display the Information Manager, choose Info Manager (⌘-Option-Shift-I) from the Show/Hide submenu in the Layout menu. A check mark appears next to the option when it is active.

Pasting autodimensioning data

The Information Manager can display autodimensioning data for a selected object and the layer on which the object is located. You can attach this data to the object and move to its layer. To do so:

1. **Select the object with the Arrow tool.**
2. **Hold down the pointer on the Information Manager.**

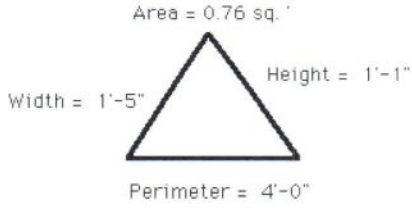
   The object's dimensions appear as well as the name of the layer the selected object is on.



3. **Drag to highlight the information that you want attached to your object; choose the layer name to make the object's layer active.**

When you release the mouse button Canvas positions the autodimensioning data next to the selected object. You can reposition these text objects and change their font, size, style, or color.

Once this data is attached to an object it is static; that is, if you resize the object, you must reattach the data from the Information Manager.



Interpreting the Information Manager

The meaning of the measurements in the Information Manager varies depending upon the action you take:

- As you move the pointer around the Canvas Window, its horizontal and vertical distance from the ruler's zero point is shown.
- As you drag an object to a new position in the Canvas Window, the horizontal and vertical distances that the object travels are displayed.
- As you rotate an object, the angle of the top of the object's bounding rectangle is shown.
- As you draw or resize a line, the length and the angle of the line are displayed.
- As you create a rectangle, rounded rectangle, oval, arc, or paint object the height and width of the object's bounding rectangle are shown.
- As you resize any object (except a line) or object group, the height and width of the object's bounding rectangle are displayed.
- As you drag the circular handle of a selected arc, the left side of the Information Manager shows the angle of the pointer. The right side shows the angle of the arc or the change in angle from the stationery end to the pointer's position.

- As you drag the circular handle of a selected rounded rectangle, the corner's radius is displayed.
- As you draw a polygon, smooth polygon, or Bézier curve, the pointer's position in the Canvas Window is shown.
- As you drag the vertex of a polygon, smooth polygon, or Bézier curve, the pointer's location in the Canvas Window is shown.
- As you auto trace a paint object to a Bézier curve, the percentage of the trace completed is shown.

Justification

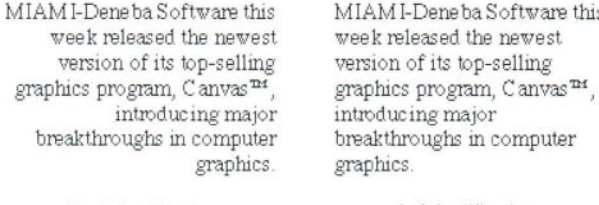
The Justification submenu in the Text menu displays options which let you change the justification of any text object. Text justification is based on the bounding rectangle of the text object. The default setting is left justification; you can also center, right, or full justify your text.

To change the justification of your text:

1. **Select the text object you want to justify.**
2. **Choose Justification in the Text menu to display a submenu of options.**
3. **Drag through the menu to highlight your choice.**

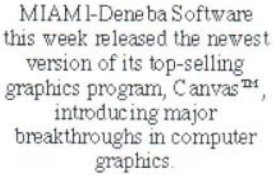
   Canvas places a check mark to the left of your choice.

   Choose **Right** or **Left** to align each line of text with the right or left side of the text object.

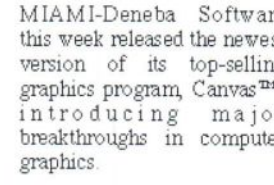


Right justification Left justification

Choose **Center** to center each line of text. Choose **Full** to extend each full line of text from the left to the right side of the text object, adding extra spaces between words when necessary.



Center justification



Full justification

Kerning

The Kerning submenu in the Text menu displays text character spacing options.

- Choose **Very Tight** or **Tight** to decrease the space between text characters.

- Choose **Normal** to space text characters normally according to font size.
- Choose **Loose** or **Very Loose** to increase the space between text characters.

- **Tighten** decreases the space between characters by one-half point and **Loosen** adds a one-half point space between text characters.

The default Kerning option also affects the spacing of tab leader characters. To change the kerning of tab leader characters, select the characters and choose a new kerning option from the Kerning submenu in the Text menu.

Lasso tool

The Lasso tool is used to select a paint area, excluding any non-enclosed background space (not bordered on all sides). You can then remove or copy these selected areas and apply the commands and options in the Effects menu to them. You can use the Lasso tool to select paint areas from scanned images, TIFF files, and other paint objects.

To select a paint area with the Lasso tool:

1. **Select the Lasso tool from the Paint Tools palette in the Tool Box.**

The pointer changes to a lasso.

2. **Drag the pointer inside a paint object to surround the desired area.**

Canvas completes the boundary and selects the lassoed area, excluding non-enclosed background space.

To deselect a lassoed area, click outside of the area, click another object, press the Enter key, or select another tool from the Tool Box.

Lasso tool modifiers

Use the following modifier keys when selecting an area with the Lasso tool to achieve different effects.

- To select more than one area of the same paint object with the Lasso tool, hold down the Control key as you make your selections. Any changes you make will affect all the selected areas.

- To deselect part of a lassoed selection without affecting the rest, hold down the Control and Option keys and draw a lasso around the selection you want to delete.
- To include white space in your selection, hold down the Option key while you make your selection.
- Double-click the Lasso tool on a solid color area of a paint object to select all the connected non-white pixels in the paint object.

Editing lassoed selections

When you have an area selected, you can:

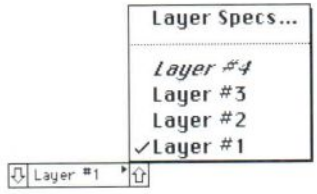
- Drag it to a new position
  - To limit your drag to multiples of 45°, hold down the Shift key as you drag the selection.
  - To drag a copy of the selection while the original remains in place, hold down the Option key while dragging.
  - To leave a trail of multiple copies, hold down the Command (⌘) and Option keys while dragging.
- Copy or Cut it to the Clipboard
- Auto Trace, Fill, or Invert it
- Add 1 Side or 2 Side Perspective
- Delete it
- Rotate it
- Flip it horizontally, vertically, or both
- Skew or Distort it

You can deselect a lasso selection by clicking outside of the area, clicking another object, pressing the Enter key, or choosing another tool from the Tool Box.

Layer palette icon

The Layer palette icon is located at the bottom of the Canvas Window, to the left of the Information Manager. It lists the layers in your document and the Layer Specs command. Invisible layers appear in italics.

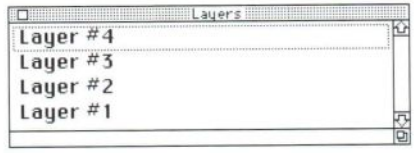
Choose the Layer palette icon and drag through the palette to highlight your choice. The layer you choose becomes active. Choose Layer Specs to display the Layer Specifications dialog box (described on page 19-132).



Invisible layers appear in italics. You can select an invisible layer to move to it and make it visible.

Layers tear-off palette

You can also keep the Layers palette open as you work on your document. To do so, drag through the Layer palette icon until you tear it away from the bottom of the Canvas Window.



User Tip: Double-click the Layers tear-off palette to open the Layer Specifications dialog box and edit the layers.

The next time you want to move to another layer, you can use this palette instead of choosing the Layer palette icon at the bottom of the Canvas Window.

You can move this palette anywhere in the document by dragging it by its title bar. To close the palette, click the close box in its upper left corner.

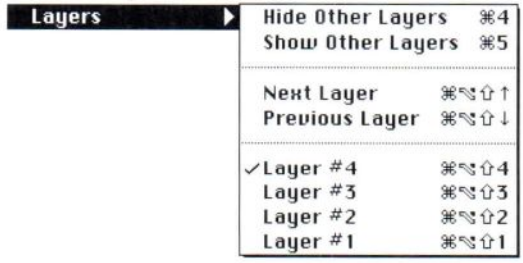
Using modifier keys with the Layer palette icon

You can also use modifier keys when choosing a layer from the Layers palette. You can choose visible or invisible layers and make layers visible or invisible. Invisible layers appear in italics in the Layers palette.

- To choose a new active layer, regardless of whether or not it is visible, and make the current layer invisible, hold down the Option key and choose the layer or click the up or down arrow in the Layer palette icon. The layer you are on becomes invisible and the one you choose becomes active.
- To move up a layer or down a layer, regardless of whether or not it is visible, without making the current layer invisible, hold down the Command key (⌘) and click the up or down arrow in the Layer palette icon.
- To make a visible layer invisible or vice versa without moving to it, hold down the Shift key and choose the appropriate layer from the Layers palette.

Layers

You can easily switch between layers in your document by choosing a different layer from the Layers submenu in the Layout menu. The Layers submenu lists all of the layers in your document plus other options.



Choose Layers from the Layout menu and drag through the menu to highlight your choice.

- Choose the layer you want to go to from the bottom of the menu. All the layers in your document are listed at the bottom of this menu.

  You can also use combination keystrokes to move between layers one through 10. Type ⌘-Option-Shift-1 through ⌘-Option-Shift-9 for layers one through nine and ⌘-Option-Shift-0 for layer 10.

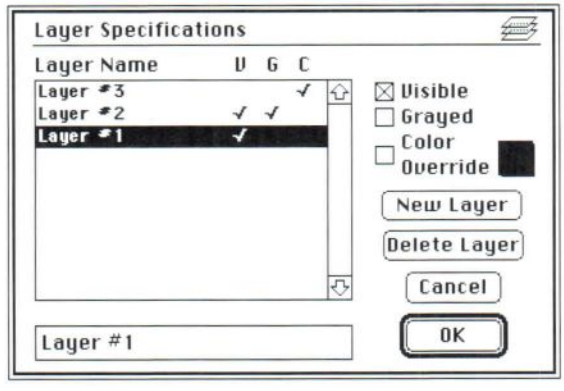
- Choose **Next Layer** (⌘-Option-Shift-↑) or **Previous Layer** (⌘-Option-Shift-↓) to move up or down to the next visible layer in your document.

- Choose **Show Other Layers** (⌘-5) to display all the layers of your document at once. This option makes all layers visible.

- Choose **Hide Other Layers** (⌘-4) to hide all the layers except the one you are currently working on. This option makes all layers except the active one invisible.

Layer Specs...

The Layer Specs command (⌘-B) in the Layout menu displays the Layer Specifications dialog box. The Layer Specifications dialog box lets you add, delete, and customize layers.



The Layer Specifications dialog box is available when Layer Specs is active in your Canvas Tools folder. For more information on the external tools in this folder, see page 19-87.

A Canvas document may have an unlimited number of user-defined layers. A layer is like a sheet of glass; it is transparent until modified.

Adding and deleting layers

To create a new layer, click **New Layer.** Canvas names the new layer Layer #__, where the __ represents the next sequence number for the new layer. Type a name for the new layer in the text box.

To delete a layer, select it in the scrolling list and click Delete Layer.

Modifying a layer

You can make your layers visible, invisible, or grayed. You can also apply a single color to all objects on a layer. To do so, select a layer in the scrolling list by clicking it. The layer highlights.

- To make a layer visible, select **Visible** or click under V in the scrolling list. A check mark appears under V in the scrolling list next to the layer. You can view all the objects in a visible layer.

  If Visible is not selected, the layer is invisible. Invisible layers cannot be seen or printed.

- To make all the objects on the layer appear gray, select **Grayed** or click under G in the scrolling list. A check mark appears under G next to the layer's name. Grayed layers will not print but can be edited.

- To apply a foreground color choice to all the objects in the layer, select **Color Override** or click under C in the scrolling list. A check mark appears under C next to the layer's name. Use the Color Override pop-up palette to select a color.

  You can also select a color with the Color Info Manager. To do so, hold down the Shift and Control keys and click the Color Override pop-up box. The Color Info Manager appears.

When you are done, click OK or press the Return key to save your new layers and their characteristics. If you deleted any layers, an alert box appears for each layer, asking if you are sure you want to delete it.

Layout menu

The Layout menu contains commands which affect the appearance of a document. From this menu you can show and customize a document's rulers, go to specific areas of your document with the Views and Layers submenus, and use the Guides and Grids commands to ensure precise placement of objects. The Size option of the Show/Hide submenu displays and hides the pointer's autodimensioning data. You can also display and hide page breaks and change your illustration's overall size using the Drawing Size command.

Leading

The Leading submenu in the Text menu displays a list of line spacing options. The predefined options are **Single Space**, **1 1/2 Space**, and **Double Space**. Choose **Tighten** (⌘-Shift-↑) to decrease the leading by one-half point. Choose **Loosen** (⌘-Shift-↓) to increase the leading by one-half point.

You can create your own leading measurement with the Type Specifications dialog box. See page 19-306 for more information.

The Leading for this text is Single Space.

The Leading for this text is Double Space.

The Leading for this text is 1½ Space.

Line tool

The Line tool creates horizontal, vertical, and diagonal lines. To use the Line tool:

1. **Select the Line tool from the Tool Box.**

Position the pointer in the Canvas Window where the line will begin.

2. **Drag in the direction that you want the line to go.**

When you have finished creating the line, release the mouse button. The line appears selected with handles at both ends. You can reposition the line by dragging it and change its length or slope by dragging either handle.

When you create a line as described in the preceding steps, you can select it and change its pen size, pen pattern, pen mode, foreground color, and background color using the Tool Box palette icons. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

User Tip: Hold down the Shift key when using the Line tool to restrict line segments to 45° angles whether horizontal, vertical, or diagonal.

Lock

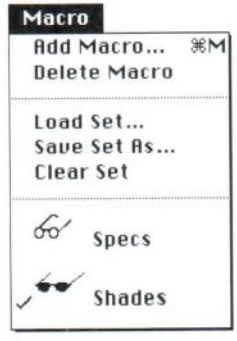
The Lock command (⌘-L) in the Object menu lets you anchor an object or group of objects in place so that they cannot be moved or changed by accident. The Lock command is useful if you have positioned something precisely and you do not want it modified. Select the objects to lock and choose Lock from the Object menu.

When an object is locked, you can select it, duplicate it, move it with the Mover tool, or copy it to the Clipboard, but you cannot cut, clear, flip, move, rotate, or change its properties in any way. If you attempt to move a locked object, Canvas displays an alert box.

To unlock a locked object, select it and choose Unlock (⌘-Option-L) from the Object menu.

Macro menu

The Macro menu lets you store objects or object groups you use frequently. These objects are called MacrObjects. Files of these objects (called macro sets) can be saved for later retrieval. Just as you select the Rectangle tool to draw a square, you can choose a MacrObject to place a customized object in your document at various sizes.



Placing MacrObjects in a document

To place a MacrObject in the Canvas Window:

1. **Choose the Macro menu.**
2. **Drag to highlight a MacrObject from the bottom of the menu.**

   The Macro menu displays the active macro set. A check mark appears next to the currently selected MacrObject.
3. **Click to place the MacrObject in its original size in the active window or drag to create the MacrObject in the desired size.**

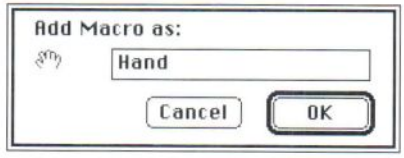
   Your MacrObject is displayed.

Add Macro...

The Add Macro command (⌘-M) lets you add an object or group of objects to the active macro set. A macro set can have up to 32 entries. To add an object or group of objects to the current Macro menu:

1. **Select the objects.**
2. **Choose Add Macro (⌘-M) from the Macro menu.**

A dialog box appears asking you to name the MacrObject.



3. **Type a name and click OK or press the Return key to save the new MacrObject and close the dialog box.**

   The new MacrObject appears in the Macro menu.

To save a MacrObject under a new name:

1. **Choose the MacrObject from the Macro menu.**
2. **Click to place it in the active illustration.**
3. **Choose Add Macro from the Macro menu.**

   A dialog box appears asking you to name your MacrObject.

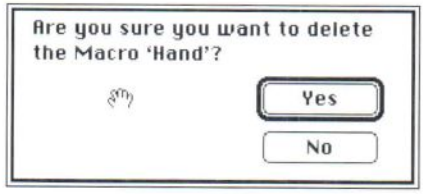
4. **Save your MacrObject under a new name.**

Delete Macro

To delete a MacrObject:

1. **Drag through the Macro menu to highlight the MacrObject you want to delete.**
2. **Choose Delete Macro from the Macro menu.**

   A dialog box appears confirming that you want to delete the MacrObject.



3. **Click OK or press the Return key to delete the MacrObject and close the dialog box or click Cancel if you change your mind.**

User Tip: Draw a MacrObject in the document before deleting it from the menu. If you change your mind you can always add it again.

Load Set

Load Set lets you load or open a macro set into the active Macro menu. To load a new macro set:

1. **Choose Load Set from the Macro menu.**

   Canvas displays a directory dialog box in which you can locate all the macro set files present in the selected disk or folder.

   If you have not saved changes to the active macro set, a dialog box appears asking if you want to do so. If you load a new set without saving changes to the active one, these changes will be lost.

2. **Choose the macro set file you want to load and click Open or press the Return key.**

   The macro set you choose is loaded into the Macro menu and becomes the default macro set for the active document. A check mark appears next to the currently selected MacrObject.

Saving and closing sets

To save the active macro set, choose **Save Set As** from the Macro menu. Canvas displays a directory dialog box. Select the folder and disk where you want to store your macro set file and type a name for your file in the text box. Click Save or press the Return key to save it. Click Cancel if you change your mind.

If you try to save a macro set under the same name as an existing macro set, a dialog box asks if you want to replace the existing file. Click Yes to replace the existing file; click No to return to the Save Set As dialog box so you can type a different name.

Clear Set closes the active macro set, removing it from the Macro menu. If you clear a set without saving changes to it, an alert box appears asking if you want to save the set before clearing it. Click Yes to save the set. Click No to clear the set without saving it. Click Cancel to return to the Canvas Window.

Magnifying Glass tool

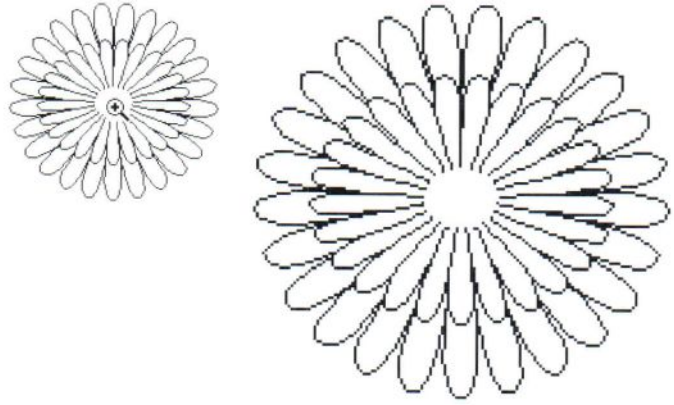
The Magnifying Glass tool lets you zoom in on (magnify) or zoom out of (reduce) your view of the Canvas Window. You can view a specific area of an illustration with varying levels of detail with the Magnifying Glass tool.

To use the Magnifying Glass tool to zoom in on an area:

1. **Select the Magnifying Glass tool from the Tool Box.**

The pointer changes to look like a magnifying glass with a "+".

2. **Position the magnifying glass in the area of the illustration that you want to enlarge and click.**



The magnification levels increase by a factor of two each time you click (2X, 4X, 8X, 16X, and 32X). The magnification levels are 1X (100%) through 14X, 16X, and 32X.

To use the Magnifying Glass tool to zoom out of an area, follow the procedure described above and hold down the Shift key as you click with the Magnifying Glass tool (the pointer changes its shape to look like a magnifying glass with a "-"). The magnification levels decrease by a factor of two each time you click: 2X, 4X, 8X, 16X, up to 32X.

Managers

The Managers submenu in the Edit menu displays a list of the available dialog boxes for configuring the tools and commands in Canvas. When you choose an option from the Managers submenu, a dialog box for customizing that option appears. The Managers submenu lists the following options: (page numbers indicate where each one is described in the Reference section). You can also refer to these options in the *Using* section for more information.

Arrowheads...page 19-10
Auto Trace...page 19-18
Brushes...page 19-34
Color Info...page 19-42
Dashes...page 19-60
Dimensioning...page 19-62
Gradient Fill...page 19-107
GridMaker...page 19-184
Hatch...page 19-118
Multigon...page 19-143
Parallel Lines...page 19-182
Patterns...page 19-188
Pens...page 19-197
RGB Colors...page 19-227
Smart Mouse...page 19-263
Sprays...page 19-285
Star...page 19-289

Marquee tool

The Marquee tool in the Tool Box lets you select rectangular paint areas to edit. You can select paint areas from TIFF files, scanned images, or other paint objects created in Canvas or other applications.

To use the Marquee tool:

1. **Select the Marquee tool from the Paint Tools palette in the Tool Box.**

   The pointer changes to a dotted crosshair.

2. **Move the pointer to a corner of the area to be selected and drag across the area to draw a rectangle around it.**

Canvas selects the area, including any background space. A flashing dotted rectangle marks the selected area.

You can also use the Marquee tool to select an entire paint object. To do so:

1. **Select the Marquee tool from the Paint Tools palette in the Tool Box.**
2. **Double-click the paint object with the Marquee tool.**

   A flashing dotted rectangle marks the selected area.

User Tip: Hold down the Command key (⌘) while using the Marquee tool to snap the marquee tight to the object, cropping any excess background space.

When you have an area selected, you can:

- Drag it to a new position
  - To limit your drag to 45° angles horizontally or vertically, hold down the Shift key as you drag the selection.
  - To drag a copy of the selection while the original remains in place, hold down the Option key while dragging.
  - To leave a trail of multiple copies, hold down the Command (⌘) and Option keys while dragging.
- Copy or cut it into the Clipboard
- Auto trace it
- Fill or invert it
- Add 1 Side or 2 Side Perspective
- Delete it

- Rotate it
- Flip it horizontally, vertically or both
- Skew or distort it

You can deselect a marquee selection by clicking outside of the area, clicking another object, or choosing another tool from the Tool Box.

Menu bar

The Canvas menu bar is located at the top of your screen. Standard Macintosh and special Canvas pull-down menus are located here. These menus and commands are discussed individually in the *Reference* section and the *Using* section.

 File Edit Text Object Layout Effects Macro Windows

Mover tool

The Mover tool lets you change the location of all the objects in all the layers of your document at once without selecting them. The Mover tool moves all the objects in your document, regardless of what layer they are in or whether that layer is active, visible, or grayed. The Mover tool also moves locked objects.

This tool is available through Mover in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Mover tool:

1. **Select the Mover tool icon from the Object Tools palette.**

   The pointer changes to a sideways hand.

2. **Hold down the pointer inside your document and drag the objects to a new location.**

   The objects move in the direction you drag.

Multigon...

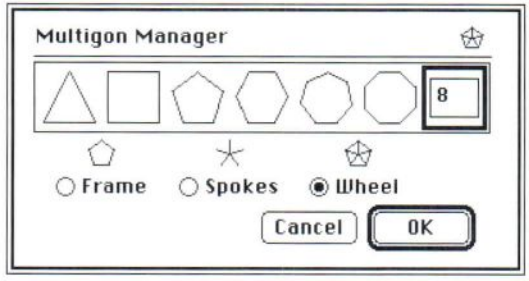
The Multigon option of the Managers submenu in the Edit menu displays the Multigon Manager. This dialog box lets you configure the Multigon tool by choosing the style and number of sides you want for your multigons.

The Multigon Manager is available through Multigon in your Canvas Tools folder. See page 19-92 for more information on external tools.

To display the Multigon Manager:

1. **Choose Multigon from the Managers submenu in the Edit menu or double-click the Multigon tool in the Object Tools palette.**

   The Multigon Manager appears.



2. **Click one of the predefined figures or type the number of sides you want in the text box.**

   Canvas can create multigons with 3 to 100 sides.

3. **Click the button next to Frame, Spokes, or Wheel to select a style.**

   - Select **Frame** to create an outline of the figure with the number of sides you specify.
   - Select **Spokes** to create a figure with a number of radii equal to the number of sides you specify.
   - Select **Wheel** to create a figure with spokes and a frame based on the number of sides you specify.

4. **Click OK to save your changes, or Cancel if you change your mind.**

   The dialog box closes and you return to the Canvas Window.

Multigon tool

The Multigon tool in the Object Tools palette is an external tool that lets you create multisided polygons.

The Multigon tool is available through Multigon in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To create shapes with the Multigon tool:

1. **Select the Multigon tool from the Object Tools palette in the Tool Box.**

2. **Position the pointer where you want to begin and drag to draw the multigon.**
3. **Release the mouse when the multigon is of the desired shape and size.**

Multigon tool modifiers

Use the following modifier keys while creating multigons to add effects to the object.

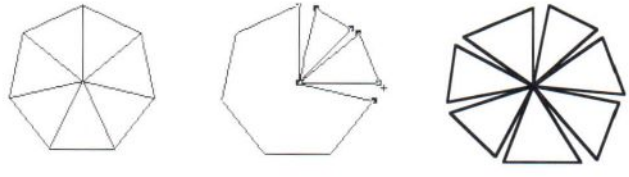
- To create the multigon from the center outwards, hold down the Option key as you drag.
- For a flowerlike effect, choose the Wheel option from the Multigon Manager and hold down the Command key (⌘) as you create the shape to smooth it.

- To constrain the multigon's bounding rectangle to a square, hold down the Shift key as you drag.
- To draw the multigon from the center and constrain its bounding rectangle to a square, hold down the Shift and Option keys as you drag to draw it.

Editing multigons

When you create a multigon as described in the preceding steps, you can select it and change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the Tool Box palette icons. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

Multigons created in this manner are created as polygons and can be edited as such. Select a multigon and choose Edit Polygon (⌘-E) from the Edit menu to place it in the edit mode. You can then reposition its many vertices.



New

The New command (⌘-N) in the File menu opens a new untitled document. This document is created from information in the Canvas Prefs file (see page 19-35). You can have as many documents open at one time as the memory of your computer allows. The new documents you create are named Untitled-1, Untitled-2, and so on until you save them under a new name.

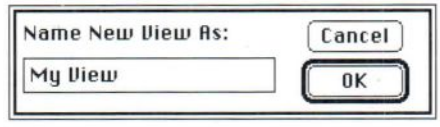
New View...

The New View command (⌘-Option-N) in the Layout menu records your location and magnification level in the Canvas Window and saves

it as an option in the Views submenu of the Layout menu. To define a view:

1. **Move to the area of your illustration you want to record as a view.**
2. **Set the desired magnification or reduction level.**
3. **Choose New View from the Layout menu.**

   A dialog box appears.



4. **Type a name for your view in the dialog box and click OK or press the Return key to save your view; click Cancel to return to the Canvas Window without saving your view.**

   The view appears in the Views submenu in the Layout menu (see page 19-307).

Object menu

The Object menu contains commands that affect the state of individual objects or object groups in a layer of your illustration. You can rearrange the stacking order of your objects with the Arrange submenu and modify multiple characteristics of an object at one time with the Object Specs command. You can group or ungroup objects and lock objects to prevent future modification. The Align command lets you align and distribute objects while the Edit command places an object in the edit mode. Special object commands let you create object blends, add hatch patterns and gradient fills, and create new objects by combining existing ones.

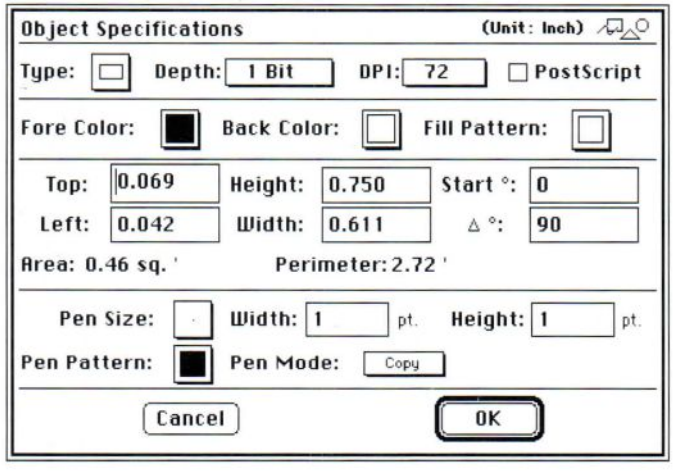
Object Specs....

The Object Specs command (⌘-I) in the Object menu opens the Object Specifications dialog box. This dialog box lets you change the properties of a selected object. This command reads *Object Specs* when one object is selected and *Group Specs* when several individual objects

or an object group are selected. The Group Specifications dialog box is described separately in the *Reference* section.

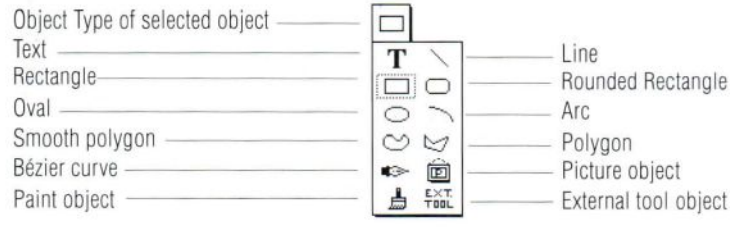
The Object Specs command is available through Object Specs in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

When you choose Object Specs with one object selected, the following dialog box appears:



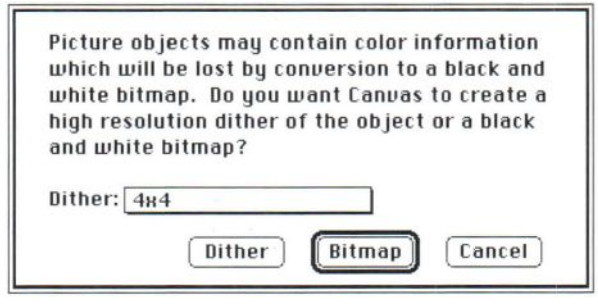
The currently selected object's properties, size, and location in the Canvas Window are displayed as well as the object's type, area, and perimeter. These dimensions are measured according to the active ruler's units, displayed in the top right corner of the dialog box.

Type: Use the Type pop-up menu to change the selected object's type. The object type you choose determines which properties you can change in the Object Specifications dialog box.



A picture object is the object type with the fewest editing options. See "Paste Picture Object" on page 19-83 for more information. The Cube tool, GridMaker tool, Dimensioning tool, Registration Marks tool, and Parallel Lines tool create external tool objects.

If you change a picture object to a 1-bit paint object, the following dialog box appears. You can create a black-and-white dither of the object, convert it to a 1-bit paint object, or cancel the conversion.



To dither the object, choose a dither option from the Dither pop-up menu and click Dither. To convert it to a 1-bit paint object, click Bitmap. Click Cancel to return to the Canvas Window without changing the selected object.

DPI: The DPI (dots-per-inch) pop-up box is enabled when the object type is a paint object. You can choose from the following available resolutions: 72, 144, 216, 300, 635, 1270, and 2540. Increasing the resolution of the object also increases its memory requirement.

If you change the dpi of a paint object, an alert box appears when you click OK asking if you want to maintain the object's size. If you click Yes, Canvas adds or subtracts bits from your image to make up the difference. If you click No, Canvas shrinks or expands each pixel in the image to make it conform to your DPI choice, resulting in a reduced or enlarged image.

Depth: This pop-up menu lets you change the depth of a selected paint object. Choose 1 Bit, 8 Bit, or 32 Bit. This menu is enabled when you are using a Macintosh with color QuickDraw capabilities; the 32 Bit option is enabled when you have 32-bit color capabilities. The depth of a paint object specifies how many bits are used to define each pixel.

The greater the depth, the more possible shades can be displayed by each pixel.

If you change a paint object's depth from 8-bit or 32-bit to 1-bit, an alert box appears. This change causes the paint object to lose all color and be displayed in the foreground and background color chosen in the dialog box.

PostScript: The PostScript check box is enabled when the object type is text. Select this check box to include PostScript code with your document.

Fore Color, Back Color, Fill Pattern, Pen Pattern, Pen Mode: Use these pop-up boxes to change these properties.

You can change the foreground color and background color of draw objects and 1-bit paint objects. When you change the foreground and background color of a 1-bit paint object, you might have to change its pen mode to Copy in order to view both colors.

In the **Pen Size** pop-up menu you can choose a new size or type a **Height** and **Width** in the adjoining text boxes. You cannot change a paint object's fill pattern or pen size.

Height and **Width:** You can change the size of the object's bounding rectangle by typing new values in the Height and Width text boxes.

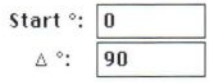
Click *Height* or *Width* to display the **Bottom** and **Right** text boxes. Bottom refers to the distance from the bottom of the object to the top of the Canvas Window and Right refers to the distance from the right edge of the object to the left edge of the Canvas Window.

Top and **Left:** You can change the location of an object by typing new values in the Top and Left text boxes. Top refers to the distance from the top of the object to the top of the Canvas Window and Left refers to the distance from the left edge of the object to the left edge of the Canvas Window.

If the object type is a line, Top is replaced by **Start v** and Left is replaced by **Start h**.

Δ v, Δ h: These options appear when the object type is a line. Δ v refers to the vertical change in distance from the start of the line to the end of the line. Δ h is the horizontal change in the line from its start to its end.

Start °, Δ °: If the object type is an arc, additional text boxes are displayed indicating the arc segment's starting point (Start °) and the segment's length in degrees (Δ°).



Dia. H., Dia. V.: If the object type is a rounded rectangle, the Dia. H. and Dia. V. text boxes appear. These values indicate the horizontal and vertical diameters of the rounded corners.

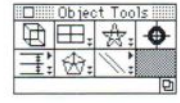
Calculate: Click the Calculate button to configure the area and perimeter of the selected object. This button appears when the object type is a Bézier curve, smooth polygon, or a polygon with many points.

Object Tools palette icon

The Object Tools palette icon in the Tool Box displays a palette of tools used to create draw objects. You can tear this palette away from the Tool Box and keep it open as you work on your document.

If these tools are in your Canvas Tools folder and have not been turned off in the ToolPicker dialog box, they appear in the Object Tools palette: Cube tool, Dimensioning tool, GridMaker tool, Multigon tool, Parallel Lines tool, Registration Marks tool, and Star tool.

Object Tools palette icon

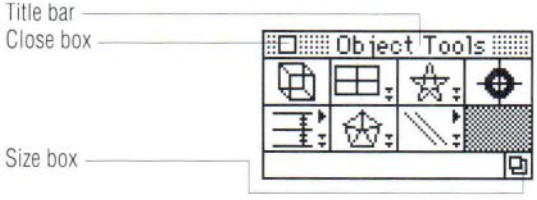


Object Tools tear-off palette

The Object Tools palette icon changes each time you select a different tool. A single right-facing indicator (▶) shows that a palette is displayed when the pointer is held down on the icon.

Object Tools tear-off palette

You can tear the Object Tools palette away from the Tool Box and keep it open as you work on your documents. To do so, select the Object Tools palette icon and drag through it to tear it away from the Tool Box. You can also display this palette by choosing the Object Tools command in the Windows menu.



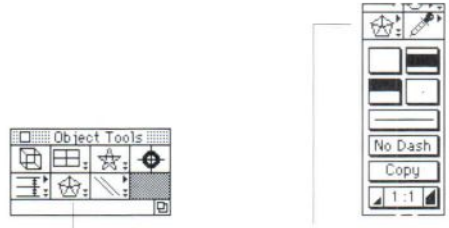
To move the palette to another location, drag it by its title bar. Use the size box in the lower right corner to reshape the palette. Click the close box in the upper left corner to close the palette.

Multiplex icons

Some of the tool icons in the Object Tools palette are multiplex icons which can display dialog boxes and/or pop-up palettes.

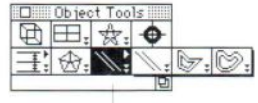
- A tool icon with two downward-facing arrows (⬙) displays a dialog box when you double-click it. The dialog box lets you configure the tool. In the Object Tools palette, these tools are the Dimensioning tool, Parallel Lines tool, Star tool, Multigon tool, and GridMaker tool.

  To double-click a tool icon you must select the tool from the palette so that it becomes the palette's icon or tear the palette away from the Tool Box.

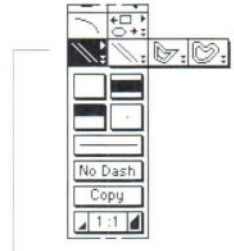


Double-click a tool icon with two downward-facing arrows in the Tool Box or in the palette to open the tool's manager

- When the Object Tools palette is open, tool icons with a single right-facing indicator (▶) signify a pop-up palette is displayed when you hold down the pointer on the icon. If the tool is the Tool Box palette icon, hold down the Option key and select the tool to display its pop-up palette. The Parallel Lines and Dimensioning tools display pop-up palettes.



Hold down the pointer on a tool in the tear-off palette with a right-facing triangle to display its pop-up palette



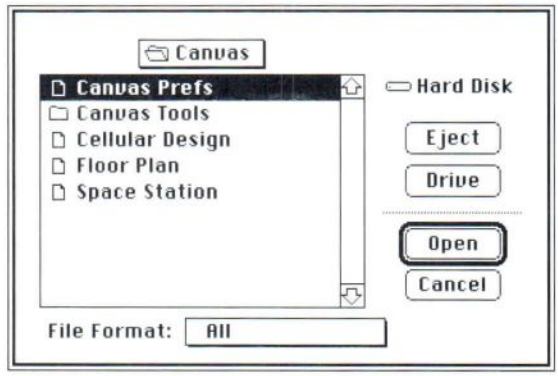
Press the Option key and hold down the pointer on the Object Tools palette icon to display the selected tool's pop-up palette

Open...

The Open command (⌘-O) in the File menu opens Canvas documents from inside Canvas. To open a document while you are in Canvas:

1. **Choose Open from the File menu.**

   Canvas displays a directory dialog box.



2. **Choose the format of the document you want to open from the File Format pop-up menu.**
3. **Locate the file you want to open in the directory.**

   Click Drive to open a document on another disk. Use the directory to locate the correct folder.
4. **Select the document you want to open.**
5. **Click Open or double-click the document's name in the directory.**

   Your document opens.

You can also open a document by double-clicking its icon on the Finder desktop. Canvas launches if necessary and the document opens.

Canvas compresses files you save in the Canvas format. A document that is indicated to be 100K in size on disk might actually be 500K when open, although you do not necessarily need 500K of contiguous memory to open it.

File Formats

When you choose a file format from the File Format pop-up menu, only documents saved in that format are displayed in the directory. You can open documents that have been saved in many different formats. Many of these formats are available through external tools in your Canvas Tools folder; see page 19-92 for more information on external tools.

All: Choose All if you want to be able to open documents saved in any of the file formats listed in the File Format menu.

Canvas Prefs: Canvas Prefs is the file format used for Canvas Prefs files. See page 19-35 for more information.

Canvas: Canvas is the default format for Canvas documents.

Canvas 1.0 I/O: This format lets you open documents created in Canvas version 1.0; it is available through Canvas 1.0 I/O in your Canvas Tools folder.

CGM: CGM (Computer Graphics Metafile) is a format commonly used by mainframe and IBM PC-compatible technical illustration programs. This format is available through CGM I/O in your Canvas Tools folder. See page 19-234 for more information on this format.

DXF, **IGES:** DXF and IGES are formats commonly used by technical illustration programs. Choose DXF or IGES if you want to open an AutoCAD™ document or a Canvas document saved in the DXF (Drawing Exchange file Format) or IGES (Initial Graphics Exchange Standard) format. See page 19-158 for more information on these formats. These options are available through DXF I/O and IGES I/O respectively in your Canvas Tools folder.

EPSF: The EPSF (Encapsulated PostScript) format translates a document into the PostScript page-description language. When you open an EPSF file, illustrations are displayed as white boxes with cross marks in the center and can be edited as picture objects. To view the illustration, select the box and change its fill pattern to white. See page 19-235 for more information on this format. This option is available through Illustrator tool in your Canvas Tools folder.

Illustrator 1.1™, **Illustrator 88™**: The Illustrator 1.1™ and Illustrator 88™ formats let you open files created in Illustrator 1.1™, Illustrator 88™, or files created in Canvas and saved in these formats. To import files created in Illustrator 3.0, the files must have been saved in the Illustrator 88™ format with the Include Header option selected. See page 19-234 for more information on these formats. These options are available through Illustrator I/O in your Canvas Tools folder.

MacDraw I™, **MacDraw II™**: The MacDraw I™ and MacDraw II™ formats let you open documents created in the programs MacDraw I™ or

MacDraw II™. These options are available through MacDraw I/O in your Canvas Tools folder.

MacPaint™: The MacPaint™ format lets you open documents that were saved in the MacPaint™ format. This option is available through MacPaint I/O in your Canvas Tools folder.

PICT: The **PICT** format lets you open documents saved in the PICT format. See page 19-235 for more information on this format.

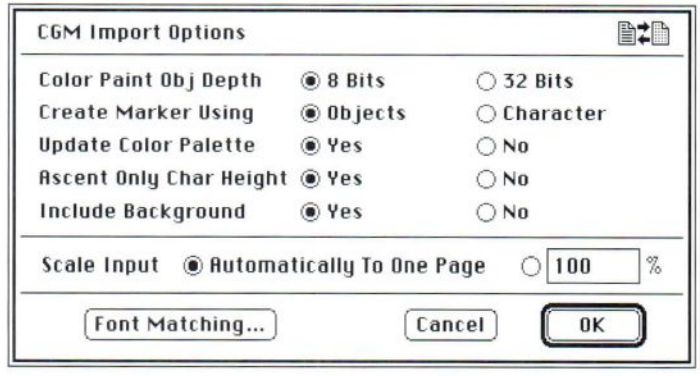
StartupScreen: The StartupScreen format lets you open StartupScreen documents. A StartupScreen documents is an illustration that appears when you start up your computer (see page 19-242). This format is available through StartupScreen I/O in your Canvas Tools folder.

TIFF: The TIFF (Tagged Image File Format) format lets you open documents saved as TIFF files. This option is available through TIFF I/O tool in your Canvas Tools folder.

UltraPaint: The UltraPaint format lets you open UltraPaint™ documents in Canvas. This option is available through UltraPaint I/O in your Canvas Tools folder.

Opening CGM files

Hold down the Command key (⌘) when opening a CGM file until the CGM Import Options dialog box appears. Use this dialog box to change the default settings shown in the following illustration.



Color Paint Obj Depth: Choose 8 Bits or 32 Bits to assign a depth to the color paint objects you import. The greater the depth of a paint object, the more possible shades can be displayed by each pixel.

Create Marker Using: CGM files often use text characters as markers to represent such things as points on a graph. When you import a CGM file, you can display these markers as draw objects or text characters. Select Objects or Character respectively to do so. Select an option depending on how you want to edit the markers in Canvas.

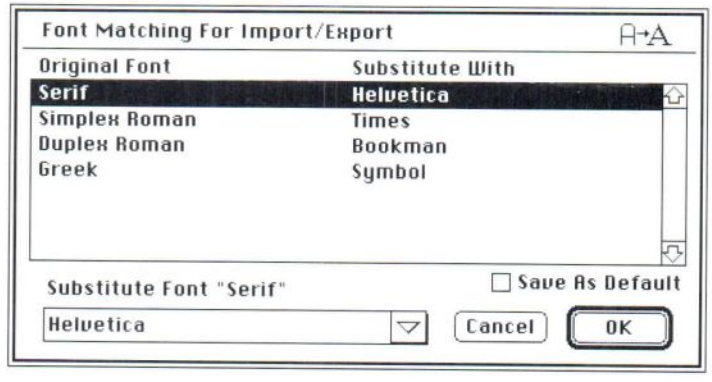
Update Color Palette: If you choose Yes, Canvas builds a new color palette using the 254 most used colors in the CGM file's color table, plus black and white, when importing a CGM file. If you choose No, the CGM file's colors are indexed to the active color palette.

Ascent Only Char Height: This option lets you compensate for the non-standard method some CGM files use to measure text. Choose Yes unless your text characters appear too large; then try reimporting the file and choosing No.

Include Background: Choose Yes to include the CGM file's background in the Canvas document. Choose Yes unless your document appears completely black; then try choosing No.

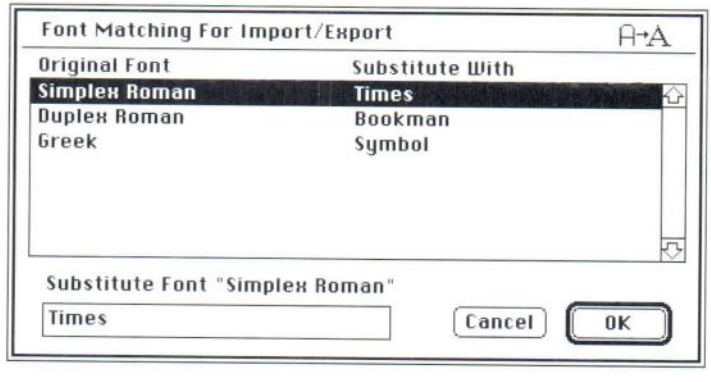
Scale Input: Select Automatically To One Page to scale the images in the CGM file to fit on one page of a Canvas document. Use the adjacent text box to specify your own scaling percentage and make them larger, smaller, or unchanged. If you import a large detailed document, you might want to increase the scale.

Font Matching: Click Font Matching to display one of two dialog boxes. To substitute Macintosh fonts for the CGM fonts used in the file you are opening, click Font Matching.



- The fonts listed under **Original Font** are the fonts used by your document; **Substitute With** lists their default substitutions. To choose a new substitute font, click the font in the scrolling list and the line highlights. Type a new font name in the text box at the bottom of the dialog box. You can also choose the downward-facing indicator adjacent to the text box and drag through the pop-up menu to choose a font.
- Click **Save As Default** to save the substitution as a default font substitution. The font will then appear in the pop-up menu adjacent to the text box and each time you open a CGM file, that substitution will occur unless you specify otherwise.

To change the default font substitutions, hold down the Option key and click Font Matching. A dialog box listing the default font substitutions appears.

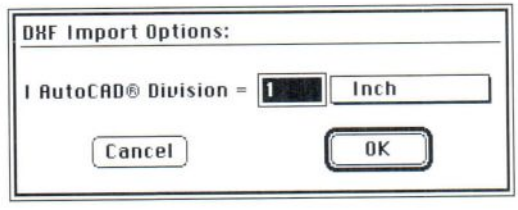


- Click the Original Font in the scrolling list whose default substitution you want to change and type a new font in the Substitute Font text box.
- To delete a default setting, select the line in the scrolling list and delete the Substitute Font from the text box.

When you are done, click OK in the Font Matching dialog box to return to the CGM Import Options dialog box. Click OK in this dialog box as well. A thermometer box appears indicating that Canvas is importing the CGM file. To prevent the file from opening, click Cancel.

Opening DXF files

Hold down the Command key when opening a DXF file to display the following dialog box.



1 AutoCAD® Division: Set the scale for your drawing by typing the number of Canvas units for each AutoCAD® unit in the text box and choosing the Canvas unit of measure from the adjacent pop-up menu.

Canvas imports objects from DXF files in the following manner.

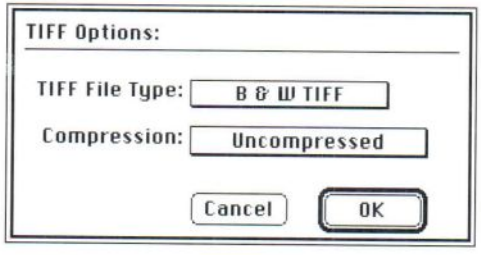
- 3-D lines are imported as 2-dimensional lines.
- 3-D Face is imported as a 2-D polygon.
- Circles are imported as ovals.
- Trace, Solid, Polyline, Vertex, and SEQEND are imported as polygons.
- Shapes, Blocks (BLKEND), and inserts are imported as groups.
- ATTDEF and ATTRIB are imported as text.

Opening IGES files

Canvas imports 3-D objects from IGES files as 2-D objects. However, if no Canvas object can estimate the original 3-D object (for example, a sphere), the object is not imported.

Opening TIFF files

When opening a TIFF file that contains color or gray-scale images, hold down the Command key (⌘) to bring up a TIFF Options dialog box. This dialog box lets you select the type of palette that you want to open with your TIFF file. If you do not hold down the Command key, the TIFF file opens with the default settings for your file type.



When TIFF files are created, the values of the shades for each pixel in the TIFF image are saved. When you open a TIFF file, Canvas matches each pixel's values to the closest color in the active color palette.

> **User Tip:** When opening a large color TIFF file, you should allot extra RAM to the Canvas application on the Finder desktop. (3X the amount of the TIFF file is recommended.)

Color Options: The Color Options pop-up menu lets you change the appearance of the colors in the document. The type of TIFF image contained in the document and the type of computer you are using determine which of these options are enabled. The default Color Option depends on the type of images in your file.

- Choose **Color** if you want your TIFF file to be displayed in color. This option is only available when the file contains a color TIFF image.

- Choose **Gray-scale** if you want the colored pixels in your document to be converted to shades of gray or if your document contains a gray scale image.
- Choose **B & W Dither** if you want to dither your TIFF file.

  B & W Dither creates patterns of black-and-white pixels to simulate shades of gray. In a dither pattern, areas with a high density of black pixels appear dark and areas with a lower density of black pixels appear lighter. View the illustration at 400% to see the gray shades as they print on a LaserWriter; dithered patterns cannot be printed on an ImageWriter.
- The **32 Bit Color** option is enabled when you have 32-bit color capabilities. With this option, Canvas dithers 32-bit images to 8-bit for screen display.

Palettes: The Palettes pop-up menu lets you choose the palette you want to open your TIFF file with.

- Choose **Optimize Palette** if you want to open your TIFF file with a palette containing the 256 most used shades in the document. This option is not available when you choose Gray-scale from the Color Options pop-up menu. This is the default option for color TIFF files when enough memory is available; otherwise the current color palette is used.
- Choose **128 Colors 128 Grays** if you want to open your TIFF file with a combination color and gray-scale palette. This option is not available when you choose Color from the Color Options pop-up menu. This is the default option for TIFF files containing gray-scale images.
- Choose **256 Grays** if you want to open your TIFF file with a palette composed exclusively of shades of gray. This option is not available when you choose Color from the Color Options pop-up menu.
- Choose **Custom Palette** if you want to open your TIFF file with a previously saved palette. A directory dialog box appears asking you to locate and open the custom palette. This option is not available when you choose Gray-scale from the Color Options pop-up menu.

Oval tool

The Oval tool lets you draw ovals or circles. To draw an oval:

1. **Select the Oval tool from the Tool Box.**

2. **Hold down the pointer in the Canvas Window and drag to create the oval.**

   Hold down the Shift key while dragging to create a circle. Hold down the Option key to draw the oval from the center.

3. **Release the mouse button when the oval is of the desired shape and size.**

   Handles appear around the its bounding rectangle to indicate that it is selected.

When you create an oval as described in the preceding steps, you can select it and change its properties using the palette icons in the Tool Box. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

Changing the roundness of an oval

To change the roundness of a selected oval, drag on one of its handles or choose Object Specs (⌘-I) from the Object menu and type in a new height and width.

Opening ovals and circles

Canvas lets you open an oval or circle, converting it to an arc.

To open an oval or circle:

1. **Draw or select an oval or circle.**
2. **Hold down the Command key (⌘) and select the Arc tool.**
3. **Move the pointer into the Canvas Window.**

A line extends from the center of the selected oval.

4. **Drag to redraw the oval, creating as large an opening as you wish.**

When you redraw the oval it is created as an arc and can be edited as such. See "Arc tool" on page 19-6 for editing information.

Page Setup...

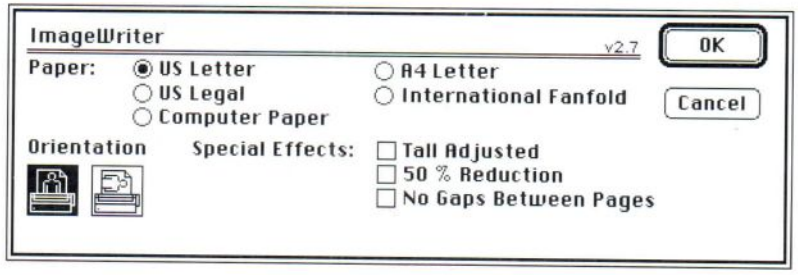
The Page Setup command in the File menu opens a dialog box which lets you select page settings for printing. These settings apply only to the active (topmost) document. Whenever you save a document, these page settings are saved with it.

Use the Page Setup dialog box to define the paper size and orientation. You can also define the printing order of multiple page documents and control the overlap between pages (tiling). The settings you select here can affect the rulers, page breaks, drawing size, and dimensions of your document.

The options available in Page Setup and the appearance of the dialog box depend on the printer you are using.

ImageWriter Page Setup

The ImageWriter Page Setup dialog box lets you select the paper size, orientation, and several special effects for your printout.



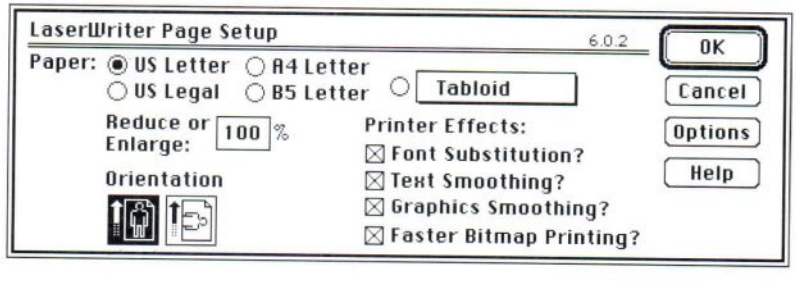
The paper sizes available in the ImageWriter Page Setup dialog box are US Letter, US Legal, Computer Paper, A4 Letter, and International Fanfold. Select the paper size your printer normally uses.

You can also select the **Orientation** of the images on the paper. The images can be printed upright or sideways.

The **Special Effects** options affect the printed images in a document.

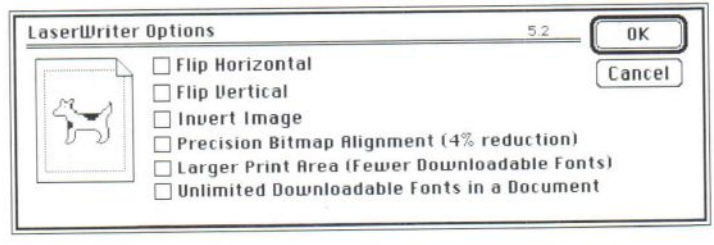
- **Tall Adjusted** keeps all printed dots square, just like they appear on the screen. Make sure this option is always checked.
- **50% Reduction** prints the document at one-half its size and at one-fourth of its area.
- **No Gaps Between Pages** eliminates the margins around printed pages. It is useful when printing multi-page documents whose edges have to be pasted together.

If you are using a LaserWriter printer there are additional **Printer Effects** options you should be familiar with.



- **Font Substitution** tells the LaserWriter to substitute any font it does not recognize with the closest available LaserWriter font. Otherwise, these fonts print at ImageWriter resolution.
- **Text Smoothing** and **Graphics Smoothing** tell the LaserWriter to process the drawing to decrease the jaggedness of diagonal lines. This slows down the printing of paint objects considerably. Try printing the same document with the Smoothing options on and off to see which you prefer.
- **Faster Bitmap Printing** preprocesses paint objects before printing them, which usually results in faster printing.

The LaserWriter driver version 5.2 or later includes several important options. Click **Options** to open the LaserWriter Options dialog box.



The effect of the options you check is shown on the picture on the left side of the dialog box.

Flip Horizontal creates a mirror image of the document, turning it on its vertical axis.

Flip Vertical turns the image upside down.

Invert Image turns colored pixels white and white pixels black, creating a negative of the image.

Precise Bitmap Alignment reduces everything on the page by 4%. *Do not check this option*; Canvas is optimized to print on a LaserWriter with this option off. Paint objects, particularly 300 dpi paint objects, do not print correctly with this option on.

Larger Print Area (Fewer Downloadable Fonts) increases the space on the page allotted for printing. However, this option can use memory which is needed to store downloadable fonts.

Unlimited Downloadable Fonts In a Document lets you download as many fonts as you want to a printer, but might increase printing time.

If precise dimensions are important in your drawing, make sure the Printer pop-up box in the Ruler Specifications dialog box is set to the printer you are using before you print.

Paint Brush tool

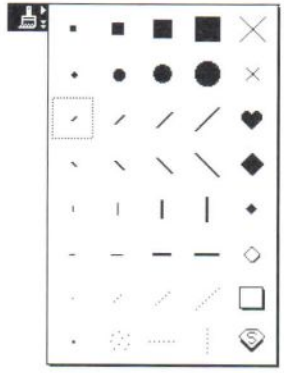
The Paint Brush tool in the Paint Tools palette paints using the currently selected pen pattern, foreground color, background color, and brush shape. You can use the Paint Brush tool to edit paint objects, including TIFF files and scanned images, or create new paint objects.

To use the Paint Brush tool:

1. **Select the Paint Brush tool from the Paint Tools palette in the Tool Box.**

2. **Hold down the pointer on the tool in the palette to display a pop-up palette of brush shapes.**

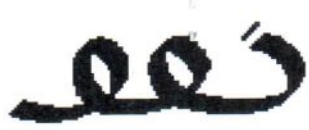
   If the tool appears as the Paint Tools palette icon in the Tool Box, you must hold down the Option key when choosing the icon to display the palette.



3. **Drag through the palette and enclose a brush shape in the selection box.**

The pointer changes to that brush shape.

4. **Hold down the pointer in the Canvas Window and drag to paint.**



If you paint inside an existing paint object, your painting becomes part of that paint object.

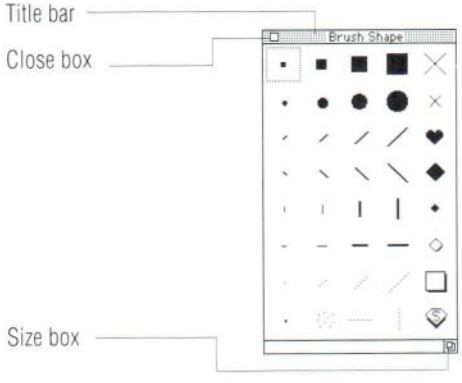
5. **Release the mouse button when you are done.**

The new paint object appears surrounded by notched handles.

Brush Shape tear-off palette

The Brush Shape palette contains the available brush shapes for the Paint Brush tool. You can edit these brush shapes with the Brush Manager (see page 19-34). To display the Brush Shape palette, hold down the Option key and select the Paint Brush tool icon; if the Paint Tools tear-off palette is open, simply hold down the pointer on the icon.

To remove this palette from the Tool Box and keep it open as you work on your document, drag through the palette until it tears away.



The next time you want to select a new brush shape you can click to select it from this palette. You can move this palette anywhere in the document by dragging its title bar. To change the shape of the palette, drag the size box in the lower right corner. To close the palette, click the close box in its upper left corner.

User Tip: Double-click the Brushes tear-off palette to open the Brush Manager and edit the brush shapes.

Paint Bucket tool

The Paint Bucket tool applies the current foreground color, background color, and fill pattern to a uniform bounded area within a paint object. The Paint Bucket tool can be used to edit paint objects created in Canvas or other applications, including scanned images. To use the Paint Bucket tool:

1. **Select the Paint Bucket tool from the Paint Tools palette in the Tool Box.**

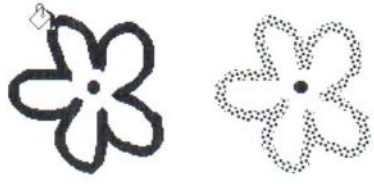
The pointer changes to a pouring paint bucket.

2. **Position the tip of the paint bucket in any bounded area within a paint object.**

The paint bucket is enabled when it is inside an active paint object; otherwise, it appears gray.

3. **Click to pour the paint.**

The current fill pattern fills the area you clicked. If you click a foreground color pixel, all the foreground color pixels in the bounded area of the paint object change. The same is true for background color pixels.



Editing patterns

Double-click the Paint Bucket tool icon to display the Pattern Manager. Use this dialog box to edit the available fill and pen patterns. See page 19-188 for more information on the Pattern Manager.

Paint Object Creator tool

The Paint Object Creator tool creates empty rectangular paint objects. You can also set the resolution (dots per inch - dpi) of these paint objects before you create them. Any object you create in an active paint object becomes part of the paint object.

A paint object is an image defined by a grid of pixels (dots) displayed on screen. These pixels are arranged to form images, from circles and squares to abstract scribbles. Unlike draw objects, which are defined by their size, shape, and position on the screen, you can edit or remove one pixel in a paint object without affecting its neighbor.

To use the Paint Object Creator tool:

1. **Select the Paint Object Creator tool from the Paint Tools palette in the Tool Box.**

2. **Press the Option key and hold down the pointer on the tool to display a pop-up menu of resolution options.**

   If the Paint Tools tear-off palette is open, you do not need to hold down the Option key to display this menu.

3. **Drag through the menu to choose the desired resolution level.**

   Choose 72, 144, 216, or 300 dpi. The next paint object you create with this tool will be set to the resolution you choose.

4. **Hold down the pointer in the Canvas Window and drag to create a rectangular paint area.**

When the paint area is complete, Canvas makes it active and selects the Paint Brush tool so you can begin painting inside it.

Creating paint objects

You can select any tool that creates objects and create the object as a paint object. For example, you can create an oval inside an active paint object if you want to edit the oval pixel by pixel. To activate a paint object, double-click it; notched handles appear around it. When you create a new paint object with the Paint Object Creator tool it is also active until you click outside it.

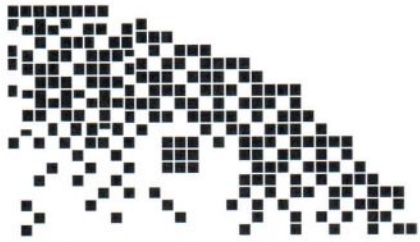
Once the paint object is active, select a tool and create your object inside it. The object is stamped into the paint object and can be edited as such. If the paint object is not active, you will create the object as a separate draw object on top of the paint object.

User Tip: When you create text in a paint object you must make all changes to your text before you click outside the text object. Once you click outside the text, the text becomes part of the paint object and cannot be edited with Text menu commands.

Editing paint objects

Only the individual pixels of paint objects can be edited; the paint object's properties (fill pattern, pen size, and so on) must be set before you create it. You can, however, change the foreground and background color of selected 1-bit paint objects using the Fore Color/Back Color palette icon (see "Depth of paint objects" on page 19-170).

You can drag a selection handle of the paint object's bounding rectangle with the Arrow tool or use the Pencil tool to delete individual pixels. Individual pixels are visible at the 6X magnification level and higher. Use the Lasso or Marquee tool to select multiple pixels and edit them with commands from the Edit and Effects menus.



Individual pixels visible at 8X magnification level.

Depth of paint objects

In Canvas you can create 1-bit, 8-bit, and 32-bit paint objects. If your Macintosh has an 8- to 32-bit color card, you can create all three types. If your Macintosh has a monochrome video card, you can only create 1-bit paint objects.

Each pixel in a 1-bit paint object is defined by one bit. When you paint in this area you turn each pixel ON or OFF; each pixel has two possible shades. ON pixels display the current foreground color and OFF pixels display the current background color. You can change the foreground and background color of a selected 1-bit paint object using the Fore Color/Back Color palette icon in the Tool Box. In order to view the results, you must also change the pen mode of the selected paint object to Copy.

If you add a color to a 1-bit paint object that differs from its foreground and background colors, its depth changes. If the color was added from the color palette, the paint object becomes an 8-bit paint object. If the color was created using the Color Info Manager or the PANTONE® Colors window, the paint object becomes a 32-bit paint object.

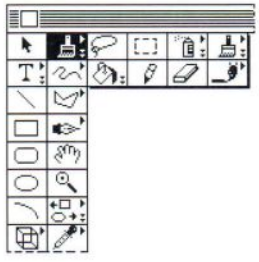
Each pixel in an 8-bit or 32-bit paint object is defined by 8-bits or 32-bits respectively. The more bits that define a pixel, the more shades that pixel can display and the more memory is required to store it. There is no ON or OFF status for these pixels. All non-white pixels are considered ON pixels. When using tools such as the Lasso or the Paint Bucket, the white pixels in an 8-bit or 32-bit paint object are considered the OFF pixels.

Use the Object Specifications dialog box to determine or change the depth of a paint object. See "Object Specs…." on page 19-145 for more information.

Paint Tools palette icon

The Paint Tools palette icon in the Tool Box displays the Paint Tools palette. This palette contains tools for editing scanned images, TIFF files, and other paint objects. You can also create paint objects with these tools.

The following tools are in the Paint Tools palette: Lasso tool, Marquee tool, Spray Can tool, Paint Brush tool, Paint Bucket tool, Pencil tool, Eraser tool, and Paint Object Creator tool.

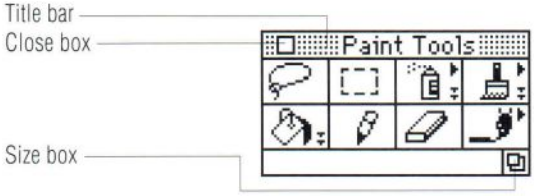


Paint Tools palette icon displaying palette

The Paint Tools palette icon changes each time you select a new tool. When a tool icon appears as the palette icon, a single right-facing indicator (▶) signifies that a palette is displayed when the pointer is held down on the icon.

Paint Tools tear-off palette

You can tear the Paint Tools palette away from the Tool Box and keep it open as you work on your documents. To do so, select the Paint Tools palette icon and drag through it to tear it away from the Tool Box.



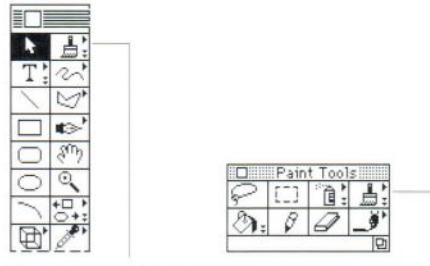
To move the palette to another location, drag it by its title bar. Use the size box in the lower right corner to reshape the palette. Click the close box in the upper left corner to close the palette.

Multiplex icons

Some of the tool icons in the Paint Tools palette are multiplex icons which can display dialog boxes and/or pop-up palettes.

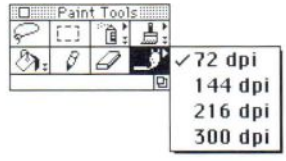
- A tool icon with two downward-facing arrows (⏬) displays a dialog box when you double-click it. The dialog box lets you configure the tool. In the Paint Tools palette, these tools are the Paint Brush tool, Spray Can tool, and Paint Bucket tool.

  To double-click a tool icon you must select the tool from the palette so that it becomes the palette's icon or tear the palette away from the Tool Box.

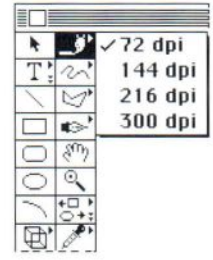


Double-click a tool icon with two downward facing indicators in the Tool Box or in the palette to open the tool's manager

- When the Paint Tools palette is open, tool icons with a single right-facing indicator (▶) signify a pop-up palette is displayed when you hold down the pointer on the tool. If the tool appears as the palette icon in the Tool Box, press the Option key and hold down the pointer on the tool to display its pop-up palette.



In the tear-off palette, hold down the pointer on a tool with a right-facing indicator to display its pop-up palette



Press the Option key and hold down the pointer on the Paint Tools palette icon to display the tool's pop-up palette, if any

The Paint Brush tool, Spray Can tool, and Paint Object Creator tool display pop-up palettes. You can tear the Paint Brush tool and Spray Can tool pop-up palettes away from the palette.

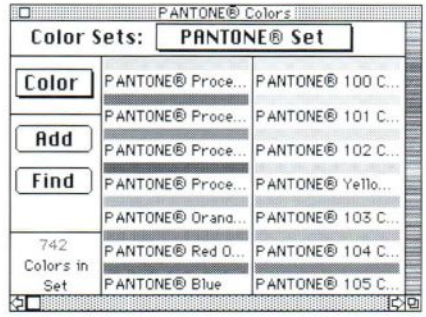
PANTONE® Colors

The PANTONE® Colors command in the Windows menu displays the PANTONE® Colors window. Use this window to create, edit, load, and save custom color sets, including the official PANTONE® set. You can use the colors in these sets to change the foreground and background color of selected draw objects or set the default foreground and background color.

This window is available when PANTONE® Colors is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Using the PANTONE® Colors window

To display the PANTONE® Colors window, choose PANTONE® Colors from the Windows menu. A diamond appears next to the command and the following floating window appears.



The window's scrolling list displays the colors in the active color set and their names. In the preceding illustration, the PANTONE® color set is displayed. The bottom left corner of the dialog box displays the number of colors in the set. The color bar on the right side of the window also displays the colors in the set. To scroll through the set and view the different colors, click the color bar or use the scroll bar, scroll box, and scroll arrows at the bottom of the window.

To reshape the window, drag the size box in the lower right corner. Enlarging the window also enlarges each color's display. However, no more than 14 colors can be displayed in the scrolling list at one time, regardless of the size of the window. To close the window, click the close box in the upper left corner of the window or choose PANTONE® Colors from the Windows menu.

Color Sets

The Color Sets pop-up menu lets you save and load color sets. The color set in the pop-up box appears in the scrolling list; it is the active color set. Previously open sets are at the bottom of the menu.

Save: Choose Save to save changes made to the active color set.

Save As: Choose Save As to save the active color set by another name or a new location. When you choose Save As, a directory dialog box appears. Select a folder and disk in which to store the color set, type the set's name in the text box, and click Save.

Load: Choose Load to display a directory dialog box from which you can select a color set to load. Locate the color set file you want to use and click Open. The name of the color set appears in the Color Sets pop-up box and the colors are displayed in the scrolling list.

New: Choose New to close the active color set and start a new, empty set. A directory dialog box asks for the name and location of the new set. Select the folder and disk where you want to store the color set, type the set's name in the text box, and click Save.

If you choose New without saving the active color set, a dialog box appears asking if you want to save the active set. Click Save to save it, click Discard if you do not want to save your changes, or click Cancel to return to the PANTONE® Colors window without loading a new set. If you click Save or Discard, the active color set will close; you can choose it again from the Color Sets pop-up menu.

Remove: Choose Remove to remove the active color set from the Color Sets pop-up menu.

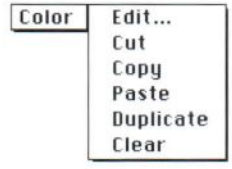
Color

The Color pop-up menu contains color editing options. You can edit, cut, clear, paste, copy, or duplicate selected colors. To do so:

1. **Select one or more colors in the scrolling list of the PANTONE® Colors window.**

   Click a color to select it; hold down the Shift key and click to select multiple colors.

2. **Choose the Color pop-up menu and drag through it to highlight your choice.**

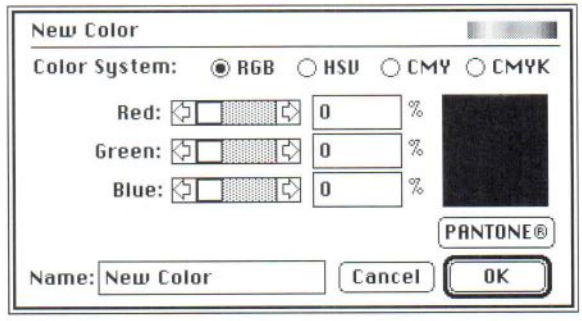


- Choose **Edit** to display the Edit Color dialog box. You can change the name of the color, replace it with a PANTONE® color, or change its RGB, HSV, CMY, or CMYK values. The Edit Color dialog box is identical to the New Color dialog box. See "Add" on page 19-177 for more information on using it.
- Choose **Cut** to remove the selected colors from the active color set and place them on the Clipboard. This option is useful if you want to move the colors from the active color set to another color set.
- Choose **Copy** to copy the selected colors onto the Clipboard without removing them from the active color set. This option is useful if you want to paste the colors into another color set without removing them from the active color set.
- Choose **Paste** to paste the colors on the Clipboard into the currently active color set in the PANTONE® Colors window.

  When used with the Copy Object's Color option of the Edit Special submenu in the Edit menu, Paste lets you paste the colors of selected objects into a set in the PANTONE® Colors window. See "Copy Object's Color" on page 19-84 for more information.
- Choose **Duplicate** to copy the selected colors and simultaneously paste them at the end of the active color set. This option is useful if you want to create new colors that are similar to the existing ones.
- Choose **Clear** to remove the selected colors from the active color set without copying them to the Clipboard; this action is irreversible.

Add

To create a new color to add to the active color set, click Add. The New Color dialog box appears.



To use the New Color dialog box:

1. **Select a color system by clicking the button next to the one you want.**

   Select RGB, HSV, CMY, or CMYK. The scroll boxes and text boxes in the center of the dialog box change accordingly. Refer to "Color Info..." on page 19-42 and the *Using* section for more information on color systems and color properties.

2. **Click PANTONE® if you want to display a PANTONE® color in the New Color dialog box.**

   The PANTONE® dialog box appears. Type the name or number of a PANTONE® color in the text box and click OK.

   You return to the New Color dialog box where the color appears in the preview box and its name appears in the Name text box.

3. **Select a color system, if desired, to continue editing the color.**

   The scroll bars and text boxes in the New Color dialog box change accordingly.

4. **Drag the scroll bars or type percentages in the text boxes to create a color.**

   The preview box on the right changes accordingly.

5. **Type a name for your color in the Name text box and click OK.**

   The color and its name are added to the currently active color set in the PANTONE® Colors window.

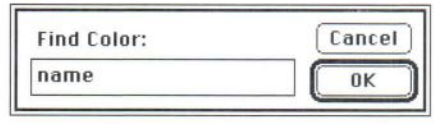
Find

Click Find to locate a color in the active color set by its name using the Find Color dialog box.

To use the Find Color dialog box:

1. **Click Find in the PANTONE® Colors window.**

   The Find Color dialog box appears.



2. **Type the name of the color you want in the text box.**

   If the color is a PANTONE® Color you can type its number.

3. **Click OK to select it or Cancel if you change your mind.**

   The Find Color dialog box closes and you return to the PANTONE® Colors window. Canvas begins searching for the specified color from the color that is selected in the scrolling list and scrolls to that area of the set. If no color is found, Canvas scrolls to the beginning of the color set.

Changing the foreground or background color

You can use the PANTONE® Colors window to change the default foreground or background color or the foreground or background color of a selected draw object. To do so:

1. **Select PANTONE® Colors from the Windows menu.**

   The PANTONE® Colors window appears.

2. **Select a draw object or 1-bit paint object, if desired.**

   If no draw objects are selected, you will change the default foreground or background color.

3. **Select a foreground or background color from the scrolling list of the PANTONE® Colors window.**

   To select a foreground color, click the color in the scrolling list. To select a background color, hold down the Option key and click the color in the scrolling list.

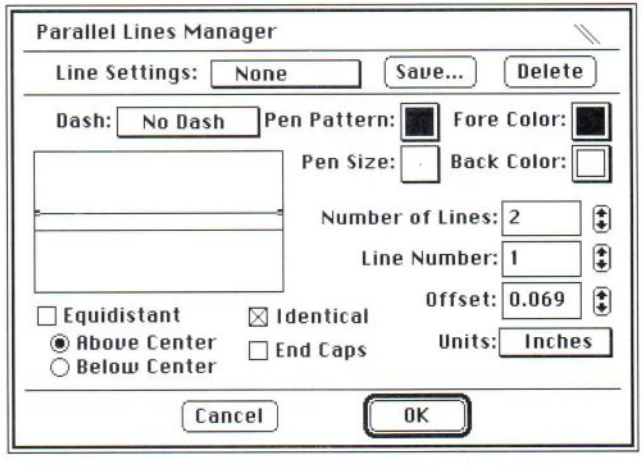
The color you select becomes the new foreground or background color of the selected object. If no objects were selected, it becomes the default foreground or background color.

Parallel Lines...

The Parallel Lines option of the Managers submenu in the Edit menu displays the Parallel Lines Manager. This dialog box lets you configure the settings for objects you create with the Parallel Lines tool. You can edit and delete parallel line settings or save new ones.

The Parallel Lines Manager is available when Parallel Lines is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

To open the Parallel Lines Manager, choose Parallel Lines from the Managers submenu in the Edit menu or double-click the Parallel Lines tool in the Object Tools palette. The Parallel Lines Manager opens.



To edit an existing parallel line object with the Parallel Lines Manager, double-click it or select it and choose Parallel Lines from the Managers submenu in the Edit menu. The Parallel Lines Manager opens.

Line Settings: This pop-up menu contains your custom settings. To retrieve a setting, choose the Line Settings pop-up menu and drag to highlight it. The setting you choose appears in the edit box.

Edit box: The edit box, on the left side of the Parallel Lines Manager, displays the selected parallel line setting. You can select individual lines by clicking them in the edit box.

Dash, Pen Pattern, Pen Size, Fore Color, Back Color: Use these pop-up menus to change the dash style, pen pattern, pen size, foreground color, and background color of the selected setting or a selected line.

Number of Lines: The Number of Lines text box displays the number of lines in the selected setting. Type a new number in the text box or use the up and down arrows to the right of the text box to increase or decrease the number of lines.

Line Number: The Line Number text box displays the number of the line which is selected in the edit box. To select a line with the Line Number text box, type its number in the edit box or use the up and down arrows on the right side of the text box to select it.

Spacing: Spacing is the distance between the lines in the selected setting when Equidistant is checked. When Equidistant is not checked, this option reads Offset. Type a new number in the text box to increase or decrease this distance.

Offset: Offset is the distance of the selected line from the center of the setting. To change the offset, type a number in the text box or use the up and down arrows next to the text box to increase or decrease it. You can also change a line's offset by dragging it in the edit box.

Units: The Units pop-up box displays the unit of measurement for the offset or spacing of the lines.

Equidistant: Select the Equidistant check box when you want all the lines in the setting to be equally spaced.

Above Center, Below Center: Click one of these buttons to indicate the direction in which lines are measured from the center of the setting. These options are enabled when Equidistant is not checked. Click Above Center or Below Center to measure a selected line above or below the center of the setting according to the distance specified in the Offset text box.

Identical: When you select the Identical check box, any change you make to the Dash, Pen Pattern, Pen Size, Fore Color, or Back Color of a setting affect all the lines and not just the selected one.

End Caps: Select the End Caps check box to place a line segment across the endpoints of a parallel line object. The line style of the end cap is the line style of the last line in the parallel line setting.

Save...: Click Save to save the setting in the edit box as a new setting. A dialog box appears asking you to name your new setting. Type a name for your setting and click OK to save it or click Cancel if you change your mind. If you save a new setting under an existing name, a second dialog box asks if you want to replace the existing setting. Click OK to replace the existing setting or Cancel to select a new name for your setting.

Delete: To delete a setting, select it from the Line Setting pop-up menu and click Delete. A dialog box asks you if you are certain you want to delete the selected setting. Click Yes to delete the setting or click No if you change your mind.

When you are done customizing your settings, click OK to apply the setting in the edit box to the selected parallel line object and close the Parallel Lines Manager. If no object is selected, the default settings of the Parallel Lines tool are set. Click Cancel to close the Parallel Lines Manager without applying the setting in the edit box to selected parallel line objects.

Parallel Lines tool

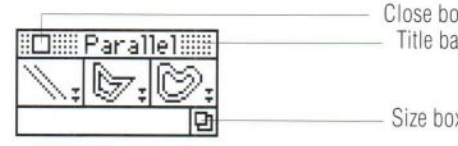
The Parallel Lines tool is an external tool that lets you draw lines, polygons, and smooth polygons made of parallel line segments. Your parallel line objects can have as many lines as you wish, each line can have different properties, and the lines can be evenly or unevenly spaced.

This tool is available when Parallel Lines is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

The Parallel Lines tool has three options: Line Segment, Polygon, and Smooth Polygon. Select the Parallel Lines tool icon in the Object Tools palette to display a pop-up palette with these options. Each option draws differently.

This pop-up palette also tears off. Click the close box in the upper left corner to close it or drag the size box in the lower right corner to reshape it. Drag it by the title bar to move it to a new location.

Parallel Lines tool displaying palette of options



Parallel Lines tool palette torn away

User Tip: Double-click the Parallel Lines tool or the Parallel Lines tear-off palette to open the Parallel Lines Manager and edit the available settings or choose a new default setting.

Drawing parallel line segments

To use the Parallel Lines tool to draw a line:

1. **Select the Parallel Lines tool from the Object Tools palette in the Tool Box.**
2. **Hold down the pointer on the tool in the palette to display a pop-up palette of drawing options.**

   If the tool is the palette icon, you must hold down the Option key to display the pop-up palette.
3. **Drag through the menu and enclose the Line Segment option in the selection box.**
4. **Position the pointer in the Canvas Window where you want to begin and drag the mouse to draw the line.**

5. **Release the mouse button to end the line when you are done.**

Drawing polygons and smooth polygons

To use the Parallel Lines tool to draw a polygon or smooth polygon:

1. **Select the Parallel Lines tool from the Object Tools palette in the Tool Box.**

2. **Hold down the Option key and select the tool icon again to display a pop-up palette of drawing options.**

   If the Object Tools tear-off palette is open, you do not need to hold down the Option key when choosing the icon.

3. **Drag through the menu to select the Polygon or Smooth Polygon option.**

   Both options draw in the same manner initially. Objects drawn with the Smooth Polygon option smooth after the shape is complete. Smooth polygons drawn with the Parallel Lines tool cannot contain fill patterns.

4. **Position the pointer in the Canvas Window where you want to begin.**

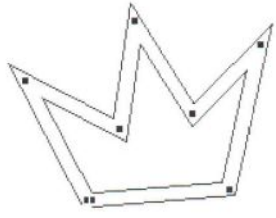
5. **Click to place the endpoint of the first line segment.**

   A parallel line segment appears which moves with the pointer.

6. **Click to anchor the first segment and move the mouse to add another.**

   Continue clicking and moving to add line segments to the polygon.

7. **Double-click when you are done drawing your polygon.**



The polygon appears selected.

Editing parallel line objects

When you create objects with the Parallel Lines tool as described in the preceding steps, you can select them and change their pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the Tool Box palette icons. You can also edit its colors using the PANTONE® Colors window and the Color Info Manager; both items are explained separately in this section.

You can resize and reposition parallel line objects by dragging a selection handle. You can also edit the individual lines of a parallel line

object by converting the object to a group. See "Convert To" on page 19-48 for more information.

Parallel Lines Manager

Use the Parallel Lines Manager to edit and delete parallel line settings or save new ones. To open the Parallel Lines Manager, double-click the Parallel Lines tool in the Object Tools palette. Double-click an existing parallel-line segment to open the Parallel Lines Manager and edit the object you double-clicked. See "Parallel Lines..." on page 19-179 for more information on using this dialog box.

Paste

The Paste (⌘-V) command in the Edit menu inserts the contents of the Clipboard into your illustration. If a paint object is active when you choose Paste, the image is pasted into it. You can paste the image as many times as you want since it remains in your Clipboard until the next time that you use the Cut or Copy command.

Paste command modifiers

When you hold down the Shift, Option, Tab, and Control keys, the Paste command changes and the following options are available.

Paste Without Comments: Hold down the Shift key and choose Paste Without Comments to paste a grouped object, a picture object, or an object created with any of the Object Tools as the individual components which comprise it. For example, if the Clipboard contains an object created with the Parallel Lines tool, choose Paste Without Comments to paste each of the lines in your document as separate objects.

Paste And Place: Hold down the Option key and choose the Paste And Place command when you want to paste an object into your document at a specific location. The pointer changes to the Place icon.

Position the top left corner of the icon where you want the top left corner of the objects to appear and click. The objects are pasted and positioned according to your specifications.

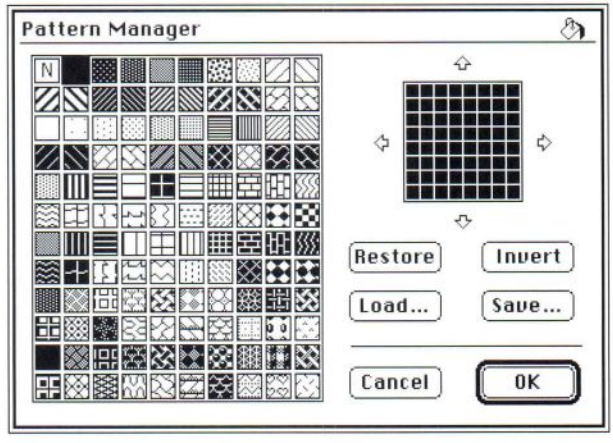
Paste As Picture: Hold down the Control key and choose Paste As Picture to paste an object into your document as a picture object. This command is equivalent to the Paste Picture Object option of the Edit Special command in the Edit menu. See "Paste Picture Object" on page 19-83 for more information on picture objects.

Paste In Position: Hold down the Tab key and choose Paste In Position to paste an object in the same location it was copied or cut from.

Patterns...

The Patterns option of the Managers submenu in the Edit menu opens the Pattern Manager. This dialog box lets you create custom fill and pen patterns for your Canvas illustrations.

The Pattern Manager is available when Pattern Manager is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.



The edit box on the right side of the Pattern Manager shows the selected pattern at the 8X magnification level. The patterns on the left side of the dialog box appear in the active Patterns palette which is displayed by the Pen and Fill Pattern palette icons in the Tool Box.

To use the Pattern Manager:

1. **Choose Patterns from the Managers submenu in the Edit menu or double-click the Paint Bucket tool icon in the Tool Box.**

   The Pattern Manager appears. The patterns in this dialog box also appear in the Pen and Fill Pattern palettes in the Tool Box.

2. **Click a pattern that you wish to edit.**

   A magnified view of the pattern appears in the edit box.

3. **Click the arrows around the edit box to move the selected pattern in the direction of the arrows.**

4. **Click or drag in the edit box to invert pixels.**

   Click a white pixel to turn it black; click a black pixel to turn it white. The pattern in the palette reflects these changes.

5. **Click Restore to return the pattern in the edit box to the state it was in when the Pattern Manager opened.**

6. **Click Invert to turn the white pixels black and the black pixels white.**

You can also drag a pattern on top of an existing one in the palette to replace it.

See "Saving a pattern set" and "Loading a pattern set" for information on saving and loading pattern sets.

When you are done editing the pattern set, click OK to save your changes or Cancel to disregard them. The Pattern Manager closes and the set inside it is displayed by the Fill Pattern palette icon and the Pen pattern palette icon in the Tool Box.

Saving a pattern set

To save the pattern set in the Pattern Manager:

1. **Click Save.**

   A directory dialog box appears.

2. **Locate the disk and folder where you want to store your set and type its name in the text box.**

3. **Click Save to save the set or Cancel to disregard it.**

   The directory dialog box closes. You return to the Pattern Manager.

4. **Click OK to save any changes you make to the pattern set in the Pattern Manager or click Cancel to disregard them.**

   The Pattern Manager closes and the set in the dialog box is displayed by the Fill Pattern and Pen Pattern palette icons in the Tool Box. The next time you open the Pattern Manager in the active document, this pattern set will be inside it.

Loading a pattern set

To load a custom pattern set into the Pattern Manager:

1. **Save the current set in the Pattern Manager if you want to keep any changes you have made to it.**

2. **Click Load.**

   A directory dialog box appears.

3. **Locate the disk and folder that contain your set and click Open.**

   The set appears in the Pattern Manager and is displayed by the Fill Pattern and Pen Pattern palette icons.

Loading a pattern set from a previous version of Canvas

Pattern sets from previous versions of Canvas contain fewer patterns than those displayed in the Pattern Manager. You can select which patterns the set will replace. To load such a pattern set:

1. **Click the first pattern in the series of those you want to replace.**

   If you do not select a pattern, Canvas replaces the patterns at the top of the dialog box with the set you are loading.

2. **Hold down the Option key and click Load.**

   A directory dialog box appears. If you do not hold down the Option key, the set will begin loading at the beginning of the palette.

3. **Locate the disk and folder that contain your set and click Open.**

   The set appears in the Pattern Manager.

When you are done, click OK to save any changes you made to the pattern set in the Pattern Manager. This set will be displayed by the Fill Pattern and Pen Pattern palette icons in the Tool Box. The next time you open the Pattern Manager in the active document, this pattern set will be inside it.

When you save your document, the pattern set in the Pattern Manager is saved with it. You can also save this pattern set in a Canvas Prefs file (see "Canvas Prefs file" on page 19-35).

Pencil tool

The Pencil tool paints freehand style lines that are one-pixel wide. It is useful in editing paint objects because it lets you change the status of individual pixels, turning them on or off. The Pencil tool uses the current foreground color unless you begin using it on a foreground color area, in which case it uses the background color.

You can use the Pencil tool to create or edit paint objects and to zoom in to a specified magnification level anywhere in the Canvas Window.

Magnifying and editing with the Pencil tool

To use the Pencil tool to magnify and edit a paint object:

1. **Select the Pencil tool from the Paint Tools palette in the Tool Box.**
2. **Position the pointer on the area of the paint object you want to edit.**

   The pointer changes to look like a pencil.
3. **Hold down the Command key (⌘) and click.**

   The area you click is magnified 8X. Pixel-by-pixel editing is best done at the 8X magnification level or higher.

   You can change the default magnification level of 8X. To do so, press ⌘-Option-Shift and drag through the Zoom In/Zoom Out palette in the Tool Box to select a magnification level. The next time you use the Pencil tool to zoom in on an area, it uses this magnification level.
4. **Click individual pixels to edit them.**

   Click a foreground color pixel to change it to a background color pixel and vice versa.
5. **To return to the 1X magnification level, hold down the Command key (⌘) and click the magnified paint object.**

Drawing with the Pencil tool

To use the Pencil tool to create a paint object:

1. **Select the Pencil tool from the Paint Tools palette in the Tool Box.**
2. **Hold down the pointer inside the Canvas Window.**

   The pointer changes to look like a pencil.
3. **Drag to draw a line.**

Release the mouse button when you are done.

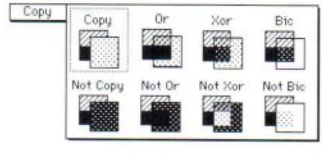
Pen Mode palette icon

The Pen Mode palette icon in the Tool Box displays a palette of pen modes. Pen modes affect the appearance of objects, especially when they overlap. You can change the default pen mode or the pen mode of existing overlapping objects and keep the palette open for continuous changes as you work.

To use the Pen Mode palette:

1. **Select the objects whose pen mode you want to change.**

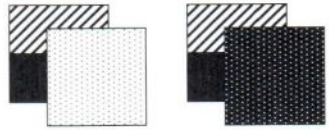
   If no objects are selected, the default pen mode changes and succeeding objects are created with this pen mode.
2. **Hold down the pointer on the Pen Mode palette icon in the Tool Box to display the pop-up palette.**



3. **Drag through the palette to enclose your choice in the selection box.**

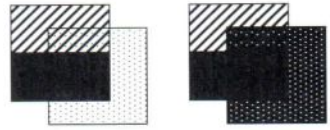
The Pen Mode palette has four pen modes: Copy, Or, Xor, and Bic. Each mode has a reversal: Not Copy, Not Or, Not Xor, and Not Bic. Reversals invert the selected objects before applying the pen mode.

Copy/Not Copy: The image is opaque; underlying images do not show through.



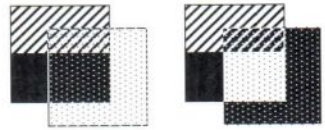
Copy Not Copy

Or/Not Or: Background areas of the image are transparent.



Or Not Or

Xor/Not Xor: Xor (Exclusive Or) reverses the image wherever the underlying image is black.



Xor Not Xor

Bic/Not Bic: Bic (Erase) makes foreground color pixels white and makes white areas transparent.

Bic Not Bic

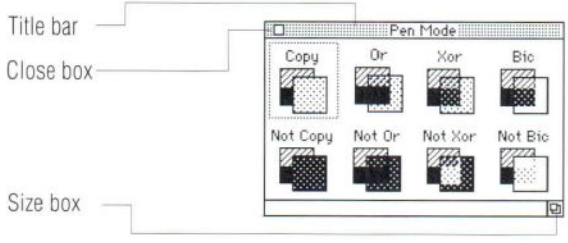
These effects can only be printed with a QuickDraw printer. PostScript printers only recognize the Copy mode. The pen modes are also available from the Object Specifications dialog box.

Pen Mode tear-off palette

To keep the Pen Mode palette open while you work on your document:

1. **Select the Pen Mode palette icon in the Tool Box.**
2. **Drag through the palette to tear it away from the Tool Box.**

   The next time you want to change pen modes, you can use this palette instead of choosing the icon in the Tool Box.



You can move this palette anywhere on screen by dragging its title bar. To change the shape of the palette, drag the size box in the lower right corner. To close the palette, click the close box in its upper left corner.

Pen Pattern palette icon

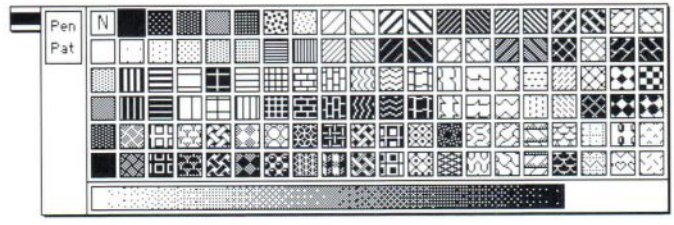
The Pen Pattern palette icon in the Tool Box lets you change the pen pattern of existing draw objects or change the default pen pattern. You can also drag the palette away from the Tool Box and keep it open while you work on your document.

To use the Pen Pattern palette:

1. **Select the objects, if any, whose pen pattern you want to change.**

   If you do not select any draw objects, the default pen pattern changes and all succeeding draw objects will be created with this pattern.

2. **Hold down the pointer on the Pen Pattern palette icon to display the Patterns palette.**



3. **Drag through the palette to enclose your choice in the selection box or drag through the gray scale bar at the bottom of the palette to choose a gray-scale percentage.**

   The pen pattern of selected draw objects or the default pen pattern changes to this pattern.

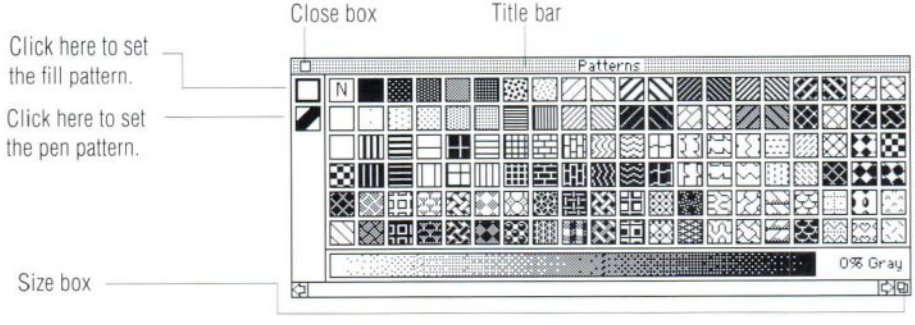
Patterns tear-off palette

You can also keep the Patterns palette open as you work on your document. To do so:

1. **Hold down the pointer on the Pen Pattern palette icon in the Tool Box to display the Patterns palette.**

2. **Drag through the palette to tear it away from the Tool Box.**

   The next time you want to change the pen or fill pattern of a selected draw object, or the default pen or fill pattern, you can use this palette.

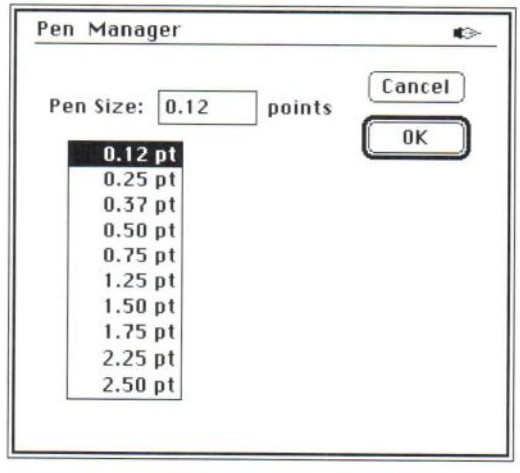


To move the Patterns palette, drag it by its title bar. To resize the palette, drag the size box. To close the palette, click the close box.

Use the Pattern Manager to edit the patterns in the Pattern palette. Double-click the Patterns tear-off palette, choose Patterns from the Managers submenu in the Edit menu, or double-click the Paint Bucket tool to open this dialog box (see "Patterns..." on page 19-185).

Pens...

The Pens option of the Managers submenu in the Edit menu opens the Pen Manager, a dialog box that lets you change the pen point sizes available in the Pen Size palette. You can create pen point sizes as large as 127 points or as small as 0.01 points.



The Pen Manager is available when Pen Manager is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To create a custom pen point size:

1. **Select the draw objects, if any, whose pen size you want to change.**

   If no draw objects are selected, the default pen point sizes will change.

2. **Choose Pens from the Managers submenu in the Edit menu.**

The Pen Manager appears.

3. **Select a default pen point size to edit from the list on the left side of the dialog box, if desired.**

   The pen size appears in the text box at the top of the dialog box.

4. **Type a new number in the text box to change the selected pen size.**

   Repeat steps 3-4 until you have changed all the pen sizes you want to change.

5. **Click OK when you are done to save your changes or click Cancel if you decide not to save.**

   The Pen Manager closes. The pen point sizes you have created appear in the Pen Size palette in the Tool Box. The pen size last selected in the Pen Manager is applied to selected draw objects.

You can also change the pen point sizes by choosing Custom from the Pen Size palette in the Tool Box to open the Custom Pen Manager. See page 19-195 for more information on using this dialog box.

> **User Tip:** PostScript printers do not support pen sizes in which one of the dimensions is zero. Therefore, lines with a zero-dimension pen size do not print on a PostScript printer.

Pen Size palette icon

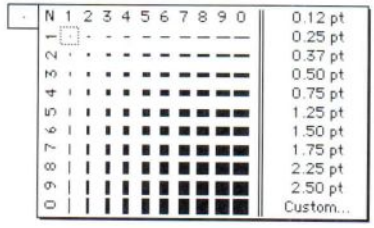
The Pen Size palette icon in the Tool Box lets you change the pen size of existing draw objects or change the default pen size. You can also drag the palette away from the Tool Box and keep it open as a tear-off palette while you work on your document.

To use the Pen Size palette:

1. **Select the draw objects, if any, whose pen size you want to change.**

   If you do not select any draw objects, the default pen size changes and all succeeding draw objects will be created with this size.

2. **Hold down the pointer on the Pen Size palette icon to display the palette.**



3. **Drag through the palette to enclose your choice in the selection box.**

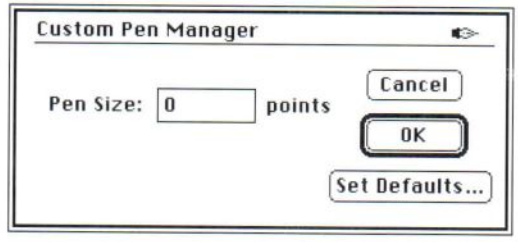
   The pen size of selected draw objects or the default pen size changes to this size.

Custom Pen Manager

To create a new pen point size with the Pen Size palette:

1. **Select Custom in the Pen Size palette.**

   The Custom Pen Manager opens.

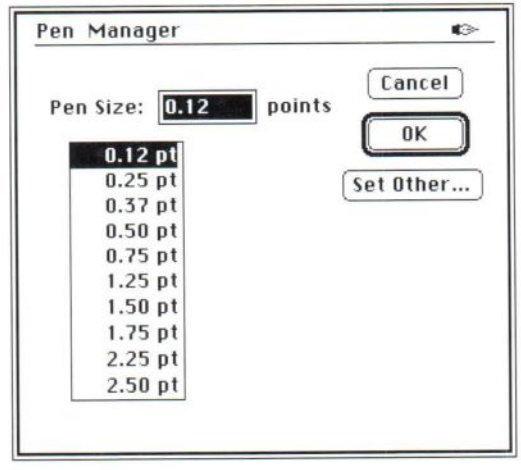


2. **Type a pen size in the Pen Size text box between 0.01 and 127 points.**

3. **Click OK, Set Defaults, or Cancel to save or disregard your changes and close the dialog box.**

   Click OK to change the pen size of selected draw objects to your new custom size. If no draw objects are selected, the default pen size changes. Click Cancel to disregard your changes.

Click **Set Defaults** to open the Pen Manager so you can replace a pen point size in the Pen Size palette with your new size.

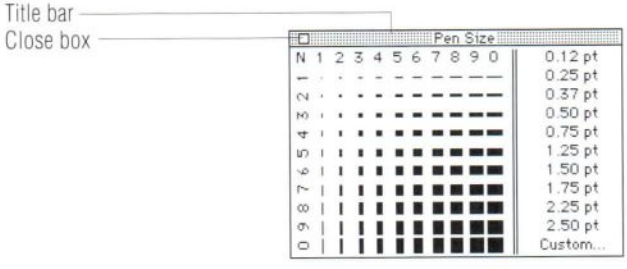


See page 19-193 for more information on using the Pen Manager. When you are done, click Set Other to return to the Custom Pen Manager.

Pen Size tear-off palette

You can also keep the Pen Size palette open as you work on your document. To do so:

1. **Hold down the pointer on the Pen Size palette icon in the Tool Box to display the Pen Size palette.**
2. **Drag through the palette to tear it away from the Tool Box.**



The next time you want to change a selected object's pen size, you can use this palette instead of choosing the icon in the Tool Box.

You can move this palette anywhere on screen by dragging it by its title bar. To close the palette, click the close box in its upper left corner.

Place

The Place command (⌘-Option-P) in the File menu lets you import layers from other Canvas documents and documents saved in other formats into a Canvas document. This command is available when Place is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

To use the Place command:

1. **Choose Place from the File menu.**

   A directory dialog box appears. You can place any file type that Canvas normally opens (see "File Formats" on page 19-152).

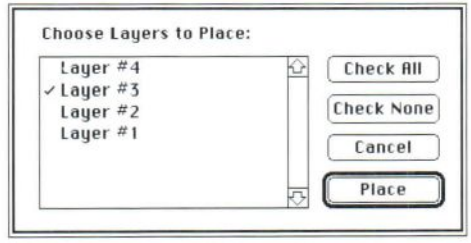
2. **Locate the file you want to place and click Open to load the document.**

   The dialog box closes and you return to the Canvas Window.

   - If you chose a single-layer Canvas or UltraPaint file, it appears in your document. If you chose a multiple-layer Canvas or UltraPaint file, a dialog box appears.
   - If you chose a non-Canvas file, the Place icon appears.

Placing layers from a Canvas or UltraPaint document

If you choose a Canvas or UltraPaint document with more than one layer, a dialog box appears asking you which layers you want to load. These layers will remain separate when placed in the active document.



Click each layer you want to place in your document; check marks appear next to their names. Click **Check All** to select all the layers. Click **Check None** to deselect all the layers, removing the check marks from their names.

When you are done, click **Place** to load the individual layers into your document or click Cancel if you change your mind. The dialog box closes.

Placing other documents

If you chose a document with a format other than Canvas or UltraPaint, the pointer appears as the Place icon.

Click to place the imported document in the desired area of the Canvas Window or drag to place the document in the desired size.

> **User Tip:** If you place a color TIFF file, the current color palette is used; you cannot choose Optimize Palette from the TIFF Options dialog box.

Point Rotate tool

The Point Rotate tool in the Effect Tools palette lets you rotate objects clockwise or counterclockwise around a point you pick. You can free rotate objects or specify a degree of rotation with this tool.

This tool is available when Point Rotate is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Point Rotate tool:

1. **Select the objects you want to rotate.**
2. **Select the Point Rotate tool from the Effect Tool palette in the Tool Box.**

The pointer changes to a crosshair with a circle in the center.

3. **Position the pointer on the center of rotation.**

   You can select a point anywhere in the Canvas Window from which to rotate the objects.

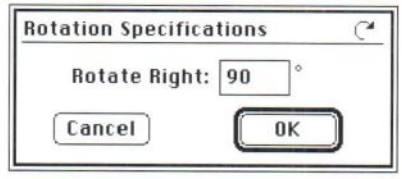
4. **Drag to rotate the objects in the desired direction.**

Specifying a degree of rotation

To specify a degree of rotation while using the Point Rotate tool:

1. **Hold down the Shift key as you drag to rotate your objects.**

   The point where you begin dragging is your center of rotation. The Rotation Specifications dialog box appears.



2. **Type the number of degrees in the text box that you want to rotate the objects clockwise.**

   To rotate counterclockwise, type a minus sign before the degrees.

3. **Click OK to perform the rotation or Cancel to disregard it and close the dialog box.**

   The selected objects rotate accordingly.

User Tip: To rotate a copy of the object, hold down the Option key when you drag with the Point Rotate tool.

Polygon tool

The Polygon tool is used to draw multisided shapes consisting of straight lines and angles, such as triangles, pentagons, trapezoids, and open-ended shapes. To create a polygon:

1. **Select the Polygon tool from the Tool Box.**

The pointer changes to a crosshair.

2. **Place the pointer in the Canvas Window where you want the polygon to begin and click to place the first point.**

A hollow square appears where you click.

3. **Move to the location of the second vertex and hold down the pointer.**

A line segment appears between the two vertices.

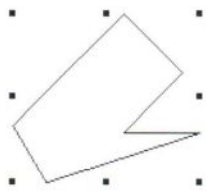
4. **Drag the line to size and position it and release the mouse button to anchor it.**

5. **Continue in the same manner to add segments to your polygon.**

To complete a closed polygon (one whose endpoints meet):

6. **Click once or press the Enter key.**

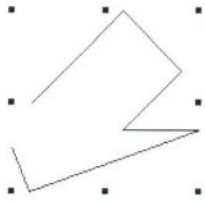
The polygon is selected and handles appear around its bounding rectangle.



To complete an open polygon:

7. **Double-click or press the Enter key.**

   The polygon is selected and handles appear around its bounding rectangle.



There are two other methods you can use to create polygons in Canvas. You can create them according to a method used in previous versions of Canvas; see page 19-205 for instructions. You can also use the Freehand tool to create polygons freehand style; see "Freehand tool" on page 19-102 for more information.

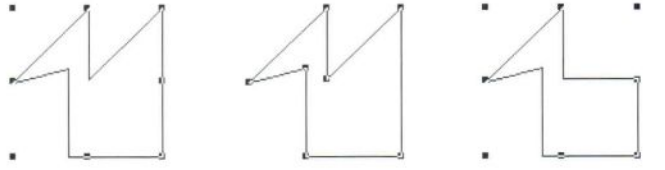
Editing polygons

When you create a polygon as described in the preceding steps, you can select it and change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the palette icons in the Tool Box. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

To resize a polygon, select it and drag one of its selection handles. To reposition a polygon, drag it to a new location or select it and use the keyboard arrow keys to move it.

Editing vertices and segments

In order to edit a polygon's segments and vertices, you must first place it in the edit mode. To do so, select the Arrow tool immediately after completing the shape or select the polygon and choose Edit Polygon (⌘-E) from the Object menu.



Selected polygon Polygon in the edit mode Polygon after editing

You can double-click the polygon to place it in the edit mode if you have selected Enter Edit Mode under Double-Clicking in the Preferences dialog box.

To add a vertex to a polygon:

- Hold down the Option key and click where you want to place the vertex.
- Hold down the Option key as you drag an existing point and a new vertex is inserted between the one you dragged and the next one in sequence.

To remove one or more vertices from a polygon:

- Hold down the Shift and Option keys and click the vertices.
- Click the vertex you want to remove and press the Delete key.
- Hold down the Shift key and click multiple vertices, then press the Delete key to remove them.
- Select the Arrow tool, drag to draw a selection rectangle around the vertices you want to delete, and press the Delete key.
- Press the Delete key while you are creating a polygon to delete the last segment created.

To open a closed polygon:

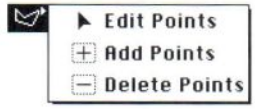
- Hold down the Command key (⌘) as you click a vertex. A new vertex is added and the polygon opens.

To close an open polygon:

- Hold down the Command key (⌘) as you click an endpoint. A new segment joins the two endpoints.

Multiplex icon

The Polygon tool in the Tool Box is a multiplex icon. It contains a pop-up menu of editing options. To use these options, hold down the pointer on the Polygon tool icon and drag through the pop-up menu to highlight your choice. The polygon is placed in the edit mode.



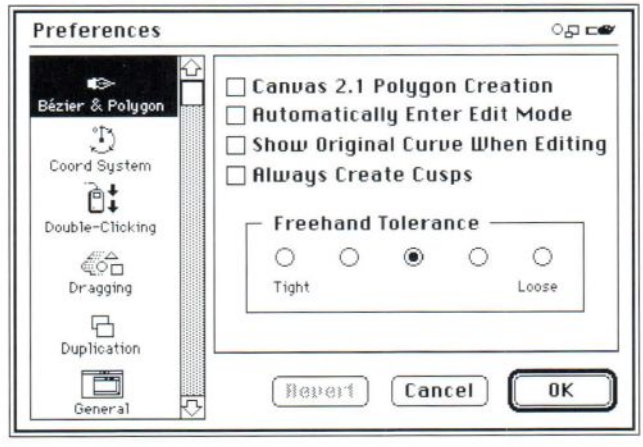
- Choose **Edit Points** when you want to edit the vertices or segments of a polygon. Place the pointer on a vertex; when it changes to a small crosshair, drag to reposition the vertex. Place the pointer on a segment and when it change to a gray arrowhead, drag to reposition the segment.
- Choose **Add Points** to add a vertex to the polygon. The pointer changes to a plus sign. Place the pointer on the segment where you want to insert the vertex and it changes to a small crosshair. Click and a new vertex appears.
- Choose **Delete Points** to remove a vertex on a polygon. Place the pointer on the vertex you want to delete and the pointer changes to a small crosshair. Click and the vertex disappears.

Adding cusps

You can add cusps (pointed ends which do not smooth) to polygons in the edit mode. To do so, hold down the Option key and click the vertex you want to change to a cusp. A new vertex (the cusp) is superimposed on top of the existing one. You can remove a cusp by holding down the Tab key and dragging the two superimposed vertices apart; delete one of the vertices if desired.

Preferences...

The Preferences command in the File menu opens the Preferences dialog box. This dialog box lets you customize your Canvas working environment.



The Preferences dialog box is available when Preferences is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To set your Preferences:

1. **Choose the Preferences command from the File menu.**

   The Preferences dialog box appears.

2. **Drag the scroll bar of the scrolling list on the left side of the dialog box to find the preference you want to set.**

3. **Click the preference to select it.**

   The preference highlights and the right side of the dialog box changes to display the options applicable for the selected preference.

4. **Use the text boxes, check boxes, pop-up menus, and radio buttons on the right side of the dialog box to set the preference.**

5. **Click Revert if you need to reset a preference to its setting when the dialog box first opened.**

If the selected preference has not been edited, Revert appears dimmed. Clicking Revert only effects the selected preference.

6. **Click OK to accept you changes or click Cancel to ignore any changes.**

   You return to the Canvas Window.

   If you click OK, your changes are saved with the active document only. If you want your Preference settings to be applied to all future documents, you must save your changes in a Canvas Prefs file. See page 19-35 for information on this file format.

Preferences dialog box settings

The Preferences dialog box lets you choose settings for the following Canvas features.

Bézier & Polygon

Bézier & Polygon gives you options for creating Bézier curves and polygons.

- **Canvas 2.1 Polygon Creation** lets you create polygons as in previous versions of Canvas, with the line segment following your movements.

  To use the Canvas 2.1 Polygon Creation mode:

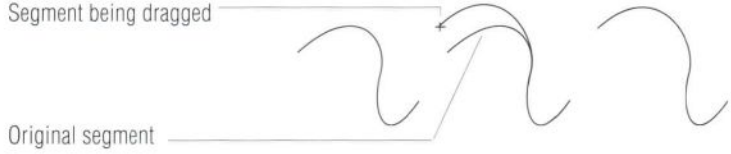
  1. **Select the Polygon tool from the Tool Box.**
  2. **Place the pointer in the Canvas Window and click to place the first vertex.**
  3. **Move the pointer to the position of the second vertex and click.**

     A line follow your movements. In the new style polygon creation mode you must drag the mouse to have a line follow your movements.

  4. **Continue in the same manner to add segments to your polygon.**
  5. **Double-click or press the Enter key to anchor your polygon when you are done.**

- **Automatically Enter Edit Mode** place polygons and Bézier curves into the edit mode when you select them. This option affects existing polygons and Bézier curves and those you create after you set the preference.

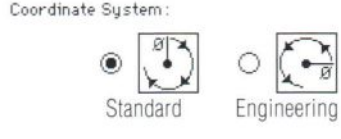
- **Show Original Curve When Editing** leaves a copy of the original object in place as you edit it so you can see how the object you are editing looks in relation to the original.



- **Always Create Cusps** causes Bézier curves created with the Bézier Curve tool to be created with cusps (ends which can be pointed). When this option is checked, each anchor point is created with only one direction point. You can then edit the preceding curve segment without affecting the following curve segment. Selecting this option also affects the editing of existing Bézier curves.
- **Freehand Tolerance** controls how tightly your freehand curves and polygons follow what you draw with the pointer. The tighter the tolerance, the more precisely the resulting object will resemble what you create before releasing the mouse button.

Coord System

Coordinate System lets you select a coordinate system for Canvas to use when measuring angles.



- **Standard** defines angle and rotation as proceeding clockwise with zero at the top (the 12 o'clock position on a clock face).
- **Engineering** defines angle and rotation as proceeding counterclockwise with zero at the right (the 3 o'clock position on a clock face).

Double-Clicking

Double-Clicking lets you specify what happens when you double-click an object in the Canvas Window.

- **Enter Edit Mode** places polygons, Bézier curves, cubes, dimension objects, and parallel line objects in the edit mode if you double-click them. This is the equivalent of selecting the object and choosing the Edit command (⌘-E) from the Object menu.

  If this option is selected and you double-click an object that does not have an edit mode, the Object Specifications dialog box opens.

- **Display Object Specifications** displays the Object Specifications dialog box if you double-click an object or the Group Specifications dialog box if you double-click an object group. These dialog boxes let you change the properties of the double-clicked objects. Double-clicking an object to bring up these dialog boxes is equivalent to selecting the object and choosing Object Specs or Group Specs (⌘-I) from the Object menu.

- **Do Nothing** means double-clicking an object has no effect.

Dragging

Dragging lets you choose how to display objects you drag.

- **Outline** displays only an outline of an object while it is being dragged.

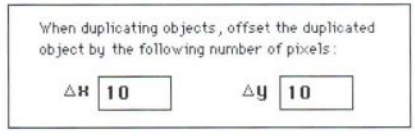
- **Objects** displays the actual object while it is being dragged.

- **Both** displays an outline of the object during a fast drag or the actual object when you click and then pause before dragging.

Show Original Object leaves a copy of the original object in place until the object is repositioned.

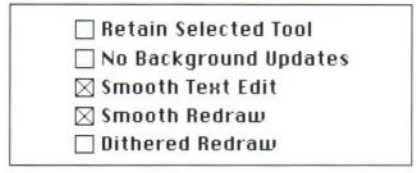
Duplication

Duplication lets you type values in the X and/or Y text boxes to change the offset Canvas applies to duplicated objects.



General

These settings give you screen redraw and tool selection options.



- **Retain Selected Tool** keeps Canvas from reverting to the Arrow after you finish drawing with a draw tool.
- **No Background Updates** keeps Canvas from redrawing the screen when you are using another application under MultiFinder with a Canvas Window open in the background.
- **Smooth Text Edit** redraws text off screen when you type it instead of displaying each character as it is typed. Do not select this option if your Macintosh already draws text slowly.
- **Smooth Redraw** redraws the entire screen in the background before making it visible instead of redrawing each object individually in the foreground. This option is most useful when you have a large number of complex objects in your document.
- **Dithered Redraw** dithers 32-bit colors to 8-bit colors on screen when you have 32-bit color capabilities and sufficient RAM. This option requires a large amount of RAM. When you select Dithered Redraw, Smooth Redraw is automatically selected.

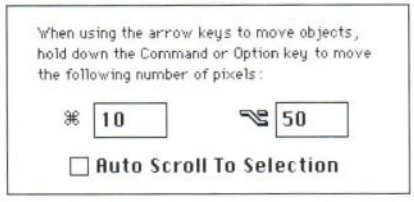
Info Mgr Display

Info Mgr Display lets you select the form in which you want measurements of objects you create in Canvas displayed. These options apply to the Information Manager, the dimensioning data displayed when Size is showing, and dimensioning data displayed when you select an arrow type which displays dimensions.

Moving

Moving lets you change the offsets Canvas applies to moving selected objects with the keyboard arrow keys while holding down the Com-

mand and Option keys. Type values in the Command key (⌘) and the Option key (⌥) text boxes to change these offsets.



- **Auto Scroll to Selection** scrolls the Canvas Window if a selection is moved out of the current view of the Canvas Window using the keyboard arrow keys. This option is on when this box is checked.

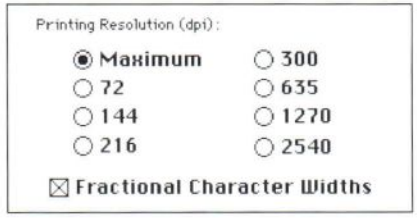
Paint Options

Paint Options lets you set options for creating paint objects in Canvas.

- **Auto-Create Paint Objects** lets you create a paint object whenever a paint tool is selected from the Tool Box and positioned inside the Canvas Window. If this option is not checked, you must first create a paint area with the Paint Object Creator tool to create a paint object.
- **Auto-Expand Paint Objects** causes Canvas to automatically extend the boundary of a paint object's bounding rectangle when subsequent painting action exceeds the boundary.

Print Options

Print Options lets you modify the way Canvas prints and exports text or graphics.



- **Maximum** assumes you want to print at your printer's maximum allowable resolution. However, maximum resolution from a QuickDraw® printer (144 dpi for the ImageWriter® and 216 dpi for the

ImageWriter® LQ) disables image reduction options and the faster printing features. To enable these features, change the printing resolution from maximum to 72 dpi. Changing the printer's resolution causes the settings in Page Setup to revert to their default settings. Be sure to choose Page Setup and reset the settings after you change the resolution.

- **Fractional Character Widths** lets Canvas use the fractional widths included in the letter spacing (kerning) information of fonts. If this option is not checked, Canvas rounds up this kerning information to the next whole number.

  If you need to allow font substitution on PostScript® printers, do not check this option. If you are exporting graphics with text to programs that do not support fractional character widths, do not check this option. Many older programs, including some word processors, do not support fractional character widths.

Selection Options

Selection options lets you choose how to select and resize multiple objects.

- **Select Across All Visible Layers** lets you choose how you want to select objects in Canvas. Selecting this check box lets you select objects on all visible layers in the active document. You can also select objects by Shift-clicking them, drawing a selection rectangle around them, or (to select all objects) choosing Select All (⌘-A) from the Edit menu. If this option is not selected, you can only select the objects in the active layer of the active document. See "Select All" on page 19-250 for more information on selecting objects.

  You can temporarily reverse this setting by holding down the Control and Tab keys when you select objects.

- **Resize Multiple Objects** lets you resize multiple selected objects by dragging a selection handle on one of the objects.

  You can use the following modifier keys when resizing multiple objects:

  - To resize multiple objects from their centers, hold down the Option key as you drag a selection handle on one of the objects.

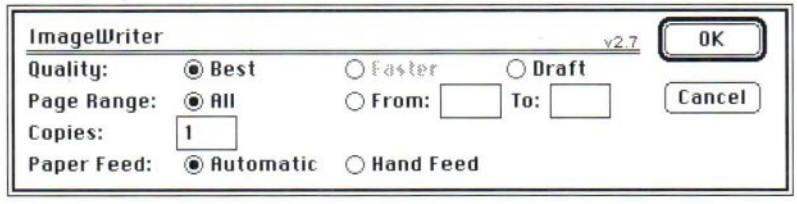
- To resize multiple objects making their bounding rectangles squares, hold down the Shift key as you drag a corner selection handle on one of the objects.

Print...

The Print command (⌘-P) in the File menu prints the active (topmost) document to the printer currently selected in the Chooser. The Print command opens a print dialog box. You can select a number of printing options from this dialog box.

When you print a Canvas document, each layer is considered a separate page. If you print a multiple-page document, multiple pages will print for each layer.

ImageWriter print options



Quality: The higher the print quality, the longer it takes to print the document. In the preceding illustration, the options are Best, Faster, or Draft.

Page Range: Specify the Page Range to print. If you click **All**, Canvas prints the entire document. If you click **From**, type the first and last page to print in the **From** and **To** text boxes.

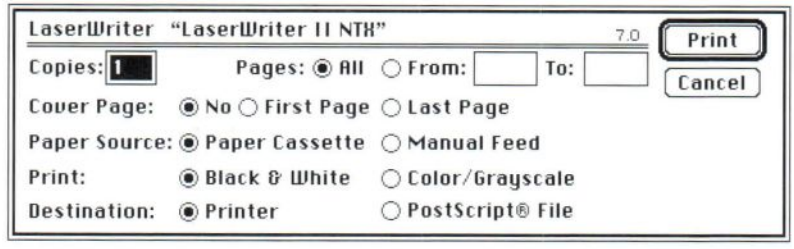
Copies: Type the number of copies you want to print of each page in the Copies text box.

Paper Feed: Select All to print every page or specify the range of pages to print in the From and To text boxes.

When you are done choosing print options, click OK to begin printing or Cancel if you change your mind. The Print dialog box closes.

LaserWriter print options

The LaserWriter always prints at the highest quality; there are no quality options to set.



Specify the range of pages to print and the number of copies per page as in the ImageWriter dialog box.

Cover Page: Select **First Page**, or **Last Page** to include a cover page as your first or last printed of page. Select **No** if you do not want to print a cover page. A cover page lists the user's name, application, name of document, date and time of printing, and the printer type.

Paper Source: Set the Paper Source to **Paper Cassette**, which feeds paper to the printer automatically, or **Manual Feed**, which lets you insert each page yourself.

Print: Set Print to either **Color/Grayscale** or **Black & White**. Black & White speeds up the printing process considerably and is useful when printing proofs.

Destination: The Destination option is available when you are using System 7.0. To send your file directly to the Printer, choose **Printer**. To save your file as a PostScript file, choose **PostScript® File**. If you choose PostScript® File, the Save As dialog box appears. Specify a name and location for your file and click Save.

When you are done choosing print options, click OK to begin printing or Cancel if you change your mind. The Print dialog box closes.

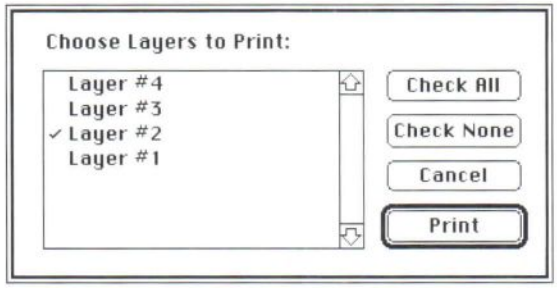
Print Special

The Print Special submenu in the File menu contains printing options. You can print selected layers of your document, selected objects in your document, or color separations of your document. You can also

set the specifications for your color separations and print your files in Encapsulated PostScript.

Layer...

The Layer option lets you print selected layers of your document, including grayed and invisible layers which normally do not print. This option is enabled when your document has more than one layer. Choose Layer and a dialog box appears where you can check the layers you want to print.



Click a layer's name to select it. A check mark appears by each layer you select. Click **Check All** to select all layers. Click **Check None** to deselect all layers. Once your layers have been selected, click **Print** to display the Print dialog box and continue with the printing process. Click Cancel to close the dialog box without choosing layers to print.

All the layers are combined into one document that is printed.

Selection...

Selection lets you print a selected object or group of objects in the Canvas Window. Use this option to print proofs of your illustration. Select the objects you want to print and choose Selection. The Print dialog box appears so you can continue with the printing process.

PostScript...

The PostScript option lets you print a file in the EPS format without saving it in this format. This option is available when Separations is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Encapsulated PostScript is a file format that contains the commands necessary to print non-PostScript files (such as Canvas files created in the QuickDraw graphics language) in the PostScript page-description language. The PostScript option shows what the file will look like when it is printed from a desktop-publishing program.

This option lets Canvas, rather than the printer driver, perform the PostScript conversion on a document; in each case the results might differ. Choose the PostScript print option to preview the effects of an EPSF file before you save it in this format or when you are not getting the desired results from regular printing.

Choose PostScript to display the Print dialog box. Specify your printing options and click Print. The document prints the way it would if you had saved it as an EPSF file and imported it to a desktop-publishing program.

Separations...

This option displays the print dialog box so you can print color separations according to the settings in the Separation Setup dialog box. See "Separation Setup" on page 19-215 for information on using this dialog box to set the specifications for creating color separations of a document.

This option is available when Separations is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To print your separations:

1. **Choose Separation Setup from the Print Special submenu in the File menu and customize your separations.**

   Be sure you click the check boxes next to Plates to Print to indicate the separations you want to print.

2. **Click Options to open the Separation Options dialog box and continue customizing your separations.**

3. **Click OK in both dialog boxes.**

4. **Choose Separations from the Print Special submenu in the File menu.**

   The print dialog box appears so you can set your options and print your separations.

Separation Setup...

The Separation Setup option displays the Separation Setup dialog box. This dialog box lets you customize the way Canvas prints and saves color separations of your documents.

This option is available when Separations is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

The process color printing method

Print shops use the process color method to print color illustrations. With this method, a single piece of paper is run through a printing press over four different ink plates. Each ink plate has varying percentages of one color on it: cyan, magenta, yellow, or black. As these colors print over each other in varying percentages, new colors are created. Print shops make the ink plates for your illustration based on the separations you make in Canvas.

Each color in your illustration is divided into percentages of cyan, magenta, yellow, and black (CMYK) and these percentages are placed on corresponding CMYK separations. These separations are used to make the ink plates for the printing press. The Separation Setup dialog box lets you adjust color percentages, allow overprinting, change screen angles, and modify other settings for your separations.

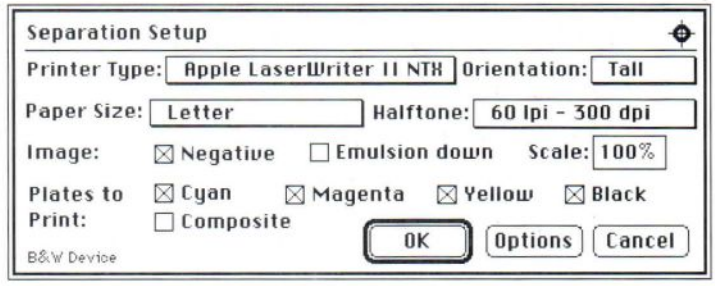
To use the Separation Setup dialog box:

1. **Choose Separation Setup from the Print Special submenu in the File menu.**

   If you have not yet chosen a PostScript Printer Description (PPD) file, a directory dialog box appears asking you to choose one.

2. **Choose the PPD file that corresponds to the printer for your final document.**

   The Separation Setup dialog box appears.



3. Select the options to customize your color separations.

Printer Type: The Printer Type pop-up box displays the printer for which you chose your PPD file. Make sure the printer in this box matches the device which will print your final document. Choose Other to display a directory in which you can locate a PPD file for the desired printer. The bottom left corner of the Separation Setup dialog box displays the words *B & W Device* or *Color Device* depending on the Printer Type you choose.

Orientation: These options arrange the objects on your page horizontally or vertically. Tall orientation places all text and graphics on the page vertically; Wide orientation places the objects horizontally. Object orientation is only apparent on the printed document; the screen image is not affected by it. If you have chosen Use Page Setup under Paper Size and you need to change the orientation, you must do so from the Page Setup command in the File menu.

Paper Size: The available Paper Sizes depend upon the Printer Type chosen. Choose a Paper Size from the pop-up box that is large enough to accommodate your entire illustration since separations cannot exceed one page. You can use the Scale text box to reduce the size of your illustration if necessary (this change is not apparent on screen). If you are saving separations in Canvas, you cannot use the Use Page Setup option.

Halftone: The Halftone pop-up menu lists the screen rulings available for the printer chosen under Printer Type. These screen rulings, measured in lines per inch (lpi) and dots per inch (dpi), create the halftone patterns that determine the number of shades in your printed illustration. The default halftone setting is based on your Printer Type and can be found in the printer's owner's manual.

Screen rulings create halftone patterns by determining the size of each halftone cell. A halftone cell is a matrix of the pixels which make up a printed illustration. The size of a halftone cell is expressed in pixels and is derived from the equation $(dpi/lpi)^2$, where dpi is the number of printed dots per inch. A high-lpi illustration has less shades and sharp-edged colors; individual pixels are not easily visible. A low-lpi illustration has more shades and soft-edged colors; individual pixels are more visible. These effects are only visible on the printed document, however, and not on the screen.

Image: You can save and print your separations in Negative form and/or Emulsion Down form, or neither. Emulsion refers to the photosensitive layer of a piece of film. If you want to have your separations printed to film, select both Negative and Emulsion Down. These options print your illustration inverted and backwards, like a photographic negative. If you print your separations to paper and want them to resemble the screen image, do not select either of these options.

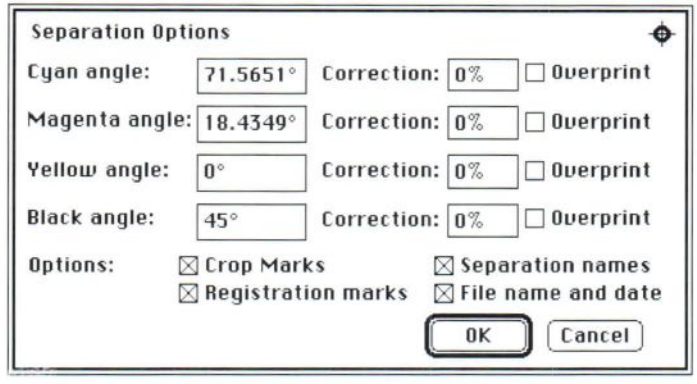
- **Negative** prints an inverted image of your separation.
- **Emulsion Down** prints a mirror image of your separation. Text appears backwards and is not readable.

Scale: Type a percentage in the Scale text box to reduce or enlarge the size of your illustration proportionally. This size change is only apparent on the printed document; the screen image is not affected by it. If you have chosen Use Page Setup under Paper Size and you need to change the scale, you must do so from the Page Setup command in the File menu.

Plates to Print: These options specify which separations print or save when you print or save the document. Select the check boxes next to the separations you want to print or save. If you check one or more colors, Canvas prints or saves a separation for each color checked. If you check Composite only, Canvas prints or saves the unseparated document. If you check one or more colors and Composite, Canvas prints or saves the unseparated document and a separation for each color checked.

Separation options

If you want to continue customizing your separations, click Options to open the Separation Options dialog box. If you are done modifying your separations, close the Separation Setup dialog box by clicking OK to keep your changes or Cancel to disregard them.



Angles: Controls the degree of rotation of the halftone cells on a separation. The angle of the halftone cells on each separation, in relation to the other separations, is a factor in creating the final colors. The CMYK angles control the position of the color on its separation. If these angles are the same on each plate, all the halftone cells "turn on" in the same place, forming moiré patterns that disrupt the continuity of the color. For best results keep the screen angles at their default settings unless the print shop advises otherwise. To change existing screen angles, type in a new angle in the appropriate text box.

Correction: When the colors you see on your screen do not look the same as the colors that actually print, you can correct them by adjusting the percentages of CMYK in the illustration. One separation can have several different percentages of its color on it; Correction increases or decreases the percentages throughout the separation. Increasing the percentage of the cyan separation, for example, adds more cyan to the entire image. Correction is not apparent on screen; the print shop will advise you when a change is necessary. Ask the print shop for color proofs if you want to make sure the printed colors are correct.

Overprint: Normally, when objects in an illustration overlap, only the topmost object prints in the overlapping area. The CMYK percentages of the topmost object override the CMYK percentages of the underlying objects in the overlapping area. However, when the topmost object is missing (has a zero value for) any of its CMYK components, you can select to let that component in the underlying object show through. For example, if a square with no yellow percentage overlaps a circle

with all four percentages, you can overprint the yellow. The yellow percentage from the circle prints in the overlapping area along with the square's cyan, magenta, and black percentages.

You can determine an object's CMYK percentages with the Color Info Manager or by printing the individual separations to see if an object is missing from a separation and therefore lacking that percentage. Select the Overprint check box next to each color you want to overprint. Overprint affects all applicable overlapping areas in an illustration. The overprint effect is not visible on your screen; ask the print shop for color proofs to preview the results.

Crop Marks: Select the Crop Marks check box to place crop marks in the corners of your illustration. Crop marks show the boundaries of the illustration. These marks are not apparent on screen and do not appear on the final color printout. Crop marks are recommended to make the illustration's size more apparent.

Registration marks: This option places registration marks in the corners of printed separations and negatives. Print shops use registration marks to align the negatives to a device that makes ink plates for the printing press. Proper alignment of the negatives ensures precise alignment of color on the ink plates and therefore on the illustration as well. These marks are not apparent on screen and do not appear on the final color printout.

Separation names: Separations are named by their colors (CMYK) so that print shops can easily identify them. Click the Separation names check box to place color names on printed separations and negatives. This text is not apparent on screen and does not appear on the final color printout. Separation names are recommended to make separations more distinguishable.

File name and date: This option places the document's name, date and time of printing, and lpi measurement on printed separations and negatives. This text is not apparent on screen and does not appear on the final color printout. Select this option to make printed separations easily identifiable.

Slides...

The Slides option prints all the slides (layers) in your document individually. These are the layers that comprise your slide show as speci-

fied in the Slide Specifications dialog box. If you specified one layer to be a master layer, it will print in the background of every slide. See "Slides..." on page 19-260 for more information on creating slide shows in Canvas. When you choose the Slides option, the Print dialog box appears. Set your print specifications and click Print to print your slides.

This option is available when Slides is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Quit

The Quit command (⌘-Q) closes all open Canvas documents and quits the program. If you made changes to any document since it was last saved, Canvas displays an alert box asking you if you want to save the document before quitting.

Rectangle tool

The Rectangle tool draws rectangles and squares. To draw a rectangle:

1. **Select the Rectangle tool from the Tool Box.**

2. **Position the pointer in the Canvas Window.**

   The pointer becomes a crosshair.

3. **Drag in the direction that you want the rectangle to grow.**

   Hold down the Shift key as you drag to create a square.

When you have finished drawing the rectangle, release the mouse button. The rectangle appears selected with handles around its boundary.

When you create a rectangle as described in the preceding steps, you can select it and change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the palette icons in the Tool Box. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

You can move it by dragging it to a new location and resize it by dragging a selection handle.

Refresh

The Refresh command (⌘-K) in the Display submenu in the Layout menu redraws the screen. It is equivalent to the effect you see when you resize the screen. The objects in the Canvas Window momentarily disappear, then reappear.

Refresh is helpful when you want to continue redrawing the screen after you have interrupted it. Press Command-period (⌘-.) to stop redraw; choose Refresh to continue it. You might want to interrupt screen redraw when your document has numerous complex objects which are slow to redraw.

Registration Marks tool

The Registration Marks tool in the Object Tools palette lets you place registration marks in a document. It is useful, for example, when you want to place several illustrations on one negative. If each illustration on a negative is surrounded by its own registration marks, the print shop can align each illustration to its own set of ink plates.

This tool is available when Registration Marks is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Print shops use registration marks to align photographic negatives of an illustration's separations to a device that makes ink plates for the printing press. Proper alignment of the negatives ensures precise alignment of color on the ink plates and in the printed illustration. Although these marks are apparent on screen, on printed separations, and on negatives, they do not appear on the final unseparated printout. For more information on color separations and registration marks, see "Separation Setup" on page 19-215.

To use the Registration Marks tool:

1. **Select the Registration Marks tool from the Object Tools palette.**

2. **Position the pointer where you want to place a registration mark and click.**

   A registration mark appears. Hold down the Command key (⌘) as you click to place more than one registration mark at a time.

Remove Effects

Canvas performs the several of its commands on a copy of the original objects. You can undo these commands with the Remove Effects command in the Effects menu. Remove Effects restores the original object or object group.

The following are removable effects:

Point Rotate tool	Rotate commands except 90° Left and Right (Effects menu)
Bind Text (Text menu)	Subscriber adornments

Skew, Distort, and Perspective (Special Effects: Effects menu)

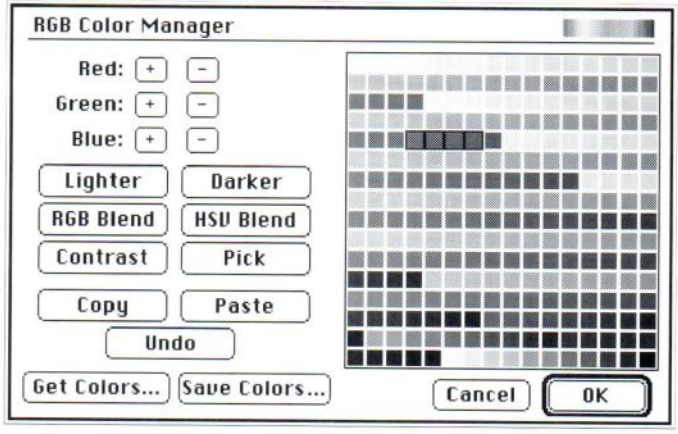
To restore objects with this command, select the objects and choose Remove Effects from the Object menu. The objects return to their previous state.

Revert

The Revert command in the File menu discards any changes that you made to your illustration since the last time you saved it. This command is dimmed unless you have already saved the document. Since Revert cannot be undone once it is executed, Canvas displays an alert box to confirm that you want to discard all of your changes.

RGB Colors...

The RGB Colors option of the Managers submenu in the Edit menu displays the RGB Color Manager, a dialog box where you can create new colors and change color palettes.



The RGB Color Manager is available through RGB Color Manager in your Canvas Tools folder. See page 19-92 for information on the external tools in this folder.

For more information on color properties and color systems, refer to the *Using* section of this manual.

Modifying colors

To modify one or more colors in the active color palette (displayed on the right side of the dialog box), select the colors you want by clicking one or dragging through the palette to select several. Use the following options to edit the colors.

Red, Green, Blue: Click the + or - buttons next to Red, Green, and Blue to increase or decrease the amount of red, green, and blue in the selected colors.

Lighter: Click Lighter to increase the red, green, and blue amounts of the selected colors evenly.

Darker: Click Darker to decrease the red, green, and blue amounts of the selected colors evenly.

Contrast: Click Contrast to replace the selected colors with the colors positioned directly opposite them on the color wheel. (To view the color wheel, select one color and click Pick.)

Copy: Click Copy to copy the selected colors onto the Clipboard for pasting into the active palette or another palette.

Paste: Click Paste to replace the selected colors in the active palette with the colors in the Clipboard.

RGB Blend: Click RGB Blend to create a blend between the first and last selected colors using the shades that fall on a straight line between them on the color wheel. This option is enabled when more than one color is selected.

HSV Blend: Click HSV Blend to create a blend between the first and last selected colors using the shades that fall on an orbit between them around the color wheel. This option is enabled when more than one color is selected.

Undo: Click Undo to cancel the last action performed on the selected colors.

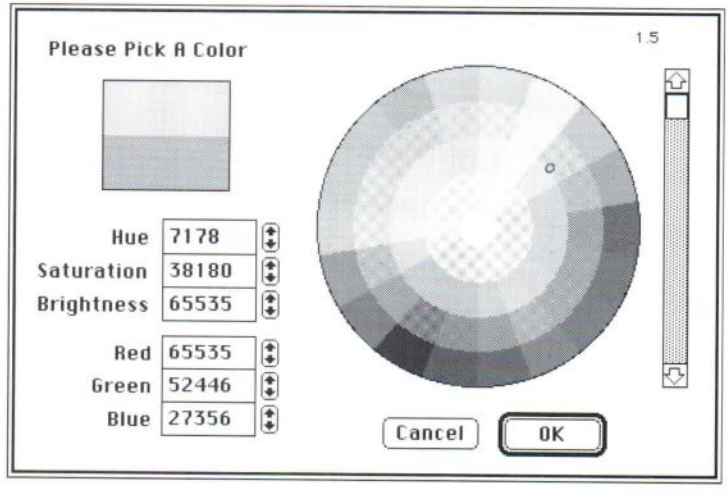
For more information on RGB and HSV, see "Color Info..." on page 19-42.

Saving color palettes

After you modify your selected colors, you can save the color palette they are in. Click **Save Colors** to display a directory dialog box for naming and saving a your modified color palette as a new file. Select the disk and folder where you want to place the file, type a name for the file in the text box, and click Save.

Pick

Select a single color in the active palette and click Pick to open the Canvas Color Picker dialog box. Use this dialog box to change the Hue, Saturation, Brightness, and amounts of red, green, and blue in the selected color with the aid of a color wheel.



Your selected color is marked by a circular pointer on the color wheel. It also appears in the preview box on the left side of the dialog box. The text boxes display the corresponding values of the selected color.

1. **Use the scroll bar on the right side of the color wheel to adjust the brightness of the selected color.**

   Brightness is the amount of black in a color. To add black to the selected color (reduce the brightness), drag the scroll box towards the bottom of the scroll bar.

   As the color changes, it appears in the top half of the preview box and the position of the circular pointer on the color wheel changes.

2. **Change the color's hue, saturation, brightness, or amount of red, green, or blue by typing a value from 0 to 65535 in the corresponding text box or using the arrows to adjust the amount.**

   Hue is the color's position as it orbits the color wheel.

Saturation is the color's intensity, or its distance from the center of the wheel.

Brightness is the amount of black in the color.

Red, **Green**, and **Blue** refer to the amount of these colors in the selected color.

Refer to the *Using* section for more information on these color properties.

When you are done editing your color, click OK to replace the color you selected in the active palette with your new color. The Color Picker dialog box closes. Click Cancel to close the Color Picker dialog box without saving your changes.

There are several other ways you can use the Color Picker dialog box.

- Double-click a color in the Colors palette in the Tool Box
- Hold down the Control key and click the Fore Color or Back Color palette icon in the Tool Box
- Hold down the Control key and click a color palette pop-up box in a dialog box

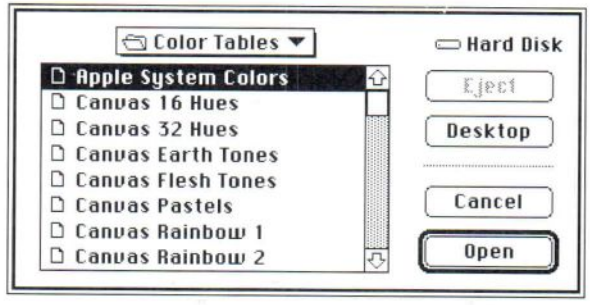
The selected color appears on the color wheel. Use the dialog box to change the amount of red, green, and blue, or the hue, saturation, and value (brightness) of the selected color.

Get Colors...

You can change your active palette using Get Colors in the RGB Color Manager.

1. **Click Get Colors to display a directory dialog box.**
2. **Scroll through the directory to locate and open a folder called Color Tables.**

   Your Canvas package includes a folder called Color Tables containing eight color palette files.



3. **Select the color palette you want from this folder and click Open.**

   The color palette you select appears in the RGB Color Manager.

User Tip: When you switch color palettes, the color illustrations in the active document, particularly 8-bit deep paint objects, might change as well.

Rotate Right

The Rotate Right submenu in the Effects menu displays clockwise rotation increments. The preset options are 90°, 60°, 45°, 30°, and 15°. Choose Other to open the Rotation Specifications dialog box. Type your degree of rotation in the Rotate Right text box. Click OK to rotate the selected objects or Cancel to disregard it.

Object rotated right 60°

User Tip: To rotate a copy of the object, hold down the Option key when you choose Rotate Right.

Rotate Left

The Rotate Left submenu in the Effects menu displays counterclockwise rotation increments. The preset options are 90°, 60°, 45°, 30°, and 15°. Choose Other to open the Rotation Specifications dialog box. Type your degree of rotation in the Rotate Left text box. Click OK to rotate the selected object or Cancel to disregard it.

Object rotated left 45°

User Tip: To rotate a copy of the object, hold down the Option key when you choose Rotate Left.

Rounded Rectangle tool

The Rounded Rectangle tool lets you draw rectangles and squares with rounded corners. To draw a rounded rectangle:

1. **Select the Rounded Rectangle tool from the Tool Box.**

2. **Hold down the pointer in the Canvas Window and drag to create the rounded rectangle.**
3. **Release the mouse button when the object is the desired size.**

   The rounded rectangle appears surrounded by eight selection handles and one circular handle.

User Tip: Hold down the Shift key as you drag with the Rounded Rectangle tool to create a rounded square.

Editing rounded rectangles

When you create a rounded rectangle as described in the preceding steps, you can select it and change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the Tool Box palette icons. You can also edit its colors using the PANTONE® Colors window and the Color Info Manager; both items are explained separately in this section.

To reposition a rounded rectangle, drag it to a new location. To resize it, drag a selection handle.

Changing the roundness of corners

Rounded rectangles have an extra selection handle. Drag this circular handle to change the roundness of the corners of the rectangle. Drag away from the rounded rectangle to make it more circular. Drag toward the object to make the corners sharper.

You can also adjust the corners of a selected rounded rectangle by choosing Object Specs from the Object menu; Dia. H. and Dia. V. measure the horizontal and vertical diameter of the rounded corners (see page 19-149 for more information).

Rulers...

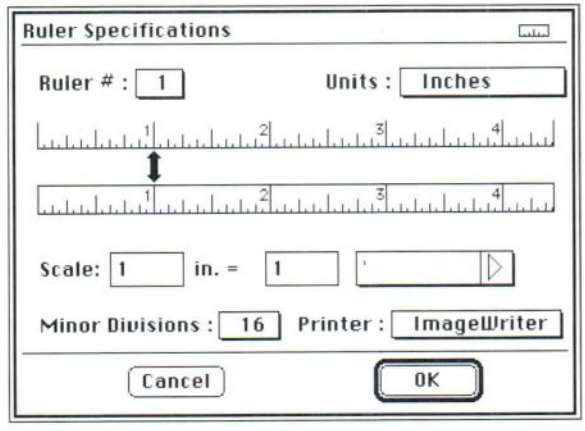
The Rulers command in the Layout menu opens the Ruler Specifications dialog box, which is the control center for the settings of your rulers. This dialog box lets you choose a default ruler or customize any of the six Canvas rulers.

The Ruler Specifications dialog box is available through Ruler Specs in your Canvas Tools folder. See page 19-92 for more information on external tools.

To use the Ruler Specifications dialog box:

1. **Choose Rulers from the Layout menu.**

   The Ruler Specifications dialog box appears.



2. **Choose a ruler to edit from the Ruler # pop-up menu.**

   The rulers, pop-up boxes, and text boxes change accordingly. The second ruler shows how your ruler is displayed in the Canvas Window.

3. **Choose a measurement system for your ruler from the Units pop-up menu.**

   When you change the units of the active ruler, the autogrid adjusts itself as well.

4. **Change the scale of the ruler, if desired, by typing a new number in the Scale text box.**

   These are your representative units. The second ruler in the dialog box changes according to your scale.

5. **Type a number in the second text box for the real units of the scale.**

6. **Specify the measurement system for the real units.**

   There are two ways to do this. Hold down the pointer on the right-facing indicator adjacent to the text box and choose a predefined measurement, such as miles, from the pop-up menu or type your own units in the text box.

7. **Choose the number of subdivisions displayed by your rulers from the Minor Divisions pop-up menu.**

   The second ruler changes accordingly.

8. **Choose your output device from the Printer pop-up menu.**

   Choose ImageWriter or LaserWriter.

   These settings make small adjustments, which are reflected in the rulers displayed on screen, to account for scaling differences between PostScript and QuickDraw printers. For example, if you want a one-inch square box to print as exactly one inch square on the LaserWriter, set the Printer to LaserWriter. If you print the same square on an ImageWriter without changing the Printer option, the square will be 4% larger. The converse is also true.

9. **When you are done, click OK or press the Return key to save your settings or click Cancel to disregard them.**

   The Ruler Specifications dialog box closes.

> **User Tip:** When printing Canvas documents on a LaserWriter, *do not* check Precise Bitmap Alignment under Options in the Page Setup dialog box. This option instructs the printer driver to reduce the drawing by 4%.

Displaying rulers

To display or hide the rulers in your Canvas Window, choose the Rulers option (⌘-Option-Shift-R) of the Show/Hide submenu in the Layout menu. When rulers are displayed, you can also change their zero point and use peel-away rulers. See page 19-255 for more information on displaying or hiding the rulers in the Canvas Window.

Save

The Save (⌘-S) command in the File menu updates your active (topmost) document on disk, recording any changes that you made since the last time the document was saved. It overwrites the previous version of your document. The Save command is dimmed if you did not make changes to the document since the last time it was saved.

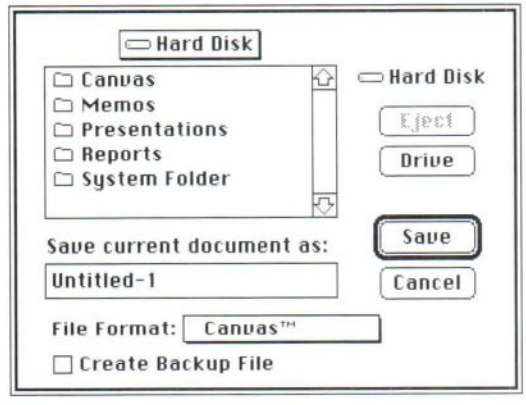
If your document has never been saved, the Save As directory dialog box appears. Use this dialog box to select a file format, name your file, and save it in a particular disk or folder.

Save As...

The Save As command (⌘-Option-S) in the File menu saves your active (topmost) document for the first time. It also lets you save a document under a different name, different file format, or in a different location. To use the Save As command:

1. **Choose Save As from the File menu.**

   The Save As directory dialog box appears.



2. **Click Drive to select the disk where you want to store your document.**
3. **Scroll through the directory to select the folder in which you want to save your document.**

4. **Choose the File Format pop-up menu and drag through it to highlight your choice.**

   Information on each of these file formats is in the following paragraphs.

5. **Select the Create Backup check box if desired.**

   This option creates a backup file when it is checked. Every time you save the document, its backup file is updated to the previously saved version of the document.

6. **Type a name for your document in the "Save current document as" text box and click Save.**

   Your document is saved under the name you type. The Save As dialog box closes.

   If you chose a File Format other than Canvas, an alert box appears warning you that saving in these formats might result in a loss of data or accuracy. These formats might not support all the QuickDraw features of Canvas and these features might be lost if you reopen the document in Canvas. Click Yes to save your document in the designated format. Click No to return to the dialog box without saving it.

File Formats

You can save your Canvas document in a number of file formats. The CGM, DXF, IGES, MacPaint, EPSF, Illustrator 1.1, Illustrator 88, Separations, StartupScreen, TIFF, and UltraPaint file formats are available through when certain external tools are active in your Canvas Tools folder. See page 19-92 for more information on external tools.

Canvas Prefs: Choose Canvas Prefs if you want to use your document and its settings as a template for future documents you create in Canvas. See "Canvas Prefs file" on page 19-35 for more information on this file format.

Canvas: The Canvas file format is the default file format; use it unless you need to import your document to a program that does not support Canvas files. This format retains all the document's data and accuracy when you reopen it in Canvas.

Canvas 2.1: Use this format when you want to open a document created in the current version of Canvas in a previous version of Canvas.

This format does not support features which were not available in previous versions of Canvas; these features will be lost in the conversion:

External tool objects	Gradient fills
Kerning	Leading
Text scaling	Full justification
Hollow and half arrowheads	Hatch patterns

This option is available when Canvas 2.1 I/O is active in your Canvas Tools folder.

CGM: The CGM (Computer Graphics Metafile) format is a format commonly used by mainframe and IBM PC-compatible technical illustration programs. It allows Macintosh files to be read by a PC or mainframe computer and vice versa. Use this format if you want to open a Canvas document on a PC or mainframe computer. This format is available when CGM I/O is active in your Canvas Tools folder. It is similar to the DXF format, but supports more color and text features. See "Saving CGM files" on page 19-236 for more information on saving in this format.

DXF, IGES: Save your Canvas documents in the DXF (Drawing Exchange file Format) or IGES (Initial Graphics Exchange Standard) format when you want to be able to open them in technical illustration programs. Choose IGES or DXF based on which format is supported by the program you are exporting to. These formats are available when DXF I/O and IGES I/O are active in your Canvas Tools folder. See page 19-240 for more information on saving DXF and IGES files.

Illustrator 1.1™, Illustrator 88™: Documents saved in the Illustrator 1.1™ and Illustrator 88™ file formats can be read by the graphics programs Adobe Illustrator™ and Adobe Illustrator 88™ respectively. These formats convert Canvas documents from the QuickDraw graphics language to the PostScript® page-description language so that they can be imported to other PostScript drawing programs.

Illustrator files do not support pen modes other than Copy. They also do not support pen or fill patterns other than PostScript grays (displayed by the gray-scale bar at the bottom of the Patterns palette). These options are available when Separations is active in your Canvas Tools folder.

EPSF: Choose EPSF to convert a Canvas document from the QuickDraw graphics language to the PostScript® page-description language, allowing it to be exported to PostScript programs while maintaining its original quality and high resolution. This option is available when Separations is active in your Canvas Tools folder.

When you save a document in the EPSF format, Canvas asks if you want to save changes to the document before you close it. It is a good idea to save the document in the Canvas format so that you can edit it later if necessary.

You can also print a document as an EPSF file without saving it in this format. Choose the PostScript option of the Print Special submenu in the File menu to do so. See page 19-217 for more information.

MacPaint: Save your document in the MacPaint file format when you want to export it to the graphics program MacPaint™. This option is available when MacPaint I/O is active in your Canvas Tools folder.

PICT, PICT 1: PICT is a file format that allows you to export your Canvas document to almost any Macintosh program. Use PICT if your document was created on a color Macintosh; use PICT 1 if your document was created on a black-and-white Macintosh (Macintosh 512, Macintosh 128, etc.).

Separations: Save color separations of your document if you are going to print the document using the process-color method. The separations you save in Canvas are used by a prepress service bureau to make photographic negatives. These negatives are used by a print shop to make ink plates for the printing press.

When you save a document in the Separations format, Canvas asks if you want to save changes to the document before you close it. It is a good idea to save the document in the Canvas format so that you can edit it later if necessary. When you open a Separation file, it opens as an EPS file and the illustration appears as a white box with an "X" in the center which can be edited as a picture object. This option is available when Separations is active in your Canvas Tools folder.

See "Saving Separations" on page 19-241 for more information on saving files in this format.

StartupScreen: The StartupScreen format lets you save a document as a drawing that appears when you start up your computer. This option is available when StartupScreen I/O is active in your Canvas Tools folder.

See "Saving StartupScreen files" on page 19-242 for more information on saving a StartupScreen file.

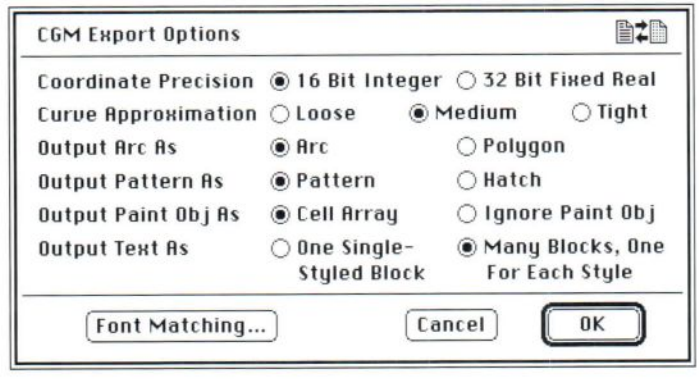
TIFF: TIFF (Tagged Image File Format) is a file format that stores paint images along with their gray-scale, black-and-white, or color information. This option appears dimmed unless a paint object is selected. TIFF is available when TIFF I/O is active in your Canvas Tools folder.

See "Saving TIFF files" on page 19-244 for more information on saving files in this format.

UltraPaint: Save your document in the UltraPaint format when you want to export it to the graphics program UltraPaint™. This format is available when UltraPaint I/O is active in your Canvas Tools folder.

Saving CGM files

You can change the default options for saving CGM files. When you save a document in the CGM file format, hold down the Command key (⌘) until a dialog box appears asking you to select several options:



Coordinate Precision: Choose a coordinate precision option based on the type of system you are exporting to. Choose 16 Bit Integer unless a high-precision drawing is being exported. Canvas rounds off the measurements of objects accordingly.

Curve Approximation: In CGM files, Bézier curves are converted to polygons. The tighter a curve approximation, the more closely the polygon will resemble the original curve. The default setting is Medium.

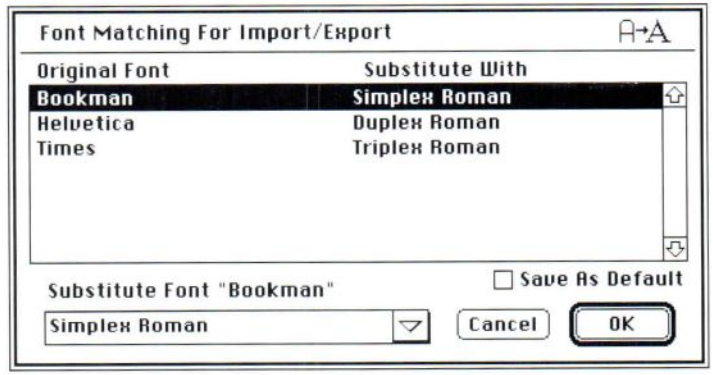
Output Arc As: Certain programs cannot import arcs in CGM files correctly. In such a case, choose the Polygon option. Select Arc if the program you are exporting to imports arcs as arcs.

Output Pattern As: Certain programs cannot import bitmap patterns. In such a case, select Hatch and the bitmap patterns will be replaced by hatch patterns.

Output Paint Obj As: If the program you are exporting to can read paint objects, choose Cell Array. If you choose Ignore Paint Obj, all paint objects are ignored and do not appear in the document.

Output Text As: To export your text and keep it looking as close to the original as possible, select Many Blocks, One for Each Style. This option creates a separate text object for all text characters with a different style. Justification, tabs, kerning, and other properties are maintained. One Single-Styled Block maintains the font, size, and color only of the first character in each text object.

Font Matching: This option is enabled when the file contains text. Click this button to open a dialog box which lets you assign CGM fonts to substitute for your document's Macintosh fonts.



The fonts listed under **Original Font** are the fonts used by your document; **Substitute With** lists their substitutions. To choose a new substitute font:

1. **Click the font in the scrolling list you want to substitute.**

   The line highlights.

2. **Type a new font name in the text box at the bottom of the dialog box.**

   You can also hold down the pointer on the downward-facing indicator adjacent to the text box and drag through the pop-up menu to choose a font.

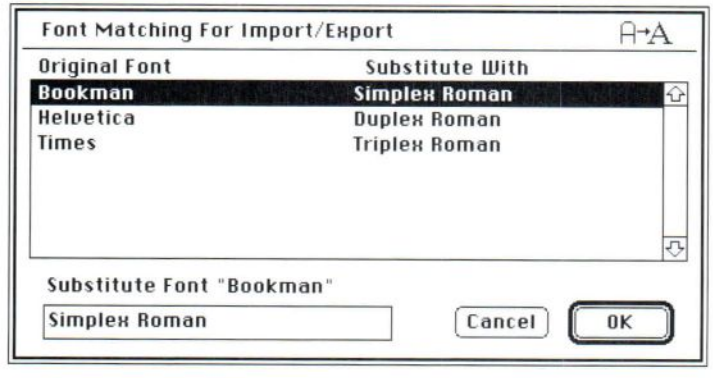
3. **Click OK to return to the CGM Export Options dialog box.**

Click **Save As Default** to create a default font substitution. Fonts designated under Save As Default also appear in the pop-up menu adjacent to the text box.

Click OK to save your font substitutions and return to the CGM Export Options dialog box. Click Cancel to return to the CGM Export Options dialog box without saving your font substitutions.

Setting default font substitutions

To check the default font substitutions, hold down the Option key and click Font Matching in the CGM Export Options dialog box. The following dialog box appears:



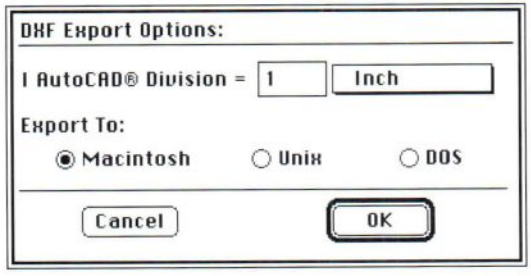
- Click the Original Font in the scrolling list whose default substitute you want to change and type a new Substitute Font in the text box.

- To delete a default setting, select the line in the scrolling list and press the Delete key to delete the Substitute Font from the text box.

When you are done, click OK in the Font Matching dialog box to return to the CGM Export Options dialog box or click Cancel to return to the Canvas Window without saving the file. If you click OK in both Font Matching dialog boxes, Canvas begins converting the file to the CGM format.

Saving DXF files

If you choose the DXF format, hold down the Command key (⌘) when you click Save until the following dialog box appears:



1 AutoCAD® Division: Set the Scale for your drawing by typing the number of Canvas units for each AutoCAD® unit in the text box and choosing the Canvas unit of measure from the adjacent pop-up menu.

Export To: Select Macintosh, UNIX, or DOS depending on which format can be read by the program you will export to.

DXF file restrictions

DXF files do not support all of the features provided by Canvas. Where possible, solutions have been approximated.

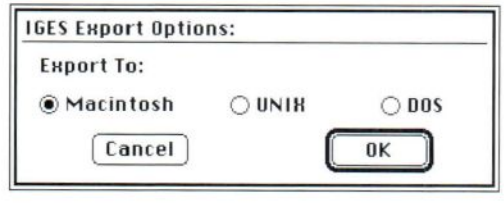
- DXF files do not support paint objects or picture objects.
- DXF files do not support pen or fill patterns. All objects will appear with a solid pen pattern and no fill pattern.
- Background colors are exported as white.
- DXF does support pen sizes; however, if the height and width of a pen size are different, the average of the two is taken.

- Pen modes are not supported. All objects are supported in the Or mode.
- Dashed lines are supported; however, they restart for each line segment and are not continuous around the object.
- Wild characters and spaces are removed from layer names and are converted to uppercase letters.
- Grayed layers are not supported. Objects on these layers will be shown in their original color.

For information on importing DXF files, see page 19-157.

Saving IGES files

If you choose the IGES format, hold down the Command key (⌘) when you click Save until the following dialog box appears:



You can select the Macintosh, UNIX, or DOS export format. Select the format that corresponds to the type of system you will export your document to.

IGES import restrictions

Some Canvas features are not supported in the IGES format.

- All layers are exported. IGES supports layers but not layer names. Each layer is a given numeric value instead.
- Grayed layers are not supported and all grayed objects are exported as ungrayed.
- Background colors are exported as white.
- Fill patterns are exported as no fill (N).
- Pen size is supported. However, if the pen height and width are different, the average of the two is exported.

- Pen modes are not supported; all objects are exported in the OR mode.
- Pen patterns are not supported; objects are exported with a solid pattern.
- Picture objects and paint objects are not supported.

Saving Separations

Before you save color separations of your document, you should also customize them.

1. **Choose Separation Setup from the Print Special submenu in the File menu.**

   The Separation Setup dialog box appears. See "Separation Setup" on page 19-219 for more information on this dialog box.

2. **Choose a Paper Size other than Use Page Setup.**

   Print shops cannot determine paper size unless it is specified in this box. If necessary, choose the Paper Size pop-up box and choose a size that will hold your entire illustration.

3. **Click the Plates to Print check boxes next to the separations you want to save.**

   If you check one or more colors, a separation for each will be saved. If you check only Composite, the unseparated document will be saved. If you check one or more colors and Composite, the unseparated document and a separation for each color checked will be saved.

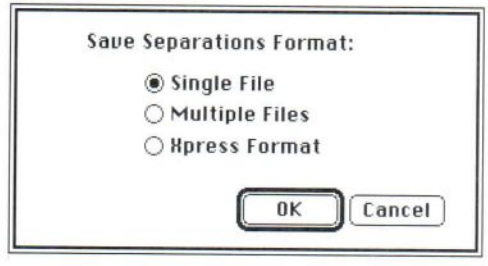
4. **Click OK to save your changes and return to the Canvas Window.**

Now that you have established which separations you want to save:

1. **Choose Save As from the File menu.**
2. **Choose Separations from the File Format pop-up menu.**
3. **Click the Create Backup check box to save a backup copy of the document.**
4. **Type a name for your separations in the text box, select a location and disk for your separations in the directory, and click Save.**

   If you chose Use Page Setup under Paper Size in the Separation Setup dialog box, an alert box appears telling you to choose another paper size. Click Cancel to return to the Canvas Window.

Otherwise, a dialog box appears asking you which format you would like to save your separations in.



5. **Choose a format for your separations.**

   Single File saves all the separations in a single file from which the negatives are made as a group.

   Multiple Files saves the separations as separate files which are made into negatives individually. Multiple filenames end with the extensions .C, .M, .Y, and .K, and the composite filename ends with the extension .comp. Select this option if you will take the separations to a prepress service bureau.

   XPress Format (also known as Desktop Color Separation or DCS) is designed for illustrations that will be placed in the desktop-publishing program Quark XPress™. XPress Format saves five separation files as Quark XPress documents, regardless of the number checked under Plates to Print in the Separation Setup dialog box. These file names end with the extensions .C, .M, .Y, .K, and .Main. You can place the .Main file in Quark XPress and see the illustration as you modify it. You can print the separations or negatives individually.

After you have chosen a format for your separations, click OK to save your separations or Cancel if you decide not to. You return to the Canvas Window.

Saving StartupScreen files

To an illustration as a StartupScreen file that appears on your screen during start up time:

1. **Choose Save As (⌘-Option-S) from the File menu.**

   The Save As dialog box appears.

2. Locate your System folder in the Save As dialog box directory.

A StartupScreen file must be in your System folder in order for it to appear at start up time.

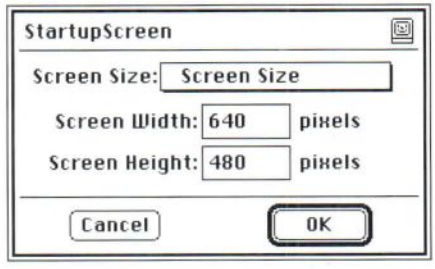
3. Choose the StartupScreen file format from the File Format pop-up menu.

StartupScreen appears as the filename in the "Save current document as" text box. Only a document named *StartupScreen* that is in your System folder will appear at start up time.

To choose a screen size for your StartupScreen document, hold down the Command key (⌘) when you click Save. Otherwise, the document is saved at the size of your main monitor.

4. Click Save or hold down the Command key and click Save until the following dialog box appears.

The following dialog box lets you specify a size for your StartupScreen document.



There are two ways you can specify a screen size:

- Choose the monitor for which the StartupScreen file will be displayed from the Screen Size pop-up menu. This menu lists the standard Macintosh screen sizes.
- Type values in the Screen Width and Screen Height text boxes to specify a custom size. Remember there are 72 pixels/inch.

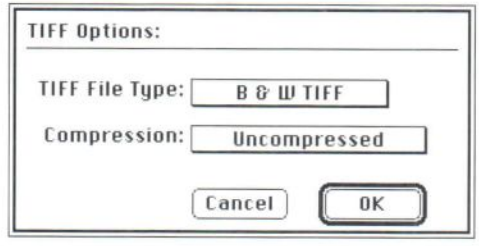
The StartupScreen illustration will appear centered, regardless of the screen size.

5. Click OK to save the StartupScreen or Cancel if you change your mind.

You return to the Canvas Window.

Saving TIFF files

When you choose TIFF from the File Format pop-up menu and click Save, the TIFF Options dialog box appears where you can choose a file type and compression option.



1. **Choose a TIFF File Type from the adjacent pop-up menu.**

   Choose **B & W TIFF** if you want the file to be saved with black and white information only. B & W TIFF is enabled when the file contains only 1-bit paint objects.

   Choose **Gray-scale TIFF** if you want the file saved with gray-scale information. Color TIFF files can be saved as Gray-scale TIFF also.

   Choose **Color TIFF** to save your document as a color TIFF file.

2. **Choose a Compression option from the adjacent pop-up menu.**

   Choose **Uncompressed** if you want to save your files without any compression. This mode takes up the most disk space and is the fastest. This mode is only available for B & W TIFF files.

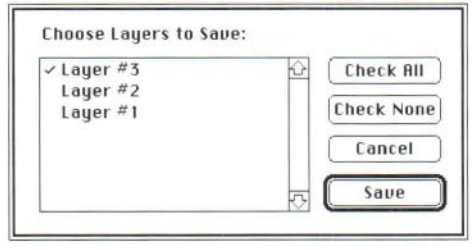
   Choose **Simple Compression** if you would like to compress the selected file. Simple Compression is available for B & W, Color, and Gray-scale TIFF files.

   Choose **PackBits Compression** if you would like to highly compress the selected file. This mode is only available for B & W TIFF files.

3. **Click OK to save the document as a TIFF file or click Cancel to return to the Save As dialog box.**

Save Layer As...

The Save Layer As command in the Edit menu lets you save one or more layers of your document as a separate document. Choose Save Layer As to display a dialog box similar to the following:



Click each layer you want to save. A check mark appears next to it. Canvas combines multiple layers into a single document. Each layer you check remains separate in the new document, provided that you save it in the Canvas format.

Check All: Click Check All to select all the layers. You can then click to deselect the layers you do not want to save.

Check None: Click Check None to deselect all the layers in the scrolling list.

Save: When you click Save, the Save As dialog box opens. Select a disk and location to store your file and a file format. Type a name for the file in the text box and click Save. The dialog box closes and you return to your document.

Click Cancel to return to the Canvas Window without saving any layers.

> **User Tip:** If you are having trouble saving a single-layer document, try saving it with the Save Layer As command.

Scale...

The Scale command (⌘-Option-\) in the Object menu opens the Scaling Specifications dialog box when one or more objects are selected. This dialog box lets you reduce or enlarge a selected object or group

of objects. You can scale as a percentage or ratio of the original drawing horizontally, vertically, or both. You can also scale text and pen sizes along with the object.

This dialog box is available when Scale Specs is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Scaling Specifications dialog box settings

Expressed as a: You can scale your objects by a Percentage or Ratio. Click the button next to your choice. The Scaling Specifications dialog box appears differently depending on your selection.

Click the ✣ check box or the ↔ and/or ↕ check boxes to specify your scaling factor. Use the adjacent text boxes to type in the percentage or ratio by which you are scaling. You must select the scaling option check box. Typing a percentage or ratio does not select the scaling option.

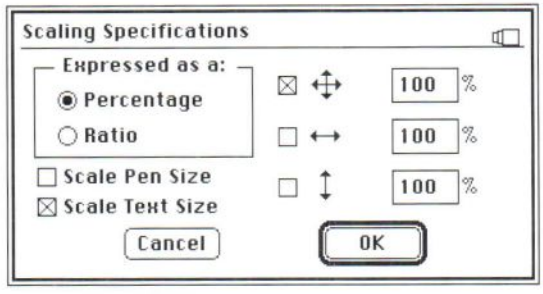
- Select the ✣ check box to scale an object and maintain its original proportions. When you check this box, any check marks in the ↔ and ↕ boxes disappear.
- Select the ↔ and/or ↕ check boxes if you want to scale along one axis or you want to specify separate horizontal and vertical scaling factors. When you check this box, any check mark in the ✣ check box disappears.

Scale Pen Size: Click the Scale Pen Size check box to scale the pen size of the object along with the object.

Scale Text Size: Click the Scale Text Size check box to scale the text in your selection.

Scaling by percentage

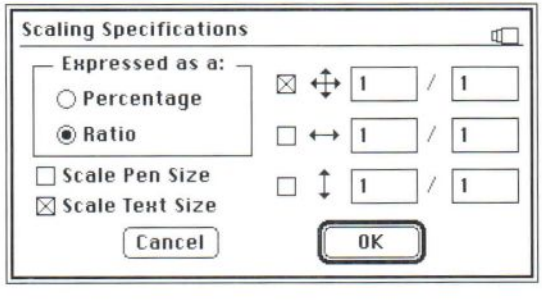
When you click the button next to Percentage, the dialog box appears as shown.



Select a scale factor and type a number in the corresponding text boxes to scale your objects along the X-axis, Y-axis, or both. To enlarge the objects, type a percentage greater than 100. To reduce the objects, type a percentage less than 100. If you type 100, the size of the objects will not change.

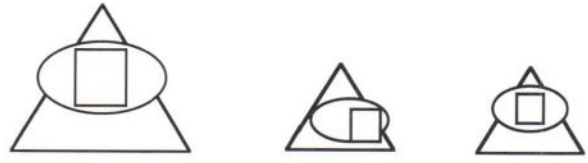
Scaling by ratio

When you click the button next to Ratio, the dialog box appears as shown.



Select a scale factor and type a number in the appropriate text box or boxes to reduce or enlarge the objects along the X-axis, Y-axis, or both. If you type a ratio of 1 to 1, the objects will not change.

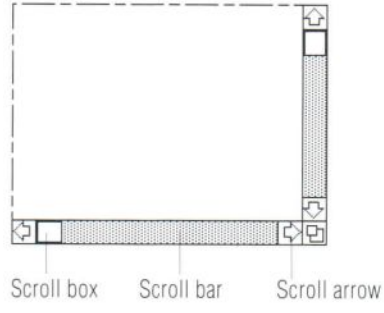
To retain the alignment characteristics of individual objects when scaling a group of objects, hold down the Option key when you click OK in the Scaling Specifications dialog box.



Original objects | Objects scaled without Option key | Objects scaled with Option key

Scroll bars, scroll boxes, and scroll arrows

The scroll bars, scroll boxes, and scroll arrows along the right side and bottom of the Canvas Window are for vertical and horizontal movement around your document.



- Click the scroll bars or scroll arrows to move horizontally or vertically one window at a time.
- Drag the scroll boxes to immediately move to an approximate location in your illustration.
- Hold down the pointer on the scroll arrows to scroll continuously through the Canvas Window.

Search & Replace

The Search & Replace command in the Text menu displays a dialog box which lets you search for words or text characters throughout your document and replace them with new words.

This command is available when Search & Replace is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use Search & Replace:

1. **Choose Search & Replace from the text menu.**

   The Search & Replace dialog box appears.

2. **Type the word you want to search for in the Find What text box.**

   Select **Whole Word** to locate only exact matches of the Find What text. For example, if Find What is *any* and Whole Word is selected, Canvas will only find the word *any*. When Whole Word is not selected, Canvas will find words like *anything*, *anyone*, and *anybody* as well.

   Select **Match Upper/Lowercase** to locate only exact matches of the Find What text with regard to case (capitalization).

3. **Type a replacement word in the Change To text box.**

4. **Click Search to locate the first occurrence of the word in the Find What text box.**

   When you click Search, Canvas searches for the word throughout all the text in the document. When the word is found, Canvas stops the search and selects the word in the document.

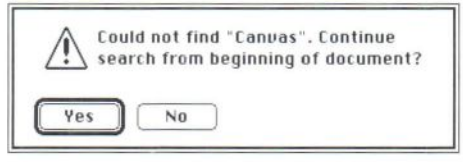
   If the Search & Replace dialog box hides the selected word, drag the dialog box by its title bar to new location.

5. **Click Change or Change All to replace the selected word with the word in the Change To text box.**

   Click **Change** to change only the selected word. After replacing the word, Canvas moves on to find its next occurrence. You can type a different word in the Change To text box each time you want to change the selected word. You can also close the Search & Replace window after a word is found and correct it from within the document.

   Click **Change All** to change all occurrences of the word throughout the document.

When Canvas reaches the end of the document's text, it displays the following alert box, with the word from the Find What text box in quotes:



Click Yes to continue the search or No to discontinue it. If you click Yes, Canvas searches for the word again and displays an alert box when the end of the document is reached.

To close the Search & Replace dialog box and end your search, click Cancel or click the close box in the top left corner of the Search & Replace dialog box.

Select All

The Select All command (⌘-A) in the Edit menu selects all of the objects in the active layer of your document. You can also select objects on all visible layers by choosing Select Across All Visible Layers under Selection Options in the Preferences dialog box. See page 19-214 for more information.

Selection handles appear around each object after you choose this command. To deselect one object at a time after choosing this command, hold down the Shift key and click each object.

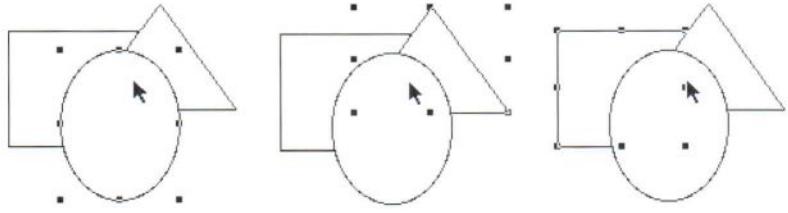
Selecting objects created with the same tool

To select all the objects that were created with a specific tool, select a core or external draw tool or the Paint Object Creator in the Tool Box and choose Select All from the Edit menu. The command reads differently depending on which tool is selected. For example, to select all rectangles, select the Rectangle tool and choose Select All Rectangles from the Edit menu. Selection handles appear around each rectangle in the active layer or throughout your document.

Selection modifiers

Use the Control or Option key as a modifier when selecting objects.

- To cycle through a stack of objects, hold down the Control key and click the point where all the objects meet. Each time you click Canvas selects the next object in the stack.



- To select multiple objects, hold down the Option key and use the Arrow tool to draw a selection rectangle across the objects you want to select. Canvas selects all objects that touch the rectangle.

Selection...

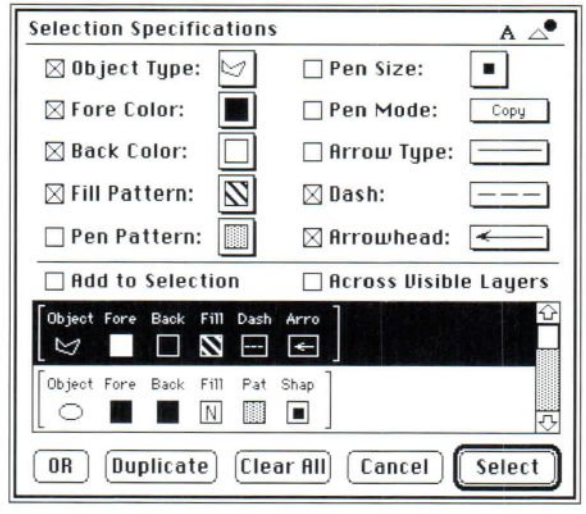
The Selection command (⌘-Option-A) in the Edit menu opens the Selection Specifications dialog box. This dialog box lets you select specific objects and properties in your document that have the attributes you specify. You can select several different objects with different properties at one time and add these objects to ones already selected in your document. You can also select objects in the active layer or in all the layers of your document.

The Selection Specifications dialog box is available when Selection Specs is active in your Canvas Tools folder. See page 19-92 for more information on using the external tools in this folder.

To use the Selection command:

1. **Choose Selection from the Edit menu.**

   The Selection Specifications dialog box appears.



2. **Drag through the pop-up menus to select the desired setting for each property you want to search for.**

   The properties you choose are added to the selection set in brackets in the scrolling list. The available settings depend on the Object Type you choose.

   You can create a selection set with or without an object type. To remove an object type from the selection set, deselect the Object Type check box.

You can have more than one selection set in the scrolling list. To create additional selection sets:

3. **Click OR to begin another selection set.**

   OR creates a new set of brackets in the scrolling list. Select an object type and properties to complete the new selection set.

4. **Click Duplicate to copy the selected selection set into the scrolling list.**

Duplicate is useful when you want to create a search set similar to the previous one and change only those properties you need.

5. **Use the remaining buttons in the dialog box to further customize the selection sets.**

   Add to Selection selects objects in your document specified by the selection sets and continues to select those objects in your document that are already selected.

   Across Visible Layers selects objects in all the visible layers of your document rather than just the active layer. This option is independent of Select Across All Visible Layers in the Preferences dialog box.

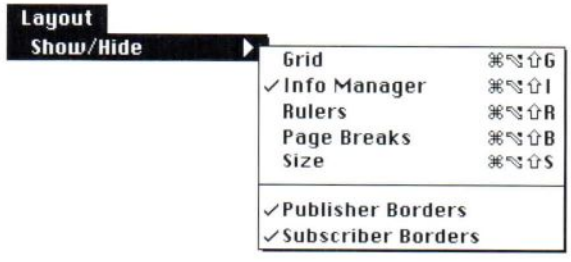
   Clear All removes all selection sets from the scrolling list. To delete one selection set, select it and press the Delete or Backspace key.

6. **Click Select to select the specified objects or Cancel if you change your mind.**

   The Selection Specifications dialog box closes. Canvas selects objects in your document based on all the selection sets in the scrolling list.

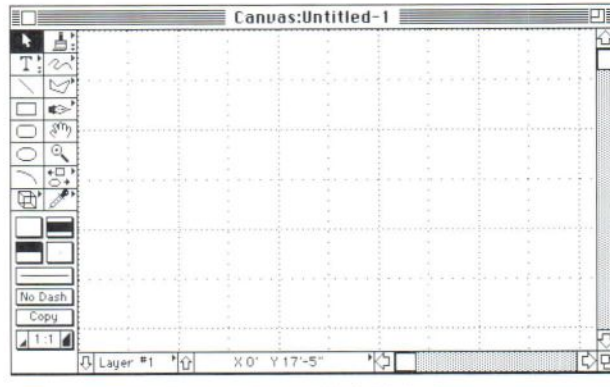
Show/Hide

The Show/Hide submenu in the Layout menu displays items which you can show or hide in your Canvas Window. To select an option, drag through the submenu to highlight your choice. When an option is active (showing), a check mark appears next to its name. To hide the option, choose it again so the check mark disappears.



Grid

The Grid option (⌘-Option-Shift-G) shows or hides grid lines in the illustration area of the Canvas Window. The specifications for this grid are controlled by the Grids command in the Layout menu. The grid display is independent of the Snap To Grid command in the Layout menu.



Canvas Window with Grid showing

Info Manager

The Info Manager option (⌘-Option-Shift-I) shows or hides the Information Manager on the left side of the horizontal scroll bar in the Canvas Window.

Information Manager

The Information Manager displays autodimensioning data based on the pointer's movements. These dimensions are based on the units of the active ruler's scale. The Information Manager is useful for accurately measuring, sizing, and positioning objects as you work on an illustration in the Canvas Window. For information on interpreting and pasting the Information Manager's data, see page 19-124.

Rulers

The Rulers option (⌘-Option-Shift-R) displays or hides the rulers along the top and left side of the Canvas Window. When the rulers are displayed, thin gray lines follow the pointer's movements along both axes to help you position and measure objects with precision.

You can display the rulers in inches, centimeters, picas, or pixels. Use the Ruler Specifications dialog box to change the display and scale of the active rulers. See "Rulers..." on page 19-233 for more information.

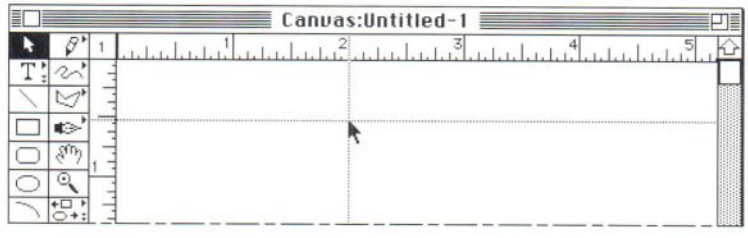
Changing the rulers' zero point

The zero point of the Canvas rulers is the point on each ruler at which the ruler begins measuring. The default zero point for each ruler is at the top left corner of the Canvas Window where the rulers intersect. You can, however, change this point and extend your rulers to display negative numbers. To do so:

1. **Choose Rulers from the Show/Hide submenu in the Layout menu if the rulers are not already visible.**
2. **Position the pointer at the intersection of the rulers in the top left corner of the Canvas Window.**

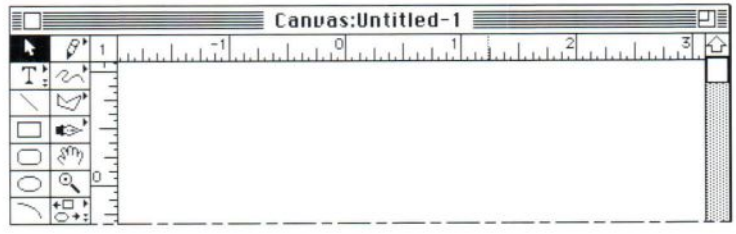
   The number of the selected ruler, as shown in the Ruler Specifications dialog box, appears at the intersection of the rulers on screen.
3. **Drag towards the bottom right corner of the Canvas Window.**

   As you drag, vertical and horizontal intersecting lines follow your movement. The position of these lines is also indicated on the respective ruler.



4. **Drag the lines the desired distance to change the zero point of each ruler.**
5. **Release the mouse button when you are done.**

The zero point of each ruler changes.



Zero point has moved

To return the rulers to their default zero point, click the number box at the intersection of the rulers in the top left corner of the illustration area.

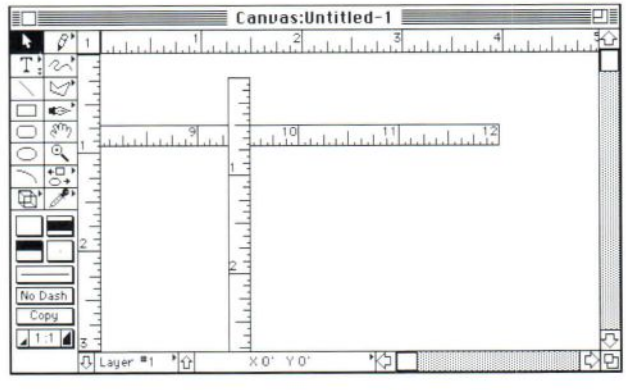
Peel-away rulers

You can also drag the Canvas rulers into the illustration area to provide additional measurement capabilities. To use these peel-away rulers:

1. **Choose Rulers from the Show/Hide submenu in the Layout menu.**
2. **Press the Option key and hold down the pointer on the desired ruler.**

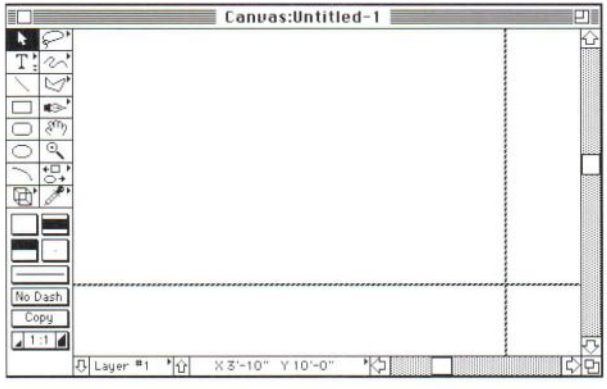
   The pointer changes to a four-headed arrow.
3. **Drag the ruler to its new location in the illustration.**

   You can drag peel-away rulers around the illustration to position them. You can cut, copy, and paste them as you would any draw object. Peel-away rulers do not display the location of the pointer.



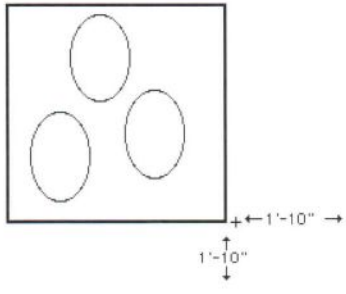
Page Breaks

The Page Breaks option (⌘-Option-Shift-B) displays or hides thick striped lines along the edges of each page in a Canvas document as specified in the Page Setup dialog box. Page Breaks are useful for large drawings. If you have divided a large illustration into a multi-page document, page breaks indicate how the individual pages will print.



Size

The Size option (⌘-Option-Shift-S) displays the pointer's horizontal and vertical distance from the ruler's zero point as you drag the mouse. It shows the dimensions of an object as you create it or hold down the pointer on it. This information is also displayed by the Information Manager at the bottom of the Canvas Window.



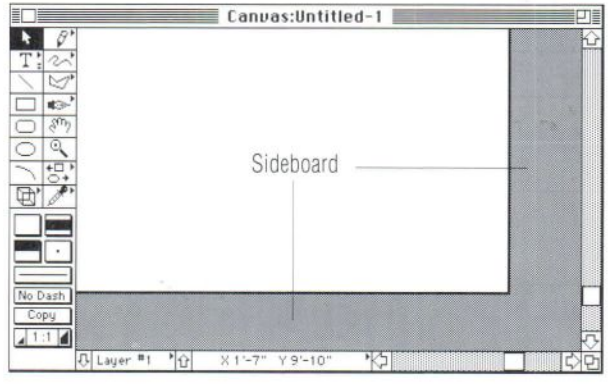
Publisher Borders/Subscriber Borders

The Publisher Borders and Subscriber Borders options let you show or hide the gray borders around the publishers or subscribers in your document. When a check mark appears next to one of these options, the borders are on.

These options appear when you are using System 7.0 or later and the System 7.0 Options tool is active in your external tools folder. See page 19-92 for more information on external tools.

Sideboard

The Canvas Window contains a gray shaded area surrounding the right side and bottom of the illustration area called the Sideboard. Objects in the Sideboard are saved with the document but are not printed.



You can move objects out of the illustration area and place them on the Sideboard until you need them. You can also create objects in the Sideboard and then move them into your document. The Sideboard is always larger than the drawing size specified by the Drawing Size command in the Layout menu.

Size

The Size submenu in the Text menu displays text sizes. The preset type sizes range from 6 to 72 points; you can also reduce or increase the

font size by one point. To define a custom font size of up to 127 points, use the Type command in the Text menu (see page 19-305).

You can also display font sizes by pressing the Shift key and holding down the pointer on the Text tool icon in the Tool Box.

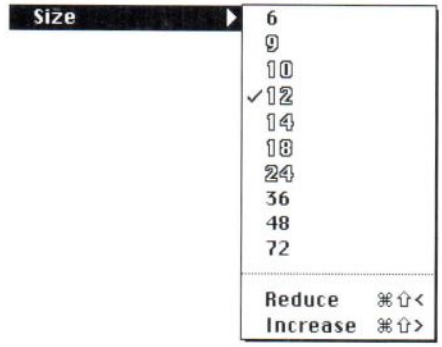
To choose a font size:

1. **Select the text object or text characters, if any, whose font size you want to change.**

   If you do not select any text, the default font size will change.

2. **Choose Size from the Text menu.**

   A submenu of text sizes appears.



3. **Drag through the submenu to highlight your choice.**

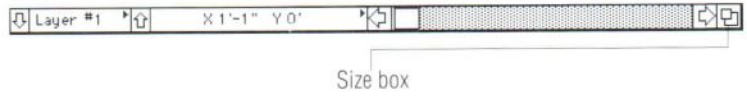
   To increase the font size of the selected text by one point, choose **Increase** (⌘-Shift->). To decrease the font size of selected text, choose **Decrease** (⌘-Shift-<). The font size of the selected text goes up or down one number in size.

When you release the mouse button, the menu closes and Canvas places a check mark to the left of your choice.

Size box

The size box, located in the lower right corner of the Canvas Window, lets you change the size of the window. You can adjust the Canvas Window to any size that fits your screen. To do so, hold down the

pointer on the size box and drag the Canvas Window to the desired size.



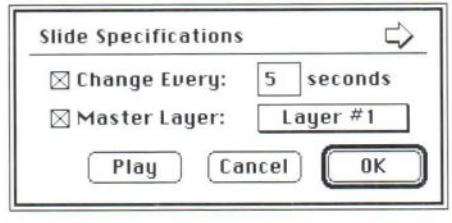
Slides...

The Slides command (⌘-Option->) in the Layout menu displays the Slide Specifications dialog box, which lets you create on-screen slide shows from the layers in your Canvas document. This dialog box is available when Slides is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Creating a slide show

Canvas uses each layer in your document as a "slide" to compose a slide show. You can scroll through the slides manually or let Canvas automatically change the slides. You can also use one of the layers as a backdrop for the remaining slides in the show.

Choose Slides from the Layout menu to display the Slide Specifications dialog box.



Change Every: Select this check box and type a number in the adjacent text box when you want the slides to change themselves. Each slide is displayed for the specified amount of time.

Master Layer: Select this check box and use the adjacent pop-up menu to select a master layer. This layer will appear in the background of each slide.

Play: Click Play to go to full screen and begin the slide show. At full screen your screen appears black except for the area containing your illustrations.

- If you selected the Change Every check box, the slides cycle continuously, changing at the interval expressed in the Change Every check box. Click the mouse button to stop the slide show.
- If you did not select the Change Every check box, you go to the first layer. Click the mouse button to cycle through the slides. After you have gone through them once you return to the Canvas Window.

  You can also use the arrow keys (next →, previous ←, first ↑, last ↓) to cycle through the slides without returning to the Canvas Window.

Using the Slides window

If you click OK in the Slide Specifications dialog box, you return to the Canvas Window where the Slides window appears. When this window is open, you are in slide edit mode and can only view one layer (slide) at a time.

Close box

Click **Last** to display the previous slide or **Next** to display the next slide in sequence. You can edit the slides as you display them.

Click **Play** to go to full screen and play your slide show according to the specifications you set in the Slide Specifications dialog box. Clicking Play in the Slides window is the same as clicking Play in the Slide Specifications dialog box.

To close the Slides window, click the close box.

You can print the individual slides in your document by choosing Slides from the Print Special submenu in the File menu. See page 19-223 for more information.

Smart Mouse

The Smart Mouse command (⌘-Option-[ ) in the Layout menu turns the active Smart Mouse™ constraints on and off and gives you access to the Smart Mouse window. Smart Mouse constraints aid in precision drawing by indicating when a draw object you are creating or any object you are dragging is within a user-specified constraint. You can then create or position your object according to the active constraint.

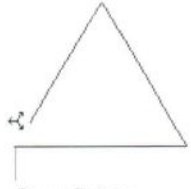
To turn Smart Mouse constraints on, choose the Smart Mouse command; a check mark appears next to its name. To turn the constraints off, choose the command again and the check mark disappears.

To find out which of your constraints are active, open the Smart Mouse window (see page 19-271) or the Smart Mouse Manager (see page 19-263). Refer to the Smart Mouse Manager for information on changing constraint settings as well.

Smart Mouse constraints are available when Smart Mouse is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

Interpreting Smart Mouse constraints

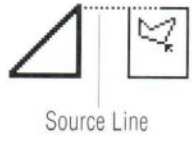
When Smart Mouse constraints are on and Smart Pointers is selected in the Smart Mouse Manager, the pointer changes its appearance when it is within a user-specified constraint. In the example below, the Multiple Angle constraint (set at 60°) is active and an equilateral triangle is being drawn.



Smart Pointer

When the angle of each line segment you draw reaches 60° or a multiple of 60°, the pointer changes from a crosshair to a Smart Pointer. A Smart Pointer is an icon that represents a Smart Mouse constraint. These are the same icons found in the Smart Mouse window.

Smart Mouse also uses Source Lines to indicate the object defining the constraint. A Source Line points to whatever object the pointer is constrained to while creating or dragging an object. In the following illustration, the Polygon & Bézier Anchors constraint is active.



When the rectangle is dragged next to the triangle, a Source Line indicates which vertex of the triangle the rectangle is constrained to.

Two constraints can affect the pointer at one time but only one Smart Pointer can be visible at a time. Press the Command key (⌘) when a Smart Pointer is visible; if another Smart Pointer appears, another constraint is in effect as well.

Smart Mouse...

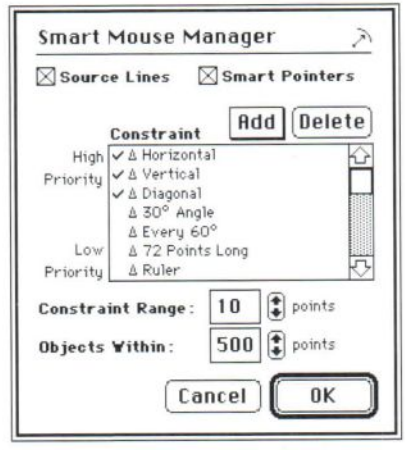
The Smart Mouse option of the Managers submenu in the Edit menu displays the Smart Mouse Manager, a dialog box that lets you set your constraint options, activate and deactivate constraints, and change constraint settings for the Smart Mouse tool. See "Interpreting Smart Mouse constraints" on page 19-262 for more information on the Smart Mouse tool.

This dialog box is available when Smart Mouse is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Smart Mouse Manager:

1. Choose Smart Mouse from the Managers submenu in the Edit menu.

The Smart Mouse Manager opens.



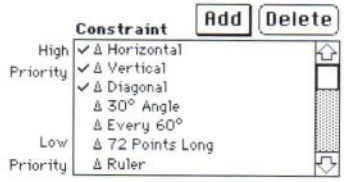
Source Lines: Source Lines are on when this box is checked. Source Lines point to the object or "source" your draw object is being constrained to while you draw or drag it. Source Lines are helpful when you have several objects in your drawing and want to constrain to a particular one.

Smart Pointers: Smart Pointers are on when this box is checked. When you create a draw object or drag an object with a Smart Mouse constraint active, the pointer changes into a constraint icon, called a Smart Pointer, when the constraint is in effect. You might want to turn off Smart Pointers if you are using a constraint such as Object Corners for which Source Lines can adequately indicate when the constraint is in effect.

> **User Tip:** To turn the Smart Pointers off temporarily while the pointer is stationary, press the Control key. The Smart Pointers will reappear the next time you move the pointer.

Constraints scrolling list: The Constraints scrolling list displays the constraint options which also appear in the Smart Mouse window (described on page 19-271). To activate a constraint, click to the left of its name in the scrolling list. A check mark appears next to it. To deactivate a constraint, click the check mark and it disappears. You can

activate as many constraints as you want at one time although only two will affect the mouse at one time.



High Priority, Low Priority: The constraints in the scrolling list are arranged by priority with the highest at the top and the lowest at the bottom. When several constraints are active, the ones with higher priority affect the draw object being created. For example, if you want to draw a line that snaps to an object's center (using the Object Fractions constraint) but the Object Corners constraint has priority, Smart Mouse locates an object corner to snap to before it locates an object center. To change a constraint's priority, select and drag it to a new position in the scrolling list.

There are two types of Smart Mouse constraints: absolute and relative. **Relative constraints** do not exhibit Smart Pointers or Source Lines until you drag the pointer since the constraint is relative to the position of the pointer with regard to the initial point. Relative constraints have a delta symbol next to their name in the scrolling list. The Relative constraints are: Horizontal, Vertical, Diagonal, Angle, Multiple Angle, Length, Ruler, and Tangent and Perpendicular.

Absolute constraints are the constraints that snap draw objects you create or drag to other objects: Object Corners, Object Fractions, Polygon & Bézier Anchors, Polygon Fractions, and Object Edges. These constraints exhibit Smart Pointers and Source Lines before and while you drag the pointer to indicate the point of constraint.

Constraint Range: Constraint Range is the horizontal or vertical distance you can be from the constraint and still display the Smart Pointer. Releasing the mouse button within this range snaps you to the constraint.

Type a constraint range in the text box or use the up and down arrows to the right of the text box to increase or decrease the constraint range.

Objects Within: Objects Within affects the absolute constraints only. It specifies how close the pointer must be horizontally or vertically to a constraining object when creating or dragging an object in order for a constraint to take effect. For example, if Object Corners is active and the Objects Within distance is 500 points, any draw object you create or object you drag can be constrained to an object within 500 points of it. If you are 510 points from the object, the constraint is not in effect.

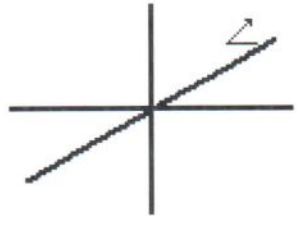
Type a distance in the text box or use the up and down arrows to the right of the text box to increase or decrease this distance.

Smart Mouse constraints

The following constraints are available from the Add pop-up menu in the Smart Mouse Manager.

Horizontal ↔, Vertical ↕, Diagonal ⤡: The Horizontal, Vertical, and Diagonal constraints let you restrict the line segments you create or edit to 45° angles horizontally, vertically, or diagonally. When you create or edit a line segment with any of these constraints active, a Smart Pointer indicates when the line segment is horizontal, vertical, or diagonal at a 45° angle. Release the mouse button while the Smart Pointer is visible to constrain the line segment accordingly.

Angle ∠: The Angle constraint lets you restrict the line segments you create or edit to a user-specified angle. When you create or edit a line segment with the Angle constraint active, the Smart Pointer indicates when the line segment is at a specified angle. Release the mouse button while the Smart Pointer is visible to constrain the line segment accordingly.



For information on changing the setting of the Angle constraint, see "Changing existing constraint settings" on page 19-271.

Multiple Angle : The Multiple Angle constraint lets you constrain line segments you create or resize to multiples of a specified angle. If the Multiple Angle constraint is set to 90°, for example, you can constrain your line segments at 0°, 90°, 180°, 270°, and 360°.

You can change the setting of this constraint through the Smart Mouse Manager; see "Changing existing constraint settings" on page 19-271 for more information.

Length : The Length constraint lets you constrain line segments and the diagonal of a draw object's bounding rectangle you create or resize to a user-specified length in points. When you create or resize such objects with the Length constraint active, the Smart Pointer indicates when the length constraint has been reached. Release the mouse button while the Smart Pointer is visible to constrain the line segment accordingly. The Length constraint bases its measurements on the 1X magnification level.

See "Changing existing constraint settings" on page 19-271 for information on changing the setting of the Length constraint.

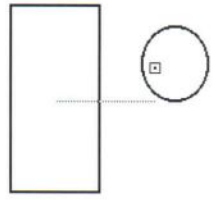
Ruler : The Ruler constraint lets you constrain draw objects you create or objects you drag to the incremental lengths of the active ruler. (To change the active ruler, choose Rulers from the Layout menu.) When you create or resize an object with this constraint active, the Ruler Smart Pointer appears at each incremental distance. For example, if your ruler is in inches with four minor divisions, the Ruler Smart Pointer appears every quarter inch that you drag the mouse. Release the mouse button when the Smart Pointer is visible to constrain the object accordingly.

Tangent & Perpendicular : The Tangent & Perpendicular constraint lets you constrain draw objects you create or objects you resize to a point which is tangent or perpendicular to another object. When you create or resize an object with the Tangent & Perpendicular constraint active, the Smart Pointer indicates when the draw object has reached a point tangent or perpendicular to another object. Release the mouse

button when the Smart Pointer is visible to constrain the object accordingly.

Object Corners ⊏ : The Object Corners constraint lets you align draw objects you create or objects you drag with the corner of another object's bounding rectangle. After you select a draw tool and place the pointer in the drawing area, the Smart Pointer and a Source Line indicate an object corner has been found to snap to. Begin or finish drawing while the Smart Pointer and Source Line are visible to constrain the object accordingly. If you are dragging an object, release the mouse button while the Smart Pointer and Source Line are visible to constrain the object.

Object Fractions ⊡: The Object Fractions constraint lets you align draw objects you create or objects you drag to a fractional point you specify inside another object. After you select a draw tool and place the pointer in the drawing area, the Smart Pointer indicates when the pointer is constrained to this fractional point inside another object. Begin or finish drawing while the Smart Pointer is visible to constrain the object accordingly. If you are dragging an object, release the mouse button while the Smart Pointer is visible to constrain the object.



You can change the setting of this constraint through the Smart Mouse Manager; see "Changing existing constraint settings" on page 19-271 for more information.

Polygon & Bézier Anchors **:** The Polygon & Bézier Anchors constraint lets you align draw objects you create or objects you drag with the anchor point of a polygon or Bézier curve. After you select a draw tool and place the pointer in the drawing area, the Smart Pointer indicates when it has found an anchor point on a polygon or Bézier curve to align to. Begin or finish drawing while the Smart Pointer is visible to constrain the object accordingly. If you are dragging an object, release the mouse button while the Smart Pointer is visible to constrain the object.

Polygon Fractions **:** The Polygon Fractions constraint lets you align draw objects you create or objects you drag to a fractional point you specify on line segments of polygons. After you select a draw tool and place the pointer in the drawing area, the Smart Pointer indicates when it has found a specified point on a line segment of a polygon to snap to. Begin or finish drawing while the Smart Pointer is visible to constrain the object accordingly. If you are dragging an object, release the mouse button while the Smart Pointer is visible to constrain the object.

You can change this constraint through the Smart Mouse Manager; see "Changing existing constraint settings" on page 19-271 for more information.

Object Edges **:** The Object Edges constraint lets you align draw objects you create or objects you drag to the edge of another object. When this constraint is met, no other constraint can indicate that it is met or being snapped to. After you select a draw tool and place the pointer in the drawing area, the Smart Pointer indicates when it has found the edge of another object to align to. Begin or finish drawing while the Smart Pointer is visible to constrain the object accordingly. If you are dragging an object, release the mouse button while the Smart Pointer is visible to constrain the object.

Adding, deleting, and changing constraints

To add a constraint to the Smart Mouse Manager and the Smart Mouse window, choose the Add pop-up menu in the Smart Mouse Manager and drag to highlight your choice.

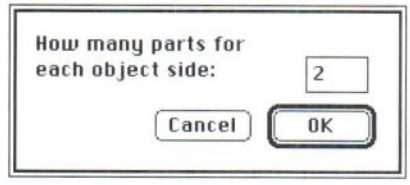
The constraint appears in the scrolling list with a check mark by its name indicating it is active. Click the check mark to deactivate the constraint and remove the check mark.

Some constraints display a dialog box when you select them from the Add pop-up menu. Type a number in the text box and click OK to save your setting or Cancel to disregard it and return to the Smart Mouse Manager.

- If you select the Angle, Multiple Angle, or Length constraint, a dialog box appears asking you to enter a new angle or length setting.

- If you select the Object Fractions or Polygon Fractions constraint, a dialog box appears asking you to enter the number of parts for each

object side or polygon segment; type 2, for example, to constrain the pointer to the center of objects or polygon segments.



In the Smart Mouse Manager scrolling list and the Smart Mouse window, these constraints are named by their settings (72 points long, 30° Angle, Object 1/2's, and so on).

Changing existing constraint settings

To change an existing constraint setting, double-click its name in the scrolling list. A dialog box appears asking you to define the new setting. Type the new setting in the dialog box and click OK to save your change or Cancel to disregard it.

Deleting constraints

To delete a constraint, click the constraint in the scrolling list to highlight it and click Delete. The constraint is removed from the scrolling list and appears enabled in the Add pop-up menu so you can choose it again.

User Tip: Since Smart Pointers do not distinguish between different settings for the same constraint, it is best to have only one setting of a constraint active at a time.

When you are done choosing constraints and constraint options in the Smart Mouse Manager, click OK to save your changes or Cancel if you change your mind. The Smart Mouse Manager will close.

Smart Mouse Window

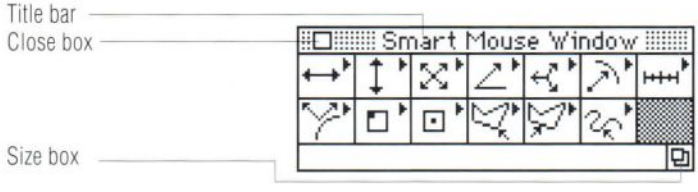
The Smart Mouse Window command in the Windows menu displays a floating window which lets you activate or deactivate the available Smart Mouse constraints. The Smart Mouse window is available when the Smart Mouse command in the Layout menu is active (has a check mark next to its name).

The Smart Mouse window is available when Smart Mouse is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Smart Mouse window:

1. **Choose Smart Mouse Window from the Windows menu.**

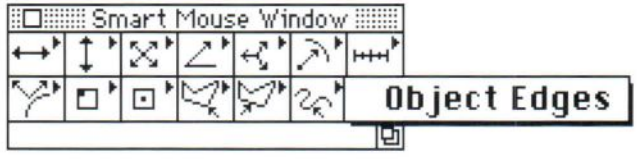
   The following floating window appears. Each icon represents a different constraint or constraint setting. See "Smart Mouse constraints" on page 19-266 for information on these constraints.



   To reshape the Smart Mouse window, drag the size box. To move this window, drag it by the title bar; to close it, click the close box.

2. **Hold down the pointer on a constraint icon to display its pop-up menu.**

   This pop-up menu gives the name of the constraint and its setting, if applicable.



3. **Click a constraint to enable it.**

   The constraint highlights. You can enable as many constraints as you want at one time but only two can affect the pointer at one time.

The icons in the Smart Mouse window are in the same order as the constraints in the Smart Mouse Manager scrolling list. If several settings of a constraint are active, that number of constraint icons appears in the Smart Mouse window. You can deactivate or delete unnecessary constraints from the Smart Mouse window through the Smart Mouse Manager (see page 19-263).

Snap To Grid

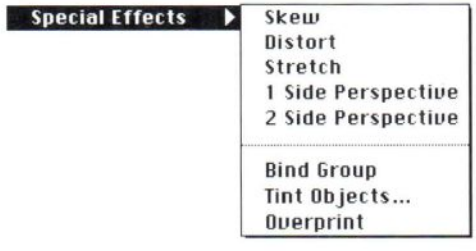
The Snap To Grid command (⌘-Option-]) in the Layout menu activates or deactivates the autogrid, a grid to which you can snap objects you create or drag.

The autogrid is controlled through the Grid Specifications dialog box (see "Grids..." on page 19-113). When Snap To Grid is enabled, dragging or resizing an object or group of objects causes it to snap to the nearest grid interval. You must have the Snap To X Grid, Snap To Y Grid, or both check boxes checked in order to activate this grid. Snap To Grid is independent of the Grid option of the Show/Hide submenu in the Layout menu.

> **User Tip:** To temporarily deactivate the autogrid when drawing or dragging an object, hold down the Tab key as you draw or drag your object.

Special Effects

The Special Effects submenu in the Effects menu contains effects options. You can apply Skew, Distort, Stretch, and 1 or 2 Side Perspective to draw objects, paint objects, text objects, or paint areas selected with the Lasso or Marquee tool. The Bind Group option lets you bind an object group to another object. The Tint Objects option lets you tint the foreground or background color of selected objects. The Overprint option lets you overprint objects on color separations.



Using Skew, Distort, Stretch, and Perspective

To use Skew, Distort, Stretch, 1 Side Perspective, and 2 Side Perspective:

1. **Use the Arrow tool to select an object or object group or use the Lasso or Marquee tool to select a paint area.**
2. **Choose Special Effects in the Effects menu and drag through the submenu to choose an option.**

   Four selection handles appear around your selection. Choose one of the following options:

   Skew: This option lets you slant an object, object group, or paint area.

   Distort: This option lets you extend part of an object, object group, or paint area in any direction. The results are similar to drawing something on a piece of rubber, then pulling an end.

   Stretch: This option lets you stretch a paint object or paint area, enlarging the image by adding pixels. Instead of just resizing the paint object's bounding rectangle, the Stretch option resizes the entire image. Using the Stretch option on a draw object is the same as dragging on one of the draw object's selection handles.

   You can also stretch a text object. The characters will be appropriately scaled. To remove the effect, set the scale back to 100% in the Type Specifications dialog box.

1 Side Perspective: This option can be applied to an object, object group, or paint area. It lets you extend one corner of an object's bounding rectangle.

2 Side Perspective: This option can be applied to an object, object group, or paint area. It lets you extend two corners of an object's bounding rectangle by dragging one. The results are similar to those found in perspective drawings of building interiors.

3. **Position the pointer on a selection handle.**

   The pointer turns into a crosshair when it is over a handle.

4. **Drag the handle to achieve the desired effect.**

Bind Group

The Bind Group option binds a copy of a group of objects to another object. The objects in the group bind to the path of a draw object or to the bounding rectangle of a paint object.

Bind Group is available when Bind is active in your Canvas Tools folder. For more information on the external tools in this folder, see page 19-92.

To bind an object group to an object:

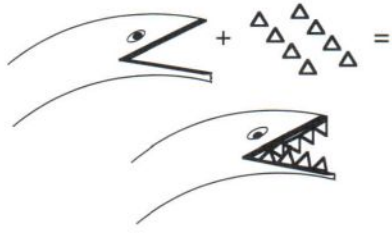
1. **Select the objects you want to bind.**
2. **Choose Group (⌘-G) from the Object menu to group the objects.**
3. **Select both the object group and the object you want to bind the object group to.**

   The object group can bind to a paint object, a draw object created with the core tools, or an object created with the Multigon tool or the Star tool.

4. **Choose Bind Group from the Special Effects submenu in the Effects menu.**

A copy of the object group binds to a selected draw object starting at the object's origin; it binds to the bounding rectangle of a selected paint object. The original object group remains unchanged so you can continue to bind it to other objects.

In the following illustration, the eel's teeth (a group of triangles) are bound to its mouth (an open polygon).

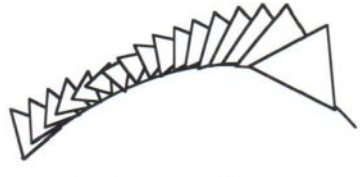


The object group binds as a group. You can edit the bound objects as a unit or ungroup them and edit them individually. To ungroup the objects, select them and choose Ungroup (⌘-U) from the Object menu.

Maintaining the object group's spacing

To maintain the spacing and order of an object group, such as an object blend or a series of duplicated objects, hold down the Option key when choosing Bind Group. When the objects in the group bind to the selected object they maintain their order and spacing.

In the following illustration, the group of triangles was created from the Blend command in the Object menu. When you bind it to the smooth polygon holding down the Option key, the triangles maintain their original spacing.



Bind Group with Option key

Bind Group without Option key

Tint Objects...

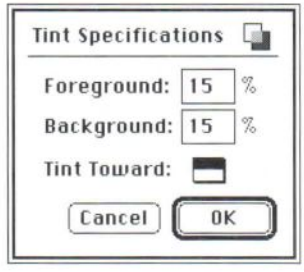
The Tint Objects option opens the Tint Specifications dialog box. This dialog box lets you blend the foreground and background colors of a selected object toward another color by a specific percentage.

This dialog box is available when Object Tint is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

To use the Tint Objects option:

1. **Select one or more objects.**
2. **Choose Tint Objects from the Special Effects submenu in the Effects menu.**

   The Tint Specifications dialog box appears.



3. **Type a number in the Foreground text box.**

   This is the percentage by which the foreground color of the selected object is tinted. For example, if the RGB values of the selected object's foreground color are 30, 50, and 20, and it is tinted 50% toward a color with the RGB values 100, 10, and 30, the Tint Specifications dialog box takes 50% of the difference between each of these values and adds it to the original color. The new foreground color will have the RGB values 65, 30, and 25.

4. **Choose a foreground color from the top half of the Tint Toward pop-up box.**

   The foreground color of the selected object will blend toward this color.

5. **Repeat step 3 and 4 for the object's background color.**
6. **Click OK to proceed with the tinting or Cancel to discontinue it.**

   The dialog box closes. If you clicked OK, the selected object changes color accordingly.

Tinting toward custom colors

You can tint toward a CMYK, CMY, HSV, or PANTONE® color by using the Color Info Manager in conjunction with the Tint Specifications dialog box.

Hold down the Shift and Control keys when you click the foreground or background color pop-up box. The Color Info Manager appears. Use the appropriate controls to create a custom color to tint your object toward. See "Color Info..." on page 19-42 for more information on using this dialog box.

Overprint...

The Overprint option lets you overprint a selected object or objects on your color separations. It can be applied to any selected draw objects. This option is available when Separations is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

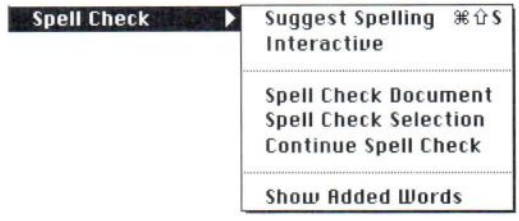
Normally, when objects in an illustration overlap, the CMYK percentages of the topmost object override the CMYK percentages of the underlying objects in the overlapping area and only the topmost object prints in the overlapping area. Overprint allows the CMYK values of the bottom object to show through the top object. For example, if a square overlaps a circle, you can overprint the square and have the circle's colors combine with the square's in the overlapping area. The overprint effect is not visible on your screen; ask the print shop for color proofs to preview the results.

> **User Tip:** The Overprint option in the Separation Options dialog box lets you overprint cyan, magenta, yellow, or black on all applicable overlapping areas in a document. See page 19-222 for more information.

Spell Check

The Spell Check submenu in the Text menu displays spell checking options. This submenu is available when Spelling is active in your Can-

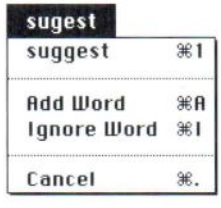
vas Tools folder. See page 19-92 for more information on external tools.



The Canvas dictionary included with the program contains 100,000 words and was specifically developed for Canvas. Owners of Deneba Software's Spelling Coach Professional™ can use their Coach Spelling Dictionary (based on Merriam-Webster's 9th Collegiate Dictionary) and Coach User Environment in place of the Canvas dictionary and user environment.

Suggest Spelling

Use the Suggest Spelling option to (⌘-Shift-S) check the spelling of a single selected word. Highlight the word you want to check and choose Suggest Spelling. The Suggest Spelling menu appears with several options and their Command-key equivalents.



- To replace your selected word with one in this menu, click the word in the Suggest Spelling menu or type its Command-key equivalent.
- Click **Add** (⌘-A) to add the word to your spell check dictionary. All future occurrences of this word will be allowed.
- Click **Ignore** (⌘-I) to allow the word to appear in the current document and in subsequent documents you work on before quitting Canvas.

Click **Cancel** (⌘-.) to close the Suggest Spelling menu without correcting the selected word.

User Tip: You can use Suggest Spelling on text created in a paint object if you highlight the word you want to check before you click outside the text object.

Interactive

Choose Interactive if you want Canvas to notify you of misspelled words as you type them. When you press the Space bar after typing a misspelled word, Canvas plays the sound you have chosen from your Macintosh Control Panel. A check mark appears by Interactive when this option is active.

Spell Check Document

Choose Spell Check Document to spell check all the text in your document. When a misspelled word is located, the Spelling Checker dialog box appears.

Spell Check Selection

Checks the spelling of selected text boxes or highlighted text characters. The Spelling Checker dialog box is displayed when a misspelled word is found.

Continue Spell Check

If you click Cancel in the Spelling Checker dialog box before the spell check finishes, choose Continue Spell Check to complete your spell check. When Canvas finds a misspelled word, the Spelling Checker dialog box is displayed.

Spelling Checker dialog box

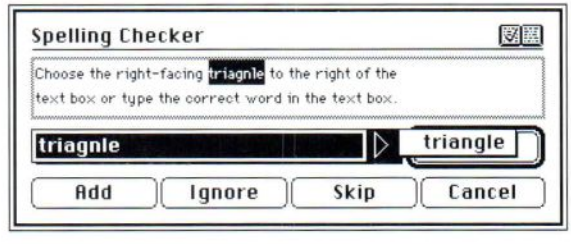
When Canvas locates a misspelled word through the Spell Check Document, Spell Check Selection, or Continue Spell Check options, the

Spelling Checker dialog box opens with the misspelled word and several options to correct it.

To correct a misspelled word:

1. **Type the correct word in the text box OR**
2. **Choose the right-facing indicator adjacent to the text box and drag through the pop-up menu to highlight the word you want.**

   The word appears in the text box of the Spelling Checker dialog box.
3. **Click Replace to correct the misspelled word.**



The correct word appears in your document and Canvas places the next misspelled word it finds in the Spelling Checker dialog box.

You can also Add, Ignore, and Skip words during a spell check.

- Click **Add** to add the word to your spell check dictionary and allow the word in the document.
- Click **Ignore** to allow the word in the current document and in subsequent documents you work on before quitting Canvas.

- Click **Skip** to ignore the word on that occurrence only. Canvas will continue to consider it a misspelling on each subsequent occurrence.
- Click **Cancel** to stop the spell check and close the Spelling Checker dialog box, saving the spelling corrections you have already made.

When the spell check is complete, the Spelling Checker dialog box closes.

Show Added Words

Choose Show Added Words to display the User Added Words dialog box which contains a scrolling list of all the words you have added to the spell check dictionary.

- To add a word to your spell check dictionary, type it in the text box and click **Add Word**.
- To remove a word you have added to your user environment, click the word in the scrolling list or type it in the text box and click **Delete Word**.

When you are through changing the User Added Words list, click Done to save your changes and close the dialog box.

Split tool

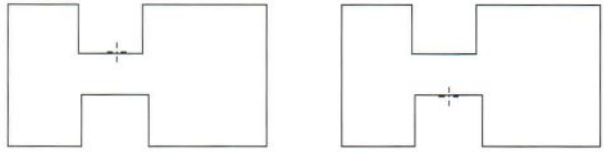
The Split tool in the Effect Tools palette lets you split draw objects. The Split tool is available when Split is active in your Canvas Tools folder.

See page 19-92 for more information on the external tools in this folder.

To use the Split tool to split draw objects:

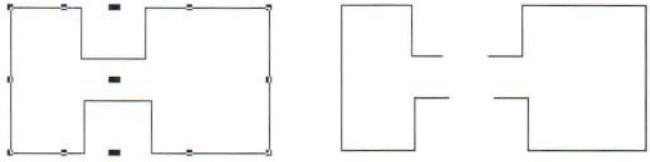
1. **Select a draw object.**
2. **Select the Split tool from the Effect Tools palette in the Tool Box.**

   The pointer changes to a pair of scissors.
3. **Position the pointer on the segment of the draw object that you want to split so that the pointer changes to a crosshair.**



4. **Click to split the object.**

   You can split a closed object in two places before the pointer reverts to the Arrow tool. You can split an open object in one place before the pointer reverts to the Arrow tool.



Objects shown selected and separated after being split

Spray Can tool

The Spray Can tool in the Paint Tools palette applies a coat of paint in the currently selected foreground color and pen pattern. It works like an actual can of spray paint. If you drag the mouse quickly, you apply a thin layer of paint. If you drag the mouse slowly, you apply a thicker

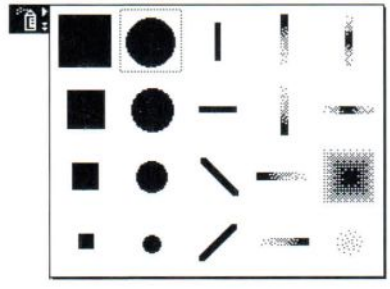
coat. The Spray Can tool can be used to create paint objects and edit scanned images, TIFF files, or other paint objects.

To use the Spray Can tool:

1. **Select the Spray Can tool from the Paint Tools palette in the Tool Box.**

2. **Hold down the pointer on the tool in the palette to display a palette of nozzle shapes.**

   If the tool is the palette icon, you must hold down the Option key to display the nozzle shapes.



3. **Drag through the palette to select a shape.**
4. **Position the pointer in the Canvas Window and drag to begin painting.**

   Drag slowly to leave a thick coat of paint or quickly to leave a light coat.

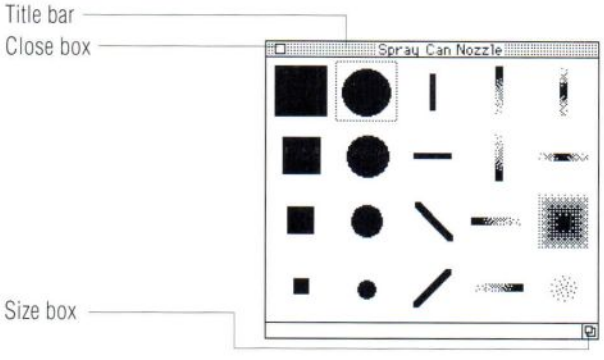
User Tip: To spray paint with a white pattern, change the default foreground color to white or change the default pen mode to Bic or Not Bic.

Spray Can Nozzle tear-off palette

Press the Option key and hold down the pointer on the Spray Can tool to display a tear off palette of available nozzle shapes called the Spray Can Nozzle palette. If the Paint Tools tear-off palette is open, simply hold down the pointer on the icon to display this palette.

The Spray Can Nozzle palette contains the available nozzle shapes for the Spray Can tool. You can edit these nozzle shapes with the Spray Manager (see page 19-285).

You can remove this palette from the Tool Box and keep it open as you work on your document. To do so, drag through the palette until it tears away.



The next time you want to select a new nozzle shape, you can click it in this palette. Drag the palette by its title bar to move it around the Canvas Window. To reshape the palette, drag the size box in the lower right corner. To close the palette, click the close box in its upper left corner.

User Tip: Double-click the Sprays tear-off palette to open the Spray Manager and edit the nozzles.

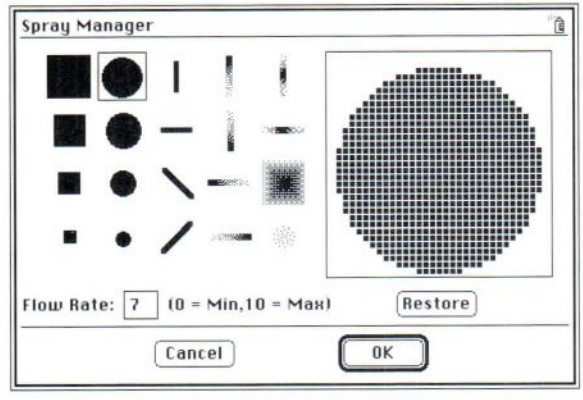
Sprays...

The Sprays option of the Managers submenu in the Edit menu opens the Spray Manager, a dialog box where you can customize the available nozzle shapes for the Spray Can tool. This dialog box is available when Spray Manager is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

To use the Spray Manager:

1. **Choose Sprays from the Managers submenu in the Edit menu, double-click the Spray Can tool in the Tool Box, or double-click the Spray Can Nozzle tear-off palette.**

   The Spray Manager appears.



   On the left side of the dialog box are the available nozzle shapes. The edit box on the right side of the dialog box magnifies the selected nozzle shape.

2. **Click a nozzle shape to select it.**

   It appears magnified in the edit box.

3. **Edit the nozzle shape by clicking pixels in the edit box.**

   The black pixels emit the paint. Click a black pixel to turn it white and click a white pixel to turn it black. Drag the pointer inside the edit box to edit multiple pixels.

4. **Click Restore to return the nozzle to its preset shape.**

5. **Type a number between 0 and 10 in the Flow Rate text box.**

   A high flow rate sprays a thicker coat paint.

When you are done, click OK to close the Spray Manager and save the changes you made to the nozzle shapes. Click Cancel to close the dialog box without saving your changes.

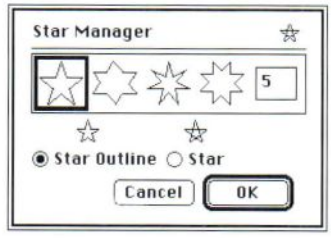
Star...

The Star option of the Managers submenu in the Edit menu displays the Star Manager. Use this dialog box to configure the shape and number of vertices in the stars you create with the Star tool. The Star Manager is available when Multigon is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.

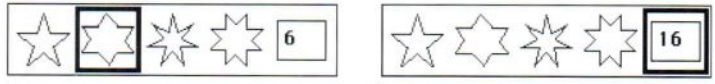
To use the Star Manager:

1. **Choose Star from the Managers submenu in the Edit menu or double-click the Star tool icon in the Object Tools palette.**

   The Star Manager appears.



2. **Click the button next to Star Outline or Star to select a design for the star.**
3. **Click a predefined star shape or type the number of points in the text box on the right side of the dialog box.**



Choose a predefined star shape or type the number of points in the text box

   If you chose Star Outline, your number of points must be between 3 and 100. If you chose Star, your number of points must be 3, a multiple of 4 up to 100, or an odd number.

4. **Click OK to save your changes or Cancel if you change your mind.**

   The dialog box closes. The next time you use the Star tool it will create shapes according to the settings in this dialog box.

Star tool

The Star tool creates star-shaped polygons. The Star tool can be set to create stars with up to 100 points. You can use the Star Manager to change the settings of the Star tool (see "Star..." on page 19-287).

The Star tool is available when Multigon is active in your Canvas Tools folder. See page 19-92, if necessary, for more information on external tools.

To use the Star tool:

1. **Select the Star tool from the Object Tools palette in the Tool Box.**

The pointer changes to a crosshair.

2. **Position the pointer where you want to begin your figure and drag to create a star.**
3. **Release the mouse button when you are satisfied with the size and position of your figure.**

Editing stars

When you create a star as described in the preceding steps, you can select it and change its pen size, pen pattern, fill pattern, pen mode, foreground color, and background color using the palette icons in the Tool Box. You can also edit its colors using the PANTONE® Colors Window and the Color Info Manager; both items are explained separately in this section.

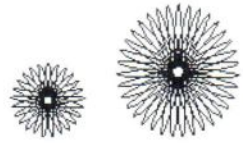
Stars are created as polygons and are edited the same as polygons drawn with the Polygon tool.

Star tool modifiers

Use the following modifier keys to add effects to your stars.

- To smooth the shape, hold down the Command key (⌘) when you release the mouse button. Interesting flowerlike effects can be

achieved with this option by choosing Star (rather than Star Outline) and a large number of sides from the Star Manager.



- To create the star from the center outwards, hold down the Option key as you drag to draw it.
- To constrain the bounding rectangle of the star to a square, hold down the Shift key as you drag.
- To create the star from the center outwards and constrain its bounding rectangle to a square, hold down the Shift and Option keys as you drag.

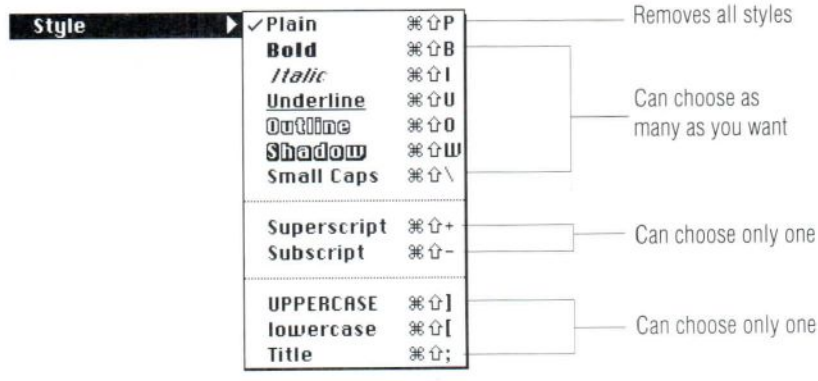
Style

The Style submenu in the Text menu displays text styles. You can change the style of selected text or change the default text style. You can also apply several styles to the same text.

- To change the default text style, choose a Style submenu option when no text is selected.
- To change the style of selected text, highlight text characters or select a text object with the Arrow tool.

Drag through the Style submenu and choose a style. Continue in the same manner to choose additional options. Choose Plain style to remove all styles.

User Tip: You can also display the Style menu by holding down the Option key and choosing the Text tool icon in the Tool Box.



Examples of text styles are shown in the following illustration.

Plain	SMALL CAPS
Bold	normal Superscript
Italic	normal Subscript
Underline	UPPERCASE
Outline	lowercase
Shadow	Title

Subscribe To...

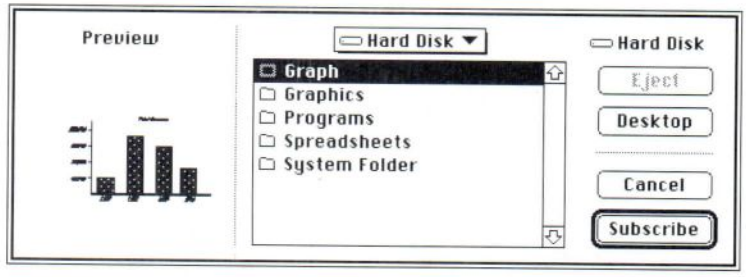
The Subscribe To command in the Edit menu displays a dialog box which lets you import editions into Canvas as subscribers. The edition file maintains a link with the document it was created in and each time it is edited in its original document, its subscriber in Canvas can be updated as well.

This command is enabled when you are using System 7.0 or later and System 7.0 Options is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

To subscribe to an edition file:

1. **Choose Subscribe To from the Edit menu.**

The Subscribe To dialog box appears.

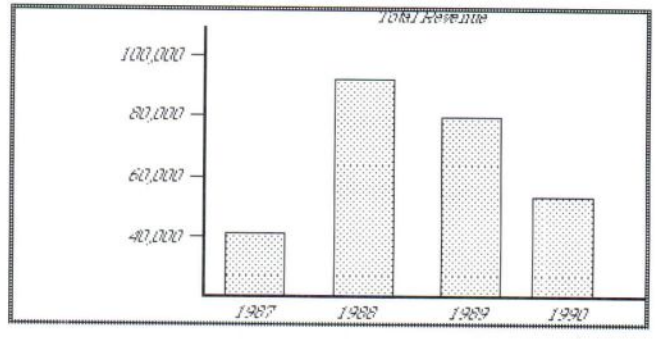


2. **Choose the edition you want to subscribe to from the directory.**

   The Preview section displays the objects in the file.

3. **Click Subscribe to import the edition.**

   The dialog box closes and the edition appears in the Canvas Window surrounded by a gray border. This object is called a subscriber.



This border does not print although it appears on screen. To hide the border, choose the Subscriber Borders option from the Show/Hide submenu in the Layout menu. When this option is not active, the borders do not show.

Adorning subscribers

To adorn a selected subscriber is to change its color, pen size, fill pattern, pen pattern, and other applicable properties. You can also change the properties of text in a selected subscriber. When you adorn a subscriber, the adornments remain even after you receive new edi-

tions. The adornments do not effect the edition file linked to it. To return the subscriber to its appearance when last updated, choose Remove Effects from the Effects menu.

Updating subscribers

You can choose to update subscribers automatically or manually. To do so, select a subscriber and choose Subscriber Options from the Edition Options submenu in the Edit menu or double-click a subscriber. A dialog box opens which lets you choose to update the subscriber manually or any time the linked edition is updated. See page 19-87 for more information.

You can also update all subscribers in a document by choosing Get All Now from the Edition Options submenu in the Edit menu. The latest versions of the editions which are linked to the subscribers in your document update their corresponding subscribers. See page 19-89 for more information.

Text menu

The Text menu contains commands that let you change the default text properties or the properties of existing text. When you first start Canvas, the default text properties are determined by the Canvas Prefs file. You can change these default properties each time you begin typing text or you can save them in a Canvas Prefs file.

- To change the default text properties, set the submenu options in the Text menu as desired when no text is selected. Subsequent text you type will have these properties.
- To change the properties of existing text, highlight the text with the Text tool or click a text object with the Arrow tool. Use the submenus in the Text menu to change the selected text. You can change the font, style, or size of a single character of text at a time.

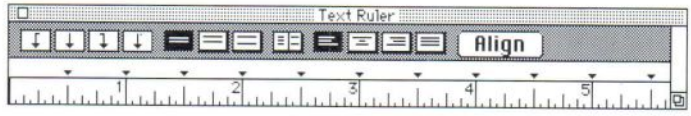
Text Ruler

The Text Ruler command in the Text menu displays a floating window that lets you set the tabs, leading, and justification of a text object in Canvas. The Text Ruler uses the units currently set in the Ruler Specifi-

cations dialog box. Default tab stops are left-aligned tabs set for every half inch.

This command is available when Text Ruler is active in your Canvas Tools folder. See page 19-92 for more information on external tools.

To display the Text Ruler, choose Text Ruler from the Text menu. The following floating window appears in the Canvas Window. If a text object is selected, the Text Ruler aligns to it.



You can keep this window open while you work on your document. To move it to a new location, drag it by the title bar across the top of the window. To close it, click the close box in the upper left corner. To lengthen it, drag the size box in the lower right corner.

Setting tab stops

To place a tab stop in your text object:

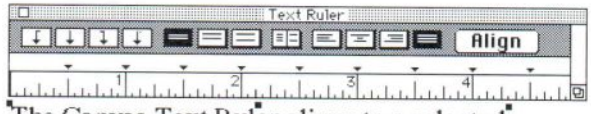
1. **Choose Text Ruler from the Text menu.**

   The Text Ruler appears.

2. **Select a text object by clicking it with the Arrow tool.**

3. **Click Align, if desired, to align the Text Ruler to the selected text object.**

   The Text Ruler aligns to the left margin of the text object. The appearance of the Text Ruler changes to reflect the tab stops, leading, and justification of the selected text.



The Canvas Text Ruler aligns to a selected text block; lets you set right, left, center, or decimal tab stops; and lets you change the justification and leading of text.

4. **Hold down the pointer on the appropriate tab icon and drag it to the desired position in the ruler.**

   Select one of the following tab icons:

   (Left): Aligns text characters to the left side of the tab stop.

   (Center): Centers text characters at the tab stop.

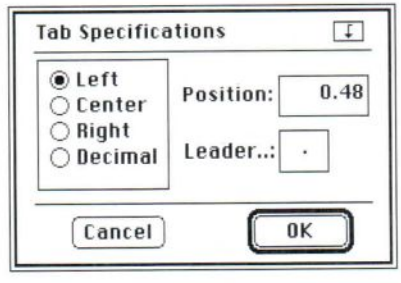
   (Right): Aligns text characters to the right side of the tab stop.

   (Decimal): Use this option to align columns of numbers by their decimal points. Aligns decimal points to the tab stop.

   All default tab stops to the left of the tab disappear.

Tab Specifications

The Tab Specifications dialog box lets you specify a leader character or change the position and type of an existing tab stop. To open the Tab Specifications dialog box, double-click a tab stop in the Text Ruler window.



Left, Center, Right, Decimal: Click a button next to Left, Center, Right, or Decimal to change the type of the selected tab stop.

Position: Type a new location for the tab stop in the Position text box to change the location of the selected tab stop.

Leader: Type a character in the Leader text box to designate a leader character to appear before the tab stop.

Justifying text

The Text Ruler gives you several options for justifying a text object. You can right, left, center, or full justify a text object. To justify text:

1. **Choose Text Ruler from the Text menu to display the Text Ruler window.**
2. **Select the text object you want to justify.**
3. **Click Align, if desired, to align the Text Ruler with the text object.**
4. **Click a justification icon in the Text Ruler window.**

   Select one of the following justification options:

   (Left Justify): Aligns each line of text with the left side of the text object.

   (Center Justify): Centers each line of text.

   (Right Justify): Aligns each line of text with the right side of the text object.

   (Full Justify): Extends each full line of text from the left to the right side of the text object, adding extra spaces between words when necessary.

   The selected text changes accordingly. For more information on these options, see "Justification" on page 19-126.

Changing the leading of text

The Text Ruler window gives you three leading (line spacing) options plus tighten and loosen options to decrease or increase leading by 1/2 point.

To change the leading of a text object:

1. **Choose Text Ruler from the Text menu to display the Text Ruler window.**
2. **Select a text object.**
3. **Align the Text ruler with the text object, if desired, by clicking Align in the Text Ruler window.**
4. **Select a leading option by clicking it in the Text Ruler window.**

   Select one of the following line spacing options:

   (Single Space)

(1 1/2 Space)

(Double Space)

(Tighten and Loosen) These options decrease and increase the leading respectively by one-half point.

The selected text changes accordingly. For more information on these leading options, see "Leading" on page 19-134.

Text tool

The Text tool is used to add text to your illustrations. You can create caption text and paragraph text in Canvas.

Caption text, such as titles and headings you add to your graphics, is useful for small amounts of text. Paragraph text lets you set the margins in advance and is useful when you are typing a large body of text.

Caption text

To create caption text with the Text tool:

1. **Select the Text tool from the Tool Box.**

   The pointer changes to an I-beam.

2. **Click in the Canvas Window where you want to place the text and start typing.**

   The point where you begin typing is the left margin. You must press the Return key to end a line.

3. **Click outside the text object when you are done.**

   The text object is selected.

Paragraph text

To create paragraph text with the Text tool:

1. **Select the Text tool from the Tool Box.**

   The pointer changes to an I-beam.

2. **Drag to draw a rectangle which sets the left and right margins of your text object.**

   When you release the mouse button, the I-beam pointer starts blinking inside the text object you drew.

3. **Begin typing.**

   Canvas wraps the words you type around the margins of the text object you drew.

4. **Click outside the text object when you are done.**

   The text object is selected.

> **User Tip:** To change to the Text tool while using another tool, type ⌘-Option-T. The pointer changes to the Text tool I-beam and you can begin typing in that spot.

Selecting text

You can select individual text characters or entire text objects in Canvas for editing.

- To select text characters, select the Text tool from the Tool Box and drag the I-beam pointer across the text you want to select. You can select a single text character or several lines of text. The text highlights. You can now edit this text with commands in the Text menu.
- To select a single word, double-click it.
- To select a line of text, triple-click it.
- To select a text object, select the Arrow tool from the Tool Box and click the text object you want to select. Hold down the Shift key to select several text objects at once. You can edit them with commands from the Text and Effects menus.

Editing text

There are several ways you can edit selected text.

- You can cut, copy, and paste selected text.

  To copy selected text objects onto the Clipboard so that they can be pasted into a word processing program in a single text object, hold down the Option key and choose the Copy Selected Text command

from the Edit menu. The text is pasted in the order in which it appears in the document, with the bottom text object first.

- You can change the properties of selected text using the commands in the Text menu. Fonts, sizes, and styles can be mixed letter by letter within a text object.
- To change the color of text, use the Fore Color palette icon, the PANTONE® Colors Window, and the Color Info Manager.
- To change the default text properties, set the submenu options in the Text menu when no text is selected.
- Selected text objects can be rotated, grouped, flipped, distorted, skewed, and more.
- To scale a selected text object, hold down the Command (⌘) key and drag a corner. For better screen representations when scaling text, use a PostScript Type 1 font with ATM™ (Adobe Type Manager™) turned on or a TrueType font.

Adding effects to text

Use the commands and submenu options in the Effects menu to add special effects to selected text objects. You can Skew, Stretch, rotate, flip, and add 1 or 2 Side Perspective to selected text objects.

You can select a text object with effects and change its properties with the Text menu commands as well. However, if multiple effects are applied to a text object, Canvas converts it to a paint object and you can no longer edit it as text. Also, if you use the Skew or perspective options of the Special Effects submenu on a text object, the text becomes a picture object.

> **User Tip:** You can scale a text object and apply one more effect and still edit it as text.

To edit text with effects:

1. **Double-click the text object.**

   A flashing cursor appears inside it.

2. **Drag to highlight the characters you want to select.**
3. **Edit the text characters as desired.**

4. **Select the Arrow tool when you are done editing and click the text object to restore its effects.**

   The text object's effects are restored.

To remove the effects from a text object, select the text object and choose Remove Effects from the Effects menu.

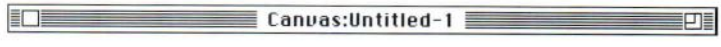
Multiplex icon options

The Text tool is a multiplex icon. It displays several pop-up menus from which you can modify text properties.

- Double-click the Text tool icon to open the Type Specifications dialog box. See "Type..." on page 19-305 for more information.
- Hold down the pointer on the Text tool icon to display a pop-up menu of text styles.
- Press the Command key (⌘) and hold down the pointer on the Text tool icon in the Tool Box to display a pop-up menu of the fonts installed in your System.
- Hold down the Shift key and hold down the pointer on the Text tool to display a pop-up menu of available font sizes.

Title bar

The title bar is located at the top of the Canvas Window under the menu bar. It displays the file format of the document you are working on followed by the name of the document. To reposition the Canvas Window, drag the title bar.



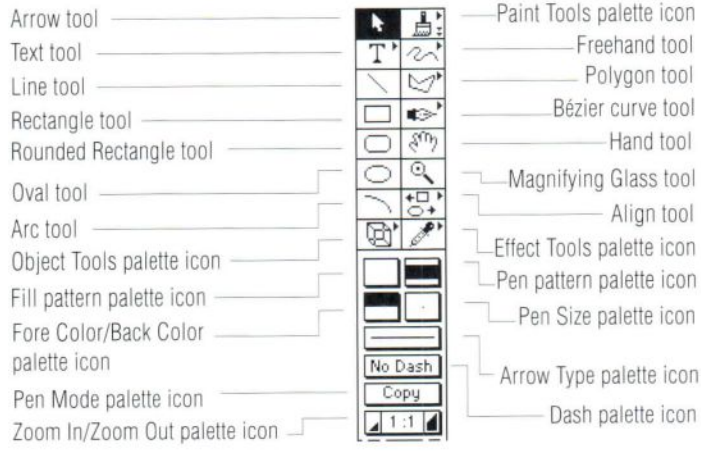
Canvas titles new documents *Untitled-1*, *Untitled-2*, and so on. The file's format appears on the left side of the colon. After you save a document, its name appears instead of *Untitled-1* and *Canvas* is replaced by the name of the new file format, if any.

Tool Box

The Tool Box is located along the left side of the Canvas Window. It contains tools for creating and editing objects in your documents.

The palette icons display tear-off palettes of tools and tool options (such as brush shapes). The tools in the Object Tools palette and the Effect Tools palette, and the Align tool, are available through external tools; the remaining tools are core tools. Each tool is discussed separately in the *Reference* section.

To use a tool, you must first select it by clicking its icon.



ToolPicker

The ToolPicker dialog box lets you activate and deactivate the external tools in your Canvas Tools folder. Activated tools are ones you can use in Canvas; when you deactivate a tool, you make it unavailable for that session of Canvas. You can also save these selections as Tool Sets. The ToolPicker dialog box can save memory by deactivating unnecessary tools, and therefore improve Canvas's overall performance, increase its speed, and let you open larger documents.

The ToolPicker dialog box is available when ToolPicker is in your Canvas Tools folder. Its name in the Canvas Tools folder is preceded by a space. Do not delete this space. It is necessary for the proper

functioning of the tool. See page 19-92 for more information on external tools.

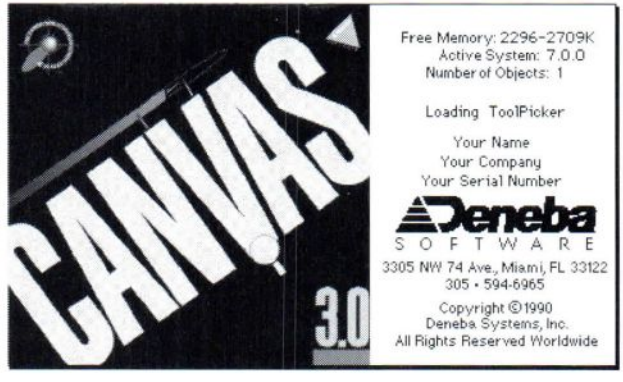
Activating and deactivating tools

To use the ToolPicker dialog box to activate and deactivate tools:

1. **Hold down the Space bar while launching Canvas.**

   To launch Canvas, double-click the Canvas icon on the Finder desktop, select the Canvas icon and choose Open from the File menu, or use another means your computer is capable of.

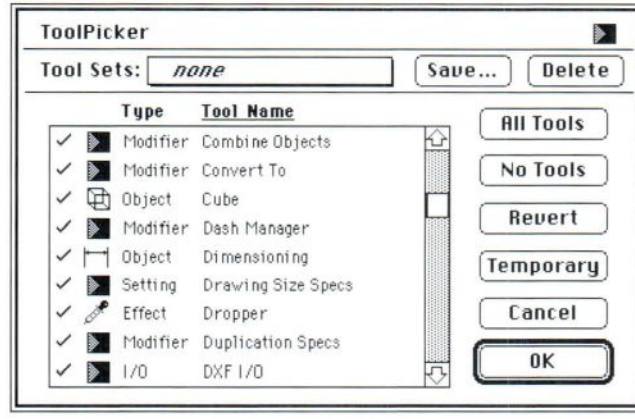
2. **Release the Space bar when "Loading ToolPicker" appears in the Canvas title box above the user name.**



The ToolPicker dialog box appears.

On the left side, a scrolling list displays icons for all the tools in your Canvas Tools folder. For a listing of each tool and how it appears in the program, see "External tools" on page 19-92.

The active tools in the scrolling list are the ones you can use during this session of Canvas. Active tools have a check mark to the left of their names.



3. **Move through the scrolling list to find the tools you want to activate or deactivate.**

   You can scroll to a tool's name by typing the first few characters of its name. You can also type (Option-↑) to scroll up or (Option–↓) to scroll down.

4. **Activate or deactivate the tools as desired.**

   You can activate and deactivate tools in the following manner:

   - Click to the left of a tool icon or double-click a tool's name in the scrolling list to activate or deactivate the tool.
   - Choose a Tool Set from the Tool Sets pop-up menu, if desired. The tools in the scrolling list are activated or deactivated according to the active or inactive tools in the set.
   - Click **All Tools** (⌘-A) to activate all the tools in the scrolling list.
   - Click **No Tools** (⌘-N) to deactivate all the tools.
   - Click **Revert** (⌘-R) to return the tools in the scrolling list to the status they were in when ToolPicker opened.

5. **Save the tools in the scrolling list as a Tool Set or continue launching Canvas.**

   See "Saving Tool Sets" and "Launching Canvas from the ToolPicker" for more information.

Type and Tool Name

The Tool Name column in the scrolling list of the ToolPicker dialog box lists the names of the tools in the external tools folder. The Type column lists each tool's type.

There are 7 types of tools:

- Effect: Tools which appear in the Effect Tools palette.
- I/O: Tools which import and/or export files that are not in the Canvas 3.0 format.
- Manager: Tools which appear in the Managers submenu of the Edit menu.
- Modifier: Tools which modify objects in the Canvas Window.
- Object: Tools which appear in the Object Tools palette.
- Paint: Tools which appear in the Paint Tools palette.
- Setting: Tools which affect the Canvas documents. These tools' settings can be saved in a Canvas Prefs file.

You can sort the tools in the scrolling list by type or name. To do so, click Type or Tool Name respectively.

Saving Tool Sets

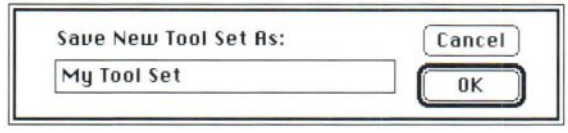
A Tool Set is a customized selection of external tools. You can create a Tool Set and use it during every session of Canvas or you can create Tool Sets for different circumstances and choose a new one each time you launch Canvas.

The **Tool Sets** pop-up menu in the ToolPicker dialog box lists all the saved Tool Sets. If there are no Tool Sets in this menu, the pop-up box says *none*.

To save a Tool Set:

1. **Activate and deactivate the desired tools in the scrolling list.**
2. **Click Save.**

A dialog box appears asking you to name your new Tool Set.



3. **Type a name for your set in the text box and click OK to save it or Cancel to disregard it.**

   The dialog box closes and the new Tool Set's name appears in the Sets pop-up box.

You can modify the selection in the scrolling list without overwriting your saved Tool Set. If you modify the scrolling list selection and want to save it as a Tool Set, you must click Save.

Deleting Tool Sets

To delete a Tool Set, choose it from the Tool Sets pop-up menu so that its name appears in the pop-up box, then click Delete.

Launching Canvas from the ToolPicker

The active tools in the scrolling list of the ToolPicker dialog box are what launch with Canvas, regardless of the set name in the Tool Sets pop-up box. After you have finished activating and deactivating the tools in the scrolling list and saving or deleting Tool Sets, proceed to launch Canvas with one of the following options:

- Click **Temporary** (⌘-T) to launch the program using your scrolling list selection for the current session of Canvas only. Subsequent sessions will revert to the previous scrolling list selection.
- Click **Cancel** (⌘-C) to disregard any changes made to the scrolling list and launch Canvas with the previously used scrolling list selection.
- Click **OK** (⌘-O) to launch the program using your scrolling list selection for the current session and subsequent sessions of Canvas. Your scrolling list selection remains active until you use the ToolPicker again to change it.

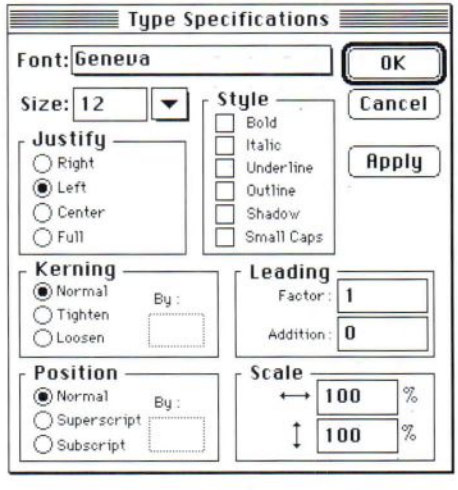
If you plan to continue using a particular scrolling list selection, it is highly recommended that you save it as a Tool Set before you launch Canvas.

Type...

The Type command (⌘-T) in the Text menu displays the Type Specifications dialog box which combines most of the Text menu options into one dialog box. You can also double-click the Text tool icon to open this dialog box.

Choosing text properties from this dialog box is equivalent to making individual choices from the Text menu. If no text is selected, the default text properties change.

This dialog box is available when Text Utilities is active in your Canvas Tools folder. See page 19-92 for more information on the external tools in this folder.



You can move the Type Specifications dialog box around the illustration area by dragging it by its title bar.

Font: Use this pop-up menu to choose the font you want to use.

Size: You can type your own font size in the text box or hold down the pointer on the adjacent right-facing indicator to display a pop-up menu of size options. You can specify a font size of up to 127 points.

Style: Select the check boxes next to the style options you want. A white check box indicates the style does not apply to the selected text and a check box with an "X" indicates the style is applied to the selected text. Grayed check boxes indicate each style will remain as is.

Kerning: Click the button next to the desired kerning (character spacing) option. Select Normal, Tighten, or Loosen. When you select Tighten or Loosen you must specify a point size in the adjacent text box.

Leading: The Leading option lets you set your own line spacing measurement.

- The **Factor** text box contains the line spacing option chosen in the Leading submenu; for example, 1 represents Single Space. Type your own line-spacing measurement in this text box.
- The **Addition** text box lets you add points to your line-spacing. Type a point measurement in this text box, if desired.

Position: Click a button next to a position for your text. Select Normal, Superscript, or Subscript. When you select Superscript or Subscript you must specify a point size in the adjacent text box from which to offset this text.

Scale: Type a scale percentage in the horizontal, vertical, or both text boxes to reduce or enlarge the text size along either or both axes. To enlarge your text, type a number greater than 100; numbers less than 100 reduce the text size.

Apply: Click Apply to apply your choices to the selected text without closing the Type Specifications dialog box. The Apply button lets you continue changing the properties of the selected text while the dialog box is open.

To close the Type Specifications dialog box, click OK or Cancel. Click OK to close the dialog box and apply your choices to selected text. If no text was selected, the default text properties change and the next text you type will have these properties. Click Cancel to close the dialog box and disregard your changes.

Undo

The Undo command (⌘-Z) in the Edit menu reverses your last action. When you choose Undo, Canvas deletes the last change that you made to your illustration. However, the following actions cannot be undone:

- Changing layers
- Changing the document's size
- Delete Macro
- Revert
- Save
- Scrolling
- Selecting and deselecting objects

To reverse an Undo action, choose Undo again.

Ungroup

The Ungroup command (⌘-U) in the Object menu converts an object group back to individual objects. See page 19-114 for information on object groups. Select an object group and choose Ungroup from the Object menu. Selection handles will appear around each object.

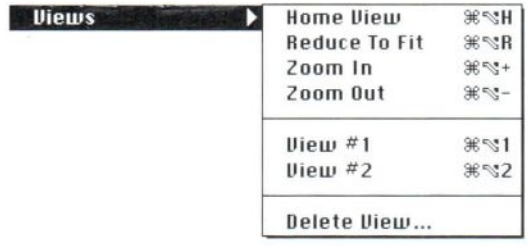
Unlock

The Unlock command (⌘-Option-L) from the Object menu lets you unlock an object or group of objects so that they can be moved and changed. When an object or group of objects is locked, you can select it or copy it to the Clipboard, but you must choose Unlock to be able to cut, clear, flip, move, rotate, or change its size or properties.

To Unlock a locked object, select the object or group of objects to unlock and choose Unlock from the Object menu.

Views

The Views submenu in the Layout menu displays the names of views you have created, plus Home View, Reduce To Fit, Zoom In, and Zoom Out. A view is a recording of a particular location and magnification level in the Canvas Window. You can create your own views with the New View command (see page 19-144).



Home View (⌘-Option-H): Home View is the upper left corner of your illustration in the Canvas Window. This is the view that is displayed when an illustration is first opened.

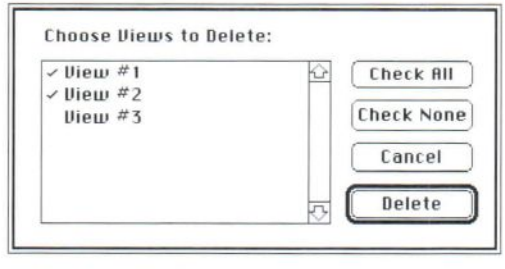
Reduce To Fit (⌘-Option-R): Reduce To Fit shrinks the document, regardless of its size, to fit into the Canvas Window.

Zoom In (⌘-Option-+): Zoom In increases the magnification level of your document to the next higher level.

Zoom Out (⌘-Option- -): Zoom Out decreases the magnification level of your document to the next lower level.

All views you save with the New View command appear in the Views submenu under the Zoom Out option. You can type ⌘-Option-1, ⌘-Option-2, and so on to switch to a different user-defined view. These views are numbered in the order in which they are saved.

Delete View: Once one or more views have been defined, the Delete View option is displayed. The Delete View option lets you eliminate user-defined views. When you choose Delete View, a dialog box appears.



Click the name of each view you want to delete in the scrolling list. A check mark appears next to its name. Click **Check All** to select all the

views in the scrolling list; click **Check None** to deselect all the views in the scrolling list.

When you are done, click Delete to remove the selected views or Cancel if you change your mind. The dialog box closes.

Windows menu

The Windows menu lets you move between multiple open Canvas documents and also displays several floating windows. All open Canvas files appear in the bottom of the menu. The active (topmost) document has a check mark next to its name. Choose a document from the Windows menu to make it active. When a floating window is open a diamond appears next to its name.

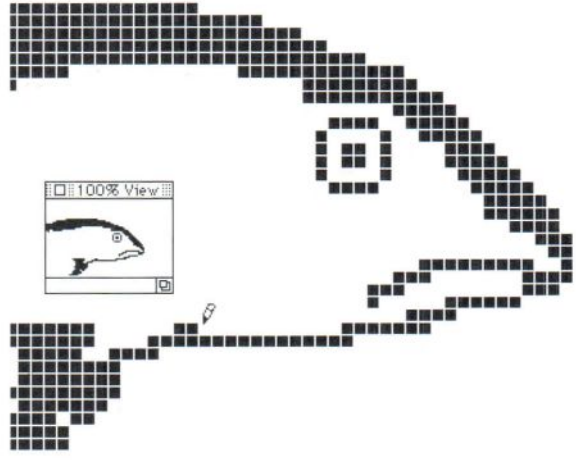
You can also move between documents on screen by clicking the window you want to view. Canvas moves it to the active (topmost) position on your screen.

The items in the Windows menu are discussed separately in the *Reference* section.

Clipboard	page 19-41
Paint Tools	page 19-174
Object Tools	page 19-149
Effect Tools	page 19-90
PANTONE® Colors	page 19-177
Smart Mouse Window	page 19-271

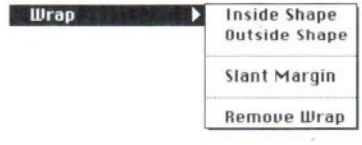
100% View

The 100% View command in the Windows menu displays the 100% View floating window when you edit a paint object at a magnification level greater that 1X. This command appears when you are at the 2X magnification level or higher. To return to the 1X magnification level, click the 100% View window.



Wrap

The Wrap submenu in the Text menu displays text wrap options. These options let you wrap text inside or outside an object and let you slant the margins of a text object. The Wrap submenu is available when Text Utilities is active in your Canvas Tools folder. See page 19-92 for more information on external tools.



Inside Shape

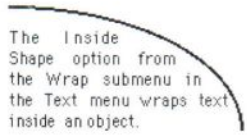
Choose Inside Shape to wrap text inside an object.

1. **Use the Arrow tool to select both the text object and the object within which you want the text wrapped.**

Remember to hold down the Shift key to select multiple objects.

2. **Choose Inside Shape from the Wrap submenu in the Text menu.**

   Canvas wraps the selected text inside the selected object.



User Tip: Set the text object to Full Justification for more precise alignment to the object's borders.

Typing wrapped text

You can also wrap text inside an object by typing it directly into a selected object. To do so, select an object, choose the Text tool, and begin typing. The characters wrap to the inside of the object.

Outside Shape

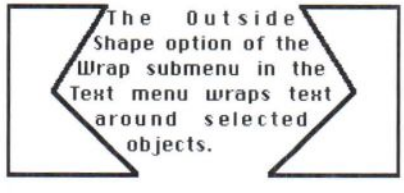
Choose Outside Shape to flow text around the outside of an object.

1. **Arrange the object(s) you want the text to wrap around so that the edge of the objects meet the edge of the text object.**
2. **Select the objects and the text object with the Arrow tool.**

   Selection handles appear around the text object and the objects.

3. **Choose Outside Shape from the Wrap submenu in the Text menu.**

   Canvas wraps the text around the selected objects.



You can edit wrapped text by changing its properties and adjusting its leading, kerning, and justification before or after it is wrapped.

Slant Margin

Choose Slant Margin to slant the margins of a text object without slanting the text characters themselves.

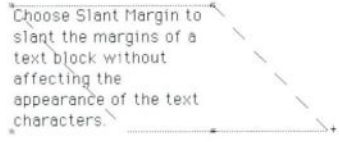
To slant the margins of a text object:

1. **Select a text object with the Arrow tool.**
2. **Choose Slant Margin from the Wrap submenu in the Text menu.**

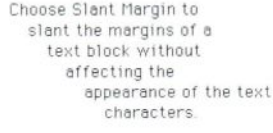
   Handles appear at each corner of the selected text object.
3. **Position the pointer on one of the handles.**

   The pointer becomes a small crosshair when it is properly positioned.
4. **Drag to slant the margins.**

   Canvas flows the text to conform to the new margins.



The text inside remains the same; only the margins of the text object are slanted.



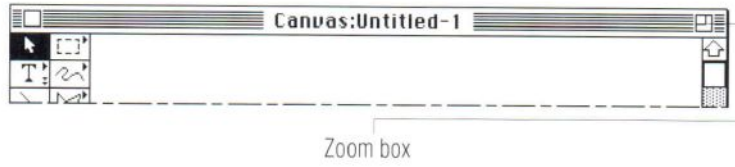
Remove Wrap

To remove the effects of Inside Shape, Outside Shape, or Slant Margin, restoring the text to a normal text object, selected the wrapped text and choose Remove Wrap from the Wrap submenu. The text object returns to its previous shape.

Zoom box

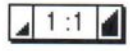
The zoom box, located in the upper right corner of the Canvas Window, lets you enlarge or reduce the size of your Canvas Window. If the

Canvas Window fits in your screen entirely, click the zoom box to reduce it in size. If the Canvas Window is smaller than your screen, click the zoom box to enlarge it to the maximum size for your screen. Click again to return the Canvas Window to its original size.



Zoom In/Zoom Out palette icon

The Zoom In/Zoom Out palette icon in the Tool Box displays the Zoom In/Zoom Out palette, which allows you to magnify or reduce your view of the Canvas Window. You can zoom in up to a 32X magnification level or zoom out to a 32X reduction level. You can create and edit illustrations at all magnification and reduction levels.



To change the current magnification or reduction level:

1. **Hold down the pointer on the Zoom In/Zoom Out palette icon in the Tool Box.**

   The Zoom In/Zoom Out palette is displayed. Magnification levels displayed in boldface type indicate the optimal levels for editing paint objects (2x, 4x, 8x, 16x, and 32x).

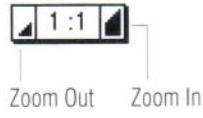
2. **Drag across to the palette and enclose your magnification or reduction level in the selection rectangle.**

   Your current view of the Canvas Window is reduced or magnified by this amount.

User Tip: To zoom in on or out from a particular object, select the object and select a magnification or reduction level from the Zoom In/Zoom Out palette. Canvas reduces or magnifies your view of that object.

Zoom In/Zoom Out icons

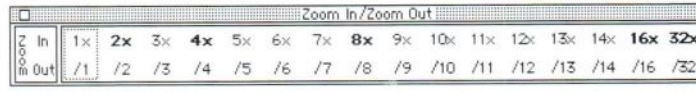
You can also use the icons on either side of the Zoom In/Zoom Out palette icon to magnify or reduce your view. The right icon magnifies (zooms in on) your view and the left arrow reduces (zooms out from) your view.



Zoom In/Zoom Out tear-off palette

You can also keep the Zoom In/Zoom Out palette open while you work on your document. To do so:

1. **Hold down the pointer on the Zoom In/Zoom Out palette icon to display the Zoom In/Zoom Out palette.**
2. **Drag through the palette and tear it away from the Tool Box.**



To reposition the Zoom In/Zoom Out palette, drag it by the title bar. To close the palette, click the close box in the upper left corner.

Section Five

Appendices

Appendix

A Glossary

active window: The frontmost window on the Canvas desktop. You can modify the active window's contents using Canvas's tools and commands. The active window is distinguished by its title bar, which is highlighted with horizontal stripes.

adorn: To override the properties of objects contained in a subscriber. Adornments have no affect on the publisher and remain in effect even when the subscriber is updated.

alert box: A dialog box that warns users of possible dangerous situations or provides suggestions for alternative action.

anchor point: An endpoint on a segment of a Bézier curve. Anchor points contain direction points and tangent lines. The position of the anchor points and their direction points determines the shape of the curve segment.

ANSI standard: You can use the ANSI (American National Standards Institute) standard to specify the properties of dimension objects created with the Dimensioning tool. The ANSI standard is the most universal standard used in the U.S.

application: A program written to perform a specific task such as word-processing or data structuring. Canvas is an example of a graphics application.

arc: Any part of a circle or ellipse. Canvas's Arc tool lets you create arcs of any length.

autogrid: A user-definable system of horizontal and vertical guidelines which, when active, constrain the pointer when creating or editing objects.

background color: The color Canvas uses to represent white pixels in fill and pen patterns.

background pixel: In a paint object, a pixel which has not been assigned a foreground color. In a 1-bit deep paint object, all background pixels have the object's background color. In an 8- or 32-bit deep paint object, background pixels are white.

banding: A method of storing large paint objects on the Clipboard by breaking them up into horizontal bands. To disable banding, hold down the Shift key and choose the Copy Without Banding command from the Edit menu.

basic icon: A tool icon which does not contain any multiplex options. The Line tool's icon is an example. Click a basic icon to select its tool.

Bézier curve: A curve, named after the French mathematician Pierre Bézier, made up of one or more segments. Each segment is defined by four points: two anchor points which determine the segment's endpoints, and two direction points which determine its shape.

bitmap: An array of pixels, each of which may be on or off. A one-bit deep paint object.

bounding rectangle: The smallest rectangle which completely encloses an object. An object's bounding rectangle determine the placement of its selection handles.

brightness: A measurement of the amount of black in a color. 0 indicates pure black while 655355 indicates a pure color. Brightness is always equal to the largest of a color's red, green, and blue components and is synonymous with value. Value is a component of the HSV (hue, saturation, value) color system.

BS-380 standard: You can use the BS-380 (British Standards Institute) standard to specify the properties of dimension objects created with the Dimensioning tool.

Canvas Prefs file: A Canvas document in which dialog boxes, tools, and menu options can be set for new documents. The options which can be saved in a Canvas Prefs file are discussed in Chapter 7. Canvas uses the active Canvas Prefs file as a template whenever you choose the New command. You create a Canvas Prefs file by saving a document in the Canvas Prefs file format.

Canvas Window: A Canvas document window. The Canvas Window contains the illustration area, the Tool Box, the Layer palette icon, and

the Information Manager, in addition to the standard Macintosh window elements.

center extension: The distance that the lines of Center dimension objects extend beyond the object to which they are applied.

center gap: The space between the center crosshair of a Center dimension object and the lines which extend from it.

center length: The length that the center crosshair of a Center dimension object extends out from the center of the object to which it is applied.

CGM: Abbreviation for the Computer Graphic Metafile file format. The CGM format is commonly used by mainframe and IBM PC-compatible CAD (computer-aided design) programs. Canvas can open and save files in the CGM format.

choose: To select by highlighting, as for menu commands.

click: To quickly press and release the mouse button without moving the mouse.

Clipboard: An area in your Macintosh's memory where data which has been cut or copied is stored. The information remains there until the next time you copy or cut information to the Clipboard. Information on the Clipboard can be pasted into the same document or between documents or applications. The Clipboard command in the Windows menu opens the Clipboard window which shows the last items you have cut or copied.

close box: A small square on the left side of the active window's title bar. Clicking the close box closes the window.

CMY: Standardized color system used in the printing industry. Colors in the CMY system are defined by their levels of cyan, magenta, and yellow. The CMY system produces richer colors than the CMYK system, but is less suited to creating strong blacks.

CMYK: Standardized color system used in the printing industry. Colors in the CMYK system are defined by their levels of cyan, magenta, yellow, and black. The CMYK system lets you produce stronger blacks than the CMY system, but cannot create the rich colors that the CMY system can.

color system: A measuring system for defining colors using a specific set of components. Canvas supports the RGB (red, green, blue), HSV (hue, value, intensity), CMY (cyan, magenta, yellow), and CMYK (cyan, magenta, yellow, black) color systems.

comments: Information Canvas uses to create Canvas objects from QuickDraw objects. You can copy an object without its Canvas-specific comments by holding down the Shift and Option keys and choosing Copy Without Comments from the Edit menu; hold down the Shift key and choose Paste Without Comments to paste objects without comments.

core tools: The basic set of Canvas tools, used along with external tools to create and edit illustrations.

cusp: On a polygon, a cusp is a superimposed point which cannot be smoothed. On a Bézier curve, a cusp is an anchor point whose two direction points' tangent lines are not colinear. Cusps allow for the creation of corners on Bézier curves.

default settings: Settings that Canvas uses unless you specify different settings.

depth: The number of bits used to define a pixel in a paint object. As the number of bits used to define a pixel increases, so does the number of possible shades for that pixel.

deselect: To make a selected object no longer selected by either clicking outside the object or holding down the Shift key and clicking it.

desktop: Your working area on the computer.

dialog box: A window which contains messages or requests information to let you specify names, settings, and other properties for the command or tool you have chosen.

dimension object: Object created by the Dimensioning tool. A dimension object is composed of dimension text, arrows, and witness lines.

dimension text gap: The distance between the dimension text and the shaft of the dimension arrow.

DIN standard: You can use the DIN (Deutches Institut für Normung) standard to specify the properties of dimension objects created with the Dimensioning tool.

direction point: Either of two points which are connected to an anchor point of a Bézier curve by tangent lines. The position of each direction point in relation to the anchor point determines the size and shape of the adjacent curve segment.

directory: A scrolling list in a directory dialog box. The directory alphabetically lists all the files and folders in the currently open folder. The currently open folder appears in the directory title pop-up box.

directory dialog box: A standard Macintosh dialog box which is used to locate files. A pop-up box at the top of a directory dialog box displays the currently open folder and the directory displays the folder's contents.

directory title: A pop-up box at the top of a directory dialog box which displays the currently open folder. Its pop-up menu shows the hierarchical path from the currently open folder to the Finder desktop.

dithering: A visual effect which arranges groups of pixels of relatively few colors in patterns to give the appearance of broader ranges of colors.

document: Any file created by an application program.

double-click: The process of positioning the pointer on an object and pressing and releasing the mouse button twice in rapid succession without moving the mouse. Canvas lets you choose what effect double-clicking an object will have in the Preferences dialog box.

DPI: Measurement of the resolution of a paint object. DPI (dots per inch) is the number of pixels the object has per square inch. Increasing the dpi adds definition to your printed or displayed image; however, it also requires more memory.

drag: The process of moving something on screen by positioning the pointer on the object, holding down the mouse button, moving the mouse (the object follows your movement), and then releasing the mouse button.

draw object: An object-oriented graphic element. When you create a draw object Canvas stores not the object itself but the data necessary to recreate it. The on-screen or printed representation of these objects can be as fine as your equipment is capable of producing.

edition: The contents of a edition file created by publishing a portion of a document. The edition is what is sent by the publisher or received by the subscriber whenever an update takes place. Editions are only available for users of System 7.0 or later.

edition file: A file which Canvas creates to store a published portion of a document, known as an edition. The edition can be subscribed to by other files. The edition file is linked to both the file containing its publisher and files which subscribe to it for the purpose of updating and transmitting its edition. Edition files are only available for users of System 7.0 or later.

emulsion: The photosensitive layer of a piece of film.

error message: A message displayed in an alert box that informs the user of a problem in communication with the computer or in the functioning of a program.

external tools: Optional elements of the Canvas program which are shipped in the Canvas Tools folder. External tools appear as tools in the Tool Box or as commands in the Canvas menus. Canvas's Open Architecture design lets you add or remove these elements without affecting the rest of the application.

file: Any named collection of information stored on a disk.

file format: The structure in which the contents of a file are arranged. Each program can write its own file format. Since not all programs support the same features, data can be lost when saving in different file formats. You should choose a format which can be read by the application in which the file will be opened.

Finder™: The part of the Macintosh system software that creates the desktop.

floating window: A window that is always in front of the active Canvas Window, such as Canvas's tear-off palettes, the Text Ruler, and the PANTONE® Colors window.

folder: A place to store and organize files, applications, and other folders on the desktop.

foreground color: The color Canvas uses to represent black pixels in fill and pen patterns.

foreground pixel: In a paint object, a pixel which has been assigned a color. In a 1-bit deep paint object, all foreground pixels have the object's foreground color. In an 8- or 32-bit deep paint object, foreground pixels are all non-white.

four-color separation: The separating of the colors in a document into four individual files, each containing the cyan, magenta, yellow, or black component of all objects in the document. These files are used to create negatives when you are sending your document to a print shop.

group: To combine two or more objects and treat them as one object.

gray scale: A gradient of grays from black to white.

guides: Non-printing lines which you can use to help you align objects.

handles: Points at the corners and midpoints of an object's bounding rectangle which can be used to modify the object's size or shape.

hatch pattern: Object-oriented fill pattern comprised of line groups.

hierarchical menu: A menu item that contains a submenu of command options. Hierarchical menu items appear in the menu with a right facing indicator to the right.

highlight: Selecting an icon by clicking it, selecting text by dragging across it, or selecting a menu command by dragging to it. The selected icon or command appears in reverse video to indicate that it is selected. Selected text appears in a band of the highlight color.

home view: The view of your document which aligns the top left corner of the document to the top left corner of the Canvas Window at the normal (100%) magnification level.

HSV blend: A blend of the HSV (hue, saturation, and value) components of the starting and ending colors. The result is a series of colors along an arced path on the color wheel between the starting and ending colors.

hue: The position of a color on the color wheel, which ranges from 0 at red to 65535, bringing you back to red as you circle the wheel counter-clockwise.

icon: An element in the Canvas Window which represents a tool or other function.

illustration area: The drawing and editing area of the Canvas Window. The illustration area is bounded by the edges of the Tool Box, the title bar, and the scroll bars.

initialize: To format a disk to receive information.

ISO standard: You can use the ISO (International Organization for Standardization) standard to specify the properties of dimension objects created with the Dimensioning tool.

JIS standard: You can use the JIS (Japanese Industrial Standard) standard to specify the properties of dimension objects created with the Dimensioning tool.

justification: The method used to align text. You can left, right, center, or full justify text objects in Canvas.

layer: A level in a Canvas document used to organize objects. Each layer is transparent until it is modified. The number of layers in a Canvas document is limited only by the amount of memory available.

leader length: The length of the horizontal portion of the witness line of a dimension object.

leading: The space between lines of text, measured from the baseline of one row to that of the next.

lightness: The amount of black or white in a color where 0 is black, 32768 is the color with no black or white, and 65535 is white.

line group: A set of parallel lines in a hatch pattern that have identical properties.

MacrObject: One or more Canvas objects can be stored as a MacrObject and then inserted into a document at any scale by simply clicking or dragging. MacrObjects appear as commands in the Macro menu and can be saved separately from the document in which they are created, in macro set files.

macro set file: A file of MacrObjects which is stored on disk.

managers: Dialog boxes for configuring the various tools and commands in Canvas.

menu bar: The list of pull-down menus running horizontally across the top of your screen. The Canvas menu bar has nine menus.

MultiFinder™: The part of your system software that lets you have multiple applications open simultaneously.

multigon: A polygon created by the Multigon tool in the Object Tools palette. Multigons can be one of three styles: frame, spokes, or wheel.

multiplex icon: A Tool Box icon with one or more triangular indicators which show that a pop-up palette of additional options and/or a dialog box for configuring the tool is available.

object: A graphic element created in Canvas. You can create text, draw, and paint objects in Canvas.

outside line length: The length of the dimension arrow of a dimension object when the Arrows Inside option is not selected.

paint object: An object defined by an array of pixels. Canvas supports paint objects at resolutions ranging from 72 to 2540 dpi and at depths from one to thirty-two bits.

palette: An array of options for a tool or property displayed in a pop-up menu or in a floating window. Palettes appearing in pop-up menus are called pop-up palettes and are displayed by holding the pointer down on a palette icon in the Tool Box. Those appearing in floating windows are called floating palettes, and can be displayed either by tearing a pop-up palette away from its palette icon or by choosing a command from the Windows menu. To choose an option from a pop-up palette, drag to enclose it in the selection box. Click to choose an option from a floating palette.

palette icon: A Tool Box icon which contains a tear-off palette of tools or editing options.

path: One or more connected segments of a Bézier curve or polygon.

peel-away rulers: Rulers which can be moved around inside the illustration area to provide additional measurement capabilities in specific areas of your document. Hold down the Option key and drag away from the Canvas ruler at the top or left side of your screen to create a peel-away ruler.

pica: A unit of measurement that is 12 points or 1/6 of an inch.

PICT: A file format used by graphics programs to save documents which will be exported to different applications.

picture object: A Canvas object which contains one or more separate objects in PICT format. Picture objects can only be scaled or resized in Canvas. They are useful for exporting graphics to other applications where they may need to be scaled.

pixel: Abbreviation for picture element. A single element of a paint object. Each dot displayed on your Macintosh screen is a pixel.

polygon: A multi-sided geometric figure composed of one or more line segments. There is a vertex at each endpoint of a polygon segment.

pop-up box: An icon which displays a pop-up menu when the pointer is held down on it. Pop-up boxes are identifiable by a shadow below and to the right of the icon itself. The pop-up box displays the current setting of the pop-up menu.

pop-up menu: Displayed when the pointer is held down on a pop-up box. You use pop-up menus to choose options in dialog boxes.

PostScript®: A computer language, created by Adobe Systems, Inc., which defines the appearance of printed type and images.

primary color: One of the three basic colors. Red, green, and blue are the primary colors of light. Combining any two of these colors produces one of the secondary colors cyan, magenta, and yellow. Cyan, magenta, and yellow are, in turn, the primary colors of pigment; they combine to produce the secondary colors red, green, and blue. In the RGB, CMY, and CMYK color systems, Canvas specifies each color by percentages of its component primary colors.

printer driver: A system file that allows the program to communicate with a specific printer.

process color: A printing method which runs a single piece of paper through a printing press over different ink plates, each with varying percentages of one color on it, usually cyan, magenta, yellow, and black (CMYK). These colors print over each other to form new colors.

publisher: An object which acts like a window in your document, enclosing objects which will be saved as an edition. Editions can be imported by other programs and still maintain a link with the document in which they were published. Publishers are only available to users of System 7.0 or later.

pull-down menu: A menu which is displayed when you hold down the pointer on its title. The pull-down menus in the Canvas menu bar contain all of Canvas's commands.

resize: To alter the size of a window (by dragging its size box) or object (by dragging a selection handle).

resolution: A measure of how fine an image is, usually expressed in dots per inch (dpi). Resolution is used to refer to the quality of a paint object, or an output device such as a monitor or printer.

RGB blend: A blend of the RGB (red, green, and blue) components of the starting and ending colors. The result is a series of colors lying along the straight line on the color wheel between the starting and ending colors.

saturation: The intensity of a color; that is, how strong the color appears. As you move outward along a radius of the color wheel, you go from zero saturation in the center to full saturation at the wheel's edge.

scroll arrows: Arrows on either end of the scroll bars in the Canvas Window. Click a horizontal or vertical scroll arrow to move through the document in the corresponding direction.

scroll bars: Gray bars on the bottom and right sides of the Canvas Window that contain scroll boxes and have scroll arrows at either end. Click the gray area of a scroll bar to move through the document one screen at a time in the desired direction.

scroll box: A box contained in each scroll bar in the Canvas Window. Drag the scroll box in the scroll bar to move a proportionate distance through the document.

scrolling menu: A menu which scrolls as you drag through it, displaying additional options. Scrolling menus are identifiable by the presence of a triangular indicator at the top or bottom. Highlight this indicator to cause the menu to scroll up or down. Canvas uses scrolling menus when a menu has more options than can be displayed at one time.

selection set: A set of selection criteria created in the Selection Specifications dialog box which determines what type of objects to select.

segment: A line or curve between two endpoints, such as in a polygon or Bézier curve.

select: To pick an object, tool, or other Canvas element, especially by clicking it.

selection box: A rectangle used to choose options from a pop-up palette. As you drag through the palette, the selection box follows the pointer. Release the mouse button when the selection box encloses the option you want to choose.

selection rectangle: A dashed rectangle which appears as you drag the Arrow tool to enclose items you want to select.

Sideboard: Gray area to the right and below the illustration area in the Canvas Window, which can be used as a work area. Objects in the Sideboard are saved with the document but are not printed.

size box: Icon located in the lower right corner of a window. Drag it to resize the window.

Smart Pointer: An icon displayed in place of the pointer to represent the Smart Mouse constraint which is in effect.

smooth polygon: A polygon with rounded rather than angular segments and corners.

Source Line: A dotted line which points to the part of the object which is defining a Smart Mouse constraint which is in effect.

specifications dialog box: A dialog box which lets you customize a particular element of your Canvas document (such as the Ruler Specifications dialog box) or edit selected objects (such as the Alignment Specifications dialog box).

submenu: A menu that is displayed by holding the pointer down on a hierarchical menu command. A hierarchical menu command is identifiable by a triangular indicator to the right of its name.

subscriber: An object containing data imported from an edition file. Subscribers are only available to users of System 7.0 or later.

tear-off palette: A pop-up palette that can be dragged away from its palette icon or tool icon in the Tool Box to become a floating window.

text object: A Canvas object containing text characters.

TIFF: The Tagged Image File Format, commonly used for saving scanned images.

title bar: The area at the top of a window which displays the document's or window's name, close box, and zoom box. Drag the title bar to move the window. The active document's title bar is highlighted with horizontal stripes.

toggle menu item: A Canvas command or option that can be either on and off. You change a toggle menu item's status by choosing it. When a toggle menu item is on, a check mark appears to the left of its name in the menu.

tolerance downspace: The line space (leading) between tolerance text in a dimension object when two tolerance measurements are present.

tolerance text scale: The scale of the tolerance text in a dimension object in proportion to the dimension text.

Tool Box: The box along the left side of the Canvas Window which displays icons which provide the tools and palettes you use to create and edit documents.

Tool Set: A customized selection of external tools created in the ToolPicker dialog box. The active Tool Set determines which external tools are loaded when you launch Canvas.

value: A measurement of the amount of black in a color; also called brightness.

view: A recording of a screen position and magnification level in your document. All Canvas documents contain two standard views: Home View and Reduce To Fit.

witness extension: The portion of the witness lines in a dimension object that extends past the dimension arrows.

witness gap: The space between the object being measured and the start of the witness lines of a dimension object.

write protect: A means of preventing the accidental erasure of a floppy disk by sliding the tab on its case toward the edge of the disk.

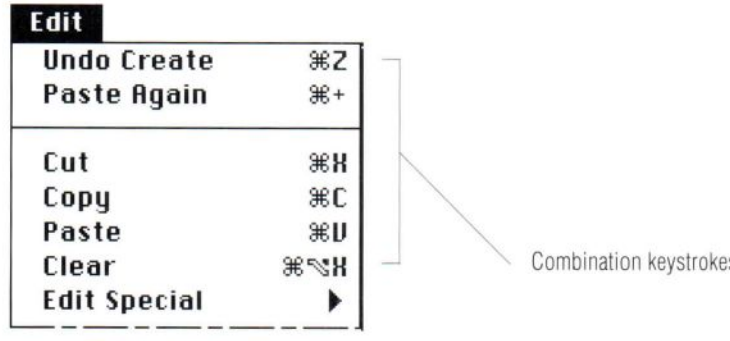
zoom box: The icon at the right side of the Canvas Window's title bar which you click to enlarge or reduce size of the Canvas Window.

Appendix A Glossary

Appendix

B Keyboard Shortcuts

Many commands appear in the menus with keystroke sequences to the right of their names. You can use these keyboard shortcuts to execute the commands from the keyboard without using the menus.



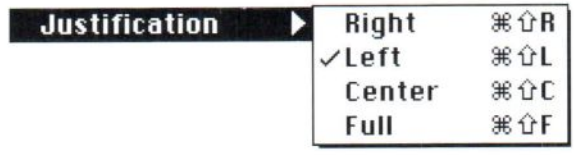
These keystroke sequences consist of one or more modifier keys (Command, Option, Shift, and Control) and a keyboard key. The symbols for the modifier keys are shown in the following illustration.

⌘ — Command key
⌥ — Option key
⇧ — Shift key
^ — Control key

To use these keyboard shortcuts:

1. **If you are applying the command to an object, select the object.**
2. **Hold down the modifier keys that appear with the menu command.**
3. **Press the key that appears to the far right of the menu command.**

For example, to make text left justified, select the text, hold down the Command and Shift keys, and press the "L" key.



The following list shows all the keyboard shortcuts by menu.

Command	Keyboard Shortcut
The menu	
Help	Command-?
The File menu	
New	Command-N
Open	Command-O
Place	Command-Option-P
Close	Command-W
Save	Command-S
Save As	Command-Option-S
Print	Command-P
Quit	Command-Q
The Edit menu	
Undo	Command-Z
Again	Command-=
Cut	Command-X
Copy	Command-C
Paste	Command-V
Clear	Command-Option-X
Select All	Command-A

Command	Keyboard Shortcut
The Edit menu *(continued)*	
Selection	Command-Option-A
Duplicate	Command-D
Duplication	Command-Option-D
The Text menu	
Size submenu	
Reduce	Command-Shift-<
Increase	Command-Shift->
Style submenu	
Plain	Command-Shift-P
Bold	Command-Shift-B
Italic	Command-Shift-I
Underline	Command-Shift-U
Outline	Command-Shift-O
Shadow	Command-Shift-W
SMALL CAPS	Command-Shift-\
Superscript	Command-Shift-+
Subscript	Command-Shift- -
UPPERCASE	Command-Shift-]
lowercase	Command-Shift-[
Title	Command-Shift-;
Justification submenu	
Right	Command-Shift-R
Left	Command-Shift-L
Center	Command-Shift-C
Full	Command-Shift-F
Leading submenu	
Tighten	Command-Shift-↑
Loosen	Command-Shift-↓

Command	Keyboard Shortcut
The Text menu *(continued)*	
Kerning submenu	
Tighten	Command-Shift-←
Loosen	Command-Shift-→
Spell Check submenu	
Suggest Spelling	Command-Shift-S
Suggest Spelling submenu	
Listed suggestion	Command-number of suggestion
Add Word	Command-A
Ignore Word	Command-I
Cancel	Command-.
Type	Command-T
The Object menu	
Arrange submenu	
Bring To Front	Command-F
Send To Back	Command-J
Shuffle Up	Command-[
Shuffle Down	Command-]
Align	Command-Y
Object Specs (Group Specs)	Command-I
Scale	Command-Option-\
Group	Command-G
Ungroup	Command-U
Lock	Command-L
Unlock	Command-Option-L
Curves submenu	
Select All Anchors	Command-Option-Shift-A
Join	Command-`
Smooth	Command-Shift-`
Unsmooth	Command-Option-Shift-`

Command	Keyboard Shortcut
The Object menu *(continued)*	
Edit (selected object)	Command-E
Blend	Command-Option-B
Convert To submenu	
Bézier Curve	Command-Control-B
Polygon	Command-Control-P
Group	Command-Control-G
The Layout menu	
Show/Hide submenu	
Grid	Command-Option-Shift-G
Info Manager	Command-Option-Shift-I
Rulers	Command-Option-Shift-R
Page Breaks	Command-Option-Shift-B
Size	Command-Option-Shift-S
Display submenu	
Wire Frame	Command-1
PostScript	Command-2
QuickDraw	Command-3
Refresh	Command-K
Views submenu	
Home View	Command-Option-H
Reduce To Fit	Command-Option-R
Zoom In	Command-Option-+
Zoom Out	Command-Option- -
User-defined view	Command-Option-number of view
New View	Command-Option-N

Command	Keyboard Shortcut

The Layout menu *(continued)*

Layers submenu

Hide Other Layers	Command-4
Show Other Layers	Command-5
Next Layer	Command-Option-Shift-↑
Previous Layer	Command-Option-Shift-↓
User-defined layer	Command-Option-Shift-number of layer
Layer Specs	Command-B
Grids	Command-Option-G
Smart Mouse	Command-Option-[
Snap To Grid	Command-Option-]
Drawing Size	Command-\
Slides	Command-Option->

The Effects menu

Rotate Right submenu

90°	Command-R

Image Effects submenu

Crop Image(s)	Command-Option-Shift-C
Trace Edges	Command-'

The Macro menu

Add Macro	Command-M

Appendix

C

Error Codes

The following is a list of common error codes and what they mean. These are the codes you will most likely see in the event of a system disruption or program malfunction.

Error Code 26: Resource or driver not found. A vital part of the program did not copy correctly and could not be found. Reinstall directly from your master disks and try again. If the missing part belongs to the System, reinstall your System file instead.

Error Code 33: Disk or disk directory full! Try saving your document to a different disk with more space available. Remember, if you close the document now without saving your work all changes will be permanently lost!

Error Code 34: Disk or disk directory full! Try saving your document to a different disk with more space available. Remember, if you close the document now without saving your work all change will be permanently lost!

Error Code 36: Disk I/O error. Usually this error indicates some kind of hardware problem, either bad disk media (wear) or a defective disk drive.

Error Code 39: Logical end-of-file reached during a read operation. Something went wrong the last time this document was saved or the disk is defective (possibly wear).

Error Code 44, 45,and 46: File locked. You can't write to a file that has been locked using the Finder's Get Info option, or to one that belongs to a locked disk, volume, or folder.

Error Code 47 and 49: File busy. This file is currently being used by someone else on the network. Otherwise it has been left open as a result of a System Error (if this is the case restart your computer as soon as possible).

Error Code 101: Wrong TIFF file version. Try resaving the TIFF file with a newer version of your TIFF software.

Error Code 102: There is not enough memory to dither the TIFF object. Try holding down the Option key while opening the file.

Error Code 103: Canvas does not support the compression type for this TIFF file; resave it using no compression.

Error Code 104: Canvas supports only TIFF files which contain gray level images of one, four, six, or eight bits.

Error Code 105: There is not enough information in this TIFF file for Canvas to properly interpret the image; try resaving it.

Error Code 108: You are out of memory! Try working with a smaller document, close all unnecessary open desk accessories or windows, reduce your disk cache (from the Control Panel), disable unnecessary INITs and print spoolers, or get more memory.

Error Code 109, 111, and 112: The Macintosh memory manager has encountered a rare but potentially dangerous error. Quit the application and restart your Macintosh as soon as possible.

Error Code 192: Resource or driver not found. A vital part of the program did not copy correctly and could not be found. Reinstall directly from your master disks and try again. If the missing part belongs to the System, reinstall your System file instead.

Error Code 193: Resource file not found. A needed file seems to be missing or can't be found. Double check your User Manual for proper installation instructions.

Error Code 200: Canvas has encountered a problem reading the program file. Recopy Canvas from your original Master Disk.

Error Code 201: Most probable cause is that your Macintosh is out of memory. If you are importing a PICT file it is possible the file may be corrupted.

Error Code 4097: The connection with the printer was just closed. Check all connections to the printer.

Error Code 4099: Write request too big. The printer's memory capacity has been exceeded. Try reducing the size of any large bitmaps and try again.

Error Code 4100: The connection with the printer was just closed. Check all connections to the printer.

Error Code 4101: Printer not found or closed. Check all connections to the printer and reselect the printer using the Chooser desk accessory. If this fails, try restarting the printer.

Section Six
Index

Index

A

About Canvas command 19-1
advanced drawing tools 6-6
Again command 13-1, 19-2
Align command 13-36, 19-2
  distributing objects 13-36
Align tool 13-39, 19-5
  Align palette 19-5
ANSI Standard 7-46
Apple menu 6-18, 19-6
  About Canvas command 19-1
  Help command 19-121
arc
  changing the length 8-13
  editing arcs 19-7
Arc tool 8-12, 19-6
Arrange submenu 13-48, 19-7
  Bring To Front 19-8
  Copy To Layer 19-10
  Send To Back 13-49, 19-8
  Send To Layer 13-49, 19-9
  Shuffle Down 13-49, 19-9
  Shuffle Up 13-49, 19-9
arrow keys 7-16, 19-12
  arrow key modifiers 19-13
Arrow tool 6-28, 15-5, 19-13
  resizing objects 6-32
arrow type 7-28
  changing 7-28
Arrow Type palette icon 7-28, 19-14
  tear-off palettes 19-17
Arrowhead Manager 7-30, 19-10
Auto Trace Manager 16-11, 19-18
  adding a setting 16-14
  deleting a setting 16-14
  retrieving a setting 16-13
Auto Trace To submenu 16-9, 19-20
  Bézier Curve 19-21
  Polygon 19-21
  Smooth Polygon 19-21
autogrid 7-37, 19-113, 19-273

B

background color
  default 7-24
Balloon Help 19-22
banding 13-2
basic drawing tools 6-6
basic icon 6-14
Bézier curve tool 9-6, 19-23
  multiplex icon options 9-16, 19-26
Bézier curves 7-13
  adding anchor points 9-17
  adding cusps 19-28
  closing 9-19
  creating 9-7, 19-23
  deleting anchor points 9-17, 9-18
  editing 9-10, 19-24
  editing a segment 19-26, 9-12
  editing an anchor point 9-11, 9-16, 19-25
  editing multiple anchor points and segments 9-13
  editing while drawing 19-27
  opening and closing 19-29
  placing in edit mode 19-24
  repositioning 9-9
  resizing 9-8
Bind Group 16-15, 19-275
Bind Text command 10-32, 19-30
Blend command 14-1, 19-31
  blend options 19-33
  Point to Point option 14-2, 19-33
Bring To Front 13-49, 19-8
Brush Manager 15-9, 19-34
brush pattern 15-11
brush shape 15-9

C

Cancel Auto Get 13-18, 19-89
Cancel Auto Send 13-17, 19-89
Canvas 2.1 file format 7-46, 19-233
Canvas file format 7-46
Canvas Prefs file 7-1, 7-43, 19-35
  creating 7-43
  default settings 7-9
  file format 7-46
  retrieving 7-44
  using custom a prefs file 19-36
Canvas Rescue files 19-40
Canvas Tools folder 6-7, 19-92
Canvas Window 6-1
CGM 7-3, 19-154, 19-236

file format 7-46
opening CGM files 19-154, 19-155
saving CGM files 19-236
Clear command 13-6, 19-41
Clipboard command 19-41
close box 6-3, 19-42
Close command 6-3, 19-41
closing a document 6-3
CMY color system 18-11, 19-44
CMYK color system 18-11, 19-44
color 18-1
brightness 18-4
HSV blend 18-6
hue 18-3
lightness 18-4
primary colors 18-3
properties 18-2
reflected light 18-3
RGB blend 18-5
saturation 18-4
transmitted colors 18-3
value 18-4
Color Info Manager 18-10, 19-42
color palette 18-2, 18-5
changing 18-7
Color Picker 18-8
color system 18-11
color wheel 18-3, 18-9
Combine submenu 14-8, 19-45
Add 14-9, 19-46
Intersect 14-9, 19-47
Outline 14-9, 19-46
Slice 14-10, 19-47
Subtract 14-10, 19-47
Convert To submenu 13-24, 19-48
coordinate systems 7-14
Copy At 2X, 4X, or 8X 13-8, 19-83
Copy command 13-3, 19-50
Copy Guides 13-4
Copy Selected Text 13-4
Copy Without Banding 13-4
Copy Without Comments 13-4
Copy Object's Color 19-84
Copy To Layer 13-49, 19-10
Copy With EPS 19-84
Create Béziers submenu 10-33, 19-51
Filled 19-51
Hollow 19-51
Create Publisher command 13-9, 19-52
Crop Image(s) 19-123, 16-8
Cube tool 14-11, 19-54
Cube tool modifiers 14-12, 19-55
editing cubes 14-13, 19-55
Curves submenu 19-56
Join 19-57
Select All Anchors 19-56
Smooth 9-6, 19-57
Unsmooth 9-6, 19-58
cusps 7-13, 9-20
adding to polygons 9-20
removing from polygons 9-21
Custom Pen Manager 19-195
Cut command 13-2, 19-58
Cut Without Banding 13-2
Cut Without Comments 13-3

D

Dash Manager 7-26, 19-60
Dash palette icon 7-25, 19-59
Dashes palette 19-59
dashed line type 7-25
changing 8-5
deselecting objects 6-31
dialog box 6-22
dimension objects
centering 11-19
creating 19-70
customizing 11-23
editing 11-13, 11-24
framing 11-20
precision 11-21
radius and diameter symbols 11-21
scale 11-23
text display 11-20
tolerance 11-22
type 11-19

unit of measure 11-23
dimension standards
creating 11-27
deleting 11-28
retrieving 11-28
Dimensioning Manager 11-18, 19-62
Dimensioning palette 11-14, 19-71
Dimensioning Standards dialog box 11-25
Dimensioning tool 11-12, 19-69
angle dimension objects 11-18
center, radius, or diameter dimension objects 11-17
chain or baseline dimension objects 11-15
horizontal, vertical, or oblique dimension objects 11-14
object side dimension objects 11-17
perpendicular dimension objects 11-16
Display submenu 13-53, 19-74
Distort 16-19, 19-274
dithering 18-21, 19-109
double-click 7-14
DPI 13-20, 13-24
drawing objects from corner to corner 8-1
drawing objects from the center 8-1
drawing size 7-6
Drawing Size command 19-75
Dropper tool 18-25, 19-77
selecting a foreground or background color 19-77
switching to Dropper tool 19-77
Duplicate command 19-78
Duplication command 13-30, 19-78
DXF 7-3, 19-154
export restrictions 19-239
file format 7-46
import restrictions 19-158
opening DXF files 19-154
saving DXF files 19-239

E

Edit command 19-81
Edit menu 6-18, 19-82
Again command 13-1, 19-2
Clear command 13-6, 19-41
Copy command 13-3, 19-50
Create Publisher command 13-9, 19-52
Cut command 13-2, 19-58
Duplicate command 19-78
Duplication command 13-30, 19-78
Edit Special submenu 13-7, 19-82
Edition Options submenu 13-12, 19-84
Managers submenu 19-140
Paste command 13-4, 19-184
Select All command 7-17, 19-250
Selection command 13-25, 19-251
Undo command 13-1, 19-307
Edit Special submenu 13-7, 19-82
Copy At 2X, 4X, or 8X 13-8, 19-83
Copy Object's Color 13-7, 18-16, 19-84
Copy With EPS 13-9, 19-84
Paste In Back 13-7, 19-82
Paste In Front 13-7, 19-82
Paste Picture Object 13-8, 19-83
Paste Scaled 13-8, 19-83
edition
publishing 13-10, 19-52
subscribing to 13-11, 19-290
Edition Options submenu 13-12, 19-84
Cancel Auto Get 13-18, 19-89
Cancel Auto Send 13-17, 19-89
Get All Now 13-17, 19-89
Send All Now 13-17, 19-89
Effect Tools palette
Dropper tool 18-25, 19-77
Mover tool 13-50, 19-142
multiplex icon options 19-172
Point Rotate tool 16-4, 19-198
Split tool 14-5, 19-282
Effect Tools palette icon 19-90
Effects menu 6-19, 19-90
Auto Trace To submenu 16-9, 19-20
Flip Both Axes command 16-6, 19-99
Flip Horizontal command 16-6, 19-99
Flip Vertical command 16-6, 19-100
Free Rotate command 16-3, 19-106
Image Effects submenu 16-7, 19-122
Remove Effects command 13-17, 19-222
Rotate Left submenu 16-1, 19-228
Rotate Right submenu 16-1, 19-227
Special Effects submenu 16-14, 19-273
EPSF 7-4, 17-9
file format 7-47
opening EPSF files 19-154
saving EPSF files 19-235
Eraser tool 15-4, 15-17, 19-91

external tools 6-7, 19-92
activating and deactivating 6-7, 19-300
Alignment Specs 13-36, 19-2
Arrowhead Manager 7-30, 19-11
Auto Trace 16-9, 19-18, 19-20, 19-102
Balloon Help 19-22
Bézier Text 10-33, 19-51
Bind 10-32, 16-15, 19-30, 19-275
Blend Objects 14-1, 19-31
Brush Manager 15-9, 19-34
Canvas 2.1 I/O 7-46, 19-234
CGM I/O 7-3, 19-234
Combine Objects 14-8, 19-45
Convert To 13-24, 19-48
Cube 14-11, 19-54
Dash Manager 7-26, 19-60
Dimensioning 11-18, 19-62, 19-69
Drawing Size Specs 7-6, 19-75
Dropper 18-25, 19-77
Duplication Specs 13-30, 19-79
DXF I/O 7-3, 19-234
Gradient Fill 18-20, 19-106, 19-107
Grid Specs 7-37, 19-113
GridMaker 14-14, 14-14, 19-111
Hatch Patterns 11-30, 19-118, 19-120
IGES I/O 7-3, 19-234
Illustrator I/O 7-47, 19-154
Layer Specs 13-41, 19-133
MacDraw I/O 7-4, 19-155
MacPaint I/O 19-235, 19-155
MacPaint tool 19-155
Mover 13-50, 19-142
Multigon 14-16, 14-18, 19-143, 19-144, 19-287, 19-288
Object Specs 13-18, 19-147
Object Tint 18-23, 19-277
PANTONE® Colors 18-12, 19-173
Parallel Lines 11-38, 19-179, 19-181
Pattern Manager 7-23, 19-185
Pen Size Manager 7-20, 19-193
Place 7-5, 19-197
Point Rotate 16-4, 19-198
Preferences 7-12, 19-204
Registration Marks 17-19, 19-222
RGB Color Manager 18-4, 19-223
Ruler Specs 7-33, 19-229
Scale Specs 13-34, 19-246
Search & Replace 10-27, 19-249
Selection Specs 13-25, 19-251
Separations 17-10, 19-234, 19-235, 19-278
Slides 17-18, 19-220, 19-260
Smart Mouse 11-1, 19-262, 19-263, 19-272
Spelling 10-23, 19-278
Split 14-5, 19-282
Spray Manager 15-12, 19-285
StartupScreen I/O 7-48, 19-155, 19-236
System 7.0 Options 13-9, 19-52, 19-84, 19-89, 19-290
Text Ruler 10-17, 19-293
Text Utilities 10-6, 10-29, 19-305, 19-310
TIFF I/O 7-48, 19-155, 19-236
ToolPicker 6-7, 19-300
UltraPaint I/O 7-48, 19-155

F

file formats 6-2, 7-45
Canvas Prefs 7-43, 19-35
DXF 7-3, 19-154, 19-239
EPSF 7-4, 19-154, 19-235
IGES 7-3, 19-154, 19-234
Illustrator 1.1 7-4, 19-154, 19-239
Illustrator 88 7-4, 19-154, 19-239
MacDraw 7-4, 19-154
MacPaint 7-4, 19-155, 235
PICT 7-4, 19-155, 235
StartupScreen 7-4, 236
TIFF 7-4, 19-159, 244
UltraPaint 7-4, 19-155
File menu 6-18, 19-97
Close command 6-18, 19-41
New command 7-1, 19-145
Open command 7-1, 19-152
Page Setup command 17-1, 19-162
Place command 7-5, 19-197

Preferences command 7-12, 19-204
Print command 17-5, 19-211
Print Special submenu 17-7, 19-212
Quit command 7-49, 19-220
Revert command 7-49, 19-223
Save As command 7-45, 19-232
Save command 7-45, 19-232
Save Layer As command 13-47, 19-245
fill pattern
changing 8-9
default 7-22
Fill Pattern palette icon 7-22, 19-97
Patterns palette 19-98
Flip Both Axes command 16-6, 19-99
Flip Horizontal command 16-6, 19-99
Flip Vertical command 16-6, 19-100
flipping objects 16-5
flipping objects as a group 19-99
Font submenu 10-1, 19-100
Fore Color palette icon 7-25
Fore Color/Back Color palette icon 19-100
choosing a new foreground or background color 19-101
Colors palette 19-101
editing a palette color 19-102
foreground color
default 7-24
Free Rotate command 16-3, 19-106
freehand objects
editing 9-3
Freehand tool 9-1, 19-102
choosing an object type to create 9-1
creating objects 9-2
editing smooth polygons 19-104
Make Bézier Curves 19-103
Make Polygons 19-103
Make Smooth Polygons 19-103

G

Get All Now 13-17, 19-89
Gradient Fill Manager 18-20, 19-107
deleting settings 18-23
design and saving settings 18-22
Gradient submenu 18-18, 19-106
editing and saving settings 19-107
grid lines 7-40
hiding 7-40
show, hide 19-254
Grid Specifications dialog box 7-37
GridMaker tool 14-14, 19-111
configuring the GridMaker tool 14-15, 19-110
GridMaker tool modifiers 14-14, 19-112
GridMaker tool Manager 14-15, 19-110
Grids command 7-37, 19-113
Group command 13-51, 19-114
Group Specs command 13-22, 15-6, 19-115
Guides command 7-38, 19-116

H

halftone patterns 17-11
Hand tool 6-26, 19-117
Hatch Manager 11-30, 19-118
hatch patterns 11-29
converting to individual lines 11-35
creating new patterns 11-33, 19-118
deleting 11-34
editing 11-34, 19-118
Hatch Patterns submenu 11-29, 19-120
Help command 5-38, 19-121
hierarchical menu 6-20
Home View 13-56
horizontal overlap 7-8
HSV blend 18-6
HSV color system 18-11, 19-44

I

icons 6-14
basic icon 6-14
multiplex icon 6-15
palette icon 6-16
IGES 7-3, 19-154
file format 7-46
import restrictions 19-159
opening IGES files 19-154
saving IGES files 19-239, 19-240
illustration area 6-4
Illustrator
file format 7-47, 19-234
opening Illustrator files 19-154
saving Illustrator files 19-234
Image Effects submenu 19-122
Crop Image(s) 16-8, 19-123
Invert 16-7, 19-122
Pattern Fill 16-7, 19-122

Trace Edges 16-8, 19-123
Info Manager 7-40, 13-28
Information Manager 6-5, 19-124
interpreting data 19-125
pasting autodimensioning data 19-124
show, hide 19-254
Invert 16-7, 19-122

J

Join 14-6, 19-57
Justification submenu 10-3, 19-126

K

Kerning submenu 10-4, 19-127

L

Lasso tool 15-4, 15-18, 19-128
editing selections 19-129
Lasso tool modifiers 19-128
Layer palette icon 6-6, 13-44, 19-130
Layers palette 19-130
Layer Specs command 13-41, 19-132
layers 13-40
activating 13-44, 13-45, 13-47
active 13-42
adding 13-42, 13-43
color override 13-42
deleting 13-44
grayed 13-42
hiding 13-47
Information Manager 13-29
rearranging 13-43
saving 13-47
visible 13-42, 13-45
Layers submenu 13-46, 19-131
Layout menu 6-18, 19-134
Display submenu 13-53, 19-74
Drawing Size command 7-6, 19-75
Grids command 7-37, 19-113
Guides command 7-38, 19-116
Layer Specs command 13-46, 19-132
Layers submenu 13-46, 19-131
New View command 13-55, 19-145
Refresh command 13-55, 19-221
Rulers command 7-33, 19-229
Show/Hide submenu 7-39, 19-253
Slides command 17-3, 19-260
Smart Mouse command 11-1, 19-262
Snap To Grid command 7-38, 19-273
Views submenu 13-55, 19-307
Leading submenu 10-3, 19-134
Line tool 8-2, 19-134
Lock command 13-52, 19-135

M

MacDraw
opening MacDraw files 7-4, 19-154
MacPaint
file format 7-47, 19-235
opening MacPaint files 19-155
saving MacPaint files 19-235
Macro menu 6-19, 19-136
Add Macro 12-1, 19-136
Clear Set 12-5, 19-138
Delete Macro 12-4, 19-137
Load Set 12-3, 19-138
Save Set As 12-2, 19-138
macro set files 12-1
closing 12-5
loading 12-3
saving 12-2
switching between 12-6
MacrObjects 12-1
adding 12-1
deleting 12-4
using 12-4
magnification 6-25
Magnifying Glass tool 6-25, 19-139
Managers submenu 19-140
Arrowheads... 7-29, 19-10
Auto Trace... 19-18
Brushes... 15-9, 19-34
Color Info... 18-10, 19-42
Dashes... 7-26, 19-60
Dimensioning... 11-18, 19-62
Gradient Fill... 18-20, 19-107

GridMaker... 14-15, 19-110
Hatch... 11-30, 19-118
Multigon... 14-17, 19-143
Parallel Lines... 11-38
Patterns... 7-23, 19-185
Pens... 19-193
RGB Colors... 18-4, 19-223
Smart Mouse... 11-2, 19-263
Sprays... 15-12, 19-285
Star... 14-19, 19-287
Marquee tool 15-4, 15-18, 15-19, 19-140
menu bar 6-17, 19-142
Apple menu 6-18, 19-6
Edit menu 6-18, 19-82
Effects menu 6-19, 19-90
File menu 6-18, 19-97
Layout menu 6-18, 19-134
Macro menu 6-19, 19-136
Object menu 6-18, 19-146
Text menu 6-18, 19-292
Windows menu 6-19, 19-309
menus
hierarchical 6-20
pull-down 6-19
scrolling 6-21
Mover tool 13-50, 19-142
moving objects 6-31
MultiFinder 7-15
Multigon Manager 14-17, 19-143
Multigon tool 14-16, 19-144
configuring 14-17, 19-143
tool modifiers 14-16, 19-144
multiplex icons 6-15

N

New command 7-1, 19-145
New View command 13-55, 19-145

O

Object menu 6-18, 19-146
Align command 13-36, 19-2
Arrange submenu 13-48, 19-7
Blend command 14-1, 19-31
Combine submenu 14-8, 19-45
Convert To submenu 13-24, 19-48
Curves submenu 19-56
Edit command 19-81
Gradient submenu 18-18, 19-106
Group command 13-51, 19-114
Group Specs command 13-22, 19-115
Hatch Patterns submenu 11-29, 19-120
Lock command 13-52, 19-135
Object Specs command 13-18, 19-146
Scale command 13-34, 19-245
Ungroup command 13-52, 19-307
Unlock command 13-53, 19-307
Object Specifications dialog box 13-18, 19-146
Object Specs command 13-18, 15-6, 19-146
Object Tools palette 19-151
Cube tool 14-11, 19-54
Dimensioning tool 11-12, 19-69
GridMaker tool 14-14, 19-111
Multigon tool 14-16, 19-144
multiplex icon options 19-151
Parallel Lines tool 11-35, 19-181
Registration Marks tool 17-19, 19-221
Star tool 14-18, 19-288
Object Tools palette icon 19-150
Open command 7-1, 19-152
file formats 19-153
opening a document 7-1
Oval tool 8-11, 19-161
changing roundness of oval 19-161
opening ovals and circles 19-161
Overprint 17-18, 19-278

P

Page Breaks (show, hide) 19-257, 7-41
Page Setup command 17-1, 19-162
Paint Brush tool 15-4, 15-8, 19-165
Brush Manager 19-34
Brush Shape palette 19-166
Paint Bucket tool 7-23, 15-4, 15-16, 19-167
displaying Pattern Manager 19-168
Paint Object Creator tool 15-4, 15-7, 19-168
editing paint objects 19-169
paint objects 15-1, 19-169
active 15-5
choosing a depth 13-20
creating 7-16, 15-6
depth 15-3
editing 15-15
editing with the Pencil tool 15-15
filling 15-16

resolution 13-20, 13-24, 15-1
selected 15-5
paint tools 15-3
constraining 15-21
Paint Tools palette 15-4, 19-171
Eraser tool 19-91
Lasso tool 15-4, 19-128
Marquee tool 15-4, 15-18, 19-140
multiplex icon options 19-172
Paint Brush tool 15-4, 19-165
Paint Bucket tool 15-4, 19-167
Paint Object Creator tool 15-4, 19-168
Pencil tool 15-4, 19-188
Spray Can tool 15-4, 19-283
Paint Tools palette icon 19-171
palette
tear off 6-17
palette colors 18-2
palette icons 6-16
tear off palette 6-17
PANTONE® colors
choosing 18-13
PANTONE® Colors command 19-173
PANTONE® Colors window 18-14
PANTONE® set 18-12, 18-14
parallel lines
editing 11-42
Parallel Lines Manager 11-38, 19-179
deleting a setting 11-41
designing a setting 11-41
retrieving a setting 11-42
saving a setting 11-41
Parallel Lines tool 11-35, 19-181
editing and saving settings 19-179
line segments option 11-36, 19-182
polygon option 11-37, 19-182
smooth polygon option 11-37, 19-182
Paste command 13-4, 19-184
Paste And Place 13-5
Paste As Picture 13-6
Paste In Position 13-6
Paste Without Comments 13-5
Paste In Back 13-7, 19-82
Paste In Front 13-7, 19-82
Paste Picture Object 13-8, 19-83
Paste Scaled 13-8, 19-83
Pattern Fill 16-7, 19-122
Pattern Manager 7-23, 19-185
patterns
editing 7-23
peel-away rulers 7-36
Pen Manager 7-20, 19-193
Pen Mode palette icon 7-31, 19-189
Pen Mode palette 19-191
pen modes 18-2
pen pattern 7-21
changing 8-4
Pen Pattern palette icon 19-191
Patterns palette 19-192
pen point sizes 7-20
pen size 7-18
changing 8-3
changing the default 7-18
Custom 7-19
Pen Size palette 19-196
Custom Pen Manager 19-195
Pen Size palette icon 19-194
Pencil tool 15-4, 15-14, 19-188
drawing with the Pencil tool 19-189
magnifying and editing with the Pencil tool 19-188
Perspective (1 Side) 16-16, 19-275
Perspective (2 Side) 16-16, 19-275
PICT 7-4
file format 7-47, 19-235
opening PICT files 19-155
saving PICT and PICT I files 19-235
picture object 13-6, 19-83
pixels 15-1
Place command 7-5, 19-197
Point Rotate tool 16-4, 19-198
Rotation Specifications dialog box 16-5, 19-199
Polygon tool 9-3, 19-200
multiplex icon options 9-16, 19-203
polygons 7-13

adding cusps 19-203
adding vertices 9-16
Canvas 2.1 Polygon Creation 9-5
closing an open polygon 9-19
deleting vertices 9-17
drawing 9-3
editing 19-201
editing a segment 9-12
editing a vertex 9-11
editing multiple segments and vertices 9-13
opening a closed polygon 9-19
repositioning 9-9
resizing 9-8
smoothing 9-6
pop-up boxes 6-6
pop-up menu 6-22
PostScript
embedding code in a Canvas document 13-20
PostScript display 13-53
preferences 7-43
Preferences command 7-12, 19-204
Print command 17-5, 19-211
ImageWriter options 19-211
LaserWriter options 19-212
Print Special submenu 17-7, 19-212
Layer 17-7, 19-213
PostScript 17-9, 19-213
Selection 17-8, 19-213
Separation Setup 17-10, 19-215
Separations 17-12, 19-214
Slides 17-18, 19-219
printer type 7-35
printing paper size 17-2
printing order 7-8
printing resolution 7-16
printing selected layers 17-7
printing selected objects 17-8
printing separations 19-214
process color printing method 17-10
properties
defaults 7-18
publisher 13-10
sending editions 13-17
Publisher Borders (show, hide) 7-42
Publisher Options 13-12
pull-down menu 6-19

Q

QuickDraw display 13-53
Quit command 7-49, 19-220

R

Rectangle tool 8-8, 19-220
Reduce To Fit 6-28, 13-56
reduction 6-25
Refresh command 13-55, 19-221
Registration Marks tool 17-19, 19-221
Remove Effects command 13-17, 16-19, 19-222
repositioning a line 8-3
resizing
a line 8-2
a shape 8-9
objects 6-32
resizing the Canvas Window 19-259, 19-312
resolution 13-20, 13-24, 15-1
default 15-7
Revert command 7-49, 19-223
RGB blend 18-5
RGB Color Manager 18-4
RGB color system 18-11, 19-43
RGB Colors... 19-223
changing active palette 19-226
modifying color palette 19-223
Pick 19-225
rotate by user-defined angle 16-2
Rotate Left submenu 16-1, 19-228
Rotation Manager 19-228
Rotate Right submenu
Rotation Manager 19-227
Rotate Right submenu 16-1, 19-227
Rounded Rectangle tool 8-10, 19-228
changing roundness of 8-11, 19-229
Ruler Specifications dialog box 7-33
rulers
changing the zero point 19-255
changing the zero-point 7-35
peel-away rulers 19-256
show, hide rulers 7-41, 19-255
Rulers command 7-33, 19-229

S

Save As command 7-45, 19-232
file formats 19-233

Save command 7-45, 19-232
Save Layer As command 13-47, 19-245
Scale command 13-34, 19-245
  scaling by percentage 19-247
  scaling by ratio 19-247
Scaling Specifications dialog box 13-35
scroll arrows 6-4, 6-27, 19-248
scroll bar 6-4, 6-27
scroll bars 6-4, 19-248
scroll box 6-4, 6-27, 19-248
scrolling submenu 6-21
Search & Replace command 10-27, 19-249
search set 13-26
Select All Anchors 9-14, 19-56
Select All command 7-17, 19-250
selecting obscured objects 6-30
Selection command 13-25, 19-251
selection tools 6-6
  paint 15-18
Send All Now 13-17, 19-89
Send To Back 13-49, 19-8
Send To Layer 13-49, 19-9
Separation Options dialog box 17-12
Separation Setup dialog box 17-10
Separations
  file format 7-47, 17-12, 19-235
  saving color separations 19-235
Show/Hide submenu 7-39, 19-253
  Grid 19-254
  Info Manager 13-28, 19-254
  Page Breaks 19-257
  Publisher and Subscriber Borders 19-258
  Rulers 19-255
  Size 19-257
Shuffle Down 13-49, 19-9
Shuffle Up 13-49, 19-9
Sideboard 6-5, 19-258
Size (show, hide) 7-42, 19-257
size box 6-3, 19-259
Size submenu 10-1, 19-258
  custom sizes 19-259
Skew 16-18, 19-274
Slides command 17-3, 19-260
Smart Mouse command 11-1, 19-262
Smart Mouse constraints 11-14, 19-266
Smart Mouse Manager 11-2, 19-263
  absolute constraint 11-4
  adding constraints 11-8
  changing constraint settings 11-9
  constraint priority 11-9
  constraint range 11-10
  deleting constraints 11-9
  objects within 11-10
  relative constraint 11-4
Smart Mouse window 11-11, 19-271
Smart Pointers 11-2, 11-3
Smooth 9-6, 19-57
smooth polygons 19-104
  adding cusps 19-105
  editing smooth polygons 19-104
  unsmoothing 9-5
Snap To Grid command 7-38, 19-273
Source Lines 11-2, 11-3
Special Effects submenu 19-273
  1 Side Perspective 16-16, 19-275
  2 Side Perspective 16-16, 19-275
  Bind Group 16-15, 19-275
  Distort 16-19, 19-274
  Overprint 19-278
  Skew 16-18, 19-274
  Stretch 16-18, 19-274
  Tint Objects 18-23, 19-277
Spell Check submenu 10-23, 19-278
  adding words to the dictionary 10-25
  Continue Spell Check 10-26, 19-280
  Interactive 10-25, 19-280
  Show Added Words 10-26, 19-282
  Spell Check Document 10-25, 19-280
  Spell Check Selection 10-26, 19-280
  Spelling Checker dialog box 19-280
  Suggest Spelling 10-24, 19-279
Split tool 14-5, 19-282
Spray Can tool 15-4, 15-11, 19-283
  editing nozzle shapes 19-285
  nozzle shape 15-12
  Spray Can Nozzle palette 19-284

Spray Manager 15-12, 19-285
spray patterns 15-14
Star Manager 14-19, 19-287
Star tool 14-18, 19-288
  configuring the Star tool 14-19, 19-287
  modifier keys 19-288
StartupScreen 7-48
  file format 7-48, 19-236
Stretch 16-18, 19-274
Style submenu 10-2, 19-289
Subscribe To command 13-10, 19-290
subscriber 13-11
  adorning 13-16
Subscriber Borders (show, hide) 7-42
Subscriber Options 13-14
System 7.0
  Balloon Help 19-22

T

tabs 10-18, 19-292
  leader 10-22
text
  adding effects 10-15
  binding 10-32
  changing the background color 10-13
  changing the background pattern 10-13
  changing the color of individual characters 10-14
  changing the foreground color 10-13
  copying 10-16
  deleting 10-17
  deselecting 10-12
  editing 10-10
  editing text to which effects have been applied 10-16
  font 10-1, 10-5, 10-6
  justification 10-3, 10-7, 10-19, 10-23
  kerning 10-4, 10-7
  leading 10-3, 10-7, 10-22
  output quality 7-16
  pasting 10-16
  scaling 10-8, 10-12
  selecting 10-11
  setting tab stops 10-19
  size 10-1, 10-5, 10-6
  style 10-2, 10-5, 10-6
  subscript 10-7
  superscript 10-7
text box 6-23
Text menu 6-18, 19-292
  Bind Text command 10-32, 19-30
  Create Béziers submenu 10-23, 19-51
  Font submenu 10-1, 19-100
  Justification submenu 10-3, 19-126
  Kerning submenu 10-4, 19-127
  Leading submenu 10-3, 19-134
  Search & Replace command 10-27, 19-249
  Size submenu 10-1, 19-258
  Spell Check submenu 10-23, 19-278
  Style submenu 10-2, 19-289
  Text Ruler command 10-17, 19-292
  Type command 10-6, 19-305
  Wrap submenu 10-29, 19-310
text objects
  creating caption text 10-9
  creating paragraph text 10-9
Text Ruler command 10-17, 19-292
  inserting tabs 19-293
  justifying text 19-295
  leading options 19-295
  removing tabs 10-21
  Tab Specifications dialog box 10-21, 19-294
Text tool 10-5, 19-296
  editing text objects 19-297
  multiplex options 10-5, 19-299
  selecting text 19-297
TIFF
  file format 7-48, 19-236
  opening TIFF files 19-159
  saving TIFF files 19-244
Tint Objects 18-23, 19-277
title bar 6-2, 19-299
toggle menu item 6-20
Tool Box 6-6, 19-300
  Align tool 13-39, 19-5
  Arc tool 8-12, 19-6
  Arrow tool 6-28, 19-13
  Arrow Type palette icon 7-28, 19-14
  Back Color palette icon 7-25, 19-100
  Bézier curve tool 9-6, 19-23
  Dash palette icon 7-25, 19-59
  Effect Tools palette icon 19-90
  Fill Pattern palette icon 7-22, 19-97
  Fore Color palette icon 7-25, 19-100

Freehand tool 9-1, 19-102
Hand tool 19-117
Line tool 8-2, 19-134
Magnifying Glass tool 6-25, 19-139
Object Tools palette icon 19-150
Oval tool 8-11, 19-161
Paint Tools palette icon 15-4, 19-171
Pen Mode palette icon 7-31, 19-189
Pen Pattern palette icon 7-21, 19-191
Pen Size palette icon 7-18, 19-194
Polygon tool 9-3, 19-200
Rectangle tool 8-8, 19-220
Rounded Rectangle tool 8-10, 19-228
Text tool 10-5, 19-296
Zoom In/Zoom Out palette icon 19-313
6-24
Tool Information 6-11
ToolPicker 6-7, 19-300
tools
Arc tool 8-12
Bézier curve tool 9-6
core tools 6-7
Eraser tool 15-17
external tools 6-7
Freehand tool 9-1
Lasso tool 15-18
Marquee tool 15-18, 15-19
Paint Brush tool 15-8
Paint Bucket tool 15-16
Paint Object Creator tool 15-7
paint tools 15-3
Parallel Lines tool 11-35
Pencil tool 15-14
Polygon tool 9-3
Rectangle tool 8-8
Rounded Rectangle tool 8-10
Spray Can tool 15-11
Trace Edges 16-8, 19-123
Type command 10-6, 19-305

U

UltraPaint
file format 7-48
opening UltraPaint files 19-155
Undo command 13-1, 19-307
Ungroup command 13-52, 19-307
Unlock command 13-53, 19-307
Unsmooth 9-6, 19-58

V

vertical overlap 7-8
viewing Canvas documents 6-24
views 13-55
deleting 13-56
switching 13-56
Views submenu 13-55, 19-307
Home View 6-28
Reduce To Fit 6-28

W

Windows menu 6-19, 19-309
100% View command 15-15, 19-310
Clipboard command 19-41
PANTONE® Colors command 18-14,
19-173
Smart Mouse window command 11-1,
19-271
Wire Frame display 13-53
Wrap submenu 10-29, 19-310
Inside Shape 10-29, 19-310
Outside Shape 10-30, 19-311
Remove Wrap 10-32
Slant Margin 10-31, 19-312

Z

zoom box 6-3, 19-312
Zoom In/Zoom Out palette icon 6-24,
19-313
zoom arrows 6-25, 19-314
Zoom In/Zoom Out palette 19-314