The Crystal Rain Forest

User Guide

RM   PC

The Crystal Rain Forest

A Mathematical Adventure
into Logo for Juniors

Designed and programmed by Simon Hosler

Credits and Copyright

The Crystal Rain Forest is a mathematical adventure in Logo for junior school children.

Designed and programmed by Simon Hosler
Teacher's book and children's materials by Bill Bonham, David Eccles and Lis Johnson
Artwork by Suzanne Hosler
RM Nimbus and PC versions programmed by Damien Cavanagh
Apple Macintosh version programmed by George Ma and Rueben Cockle
Programs and Documentation:
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• *With special thanks to Charles Hosler.*

Contents

Introduction

The Crystal Rain Forest is an adventure program for upper junior school children. The package has a strong environmental theme based on rain forests, and also includes a series of carefully structured puzzles and problems that introduce children to Logo in a logical and sequential manner.

The package is ideal for use as the centre piece for topic work on rain forests, conservation and other ecological issues, as an introduction to Logo, or simply as an adventure in its own right. The adventure contains numerous starting points for all sorts of work on conservation and nature, and ideas for further work. The resources for these can be found in the separate Teacher's notes booklet - 'Using Crystal Rain Forest in the classroom'.

As children progress through the adventure each of the challenges they are presented with introduces a new aspect of Logo, and as a result they gradually learn how to use Logo to create their own shapes and patterns. Each challenge has an accompanying instruction card to help the children if necessary, however, for most children the graphics in the program make the tasks self-explanatory. A copy of *Crystal Logo*, an easy to use version of Logo, is included in the package together with a simple instruction booklet for the children.

The package contents

In your *Crystal Rain Forest* package you should find:-

• User Guide

• Teacher's book

• *Crystal Logo* booklet

• 4 instruction cards

• 2 x A3 colour maps

• 2 x A4 colour maps

• 2 x A4 black and white maps to photocopy

• 1 x coloured jaguar information card

The number of discs supplied will depend on the version being used. See the appropriate section for details.

Using the Acorn 32 bit version

Machine requirements:

The Crystal Rain Forest will run on an Archimedes, A3000 , A3020, A4000, A5000, A7000 or Risc PC with at least one megabyte of memory.

Software protection

The program is supplied on four discs. The key disc is protected and will not copy. This allows us to run our popular approval system. The software may be installed on a hard disc drive but will require the Key disc to be placed in the disc drive to start the software. (See below for hard disc considerations.) An unprotected Key disc will be provided when a site licence is purchased or alternatively you can purchase a single security backup disc for a nominal charge. Contact Sherston Software for details.

Before using the software you should make copies of all the discs with the exception of the Key disc.

All our discs carry a life time guarantee.

Hard disc users

Installing the software

- Create a suitable directory on your hard disc drive.
- Each *Crystal Rain Forest* disc contains an application *!Crystal*.

  The key disc also contains *!Fonts*.
- Copy the contents of all four discs, with the exception of *!Fonts,* by dragging the *!Crystal* application into the directory display you have just opened on the hard disc drive. Don't worry about the applications all having the same name, the copying process will combine all the applications into one.

Copying !Fonts

Your hard drive will probably already contain an application *!Fonts.* The font provided with *The Crystal Rain Forest* is Tabloid which is an essential part of the program and must be installed correctly.

To add the Tabloid font to those already on your hard disc:

- Hold down the **Shift** key and double click the **select** button on the *!Fonts* applications on both your hard disc and on the *Crystal Rain Forest* Key disc.

- The *!Fonts* application on the *The Crystal Rain Forest* disc contains a directory *Tabloid.* This should be dragged across into the *!Fonts* directory on the hard disc.

- Double click on the *!Fonts* application on your hard disc.

Copying !Fonts on a Risc PC

To add the font *Tabloid to those already on your Risc PC* follow these steps:

- Click on the hard disc icon.
- Double click on the *!Boot* icon in the directory display.
- Click **select** on the **Fonts** icon in the window as shown below.
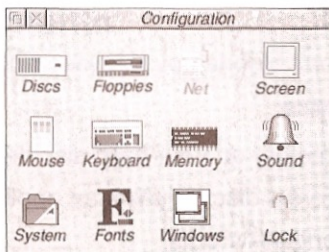
- Drag the *!Fonts* application from the *Startup* disc onto the lower part of the window shown below and then click on **Set**.
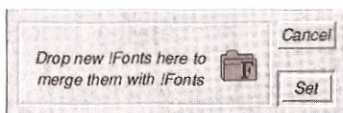
Loading the software

Floppy disc users

Place the key disc in the drive and click the **select** button on the floppy disc icon (:0). This will open up a window containing two applications *!Crystal* and *!Fonts*.

Double click on the *!Fonts* application if you have been using fonts from other discs and have not reset your computer since then.

Double click on the application *!Crystal* to load the software onto the icon bar.

Hard disc users

Double click on the application *!Crystal* to load the software onto the icon bar. Unless you have purchased a site licence you will be asked to insert the Key disc the first time you load the software.

Starting The Crystal Rain Forest

Once *The Crystal Rain Forest* icon is installed on the icon bar the adventure can be started in one of two ways.

Either:

• Click the **select** button on the icon to begin the adventure at the beginning,

or

• select a different starting point from the set up panel, (see Teacher Controls), and then click the **select** button on the icon on the icon bar.
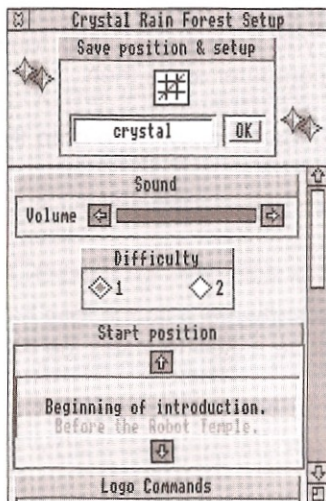
Leaving The Crystal Rain Forest (Ctrl Q)

To leave the adventure hold down the **Ctrl** key and press the letter **Q**. The application will remain installed on the icon bar and so you are able to use the set up menu option and save your current position.

Teacher controls

To access the teacher control panel, click the **menu** button on *The Crystal Rain Forest* icon on the icon bar and then click on the **Setup** option on the menu.

The control panel can be used to set up the following:

```
┌─────────────────────────────┐
│⊠│  Crystal Rain Forest Setup │
│    Save position & setup     │
│◄◊►        ┌───┐              │
│           │ # │         ◄◊►  │
│           └───┘              │
│  ┌────────────┐ ┌───┐        │
│  │  crystal   │ │ OK│        │
│  └────────────┘ └───┘     ⇧  │
│          Sound               │
│ Volume ◄▣▬▬▬▬▬▬▬▬▬▬▬▣►       │
│        Difficulty            │
│     ◊1        ◊2             │
│      Start position          │
│           ⇑                  │
│  Beginning of introduction.  │
│   Before the Robot Temple.   │
│           ⇓               ⇩  │
│      Logo Commands        ▣  │
└─────────────────────────────┘
```

- to save the current position in the adventure,

- to adjust the sound volume,

- to set the level of difficulty,

- to change the starting point of the adventure,

- to change the Logo commands used within the program,

- to change the 'Save area' or directory where screens and Logo programs and sprites will be saved.

Saving the current position

To save the current position in the adventure drag the icon shown left into a directory display. Enter a name before you save the position. To re-load this position, drag the saved icon into the teacher control window, or more simply, drag it onto *The Crystal Rain Forest* icon on the icon bar and then click on this icon to re-start. When saving your position all the current settings within the setup panel are saved.

Adjusting the volume

Adjust the volume of the sound used throughout the adventure by clicking on the arrows to the right and left of the green bar.

Level of difficulty

There are two difficulty levels. Click on the button next to the level of your choice. Selecting the harder level will mean that the challenges contain extra and usually more difficult problems for the children to solve.

Changing the starting point of the adventure

There are 26 possible starting points for the adventure:

Move through the options by clicking on the up and down arrows until the one you require is highlighted. Clicking on the *Crystal Rain Forest* icon on the icon bar will then start the adventure at this position.

Beginning of introduction.
Before the Robot Temple.
After the Robot Temple.
Start to explore Bridgetown.
Before you help the gardener.
After helping gardener.
After helping gardener + map.
As you enter the jungle.
As you enter the jungle + map.
After receiving bag of money.
After receiving money + map.
At museum shop +money + map.
Temple museum with wire menders.

Begin repairing automatic door.
After repairing automatic door.
As you escape from Bridgetown.
After meeting floating logs.
At the two rope bridges.
After mending the rope bridges.
At the saw mill.
At the lily ponds.
At the brave explorers.
Before the safety nets game.
After the safety nets game.
START CRYSTAL LOGO.
The conclusion!

Changing the Logo commands

If the small box next to the left of the words *Crystal Rain Forest Logo* contains a star then the commands used throughout will be those supplied by the *Crystal Logo* program. In this case the commands in the right hand column will be greyed out.

If you wish to enter and use your own commands, click on the star to remove it. At this point the commands in the right hand column will become editable allowing you to change as many of them as you wish before saving your position.

Note: After using Crystal Logo press **Ctrl C** to continue with the adventure.

Changing the Logo save area.
(Hard disc users only)

This may be changed if you wish users to have their own individual save area on the hard disc. Floppy disc users see page 7?)

The default save directory is *!Crystal.Four.Savearea* found inside the *!Crystal* application.

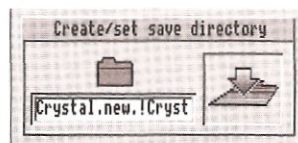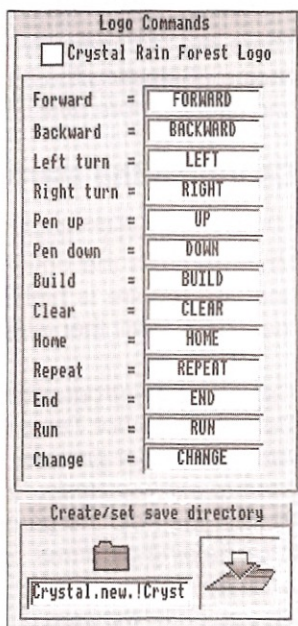## Creating a new save directory (save area)

Either:

• Enter the name of the new directory to be used and drag the directory icon into the directory where this new 'save area' is to be created.

Or

• drag an existing directory icon over the arrow shown right.

N.B. remember to save your position after you have set up the new 'save area'.

Saving and printing screens

The Crystal Rain Forest adventure contains many beautiful scenes which children will no doubt wish to save and print out.

Warning: Saving on floppy discs

Before you can save screens, *Crystal Logo* programs or *Crystal Logo* screens onto floppy disc, you should first prepare a separate disc. **Do not name this disc Crystal1, Crystal2, Crystal3 or Crystal4** or this will cause problems when saving.

Go on ▶▶ Screens can be saved or printed **only** when the '**Go on**' arrow(s) appear on the screen.

Saving screens (Ctrl S)

Hard disc users

Pressing **Ctrl S** will save the whole of the current screen to the **Save area** defined in the set up box described earlier.

Floppy disc users

Press **Ctrl S** - you will be prompted to replace the current adventure disc with the disc to be used for saving. Click **OK** to save the screen. You will then be prompted to replace the adventure disc. Click **OK** to continue the adventure.

Saved screen names

All screens are saved sequentially with the file names *Screen1, Screen2* etc. whether they are being saved to floppy or hard discs.

Each screen is saved as a sprite file and can, therefore, be transferred to most other Risc OS applications which accept this file type. Alternatively the file can be loaded into *!Paint* where it can be edited, re-saved and printed.

Printing screens (Ctrl P)

Before attempting to print a screen direct from *The Crystal Rain Forest* adventure, you should make sure that you have loaded a Risc OS printer driver which is compatible with your printer, prior to starting *The Crystal Rain Forest.*

To print the screen, hold down the **Ctrl** key and press **P.** You will not be able to use the adventure while printing is taking place, and the time taken to print the screen will depend on the type of printer and the resolution or print density you are using.

Using the RM Nimbus version

System requirements:

Crystal Rain Forest will run on RM Nimbus 186, 286, 386, 486 and Pentium computers.

Package contents

As listed on page 4 except that the floppy version is supplied on three discs only - the key disc will not copy.

Note: Network and hard disc versions - one disc only.

Mouse

A mouse must be attached to your computer in order to use *Crystal Rain Forest*. This mouse will have only two buttons which are referred to in the software simply as left and right. Most operations are carried out using the left hand button.

Hard disc installation

If you have purchased the hard disc version of *Crystal Rain Forest* simply put the disc into drive A or B, log onto the drive and type:

>**Ontodisc** [Enter]

This will copy the whole program into a directory CRF on your hard disc.

Network installation

If you have purchased the network version of *Crystal Rain Forest* simply put the disc into drive A or B, log onto the drive and type:

>**Ontonet** [Enter]

This will copy the whole program into a directory P:CRF on your fileserver.

Starting the Software

(N.B. If you are using Windows exit before loading *Crystal Rain Forest*.)

Floppy disc users
Place disc in the drive and enter the command:
>**Go** [Return]

Hard disc users
Enter the command:
>**go_crf or GO_CRF**

Network users
Enter the command:
>**n:go_crf or N:GO_CRF**

Installation onto Windows or Window Box

Crystal Rain Forest was written as a DOS application, which can be run from the DOS prompt or from inside Windows/Window Box, as a 'non-Windows' application. These instructions explain how to set up an icon to run the program. This program is written to run in 'pc-186 mode' on your computer (rather than in 'ibm-pc mode'). On some RM computers it is necessary to have the 'RM 186 device drivers' installed. Later models cater for this automatically when executing the runpc186 command.

Hard disc installation versions:

- The batch file '**ontodisc.bat**' needs to be run to put all the program files onto the hard disc of your computer. You can type **ontodisc** at the DOS a: prompt or run **a:ontodisc.bat** from inside Windows. Windows 'program manager/file' option 'run' can be used to do this, or 'file manager', displaying the files on the disc in **a:**, and double clicking on **ontodisc.bat**.

- **Make a note of the comments displayed when ontodisc finishes.** These give the batch file name and application directory name you will need later.

- Having installed the files onto **c:** run Windows program manager.

- Select 'file' and 'new'. Create a 'Sherston' group if you wish. Select to add a new program item. The 'description' field should be filled in with the name of the program you are installing. The 'command line' field must be (do not type the quotation marks!) **'runpc186.com'** followed by a space then followed by the full name of the batch file that runs the program. This batch file name is displayed on the screen when you run 'ontodisc'.

- The command line should be **runpc186.com \go_crf.bat**. A Sherston icon is supplied in the file Sherston.ico which was copied into the new directory by ontodisc.bat.

- Selecting the 'change icon' option after entering the 'command line' field, will allow you to put in the directory and icon file name (e.g. crf\sherston.ico) to use it.

Standalone disc versions (including those sent out on approval):

These discs are 'protected' and you are unable to copy them onto your hard drive. You can still copy the file 'sherston.ico' from the disc onto your hard drive (using the file manager, or from DOS). A new program item can be set up as described above, putting into the command line **runpc186.com a:\go.bat** and changing its icon to be that supplied in Sherston.ico. You can put the 'description' to be 'floppy go 186' and subsequent double clicks on this application, with our program disc in drive A:, will run the program, which would normally be loaded by typing 'go' from the DOS a: prompt.

NOTES:

1 On a **Window Box** computer, the manager needs to set up the new program item for our program, on all the desktops that will want to be able to run our program. This is done by running the program manager/ file/new option and entering the details as described, whilst updating each desktop in turn.

2 Some models of RM computers use **'runpc186.exe'** and not **'runpc186.com'**. If specifying **'runpc186.com'** in your program item command line does not work, leave off the extension **'.com'** and your computer will use its own **runpc186.exe** instead. In these cases, the file

'**runpc186.exe**' must be in one of the directories on the current 'path', for the computer to be able to find it. The command line will now be just runpc186 \batch file name (eg. **runpc186 \go_crf.bat**)

3 If our program 'hangs' or responds with an error message relating to RM PC186 mode, check your computer documentation or Windows help file about running pc186 mode software. You may need to run an RM utility to update the computer's configuration file to allow it to run in pc186 mode.

4 On 'fast' computers you can add /**LOW** to the end of the command line if the program runs too fast for comfort! (i.e. runpc186 \go_crf.bat /LOW).

Starting Crystal Rain Forest
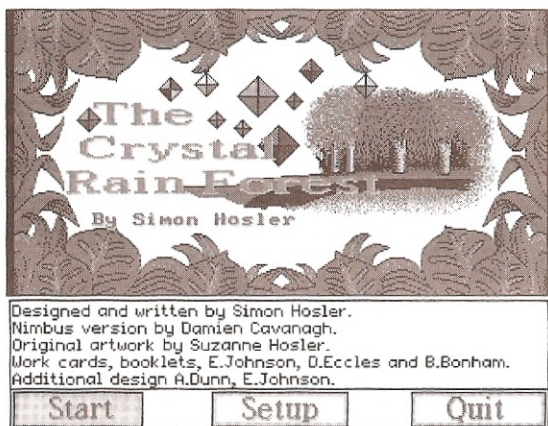
At the title screen, shown below, you have three options:

Start:

Click the left button to start the adventure.

Quit:

Click the left button to leave the program.

Setup:

Click the left button to enter the **Setup** screen and the Teacher Controls described below.

Leaving Crystal Rain Forest

Ctrl Q:

You can leave the adventure at any time by holding down the **Ctrl** key and pressing the letter **Q**. This will return you to the title screen where you can choose the **Quit** option to leave the program altogether.
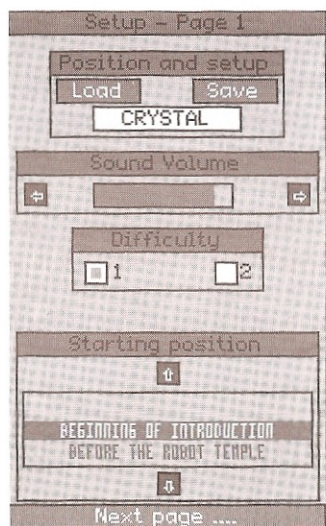
Teacher controls

Click on the **Setup** option to access teacher controls and do the following:

• Load or save your position or set up. Delete the name '*Crystal*' if you wish to use another name.

• Adjust the volume by clicking on the arrows

• Select difficulty level - 1 easy, 2 hard.

• Change the starting position by clicking on up or down arrows to scroll through the starting positions. Click on **Start** to enter the adventure at the currently selected starting position.

• Move to the next page for more setup options. (See next page.)

There are 26 possible starting/saving positions within the adventure.

Beginning of introduction.	*Begin repairing automatic door.*
Before the Robot Temple.	*After repairing automatic door.*
After the Robot Temple.	*As you escape from Bridgetown.*
Start to explore Bridgetown.	*After meeting floating logs.*
Before you help the gardener.	*At the two rope bridges.*
After helping gardener.	*After mending the rope bridges.*
After helping gardener + map.	*At the saw mill.*
As you enter the jungle.	*At the lily ponds.*
As you enter the jungle + map.	*At the brave explorers.*
After receiving bag of money.	*Before the safety nets game.*
After receiving money + map.	*After the safety nets game.*
At museum shop +money + map.	***START CRYSTAL LOGO.***
Temple museum with wire menders.	*The conclusion!*

Changing the Logo commands

```
┌─────────────────────────────┐
│      Setup – Page 2         │
│      Logo Commands          │
│  ☐ Crystal Logo             │
│  ┌──────────────────────┐   │
│  │ Forward    FORWARD   │   │
│  │ Backward   BACKWARD  │   │
│  │ Left       LEFT      │   │
│  │ Right      RIGHT     │   │
│  │ Up         UP        │   │
│  │ Down       DOWN      │   │
│  │ Build      BUILD     │   │
│  │ Clear      CLEAR     │   │
│  │ Home       HOME      │   │
│  │ Repeat     REPEAT    │   │
│  │ End        END       │   │
│  │ Run        RUN       │   │
│  │ Change     CHANGE    │   │
│  └──────────────────────┘   │
│      Save Directory         │
│  ┌──────────────────────┐   │
│  │ A:                   │   │
│  └──────────────────────┘   │
│      Next page ....         │
└─────────────────────────────┘
```

- If the small box next to the left of the words *Crystal Logo* contains a dot, then the commands used throughout will be those supplied by the *Crystal Logo* program. In this case the commands in the right hand column will be greyed out.

- If you wish to enter and use your own commands, click on the box to remove it. At this point the commands in the right hand column will become editable, allowing you to change as many of them as you wish before saving your position.

Note: After using Crystal Logo press Ctrl D to continue with the adventure

Save directory

Enter the name of the directory where you wish to save Logo programs and screens. If you do not change this directory, the default will be used.

Print options

Setup – Page 3

Printer Options

Type

☑ Epson   ☐ Integrex

Port

☑ PRN, COMA
SERIAL PRINTER SOCKET
☐ AUX, COMB
SERIAL AUX PICONET SOCKET
☐ LPT1
PARALLEL PICONET MODULE 1
☐ COM1
SERIAL PICONET MODULE 1
☐ LPT0
BBC PARALLEL PORT

Done.

Printer type
Use this panel to choose between Epson and Integrex printers.

Printer Port
Use this panel to direct the print out to the correct printer port.

Done - click here when setup is complete.

Printing and Saving screens

It is possible to save or print screens whenever the mouse pointer is visible on screen.

Print screens
To print a screen hold down the **Ctrl** key and press the letter **P.** Make sure your printer is attached and is on line. You will not be able to use the adventure while printing is taking place.

Saved screens
To save a screen hold down the **Ctrl** key and press the letter **S.**
Screens will be saved in *Paintspa* format with sequential names (CRF_AA, CRF_AB, CRF_AC etc.)

**Now turn to page 33
to see how to move around the Crystal Rain Forest.**

Using the PC/IBM compatible version

Minimum system requirements
MS-DOS 3.10 or later
80286 CPU
640K main memory
VGA display
Microsoft compatible mouse

Package contents
As listed on page 4 except that the floppy version is supplied on 2 discs only.

Note: Network and hard disc versions - one disc only.

Mouse
A mouse must be attached to your computer in order to use *Crystal Rain Forest* and a suitable mouse driver must be loaded prior to starting the program. This mouse may have only two buttons which are referred to in the software simply as left and right. Most operations are carried out using the left hand button.

Starting Crystal Rain Forest
To start the program, place the KEY/INTRO disk into drive A or B, log onto the drive and type:
GO [Enter]

Hard disc installation
All the disks may be copied onto hard disk as follows:
1) Place the KEY/INTRO disk into the floppy drive and log onto that drive.
2) Type INSTALL [Enter] and then follow the on-screen instructions.

The KEY/INTRO disk must be in the floppy drive before you start the program.

To start from your hard disc log onto the hard drive and directory you have set up and type
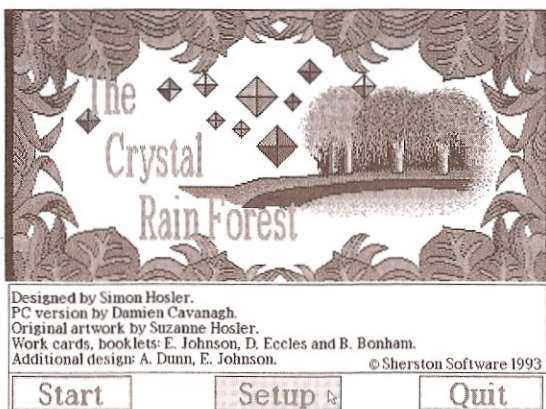
GO A   if the **KEY disc** is in drive A
GO B   if the **KEY disc** is in drive B

Windows
To install the icon, run the file **ICONS.EXE** from within the File Manager.

Starting Crystal Rain Forest
At the title screen, shown below, you have three options:

Designed by Simon Hosler.
PC version by Damien Cavanagh.
Original artwork by Suzanne Hosler.
Work cards, booklets: E. Johnson, D. Eccles and B. Bonham.
Additional design: A. Dunn, E. Johnson.   © Sherston Software 1993

Start   Setup   Quit

Start:
Click the left button to start the adventure.

Quit:
Click the left button to leave the program.

Setup:
Click the left button to enter the **Setup** screen and the option controls.
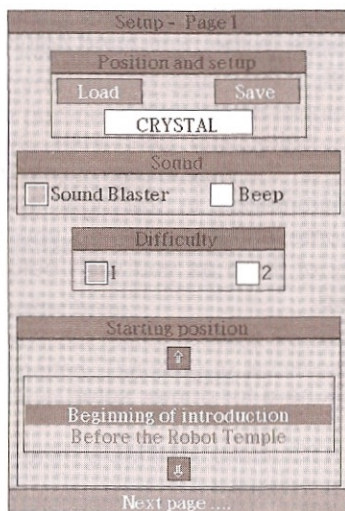
Leaving The Crystal Rain Forest
Ctrl Q:
You can leave the adventure at any time by holding down the **Ctrl** key and pressing the letter **Q**. This will return you to the title screen where you can choose the **Quit** option to leave the program altogether.

Teacher controls

To access the control panel click on the **Setup** option on the main screen.

The control panel can be used to do the following:

```
           Setup - Page 1
          Position and setup
   Load              Save
          CRYSTAL
               Sound
  □ Sound Blaster      □ Beep
             Difficulty
    □ 1              □ 2
          Starting position
               ⬆
     Beginning of introduction
        Before the Robot Temple
               ⬇
          Next page ....
```

- **Load** or **Save** the current setup or position in the adventure. Delete the name *'Crystal'* if you wish to use another name.

- **Sound** - adjust the sound output - if a Sound Blaster card is not fitted the system will default to Beep.

- **Difficulty level** - level 1 easy, level 2 hard. Selecting the harder level will mean that the challenges contain extra, and usually more difficult, problems for the children to solve.

- **Starting point** - scroll through the options and then click on Start on the main title screen. (See list of starting points below.)

- **Next page** click on this button to move to more Setup options.
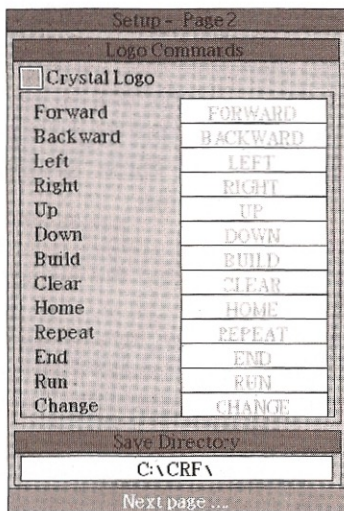
Changing the starting point of the adventure

There are 26 possible starting points for the adventure:

Beginning of introduction.	*Begin repairing automatic door.*
Before the Robot Temple.	*After repairing automatic door.*
After the Robot Temple.	*As you escape from Bridgetown.*
Start to explore Bridgetown.	*After meeting floating logs.*
Before you help the gardener.	*At the two rope bridges.*
After helping gardener.	*After mending the rope bridges.*
After helping gardener + map.	*At the saw mill.*
As you enter the jungle.	*At the lily ponds.*
As you enter the jungle + map.	*At the brave explorers.*
After receiving bag of money.	*Before the safety nets game.*
After receiving money + map.	*After the safety nets game.*
At museum shop +money + map.	***START CRYSTAL LOGO.***
Temple museum with wire menders.	*The conclusion!*

Changing the Logo commands

Setup - Page 2
Logo Commands

☐ Crystal Logo

Forward	FORWARD
Backward	BACKWARD
Left	LEFT
Right	RIGHT
Up	UP
Down	DOWN
Build	BUILD
Clear	CLEAR
Home	HOME
Repeat	REPEAT
End	END
Run	RUN
Change	CHANGE

Save Directory

C:\CRF\

Next page ...

If the small box next to the left of the words *Crystal Logo* contains a dot, then the commands used throughout will be those supplied by the *Crystal Logo* program. In this case the commands in the right hand column will be greyed out.

If you wish to enter and use your own commands, click on the box to turn it off. At this point the commands in the right hand column will become editable allowing you to change as many of them as you wish before saving your Setup.

Next page - click here for printer setup.

Save directory.
Enter the name of the directory where you wish to save Logo programs and screens. If you do not change this directory the default will be used. Remember to save your setup if you change this directory.

Note:
After using Crystal Logo press Ctrl D to continue with the adventure.

Saving and printing screens

The Crystal Rain Forest adventure contains many beautiful scenes which children will no doubt wish to save and print out.

Saving screens (Ctrl S)

To save a screen press **Ctrl S** when you see the mouse pointer.

• If you wish to save the whole screen, just press the space bar.

• If you wish to save only a portion of the screen, use the keys 1-4 to define the portion of the screen required and **then** press the space bar.

Screens will be saved in windows BMP format with sequential names (CRF_AA, CRF_AB, CRF_AC etc.)

Printing screens

Printer type

Epson dot matrix, Hewlett Packard Deskjet and Integrex Colourjet 132 printers are supported. The Integrex is compatible with a number of other ink-jets, so if you have another ink-jet, try it!

To print a screen, press CTRL-P when you see the mouse pointer.
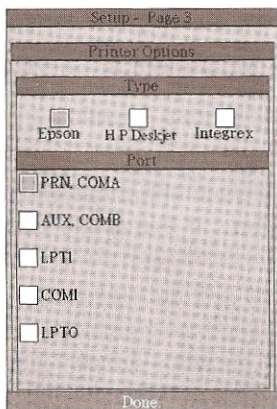
Printer type

Use this panel to choose between Epson and Integrex printers.

Port

Use this panel to direct the print out to the correct printer port.

Done - click here when Setup is complete.

Sound Blaster™

The Sound Blaster v2.00 is supported.

If you have another version of the Sound Blaster (eg PRO), copy the file CT-VOICE.DRV supplied with your card onto the KEY/INTRO disk.
Make sure the Sound Blaster DOS environment string is properly defined, eg SET BLASTER=I5 A220 D1 sets the interrupt to 5 and the port address to 220 hex.

SOME SOUND BLASTER CLONES WILL NOT WORK WITH CRYSTAL RAIN FOREST DUE TO HARDWARE DIFFERENCES.

If your clone does not work, you need a version of CT-VOICE.DRV that works with your clone in exactly the same way that the Creative Labs CT-VOICE.DRV works with the Sound Blaster.

You may already have this driver, in which case copy it onto the KEY/INTRO disk.

If you don't have the driver, run **SETSOUND.BAT**.

If this still doesn't work contact the technical support department at Sherston Software.

Note:
If you are running *The Crystal Rain Forest* from Windows in enhanced mode, you might experience difficulty using the Sound Blaster. If this is the case, run Windows in Standard mode (using WIN/S).

Using the Apple Macintosh version

System requirements:
Crystal Rain Forest will run on an Apple Macintosh computer system with the following:
System 7
Hard disc with 3.6 megabytes free
Colour screen display (the program will not run on a monochrome system).

Package contents
As listed on page 4 except that this version is supplied on two discs only.

Installing The Crystal Rain Forest
This version of *The Crystal Rain Forest* software comes on two floppy discs. To use the software, it must first be installed onto a hard disc using the Installer provided.

Place the *Install* disc into the floppy disc drive and use the mouse to click on the Install icon. The Installer program uses a common Mac dialogue box; you will have to provide the location on your hard disc where the software is to be installed.
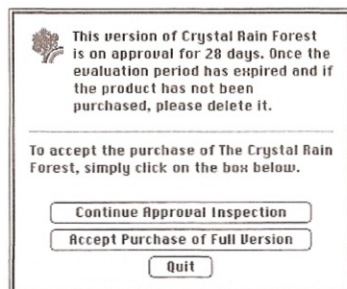
The software cannot be run from the original floppy discs.

Using the Software

Software Registration Window

This version of *The Crystal Rain Forest* has an establishment/user registration process built into the software.

During loading, this system is shown to the user via a registration window (shown opposite). This window has two options, 'Continue Approval Inspection' and 'Accept'

This version of Crystal Rain Forest is on approval for 28 days. Once the evaluation period has expired and if the product has not been purchased, please delete it.

To accept the purchase of The Crystal Rain Forest, simply click on the box below.

Continue Approval Inspection
Accept Purchase of Full Version
Quit

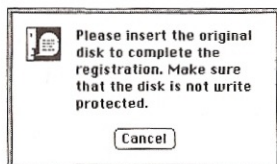Purchase of Full Version' both these options are explained below.

Approval Order Users

If you are currently looking at the software via a free approval service and wish to continue the evaluation of the product, then simply click on the 'Continue Approval Inspection' box to run the software.
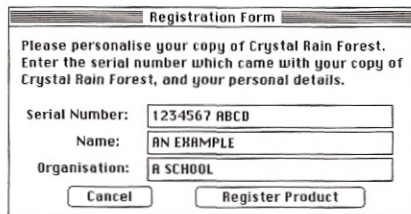
Official Order Users

If you have already bought the software, or have decided to purchase it after evaluation, then simply click on the 'Accept Purchase of Full Version' option.

The computer will now ask you to insert the original Install master disc. Before putting the disc in the drive, it is important that you write down your software serial number and keep it safe (the serial number appears at the bottom of the floppy disc label).

> Please insert the original disk to complete the registration. Make sure that the disk is not write protected.
>
> [Cancel]

Once you have written down the serial number, place the disc in the floppy drive making sure that the disc is **not** write protected.

The computer will now open the Registration Menu (see opposite). On this menu, you must enter three pieces of information:- your software serial number, your name, and your organisation (school) name.

> **Registration Form**
>
> Please personalise your copy of Crystal Rain Forest. Enter the serial number which came with your copy of Crystal Rain Forest, and your personal details.
>
> Serial Number: [1234567 ABCD]
> Name: [AN EXAMPLE]
> Organisation: [A SCHOOL]
> [Cancel] [Register Product]

Once you have typed in this information, click on the 'Register Product' button to complete the registration process.

Now that *The Crystal Rain Forest* is registered with your details, the software will load without any of the registration windows.

Warning: This registration process cannot be reversed! If you do accidentally click on the 'Accept Purchase of Full Version' option, don't worry! Simply click on the cancel button to avoid the registration taking place.

Starting the Crystal Rain Forest

Double click on the *Crystal Rain Forest* application. The title screen below will appear.
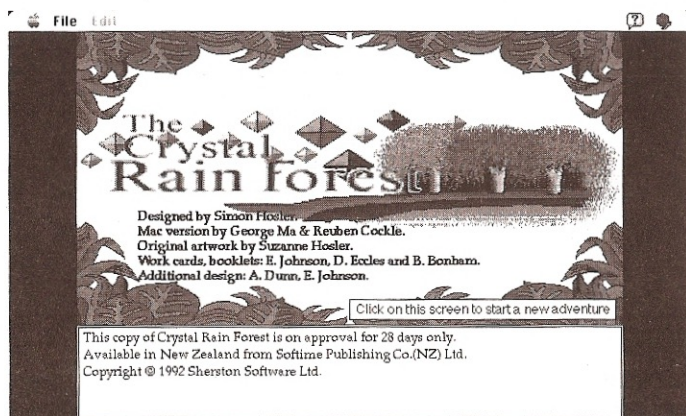
Leaving the program
(Command Q)

At any time <command Q> may be pressed to exit the program. There may be a delay if, for example, an animation is active.

Pull down menu options

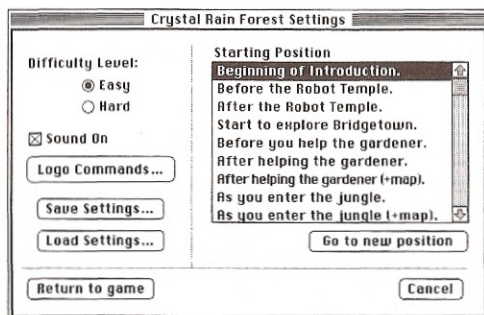The Crystal Rain Forest pull down menu contains the following options:

New game   Command N
Load game   Command L
Save game   Command S
Help   Command H
Settings   Command K
Quit   Command Q

Teacher controls
(Command K)

The setting control panel can be used to set up the following:

```
═════════════ Crystal Rain Forest Settings ═════════════
┌──────────────────────────────────────────────────────┐
│                        Starting Position               │
│  Difficulty Level:     ┌──────────────────────────┐▲  │
│                        │Beginning of Introduction. │   │
│       ⦿ Easy           │Before the Robot Temple.   │   │
│       ○ Hard           │After the Robot Temple.    │   │
│                        │Start to explore Bridgetown.│  │
│  ☒ Sound On            │Before you help the gardener.│ │
│                        │After helping the gardener. │   │
│  ┌─────────────────┐   │After helping the gardener (+map).│
│  │ Logo Commands...│   │As you enter the jungle.   │   │
│  └─────────────────┘   │As you enter the jungle (+map).│▼│
│  ┌─────────────────┐   └──────────────────────────┘   │
│  │ Save Settings...│                                    │
│  └─────────────────┘   ┌──────────────────────────┐   │
│  ┌─────────────────┐   │   Go to new position      │   │
│  │ Load Settings...│   └──────────────────────────┘   │
│  └─────────────────┘                                    │
│  ┌───────────────┐                 ┌─────────┐         │
│  │ Return to game│                 │ Cancel  │         │
│  └───────────────┘                 └─────────┘         │
└──────────────────────────────────────────────────────┘
```

Starting positions
You can change the point at which you enter the adventure - scroll through the options until the one you want is highlighted and then click on 'Go to new position'.

Beginning of introduction.
Before the Robot Temple.
After the Robot Temple.
Start to explore Bridgetown.
Before you help the gardener.
After helping gardener.
After helping gardener + map.
As you enter the jungle.
As you enter the jungle + map.
After receiving bag of money.
After receiving money + map.
At museum shop +money + map.
Temple museum with wire menders.

Begin repairing automatic door.
After repairing automatic door.
As you escape from Bridgetown.
After meeting floating logs.
At the two rope bridges.
After mending the rope bridges.
At the saw mill.
At the lily ponds.
At the brave explorers.
Before the safety nets game.
After the safety nets game.
START CRYSTAL LOGO.
The conclusion!

Go to new position
This will take you into the adventure at your currently selected position.

Return to game
This will return you to your previous position within the game.

Difficulty level
This can be set at either Easy or Hard. The differences in these levels are detailed in the Teacher's notes section later in this book.

Sound
The sound can be turned on and off.

Save settings (Command S)
You may save your current game position and other settings to a file.

Load settings (Command L)
You can return to a saved position and/or saved settings by loading the 'saved settings' file.

Logo Commands
If you wish you can change the logo commands used throughout the adventure, if the children using the program are familiar with other terminology. Any changes made here will be saved when the Save settings option is used.

Change Logo Commands			
Original	Change	Original	Change
Forward	Forward	Clear	Clear
Backward	Backward	Home	Home
Left	Left	Repeat	Repeat
Right	Right	End	End
Pen-Down	Pen-Down	Fresh	Fresh
Pen-Up	Pen-Up	Colour	Colour
	Cancel	OK	

Saving and Printing Screens

The Macintosh version of *The Crystal Rain Forest* uses the Mac system software for saving screens.

To save a screen press <Command Shift 3>. The screen will be saved in the root directory and will be a pict file type. The saved screens could be used in classroom desktop publishing.

These saved screens can be printed by first loading a suitable printer using the *Chooser*. After that, the saved screens can be printed by using the Teach Text application. This application is supplied by Apple as part of the system software. Double clicking on the saved screens will cause Teach Text to load them. Use the print menu option within Teach Text.

Moving around The Crystal Rain Forest

If you are using *The Crystal Rain Forest* for the first time you will probably wish to explore and investigate all there is to see. Moving around *The Crystal Rain Forest* environment is extremely easy.
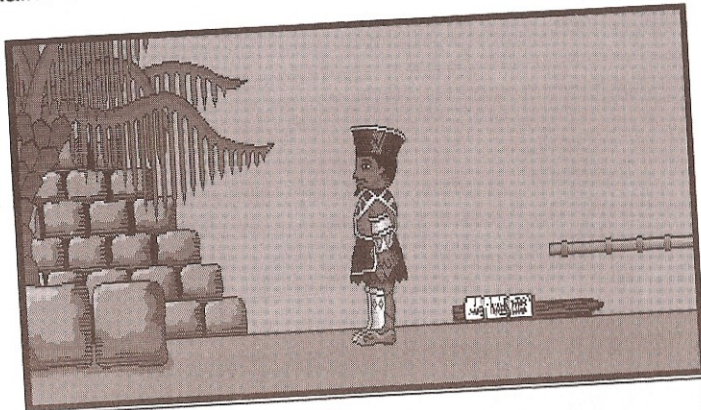
They took a blow pipe
and a poisoned dart...

Go on ▶▶

Whenever a screen displays the **Go on** symbol two arrows appear when you move the pointer near the symbol, clicking on the arrows will take you on to the next screen.

Exploring pictures

Whenever a screen contains small squares like those shown below the mouse can be used to explore the picture. You will need to look carefully for these boxes as the variety of colours used on the screen may make it difficult to see some of them.

The trees are the homes for rare animals and plants.

Explore the picture

Moving around Bridgetown

Useful objects collected

Jungle knife

| FORWARD | RIGHT | LEFT |
| SEARCH | CLUE | TOWN MAP |
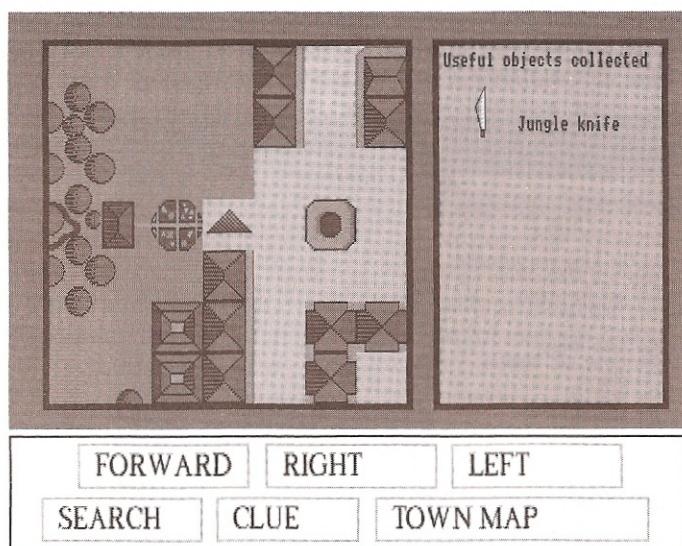
FORWARD - click on this to move forward and then choose the number of units you wish to move.

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
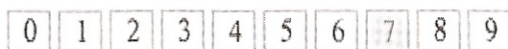
If you choose this option by mistake and decide that you do not, or cannot, move forward click on 0 (zero).

RIGHT/LEFT - click on this option to change your direction of movement through 90°.

TOWN MAP - Click on this option to display a map of the whole town showing your position.

Using Clues

Use the **CLUE** option to display a list of clues to help you decide where to go and what to do next.
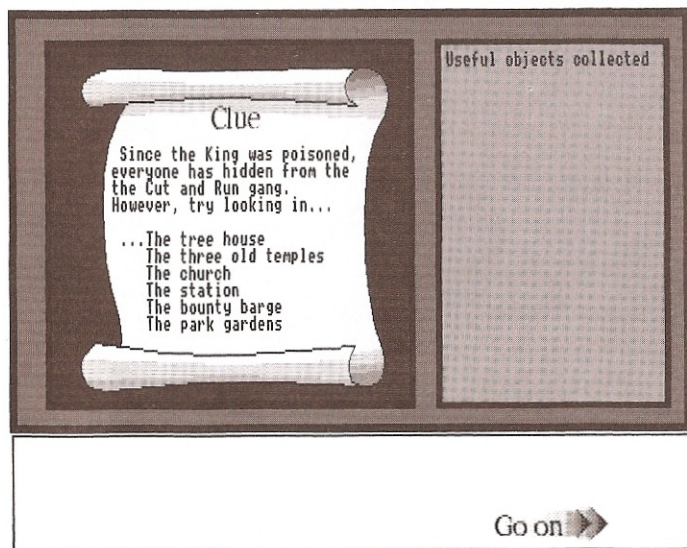
SEARCH - click on this button when you arrive at one of the locations and you wish to look into it, e.g. the tree house.

It is a good idea to click on the **CLUE** option after you have visited a location and completed the tasks there, as further information may appear as a result of your visit.

Navigating the river

When you are navigating the river you should make sure that you look out for red jetties and stop at each one en route, complete the necessary task, and then continue your journey.

Crystal Logo

Crystal Logo is included in the package and can be used either, alongside *The Crystal Rain Forest,* or in isolation from the rest of the package without the need to work through the whole of the adventure. Its use within *The Crystal Rain Forest* package is to allow the children to create their own crystals which they can then print or save.

Some teachers will already be familiar with the concept of Logo and its applications and, therefore, it has been made possible to amend the Logo based commands used throughout the whole of the adventure and *Crystal Logo,* so that they correspond with those with which individuals may be familiar. (See relevant Teacher Control section for version being used.)

Important note

Proceeding after using Crystal Logo.

After using *Crystal Logo* you should, depending on which version you are using, press the following keys to continue the adventure after you have created your own crystal.

Acorn version: Ctrl C
RM Nimbus version: Ctrl D
PC version: Ctrl D
Apple Macintosh version: Use the 'Use crystal' button

Notes

Teacher's synopsis

The planet, Oglo, is in big trouble. Its last remaining rain forest is rapidly disappearing as the Cut and Run Gang slice their way through it for profit and greed. The King of Oglo, dismayed by the destruction of his forests, has banned all further tree-cutting, but the Cut and Run Gang poison him and now he lies dangerously ill in hospital and can only be cured by the crystals that are hidden deep within the rain forest. The children can save the King, the rain forest, and subsequently the planet, by finding the magical crystals, but they will need to be careful as the Cut and Run Gang are out to stop them. Before they can explore *The Crystal Rain Forest* the children need to find both parts of an ancient map, and also need to seek help from the elusive Professor Roberts who can be found somewhere in Bridgetown.

The professor's laboratory is inside one of the temples, but unfortunately the door is locked. Luckily, Carlos knows a secret way in, but the children need to help him, by guiding the robots found inside the temple, to open the doors blocking Carlos's path. However, when they manage to open the door to the Professor's laboratory they find that he is not 'at home' and that they will have to explore Bridgetown to try and track him down.

With the help of a 'town-plan', the children can travel around Bridgetown to search for the missing Professor, but they have to be careful to avoid the Cut and Run Gang who are on the loose around the town. As they explore, the children meet some of the town's other inhabitants, some of whom need the children's help. Esme, the gardener, is having trouble with some of the bridges in the park, and if the children can help to mend them, they will be rewarded with a jungle knife. They can use this to cut a path into the edge of the jungle where they will find Herbert's tree house. Herbert packs leaves into parcels that are sent to be used for medicines, but he is having trouble making them fit inside the bamboo boxes that they are shipped in. If the children can help him he will give them 20 gold coins.

At the museum shop they can buy a number of items with the money they were given by Herbert. If they spend wisely they will be able to pacify Hiss the snake, who is hiding in the secret entrance on the side of the Temple museum, by giving him some sweets.

At the end of the secret tunnel the children find Professor Roberts' secret workshop, but the Cut and Run Gang sabotage the door control box before they can enter. However, if they bought a wire mending kit from the museum shop they will be able to fix the control box and get into the workshop. When the children eventually find Professor Roberts their success is short lived, as the Cut and Run Gang are not far behind them, and before he is able to help them in their search for the crystals he is poisoned, just like the king.

Using an underground escape route from the secret workshop, the children have no choice but to set off to try and find the magic crystals for themselves. The journey into the jungle by boat introduces the children to a host of colourful rain forest inhabitants (including some very unusual new friends), and they are presented with a further series of challenges to complete.

First the children have to learn how to use the boat's computer in order to be able to navigate their way up river. Once they have mastered the boat's navigation computer, the children can land at the jetties along the riverside. At the first jetty they are greeted by Manuel who is worried about the condition of some nearby rope bridges which are in a poor state of repair. When the bridges are safe again, Manuel gives the children a key that he found near the Cut and Run Gang's saw mill, and the children launch the boat again to head further up river.

The second jetty is the landing site for the Cut and Run Gang's saw mill. On exploration the children will find a locked safe inside the saw mill. Fortunately the key that they were given by Manuel happens to fit the safe and inside they will find the second half of the ancient map of the rain forest that they need to complete their task. The Cut and Run Gang themselves are nowhere to be seen, but there are some very strange footprints on the floor!

The next jetty is the site of the lily ponds. Above this point on the river the children no longer have to navigate the boat.

The final jetty on the river is the site of a jungle trading post run by a famous and brave explorer, who for some reason is hiding in a box inside his trading post. When the children find him they discover the reason why! Apparently he has seen monsters over by the waterfall, and the children are given the opportunity of investigating. When they reach the waterfall they see yet more

of the strange footprints that they have found in various places along the river, together with a message asking the children to help with a final challenge. There are tins of poison floating down the river towards the waterfall and the children need to make nets to catch them. Everything is going well until the last tin of poison is out of reach and is about to go over the falls, when it is caught by one of the 'monsters'. These turn out to be rare creatures on the planet Oglo that have been trying to help the children in their quest to find the magic crystals and have, in fact, gathered up all the remaining crystals for the children. Unfortunately, just as they are about to hand them over there is a terrible accident, the crystals are dropped and before their very eyes, are all destroyed.

Dismayed, and sure that they have failed in their quest to save the king, the children make their way back to Bridgetown. *The Crystal Rain Forest* and the planet of Oglo itself seem doomed. However, when they arrive back in the Professor's secret workshop the computer he was using to try and create magic crystals himself is still working. Perhaps their experiences in the rain forest may have provided the children with one last chance. If the children can create their own magic crystals they may still be able to save the professor, the king and the rain forest!

Teacher's Notes

General

The Crystal Rain Forest has been designed specifically to be both the starting point for all sorts of environmental work and a 'fun' introduction to the language of Logo. Whenever possible, we recommend letting two or three children tackle the adventure together as they will benefit greatly from the discussion and cooperation involved in trying to solve the various problems.

Ideas for further work are given at the end of these teacher's notes.

The Logo challenges

Each of the challenges has an accompanying instruction card to help the children if necessary, however, for most children the graphics in the program make the tasks self-explanatory.

Robot Temple

In this challenge the children have to guide the robots inside the temple to the door switches so that they can open the doors that are blocking Carlos's path.

They can select from the instructions WALK, JUMP, TURN, and LEAVE.

Once the door has been opened, the children can use the mouse to lead Carlos himself through the maze and into Professor Roberts' laboratory. They must use the left and right-hand mouse buttons for direction and the middle button to make him jump.

At difficulty level one there are two mazes for the children to guide the robots through. At level two a third, more complicated, maze is included to stretch children.
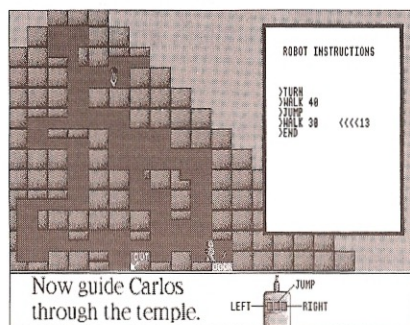
Garden Bridges

Here the children have to fill in the spaces in the broken garden bridges. First they have to select the correct shapes needed to fill the gaps in the bridges. These will float downstream from the left so they must be careful to choose the shapes in the correct order so that they arrive at the correct time.

Can you choose the correct shapes?

Go on ▶

As the shapes float downstream, the children have to use the mouse to TURN them, or move them UP or DOWN so they float into the correct place. If they make a mistake, the children can RESTART. If they are happy that the shape is in the right position to float into the gap they can float the shape in more quickly by selecting FIT.
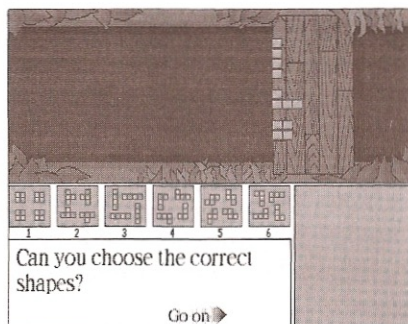
At level two in this challenge a third, more difficult bridge is included.

Monkey Puzzle

In this puzzle Herbert is having trouble fitting his packages of leaves into the bamboo boxes. The children have to change the size and shape of the boxes so they will fit properly. The different dimensions of each parcel is represented by letters and the children should use the mouse to choose which measurement to change, and then to select the new length. They may need to change the length of more than one side.

| a=6 | c=3 |
| b=4 | d=3 |
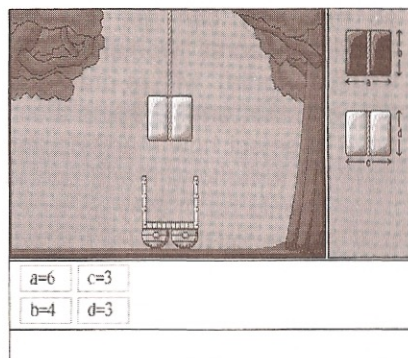
At difficulty level two the children will be shown boxes of three different types, offering them six possible dimensions to alter. (Level one uses only two box types.)

Automatic Shop

Shopping wisely here will help the children find Professor Roberts.

To select the goods they want to buy the children must move the automatic pointer so it points to the appropriate goods. They should use the mouse to select the direction and how many degrees they want the pointer to move.

The items they require are sweets, to satisfy the hungry snake Hiss, and the wire mending kit.

There are no differences between difficulty levels in this activity.
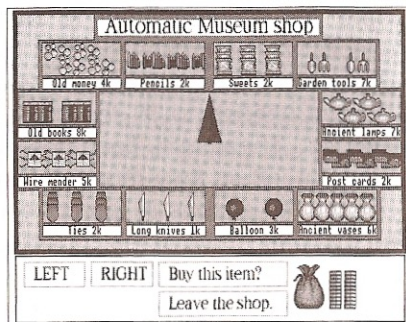
Wire Connections.

In this challenge the children must mend the wires in the door control box so that they can get into Professor Roberts' secret workshop. The red triangle (turtle) will re-draw the wires between the terminals and the children have to select how many degrees they want the turtle to turn and how long the wires should be. If they go wrong, they can choose to RESTART the wire.
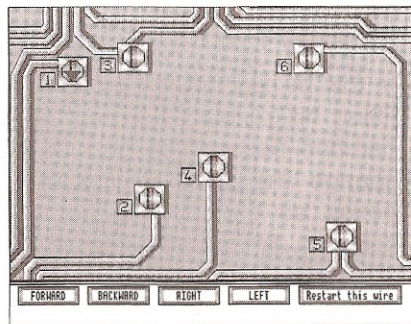
At difficulty level two the children are presented with a more complicated box to mend.

Travelling up the River

The children must travel along the river and stop at each jetty they come to on their journey.

Lower and Upper River: To travel up the lower part of the river the children have to give the boat one instruction at a time.

Middle River: To make progress in the middle river, the children need to make a list of instructions for the computer on the boat to follow. They must select how far FORWARD or BACKWARD they want the boat to move, and how many degrees it needs to TURN before moving. They should take care to build up the list of instructions in the correct order; to help them they can TRY A COURSE to see where it will take the boat before deciding to use it.
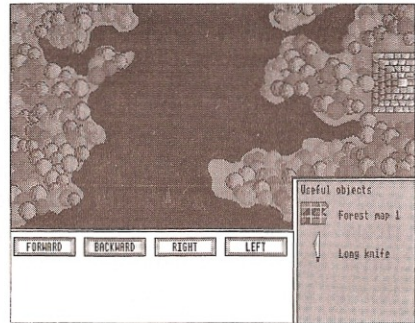
Rope Bridges

In this activity the children have to mend some rope bridges that are unsafe. When mending the first bridge the children are given the program which will mend one link of the broken bridge. They then have to add instructions to say how many times the movement needs to be REPEATed, and when the repeats need to END in order to complete the repair.
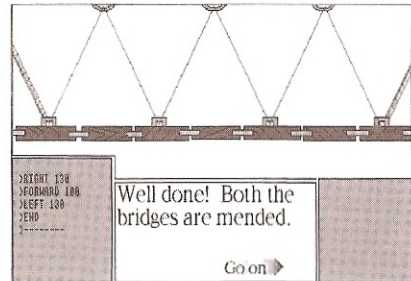
The second bridge is more difficult as children have to build their own program to mend the first link in the bridge. They will need to include how far the rope needs to be stretched FORWARD or BACKWARD, and how many degrees it has to turn. Then they need to include the number of times the procedure has to be REPEATed and when it needs to END.

At difficulty level two a third, more complex, bridge is included.

Safety Nets

This activity introduces children to one of the most powerful commands in Logo, BUILD. The children have to 'draw' nets of the right shape and size to catch tins of poison that are floating down the river towards the waterfall, and must create a list of instructions to draw a line around the tin. The line must be exactly on top of the green border surrounding the tin.

Number 2

LEFT — RIGHT
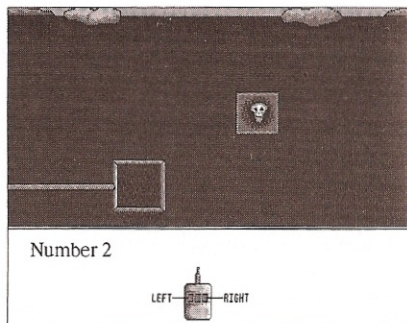
Once they have drawn nets of the right shape and size they have to place them in the correct order to catch the tins of poison as they fall over the waterfall, using the left and right-hand button on the mouse.

At difficulty level two a third, more complex, shape of tin floats down the river.

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