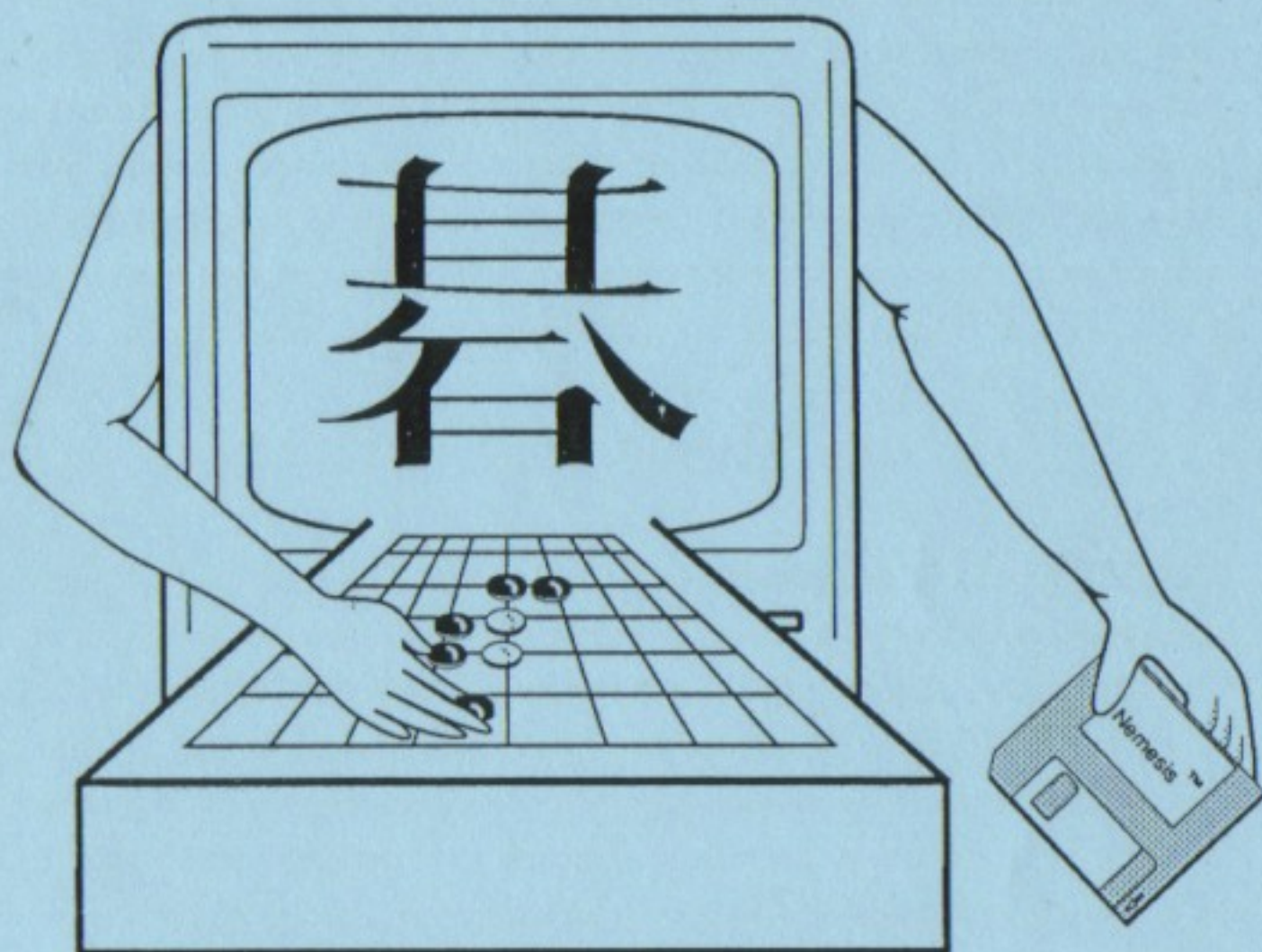


NEMESISTM

Go Master[®]
Joseki TutorTM
Tactical WizardTM



Macintosh Version 4

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Toyogo, Inc.

Toyogo, Inc. is dedicated to providing the finest computer Go program and Go tutorials anywhere in the world. Also, we are dedicated to popularizing Go in America. Currently, our programs are available for PC compatibles and Macintosh computers. In addition, we have a portable Go playing unit, Igo Dojo, which will be available early in 1990.

We believe in quality programming and stand behind our work. If you discover a bug in any NEMESIS™ product, we would like to know about it. So much so that we offer a \$10 reward for the first report of each bug. We also welcome suggestions and commentary. Refer to *Bug Reporting* for reporting procedures and restrictions.

We would like to thank you for purchasing NEMESIS™. In doing so, you have become one of her foster parents, enabling us to continue developing NEMESIS into a stronger player. As NEMESIS proceeds to graduate from kindergarten (10 kyu), elementary school (5 kyu), high school (3 Dan), college (5 Dan), and enters postgraduate work (professional), we will continue to keep you in touch with these changes.

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Welcome to NEMESIS™

"Those who are concerned in the computer business know very well that it is only a fantastic dream to make the computer play Go in its own way in place of human beings." An Introduction to Go by the Nihon Kiin¹, 1973

After 15 years of research, Bruce Wilcox, author of *Instant Go*², succeeded in creating NEMESIS, a computer program that realizes the *fantastic dream* — a program which emulates human play.

NEMESIS plays like no other game program in the world. Instead of using tree searches (the technique used in master chess programs), she assesses the board situation and selects a strategy. In examining a typical game, it is often impossible to guess which player is the computer.

Before NEMESIS, experts thought that Go was impossible to program. Yet Bruce Wilcox was able to design a successful program and, since its birth, others have been inspired to explore the possibilities, thus creating the industry of computer Go. This includes computer Go tournaments (e.g., Usenix, Acornsoft, Ing Wei-Chi, European Computer Go Congress), the Japanese fifth generation Artificial Intelligence Initiative Go project, and the big prize: \$1,300,000 for the first program to beat a professional player by the year 2,000. This prize, as well as lesser ones for partial progress, is offered by ACER Corporation of Taiwan.

¹ Nihon Kiin is the Japanese Go Association.

² *Instant Go* is a revolutionary approach to playing Go, published in parts in American Go Journals during the late 1970's. Wilcox expects to publish a complete book by the year 2,000 (before winning the \$1.3 million prize).

About NEMESIS™

This manual is designed for use with *all* NEMESIS Macintosh products.

NEMESIS™ Go Master® is our Go playing program. Go Master is designed to be enhanced by all other NEMESIS Macintosh products. Samples of these are contained within Go Master. If you purchase any of these extensions you should be sure to install them properly into Go Master so that the full power of their features is available during your Go play.

NEMESIS™ Joseki Tutor™ is our tutorial for corner openings. Joseki Tutor operates independently but should be installed in the Go Master if you own both.

NEMESIS™ Tactical Wizard™, our newest product, is a tutorial on life & death. Tactical Wizard operates independently but should be installed in the Go Master if you own both. If you own both Tactical Wizard and Joseki Tutor but do not own Go Master, we suggest you request an integrated version when you register, as multiple NEMESIS products are not designed to run separately on your hard disk.

Professional Game Records Accompanying NEMESIS

Professional games are *works of art*, and are copyrighted. We have taken ten (10) pro games from the ancient masters (their copyright has expired) and included them on your disk. If you are interested in detailed commentary on these games, we recommend you purchase the book *Appreciating Famous Games* by Shuzo Ohira (available from Ishi Press). This book is not for the novice.

Warning - Read your READ.ME files!

At this point you should read *each* of the **read.me** files found on your NEMESIS disks to understand how to integrate your NEMESIS products and how to install them on your hard drive. *Do not simply copy them to your hard drive! Multiple NEMESIS products should not reside on the same hard disk together.*

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About the Game of Go

Go is an ancient board game that takes the simplest of elements — line and circle, black and white, stone and wood — uses simple rules, and yet generates subtleties of play that have enthralled players for thousands of years.

Go is easy to learn. Its few rules can be demonstrated quickly and grasped easily, and it can be played enjoyably by people with a wide range of skills. Moreover, a unique and reliable system of handicapping brings many more players “into range” of an enjoyable contest, even between two players of greatly differing skill.

Beyond being merely a game, Go can take on other meanings for its devotees: an analogy for life, an intense meditation, a mirror of one’s personality, an exercise in abstract reasoning, a mental “workout,” or (when played well), an art form in which black and white dance across the board in delicate balance. Most importantly, Go, as a game, is challenging and fun for all players. (adapted from The American Go Journal)

Origins of Go

Go is among the oldest games, originating in China over 4000 years ago. In the fifth century A.D. the game was carried to Japan where it flourished to such an extent that today Go is Japan’s national game. In Japan, there are over 400 professional players who compete in tournaments sponsored by major newspapers and television stations. Go is so well integrated into Japanese society that even women’s magazines have Go columns, and major corporations pay professionals to teach at company Go clubs.

Though Go has been played and respected in the Orient for centuries, it was not until 1911 that Dr. Edward Lasker, a famous chess master, brought Go to the United States. While Go is still relatively unknown here, there are Go clubs in many cities and local and national tournaments, as well as two native professional players trained in Japan, and one trained in Korea.

How to Play Go

Board: Go is played with black and white stones on a square grid board, usually 19x19 lines. Figure 1 is an example of a 13x13 Go board.

Moves: Players alternately place black and white stones on the grid intersections. Black always goes first. When a player cannot make any more useful moves, she passes. The game ends when both players pass.

Objective: Players attempt to surround regions of empty intersections with walls of their stones. Whoever surrounds more empty intersections at the end of the game wins.

Strings: Stones of the same color which are immediately adjacent to each other along the horizontal and vertical lines of the grid form a string. Two single stones diagonal from each other are not in the same string. An isolated single stone is the smallest string. Strings are the fundamental units of capture. In Figure 1 there are six (6) black strings (stones marked with squares form one string while all other black stones are single stone strings).

Capture: Strings are captured (removed from the board) when they are surrounded by the opponent's stones on all horizontal and vertical intersections (diagonals don't count). A string's adjacent vacant intersections are called liberties. It is possible to place a stone on the board so that it has no liberties; that stone *survives* only if opponent stones are captured with the same move. Otherwise, the stone suicides and its string is removed. (Suicide is either illegal or unproductive, and definitely not recommended.)

Repetition: Repeating a board configuration is illegal. This means that the entire board cannot look the same as it did on any prior turn. Because you are adding stones on each turn, this only happens under special kinds of capture situations. Unlike chess which ends in a draw if the board repeats often enough, Go requires that you not repeat.

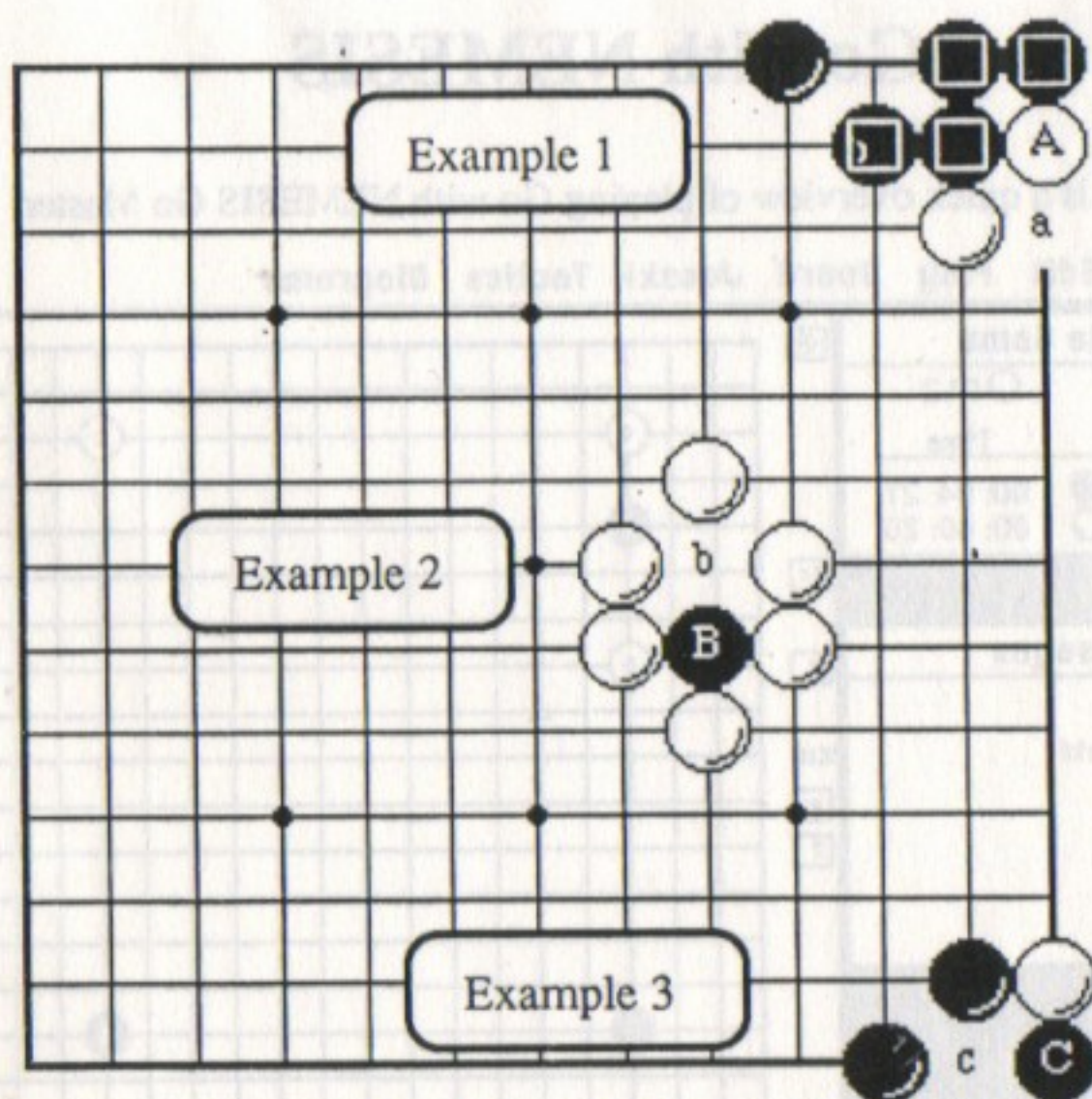


Figure 1. Examples of Capture

Example 1: White's stone A can be captured by a Black stone played at a. A White stone at a would create a 3-stone string with 3 liberties.

Example 2: Playing either White or Black at b would capture Black's stone B, though Black should not do so (as he would lose both stones in suicide).

Example 3: White may capture Black's stone C by playing at c. Black must play elsewhere before then capturing White's stone at c or else the board would illegally repeat (i.e. the board would look exactly as it does now in Figure 1).

Go with NEMESIS

This section is a quick overview of playing Go with NEMESIS Go Master

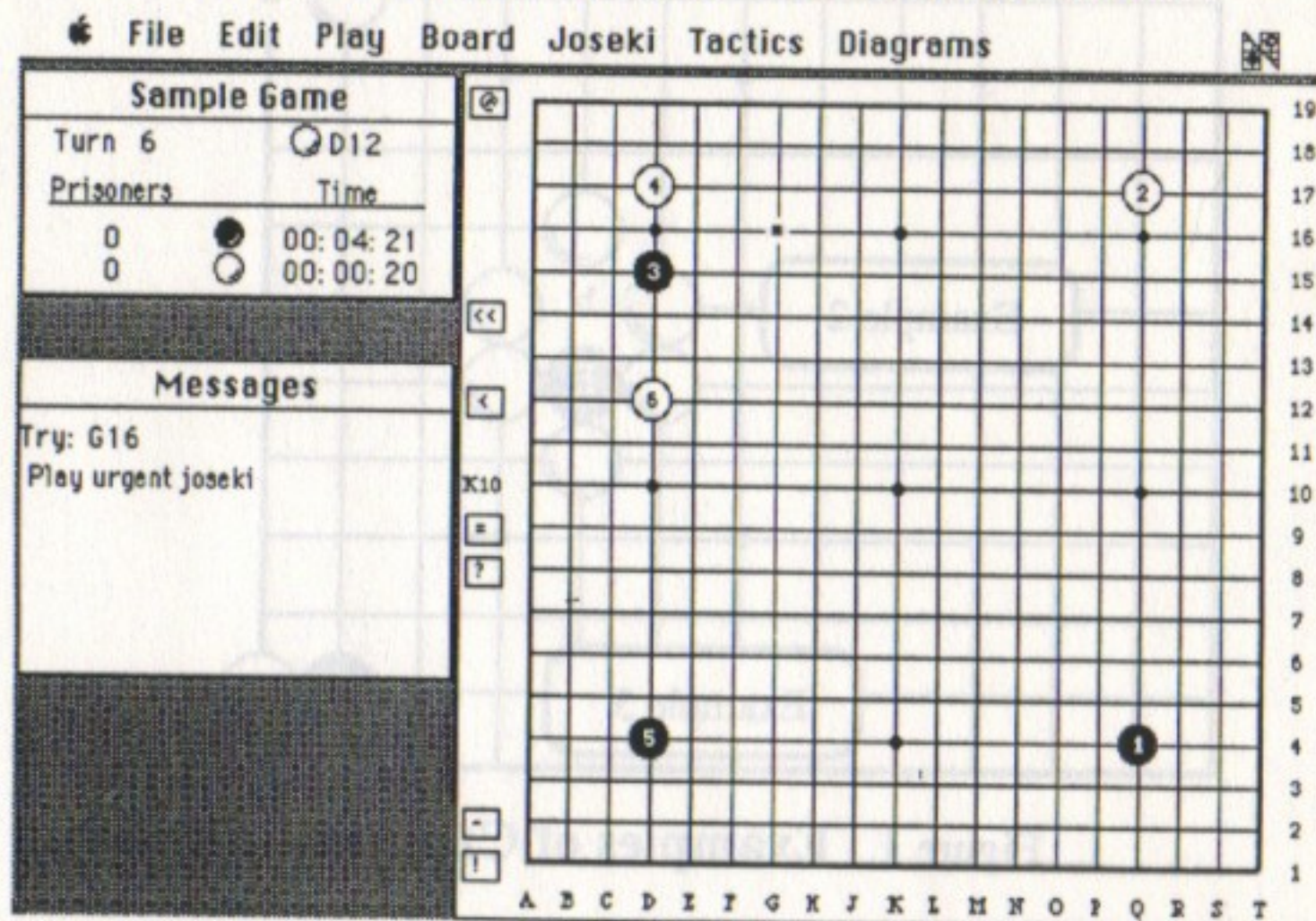


Figure 2. The NEMESIS Screen

Figure 2 shows the three parts of the NEMESIS screen: the **Game Window** (labelled *Sample Game* - i.e. the file name), the **Messages Window**, and the **Game Board**. The menus appear at the top of the screen.

The **Game Window** shows the turn number, who last played and where, the time spent for each player, and the number of stones captured by each side. The game record (document/file) name is in the **Game Window** title bar. The **Messages Window** displays hints and motives for the moves made by NEMESIS and other system messages. In *Sample Game* (Figure 2), Black has selected **Hint**. NEMESIS' reply is displayed in the **Messages Window**. The corresponding intersection (coordinate G16) is marked with a bold box. The **Game Board** shows the go board with grid labels, and **Mouse Traps** on the left for fast access to common commands. **Mouse Traps** are explained fully in **Menus**.

Basic Parameters		
Game Controls:	Tactics Controls:	Display Controls:
19 x 19 Board	Search Width= 5	Sysbeep Sound
No handicap	Search Depth= 8	Grid labels
Japanese rules	Search Moves= 15	Number all
Black= Human	No display	Instant replay
White= NEMESIS		Rare humor
<input type="button" value="OK"/> <input type="button" value="Cancel"/>		

Figure 3. Setup Everything dialog

Basic Parameters

NEMESIS defaults to the parameter settings shown in Figure 3. *Game Controls* define the basic Go environment, *Tactics Controls* affect NEMESIS' tactical ability during her play, and *Display Controls* affect the cosmetics of the game.

Game Controls: The Go board is a 19x19 Board, the standard tournament size. Handicap is set to **No Handicap**; the players are assumed to be evenly matched opponents or at most one rank apart. The rules are **Japanese rules**, the standard outside of China. **Black= Human** sets the first player to you, and **White= NEMESIS** sets the second player to NEMESIS at her strongest rank.

Tactics Controls: NEMESIS' tactical parameters, **Search Width= 5**, **Search Depth= 8**, and **Search Moves= 15**, balance reasonable play and responsiveness. **No Display** means NEMESIS will *not* reveal her tactical thinking while she is determining her move.

Display Controls: The sound setting defaults to **Sysbeep Sound**, which means a beep will sound after each move and for messages. **Grid Labels** puts the alphanumeric grid along two sides of the go board, and tracks the mouse location (K10 in Figure 2) when the mouse is on the board. **Number All** displays the turn number on each stone. The replay speed is set to **Instant Replay**, which is the fastest. Motive display is set to **Rare Humor**, allowing NEMESIS to display occasional wit during explanations of her play.

These parameters can be changed using **Setup Everything** in the **Play Menu**. To customize your basic parameters so that NEMESIS will start-up with your own settings, change them and then save them using the **Save** command in the **File Menu**. Thereafter, start NEMESIS by opening this file.

Starting a New Game

To begin playing Go, click on the intersection where you want to place your first stone. The clock will start to run as soon as you place the stone. And your game has begun! (If NEMESIS is the first player, use the **Play** command found in the **Play Menu** or double click on the board and Nemesis will begin her game.)

Pausing During a Game and Resuming Play

To interrupt your Go game, select **STOP!** from the **Edit Menu** or use the **Mouse Trap !**. **STOP!** can be used *any time*. Stopping during play stops the game clock as well as interrupts NEMESIS if she is thinking. To resume play, either place your next stone if it is your turn or select **PLAY** from the **Play Menu** (or **Mouse Trap P**) to start NEMESIS' turn.

Unplaying a Move

If you want to take back a move, select **Unplay Move** from the **Edit Menu** or use the **Mouse Trap <**. Each time you select **Unplay Move**, the last played stone is removed. Repeating this command backs you up to any position in the game. Hold down **⌘ U** (the command key equivalent of **Unplay Move**) to unplay several moves rapidly.

Unplaying All Moves

To back up to the beginning of the game instantaneously, select **Delete all Moves** from the **Edit Menu**. All stones (except any handicap ones under Japanese rules) will be cleared. You can interrupt **Delete all Moves** along the way by typing **⌘ .** (Stop!) or clicking on the **Mouse Trap !** (Stop!). The **Mouse Trap <<** (Delete all Moves) is on 19x19 and 13x13 Go boards only.

Replaying a Move

To replay a move taken back either with **Unplay Move** or **Delete all Moves**, select **Replay Move** from the **Edit Menu** or use the **Mouse Trap >**. Each time you select this function, NEMESIS replays one move. Hold down **⌘ R** (the command key equivalent of **Replay Move**) to replay several moves rapidly.

Replaying the Rest of the Game

Instant Replay, found in the **Edit Menu**, replays the rest of the unplayed moves in your game. You can adjust the replaying speed from very quick to very slow using **Setup Everything** in the **Play Menu**. To replay an entire game, select **Delete all Moves**, and then **Instant Replay**. You can interrupt **Instant Replay** along the way by typing **⌘ .** (Stop!). The **Mouse Trap >>** (**Instant Replay**) is on 19x19 and 13x13 Go boards only.

Asking NEMESIS for Help

Hint can be selected from the **Play Menu** or by using the **Mouse Trap ?**. **Hint** allows you to ask NEMESIS what she thinks the next move should be. She will give her best opinion along with her reasoning. Repeatedly selecting **Hint** will obtain a series of alternative moves. If you exhaust her list of useful moves, NEMESIS will suggest passing.

Saving a Game

To save your game onto a disk, select **Save** or **Save As** from the **File Menu**.

Printing a Game

Selecting **Print** from the **File Menu** prints the contents of each of NEMESIS' windows.

Quitting NEMESIS

To exit the program, select **Quit** from the **File Menu**.

Menus

🍏 File Edit Play Board Joseki Tactics Diagrams

The menu bar contains **File**, **Edit**, **Play**, **Board**, **Joseki**, **Tactics**, and **Diagrams** menus. The following sections describe each of these menus and the items found within them. In some cases, you will see that a menu item is grayed on the screen. This means that the function is not presently available. The menu item's **Mouse Trap** (if any) is also not shown. If all items in a menu are unavailable then the menu name in the menu bar is grayed. Any option which is not grayed can be utilized even when you have a watch cursor. The menu items **Undo**, **Cut**, **Copy**, **Paste**, and **Close** are always grayed because they have no functionality in NEMESIS products. These are present only for use with your desk accessories.

Mouse Traps™



Mouse Traps™ are mouse-sensitive boxes on the left side of the board, which directly invoke common commands available on menus. **Mouse Traps** are

@	<i>drag region</i>	-	Pass
P	Play	!	Stop!
<	Unplay Move	>	Replay Move
<<	Delete all Moves	>>	Instant replay
[Prior Sequence]	Next Sequence
?	Hint	=	Score

The **Mouse Trap @** is used to drag the Go board, since the conventional title bar has been omitted in order to enlarge the Go board to support 3-digit stone numbering. **Delete all Moves**, **Instant Replay**, **Prior Sequence** and **Next Sequence Mouse Traps** are omitted on the 9x9 board because it is too small to support them. **Mouse Traps** do not appear when the function they represent is unavailable. The diagram of **Mouse Traps** to the left is a simulation since all **Mouse Traps** are never available at the same time.

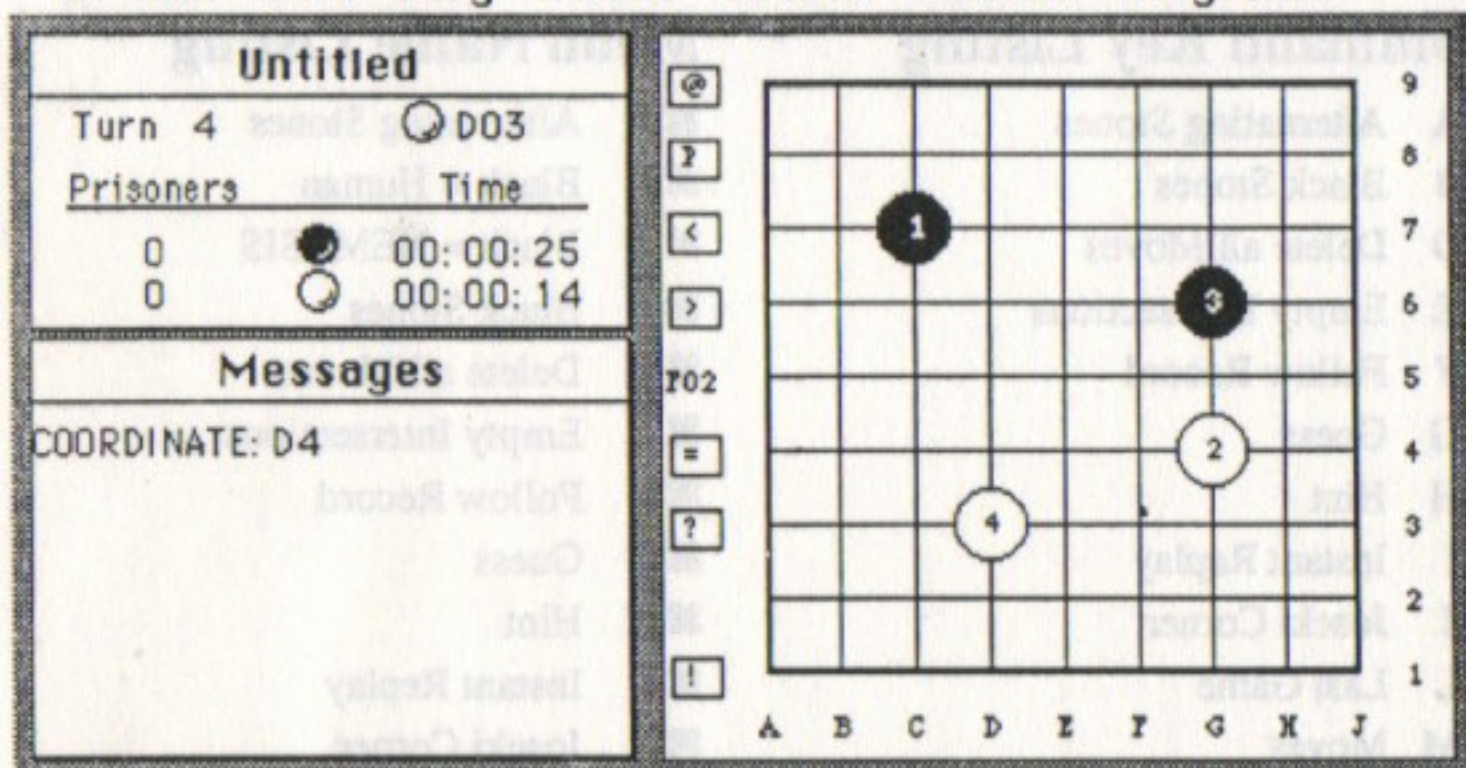


Figure 4. Coordinate Entry

Squeaking by with no Mouse

Entering Moves: Instead of using a mouse to enter a move, you can also enter moves from the keyboard by typing the coordinate name (e.g., D04 or D4). The coordinate name consists of the column letter followed by the row number. When you type a coordinate name, NEMESIS will echo your keystrokes in the Messages window beside the label COORDINATE:. To place your move on the board, press RETURN or ENTER.

Command Key Equivalents: Many menu items have command key equivalents (shortcuts for selecting a menu item without the mouse). These appear after the menu name in parentheses, e.g. New (⌘N). To use ⌘N, hold down the ⌘ key and press N.

The following listings are quick references to all command keys which are sorted alphabetically both by command key and menu name.

Command Key Listing

⌘ A Alternating Stones
 ⌘ B Black Stones
 ⌘ D Delete all Moves
 ⌘ E Empty Intersections
 ⌘ F Follow Record
 ⌘ G Guess
 ⌘ H Hint
 ⌘ I Instant Replay
 ⌘ J Joseki Corner
 ⌘ L Last Game
 ⌘ M Moves
 ⌘ N New
 ⌘ O Open
 ⌘ P Play
 ⌘ Q Quit
 ⌘ R Replay Move
 ⌘ S Save
 ⌘ T Tactics Target
 ⌘ U Unplay Move
 ⌘ W White Stones
 ⌘ 0 White = NEMESIS
 ⌘ 1 Black = Human
 ⌘ 2 White = Human
 ⌘ 9 Black = NEMESIS
 ⌘ . Stop!
 ⌘] Next Sequence
 ⌘ [Prior Sequence
 ⌘ - Pass
 ⌘ = Score

Menu Name Listing

⌘ A Alternating Stones
 ⌘ 1 Black = Human
 ⌘ 9 Black = NEMESIS
 ⌘ B Black Stones
 ⌘ D Delete all Moves
 ⌘ E Empty Intersections
 ⌘ F Follow Record
 ⌘ G Guess
 ⌘ H Hint
 ⌘ I Instant Replay
 ⌘ J Joseki Corner
 ⌘ L Last Game
 ⌘ M Moves
 ⌘ N New
 ⌘] Next Sequence
 ⌘ O Open
 ⌘ - Pass
 ⌘ P Play
 ⌘ [Prior Sequence
 ⌘ Q Quit
 ⌘ R Replay Move
 ⌘ S Save
 ⌘ = Score
 ⌘ . Stop!
 ⌘ T Tactics Target
 ⌘ U Unplay Move
 ⌘ 2 White = Human
 ⌘ 0 White = NEMESIS
 ⌘ W White Stones

File Menu

File	
New	⌘N
Open...	⌘O
Close	
Save...	⌘S
Save As...	
Last Game	⌘L
.....	
Page Setup...	
Print...	
.....	
Quit	⌘Q

Most of the menu items operate in the familiar Macintosh fashion though there are some subtle differences. The Close command is disabled because NEMESIS always has an open Go board. Save operates identically to Save As, bringing up the Macintosh dialog box each time you use it. Last Game is a command analogous to a sophisticated undo.

New (⌘ N)

New clears the board to start a new game *and* initiates Play. Note that if you are using Japanese rules, the handicap stones (if any) remain on the game board, but all other stones are removed. (The Rules command is described thoroughly under the Play Menu.) If you are Black, then simply place your move on the board. If NEMESIS is Black, she thinks for a moment and then places her move without any further prompting.

Open (⌘ O)

The Open command allows you to restore a game record previously saved to disk.

Save & Save As (⌘ S)

These commands work identically. When you save a game, all of the settings associated with the game are also saved.

After you experiment with NEMESIS and determine the settings you most often wish to start with, we suggest you save a game with these settings for starting NEMESIS in the future. You may wish to have more than one of these start up games, for example a 13x13 board and a 19x19 board.

A saved game is kept exactly as it appeared at the time of the save. If you unplayed moves, the game is restored with those moves still unplayed.

Last Game (⌘ L)

NEMESIS can keep track of two *significant* games simultaneously. The **Last Game** command restores you to the last significant game record, thus recovering valuable game records that might have been accidentally destroyed. Its most dynamic use can be demonstrated by playing *two* games simultaneously. If the game is significant (i.e. more than four (4) white moves have been played) and you destroy that game in any manner, then that game can be accessed using **Last Game**. Ways to destroy a game include starting a new game, restoring a game, using **Last Game**, changing the board size or handicap, keeping moves after **Altering the Board**, or by unplaying any number of moves and then playing a variation. You cannot use **Last Game** after **Quit**, since NEMESIS keeps the games in RAM, *not* on disk. **Last Game** should not be used in place of the **Save** command. If a game record matters and you are about to explore some variations, save the game first.

The most practical use of the **Last Game** is figuring out *what went wrong* when you've lost some territory. To do this, simply back the game up to the appropriate point and then try again. When you are finished exploring this new line use **Last Game**. You will return to the point in the first game where you deviated. Try another variation or replay your moves and continue with your game.

Page Setup

Page Setup prepares your page for printing. For standard Imagewriter printout, select the Tall Adjusted option for best results. See your printer and Macintosh manuals for further assistance.

Print

The **Print** command prints the contents of the NEMESIS windows to one of your printing devices. The **Messages** and **Game** windows and the Go board will all be printed.

You can also print the 19x19 Go board larger than your screen is able to display by selecting **Large size** or **MEGA size** under **Setup Everything**. These sizes are part of the board size pop-up menu. Note: if you are printing a **19x19 Board** in **MEGA size**, you will need to scale down the printout with **Page Setup** in order to fit on an 8 1/2" x 11" piece of paper. Depending on the hardware you own you can experiment with these sizes to come up with you own preferences.

The Go board prints only those moves showing on the Go board. Even if you can't see the entire board on the screen, the whole Go board will be printed. If you back up to some mid point in your game and then select **Print**, only the game record up to that point will print.

Game diagrams can be made using the functions found in the **Diagrams Menu**, and then printed or captured using a screen capture tool.

Quit (⌘ Q)

To exit NEMESIS, select **Quit**.

Edit Menu

Edit	
Undo	⌘Z
Cut	⌘K
Copy	⌘C
Paste	⌘V
Unplay Move	⌘U
Replay Move	⌘R
Delete all Moves	⌘D
Instant Replay	⌘I
Stop!	⌘.

Unplay Move (⌘ U) <

To unplay a single move, select **Unplay Move**. **Unplay** takes back the last move played. Repeating this command backs you up to any prior position in the game. In the **Altering the Board**, **Exploring Joseki**, and **Exploring Tactics** modes, **Unplay Move** only unplays hypothetical moves. Hold down ⌘ U to unplay several moves rapidly.

Changing Your Move: Now you can prove the famous lament *I would have won if* If you misplace a stone, or realize an earlier move was a mistake, you can go back and place a different move. First, we recommend saving your original game if you want to keep it, because you may not be able to recover it later. Next, use **Unplay Move** until your offending move and all subsequent play are gone. Then enter your new move, and continue with this new game to discover the *truth*. (See **Last Game** in the **File Menu** for how to flip between your original game and this new variation.)

Changing NEMESIS' Move: If you don't like a move NEMESIS made, or just want her to play a different one, use **Unplay Move** until *her* move is gone and then select **Play**. NEMESIS will select a different move. Successive application of **Unplay Move** and **Play** will force NEMESIS to run through her entire repertoire of choices in the order she deems best. If you want her to return to the start of this sequence of choices, take back two (2) moves (NEMESIS' and yours) and then replay yours. This resets NEMESIS. *This is particularly useful for stronger players, as NEMESIS will often select a better second move if her first move is bad.*

Replay Move (⌘ R) >

To replay a move taken back either with **Unplay Move** or **Delete all Moves**, select **Replay Move**. Each time you select this function, the game replays a single move. Hold down ⌘ R to replay several moves rapidly.

Delete all Moves (⌘ D) <<

To back up to the beginning of the game, select **Delete all Moves**. All stones except Black's handicap will be cleared. Handicap stones will be cleared under **Chinese Rules** only. You can interrupt NEMESIS when she is clearing the board by selecting **Stop!**. This is a fast way to reach a particular move in your game. When the **Altering the Board**, **Exploring Joseki**, or **Exploring Tactics** modes, **Delete all Moves** will clear your hypothetical moves only. The **Mouse Trap <<** is only available on 19x19 and 13x13 boards.

Instant Replay (⌘ I) >>

Instant Replay allows you to automatically replay moves which have been backed up. To replay an entire game, select **Delete all Moves** and then select **Instant Replay** (i.e. type ⌘ D ⌘ I or use the mouse traps). **Instant Replay** allows selection of the speed (in seconds) that the moves are replayed; see **Setup Everything** in the **Play Menu**. You can also interrupt **Instant Replay** part way through by selecting **Stop!** and reselect it to continue. The **Mouse Trap >>** is only available on 19x19 and 13x13 boards.

Stop! (⌘ .) !

Stop! interrupts NEMESIS, no matter what she is doing. When NEMESIS is computing her move, **Stop!** stops her. If it is your turn, **Stop!** freezes the game clock. If NEMESIS is scoring, this command stops the scoring process. **Stop!** also cancels **Altering the Board**, **Exploring Joseki**, **Exploring Tactics** modes as well as **Diagramming** and **Scoring**. To resume play, select **Play** from the **Play Menu** or place your move if it is your turn. *If NEMESIS is deep in meditation, she may take a moment to rouse. She thanks you for your patience and understanding.*

Play Menu

Play	
Setup everything	
✓ Play	⌘P
Hint	⌘H
Score	⌘=
<hr/>	
Pass	⌘-
Follow Record	⌘F

Setup Everything

Items in **Setup Everything** allow you to change the *Basic Parameters* of your Go game. When selected, the dialog box shown in Figure 5 appears. The current value of each parameter is shown in the rectangular buttons. Each parameter is part of a Pop-up Menu which will appear when you click on its button. The current value in the Pop-up Menu is preceded by a check mark. To change a parameter's value, click on its button, drag the mouse until the desired item is highlighted, then release the mouse (this procedure is identical to selecting an item from a menu). The button is now labelled with the new value. Repeat this procedure for each of the parameters you wish to change, then select **OK** to activate these changes or **CANCEL** to discard them.

Basic Parameters		
Game Controls:	Tactics Controls:	Display Controls:
19 x 19 Board	Search Width= 5	Sysbeep Sound
No handicap	Search Depth= 8	Grid labels
Japanese rules	Search Moves= 15	Number all
Black= Human	No display	Instant replay
White= NEMESIS		Rare humor
OK		Cancel

Figure 5. *Basic Parameters*

Game Controls:

19 x 19 Board

No handicap

Japanese rules

Black= Human

White= NEMESIS

9 x 9 Board

13 x 13 Board

✓19 x 19 Board

✓Normal size

Large size

MEGA size

This Pop-up menu allows you to select between three different board sizes: 9x9 Board, 13x13 Board, 19x19 Board and between three display sizes: Normal size, Large size, and MEGA size.

A regular game of Go is played on a 19x19 Board, the smaller boards are common variant sizes. We suggest the 9x9 Board for beginners who want to learn the basics of Go. For more experienced Go players, a 9x9 Board is useful for very quick games. A 13x13 board is the next step for beginners. Studying Go on this size allows you to learn faster, since you can play a lot more games and because the Go strategy is simpler. More experienced Go players can use a 13x13 Board for faster games. 19x19 Board is the standard Go board. Normal size is designed for a Mac Plus or SE screen; Large size is for a MAC II; MEGA size is for 19 inch screens. When using 9x9 board and 13x13 board you may prefer bigger display sizes. These larger sizes are also nice for printing.

✓No handicap

2 stone handicap

3 stone handicap

4 stone handicap

5 stone handicap

6 stone handicap

7 stone handicap

8 stone handicap

9 stone handicap

This Pop-up menu allows you to set Black's handicap from an even game with No Handicap to a 9 Stone Handicap. Black Moves in the Board Menu can be used to create even higher handicaps or arbitrarily placed handicaps.

One advantage Go has over other strategic games is its handicapping method. Since Go involves successively adding stones to the board, the weaker player takes Black and starts with extra initial moves. The wider the disparity of strength between the players, the greater the number of handicap stones Black is given. The handicap between the strongest and weakest players in the world, if given, would be about 45 stones! For those who want to compare the complexity of Go with that of chess, the difference between strongest and weakest players in chess is only 26 stones (measured using an equivalent rating system).

The rating system is tied to handicapping, with one rank difference equal to one handicap stone. A beginner who has just learned the rules is rated at 35 kyu (class). As he gets stronger, he works his way to 1 kyu. Since each level corresponds to a handicap stone, a 30 kyu player takes a 7 stone handicap from a 23 kyu player. After 1 kyu, ratings are measured in dan (black belt rank), with higher dan numbers signifying a stronger rating. A five (5) dan would give nine (9) stones to a five (5) kyu. The top US amateurs are seven (7) dan. Professional players are even stronger.

Black's first move consists of placing his handicap stones. Evenly matched players should set Black's handicap to **No Handicap** and either alternate sides in a series of games or give White four to eight (4-8) points per game to compensate for the disadvantage of starting second. One (1) stone handicap is the same as a **No Handicap** where the weaker player always takes **Black**, and **White** receives no compensation.

Under **Japanese** rules, NEMESIS places the handicap stones according to fixed positions. These stones will remain on the board even when the board is cleared.

In contrast, **Chinese** rules allow **Black** to place handicap stones anywhere. Since the placement of these stones is **Black's** choice, the handicap stones do not stay on the board when cleared.

NOTE: A player stronger than NEMESIS can profit from the handicapping system by giving NEMESIS Black and the appropriate handicap. We recommend choosing the **Chinese** rules in this case, which allows NEMESIS to choose her own position.

Chinese rules

✓Japanese rules

With this Pop-up menu you can select either Japanese rules or Chinese rules.

The rules in Go are so simple; there should be no need for different rules. But... Japanese rules are used everywhere except in China. On the other hand, there are an awful lot of Chinese.

Handicapping: Japanese rules provide fixed patterns for the placement of handicap stones. Chinese rules give Black the first n moves to place anywhere.

Turn Numbering: Under Japanese rules, the stones of the handicap do not count toward the turn number. Thus, in a handicap game, White's first move is considered Turn 1. Under Chinese rules, White passes during Black's handicap moves, so the turn number of White's first stone is twice the number of the handicap. For example, against a 2-stone handicap, White's first move is labeled Turn 4.

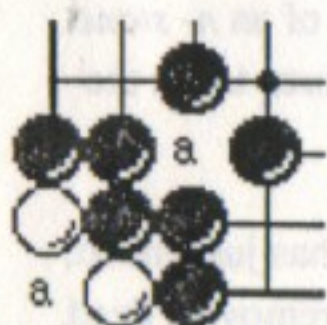


Figure 6.

Suicide: Japanese rules forbid placing a stone on an intersection with no liberties if it does not capture enemy stones (i. e. suicide). Chinese rules allow suicide of two or more stones. Suicide is not particularly useful nor recommended. Note that you may not change the rules from Chinese to Japanese after suiciding stones, because suicide is not permissible under Japanese rules. In Figure 6, both moves *a* would be suicidal for White. Only one is legal under Chinese rules.

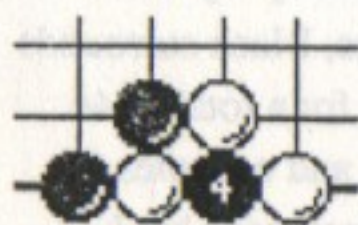


Figure 7.

Repetition: Chinese rules use a universal no board repetition rule. A player cannot repeat an entire board image. Japanese rules have special rulings for specific repeated board positions that rarely happen in normal games. NEMESIS uses the Chinese no repetition rule under either setting. In Figure 7, when Black's stone (B4) captures the white stone on its left (not yet removed), his stone will have only one liberty. White may not recapture B4 until she plays elsewhere.

Resolution phase: When the game is over and dead stones are removed as prisoners, weaker players may find they disagree about the life and death of stones. Their disagreement is resolved by a resolution phase. During this phase, both players continue playing to kill or save the stones in question. When both players pass, the resolution phase is over.

In Japanese rules, whenever a player passes within the resolution phase, he must hand an unplayed stone to his opponent as a prisoner in order to keep the score unchanged. This allows a player to move inside his own territory without penalty, because either his opponent is doing likewise or paying the pass penalty. In Chinese rules the resolution phase is no different from regular play. Since there is no penalty for playing within your own territory, there are no stones handed over when a player passes.

✓Black= Human ⌘1
Black= NEMESIS ⌘9
Black= 20 kyu
Black= 25 kyu
Black= 30 kyu
Black= 35 kyu

White= Human ⌘2
✓White= NEMESIS ⌘0
White= 20 kyu
White= 25 kyu
White= 30 kyu
White= 35 kyu

You can independently set who plays Black and White. Selecting **Human** (⌘1 Black, ⌘2 White) sets **Black** or **White** to a human player (i.e. entering moves manually). You can play against a friend by selecting ⌘1 ⌘2. **NEMESIS** (⌘9 Black, ⌘0 White) is your strongest computerized opponent. By selecting **NEMESIS** as both players, ⌘9 ⌘0, you can watch a demonstration game. You may also set **Black** or **White** to weaker computerized players: **20 kyu**, **25 kyu**, **30 kyu**, or the almost totally random **35 kyu**. Note: you will learn the most by setting **NEMESIS** to her strongest setting and choosing an appropriate handicap and/or using smaller board sizes. *Choice of player is available in Go Master only. The Joseki Tutor and Tactical Wizard allow only human - human play.*

Tactics Controls:

Search Width= 5

Search Depth= 8

Search Moves= 15

No display

The first three items under Tactics Controls can be altered in Go Master only. The last item can be altered in either Go Master or Tactical Wizard.

During play, NEMESIS performs goal-oriented tactical searches. That is, she analyzes the situation for a particular outcome: to try to kill or save a string, to try to cut or defend a connection, to try to kill or save a group. Within each search, NEMESIS imagines what might happen as a result of various move sequences. This imagining takes the form of an upside-down tree of choices. Figure 9 is a simple example of such a tree. The top of the diagram, the root of the tree, is your current board position. The nodes of the tree are possible moves for the players. Nodes which have no moves connected beneath are the *leaves*, the end of a completed sequence. *Leaves* are indicated by square boxes. A possible sequence of moves is connected with arrowed lines.

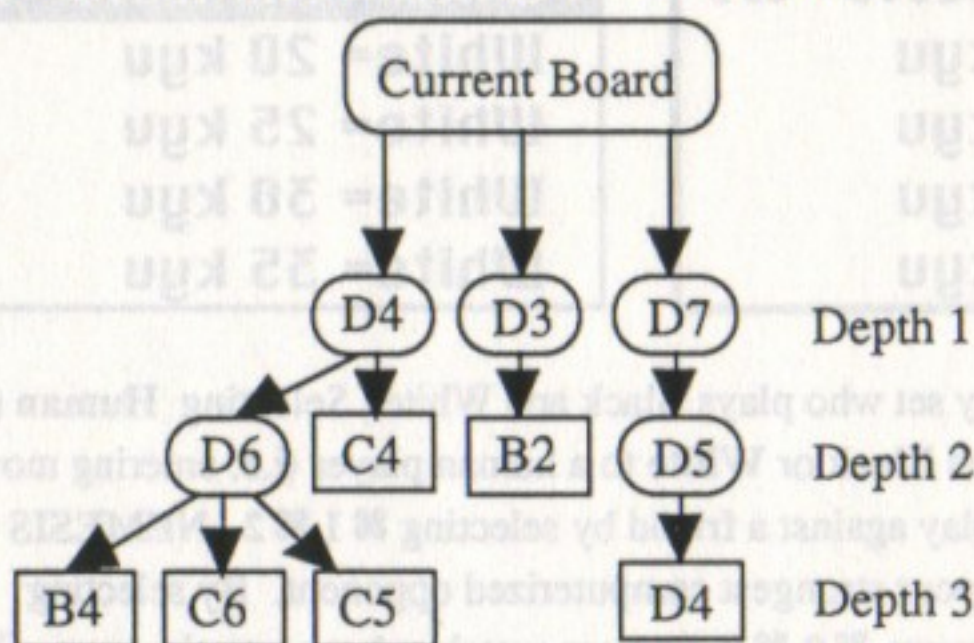


Figure 9. Tactical Tree

Such trees may be small or big, depending upon the complexity of the problem. The bigger the tree explored, the more time NEMESIS takes. You can limit how much of this tree NEMESIS explores per search with the next three parameters: **Search Width**, **Search Depth**, and **Search Moves**. The higher you set these parameters the better NEMESIS might play - of course more slowly. Depending on the power of your machine this may or may not be noticeable.

Search Width= 1

Search Width= 2

Search Width= 3

Search Width= 4

✓Search Width= 5

Search Width= 10

Unlimited width

Search Width controls how many variations (sequences leading to final positions)

NEMESIS examines per search per player, i.e. how many *leaves* in a tree are generated.

The tree in Figure 9 has six (6) *leaves*. If NEMESIS exhausts the width limit for a particular player, NEMESIS will not explore the tree further. Instead she will assume that player cannot win the search.

Search Width = 1 means NEMESIS should try one variation line and use that as the basis of deciding the result. This may seem insufficient for making any intelligent decision, but NEMESIS explores what she thinks is the best line first, and she may get the correct answer this way. Most problems at NEMESIS' level should have no more than three to five (3-5) interesting variation lines.

Search Depth= 5

Search Depth= 6

Search Depth= 7

✓Search Depth= 8

Search Depth= 9

Search Depth= 10

Search Depth= 15

Search Depth= 20

Unlimited depth

Search Depth controls how many moves into the search the defender needs to keep his stones alive before the attacker abandons the search as too hard, i.e., it controls how many levels down the tree NEMESIS can go. Figure 9 the **Search Depth** is three (3). If NEMESIS reaches the depth limit, NEMESIS will assume the defender succeeds along this variation in the tree.

Most problems which are reasonable for a player of NEMESIS' strength, should be solvable within a depth of seven to nine (7-9). Selecting a large search width and small search depth tells NEMESIS not to overlook the obvious simple tactics. Selecting a small search width with a large search depth allows NEMESIS to explore briefly complex sequences beyond her normal ability.

Search Moves= 5
Search Moves= 10
✓Search Moves= 15
Search Moves= 20
Search Moves= 30
Search Moves= 50
Search Moves= 100
Unlimited moves

Search Moves controls how many moves are generated in the tree before exploration must stop. When NEMESIS reaches the move limit, she completes whatever line she is working on (finishes the variation in progress), and then stops searching further. (Thus she may actually spend more moves than you specified, but only to make the current line meaningful.)

Figure 9 requires eleven (11) search moves to be completed. Most problems shouldn't spend more than fifteen to twenty (15-20) moves in searching, or the problem is probably too complex, or being analyzed poorly.

✓No display
Continuous display

This Pop-up Menu controls if NEMESIS displays her tactical thinking or not.

No Display turns off the display of tactics. When you select Continuous Display, NEMESIS' tactical thinking will be displayed. This *flashy* feature can be entertaining and instructive, but it will slow down the game. Note when Exploring Tactics with this feature on, you will see NEMESIS' thinking.

Display Controls:

Sysbeep Sound
Grid labels
Number all
Instant replay
Rare humor

No sound
✓Sysbeep Sound
Realistic Sound

When Sysbeep Sound is on, NEMESIS beeps when she plays a move and when she displays an alert message.

You can control the volume and the beep sound itself through the **Control Panel** in the Apple Menu. You can also turn sound off by selecting **No Sound**. With **Realistic Sound**, NEMESIS makes a proper stone *plunk* when stones are placed, and announces *Atari* when NEMESIS' move causes your stones have one liberty remaining. *Systems prior to 6.02 do not always correctly implement Realistic Sound. If your machine crashes when it tries to make a move, either use Sysbeep or obtain a more recent system.*

No grid labels

☒ **Grid labels**

With **Grid Labels** on, the alphanumeric coordinate grid is displayed around the board and the mouse location is shown centered off the left edge. **No grid labels** removes these displays.

Number last

☒ **Number all**

Number All numbers all stones with their turn number. When **Number Last** is chosen, the turn number appears only on the last stone placed.

Whenever NEMESIS is displaying hypothetical moves in **Exploring Joseki** and **Altering the Board**, all real game moves are temporarily unnumbered, and only hypothetical moves entered in these modes are numbered, starting with the number one (1). When you return to the game, the board is renumbered as it was.

☒ **Instant replay**

1 sec/move

2 sec/move

3 sec/move

4 sec/move

5 sec/move

10 sec/move

The items in this Pop-up menu control the speed of **Edit Menu's Instant Replay**. **Instant Replay** is the fastest, 10 sec/move is the slowest.

No motives

No humor

☒ **Rare humor**

Often humor

All humor

Items in this last Pop-up menu govern NEMESIS' display of the motives for her moves and hints. Sometimes during her play, however, she displays a perverse sense of humor and substitutes a humorous motive for the real one. You can control the frequency of this substitution, with **No Humor** to **All Humor**. You may also turn off all commentary by selecting **No Motives**. *This option is used in Go Master only.*

Play (⌘ P) P

When you first start NEMESIS, play is stopped. Selecting **Play** starts the clock running. On NEMESIS' turn, she will start thinking and then place her move.

If you are in any of NEMESIS' hypothetical modes, **Exploring Joseki**, **Altering the Board**, **Exploring Tactics**, or if you are **Scoring** or **Diagramming**, you must select **Stop!** before you can resume playing. Once stopped, select **Play** or either click on the intersection where you want to move if it is your turn, or double-click anywhere on the board if it is NEMESIS'.

You can also use **Play** to resolve scoring disputes, although if you are stronger than NEMESIS, you may just wish to tell NEMESIS what the correct life and death status is directly during scoring. Alternatively, you can resume the game in scoring resolution mode. When a game has been ended by two passes, just select **Play**. You would do this if you disagree with NEMESIS about which stones are dead and would like to find out who is correct. During scoring resolution, the objective of both players is to resolve disagreements about which stones are alive and which are dead. This is done by playing out the moves to capture or save the disputed stones. Scoring resolution is fully described under **Rules in Setup Everything**.

Hint (⌘ H) ?

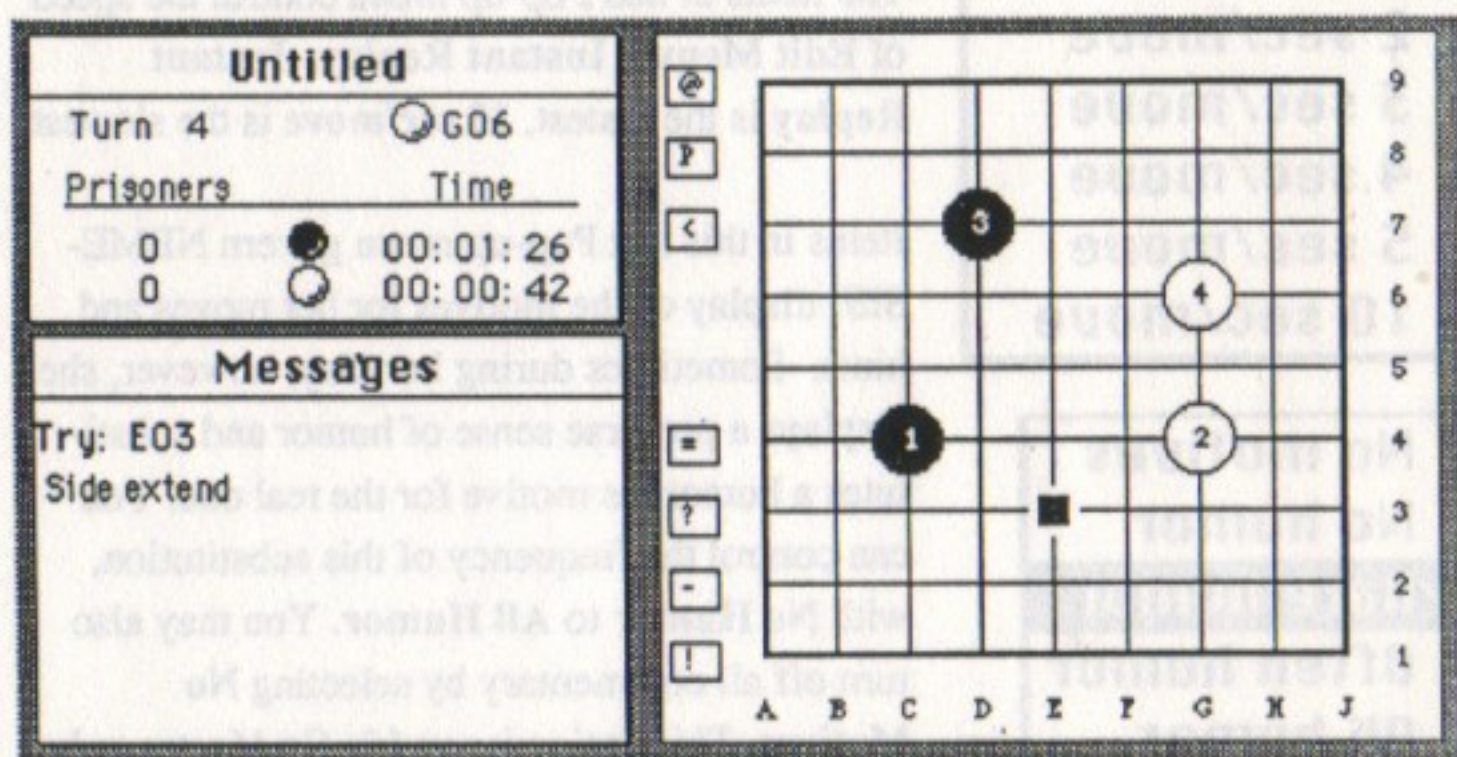


Figure 10. Example of a Hint for Black

During play, **Hint** allows you to ask NEMESIS to suggest the next move for you. The hint will be displayed on the board as a square for Black and a circle for White on the intersection suggested, and in the **Messages Window** as the alphanumeric coordinates with the reason for her suggestion (see Figure 10). To make the suggested move, just click on the intersection or press **Return** or **Enter**. Use **Hint** again and again for alternate suggestions. If you want her to return to the start of this sequence of hints, take back one (1) move and then **Replay** it. This resets NEMESIS.

Hint also displays next move(s) when you are **Exploring Joseki** or **Exploring Tactics**, or using **Follow Record**.

Score (☞ =) ☐ =

Select **Score** to get an estimate of the score at any time during a game or within the **Board Menu**. NEMESIS will compute which player controls what territory and which stones are alive or dead. Black territory is marked with solid black squares on the captured intersections, and White's is marked with circles. Note that marked intersections merely indicate control; they do not correlate directly with the points shown in the alert box on the screen during scoring, unless the game is over. Dead stones are also marked; Black's dead are faded with a white square inside, White's stones dead are faded with a solid black square inside. The score will be displayed in the **Messages Window** (see Figure 11).

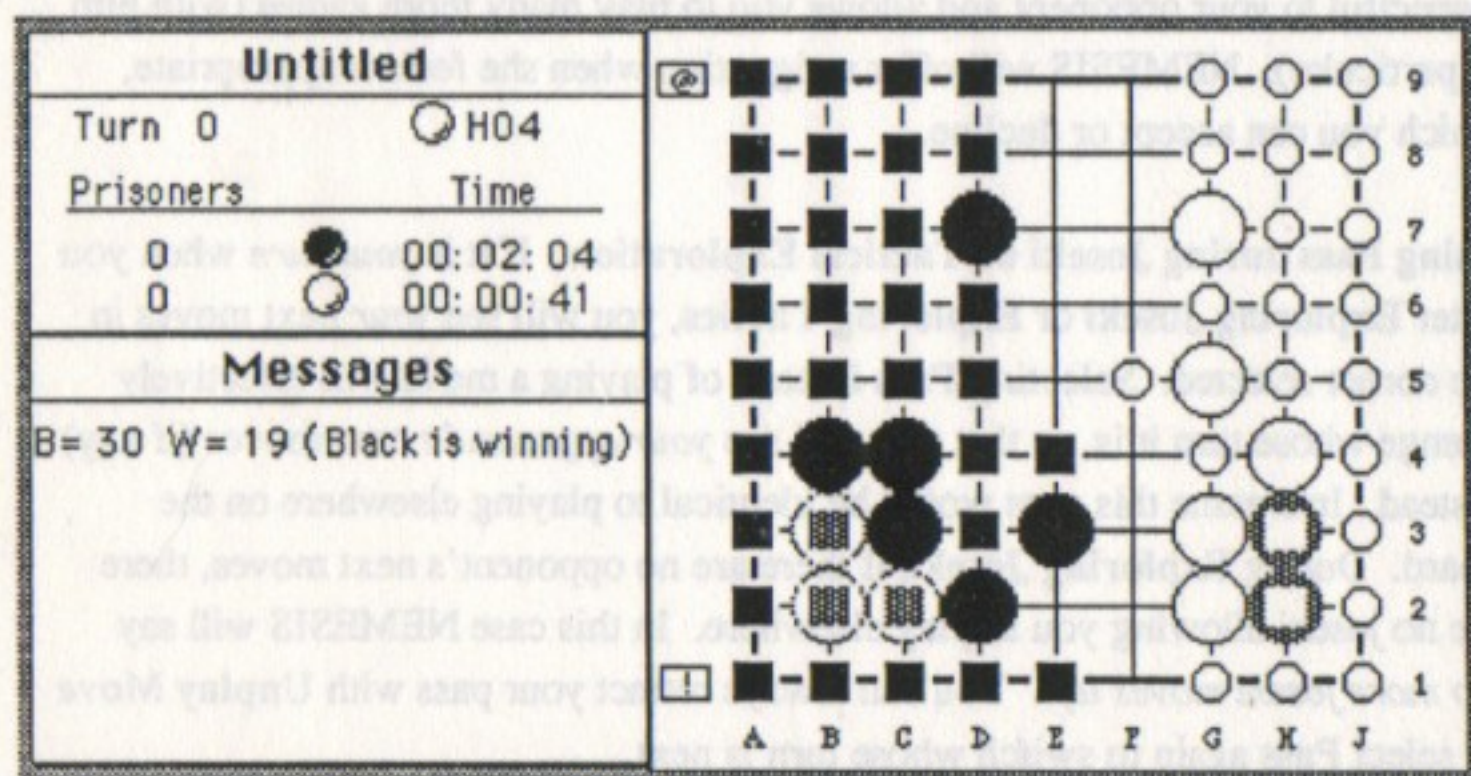


Figure 11. Scoring Midgame

Scoring allows you to change the life/death assessments NEMESIS has made. When you click on a stone while the scoring display is still showing, the corresponding group's life status changes, from alive to dead, or dead to alive. However, only that one group will change. If that implies changes to other groups, you will have to click on them also. The score will be recomputed with a new shading map. This allows you to fix erroneous scores or to see what the score would be like if you succeeded in killing or saving some group.

When you are done with Score, select **Stop!**. This returns you to where you were before you asked for the score.

Pass (☞ -)

Pass is used when there are no more useful moves to play in the game. You select **Pass** from the **Play Menu** on any turn. When both players pass consecutively, the game ends. If you disagree about the life or death of any group you can continue play to resolve the dispute. Scoring resolution is fully described under **Rules** in the **Setup Menu**.

Stronger players might pass in the middle of the game to suggest politely that their opponent is so far behind that he should consider resigning. Resigning is the other way to end the game. Resigning when you are hopelessly behind is respectful to your opponent and allows you to play many more games (with him in particular). NEMESIS will offer resignation when she feels it appropriate, which you can accept or decline.

Using Pass during Joseki or Tactical Exploration: If it is *your turn* when you enter **Exploring Joseki** or **Exploring Tactics**, you will see *your* next moves in the corner selected. Selecting **Pass** instead of playing a move will effectively change whose turn it is, so that you will see *your opponent's* next moves (if any) instead. In a game this pass would be identical to playing elsewhere on the board. During **Exploring Joseki**, if there are no opponent's next moves, there are no joseki allowing you to play elsewhere. In this case NEMESIS will say *No more joseki moves left*. You can always retract your pass with **Unplay Move** or select **Pass** again to switch whose turn is next.

Follow Record (⌘F)

Follow Record restricts both players to those moves recorded in the game record. To follow the moves played your game, type ⌘D (**Delete all Moves**), ⌘F (**Follow Record**) and then type ⌘P (**Play**). NEMESIS will only allow you to place a stone on the move that was played during the game. If you attempt to play elsewhere, NEMESIS will beep. **Hint** will show you where the move belongs. **Follow Record** turns itself off automatically when you reach the end of the recorded game moves.

Follow Record is useful for playing *Guess the Next Move*, something popular in problem books in Japan. In these, you are presented with a board diagram and asked to guess the next move. Now you can go beyond these books. You can put yourself completely in the role of a professional player and try to guess his next move throughout the entire game.

To do this, **Open** one of the professional game records supplied with NEMESIS and select **Delete all Moves**. Assign NEMESIS to **Black** or **White** and yourself to the other color. Select **Follow Record** and then **Play**. You are now playing the role of a pro, trying to figure out his move. If you succeed, NEMESIS responds automatically, and it's your turn again to guess the following move. If you can't find the next move, use **Hint**.

Board Menu

Board

Alternating Moves	⌘A
Black Moves	⌘B
White Moves	⌘W
Empty Intersections	⌘E

The **Board Menu** is used for **Altering the Board** which allows you to change the content of any board intersection, regardless of whether it is already occupied in the game. This menu is useful for setting up arbitrary handicaps, for setting up problems, or for a little cheating when all else fails — just add a few moves to your side or take some away from NEMESIS!

When **Altering the Board** NEMESIS tries to keep the order of moves the same as that in the existing game (before editing), but can only keep moves that show on the board. Thus, pass moves and captured stones disappear from your game record. Also, when **Altering the Board** a legal board image is maintained. This means that if you add moves that result in the capture or suicide of stones, those stones are removed.

When you exit **Altering the Board**, by selecting **Stop!**, a dialogue box appears asking you whether you would like to incorporate your edits as part of your game. If you would, select **Yes**.

Using **Score** from while **Altering the Board** is a convenient way to ask: "Suppose I played this and he played that... would this be good for me?" and have NEMESIS give you the answer.

Black Moves (⌘ B)

Select **Black Moves** to add black stones anywhere on the Go board. After selecting this option, click the mouse on each intersection where you want to place a black stone. Note: you can not place a black stone anywhere which would result in an illegal board position (i.e. by suiciding a single stone), but you can overwrite white stones.

White Moves (⌘ W)

Select **White Moves** to add white stones anywhere on the Go board. After selecting this option, click the mouse on each intersection where you want to place a white stone. Note: you can not place a white stone anywhere which would result in an illegal board position (i.e. by suiciding a single stone), but you can overwrite Black stones.

Alternating Moves (⌘ A)

Select **Alternating Moves** to add black and white stones anywhere on the Go board. After selecting this option, just click the mouse on each intersection where you want to place a stone. The first stone will be black if White played the last move, or will be white if Black just played. Note: you can not place a stone anywhere which would result in an illegal board position (i.e. by suiciding a single stone), but you can overwrite stones of the opposite color.

Alternating Moves is *not* designed to be used for recording games. You should set both players to **Human** and play out the game. This allows NEMESIS to track captured stones properly.

Exploring a Variation: If you want to visualize what might have happened, **Alternating Stones** lets you lay out a variant set of moves without interfering with your game. Back up the game to the situation to be explored and select **Alternating Stones**. Enter moves for both sides until you have seen what happens. Then press **Stop!** and discard the edits. You will be back in your game as before and can **Replay** or **Instant Replay** to return to where you interrupted your game.

Empty Intersections (⌘ E)

Select **Empty Intersections** to remove stones anywhere on the Go board. After selecting this option, click the mouse on each intersection where you want to remove a stone.

Joseki Menu

Joseki	
Joseki Corner	⌘J
Moves	⌘M
✓Next Sequence	⌘]
Prior Sequence	⌘[
Guess	⌘G

If you have just purchased the Joseki Tutor, be sure to read your *read.me* file found on your disk so that you properly install this program.

Joseki are sequences of moves considered to be equitable for both players, usually involving the opening play in a corner. These sequences have been developed over centuries through study and analysis by professional players. Joseki are usually studied by those players who have a solid grasp of Go fundamentals. When you can beat NEMESIS regularly (in an even game - at her strongest setting! - *without cheating!*), you are ready for our Joseki Tutor. Go Master, by itself, comes with a sample of only 40 joseki which work primarily on empty corners.

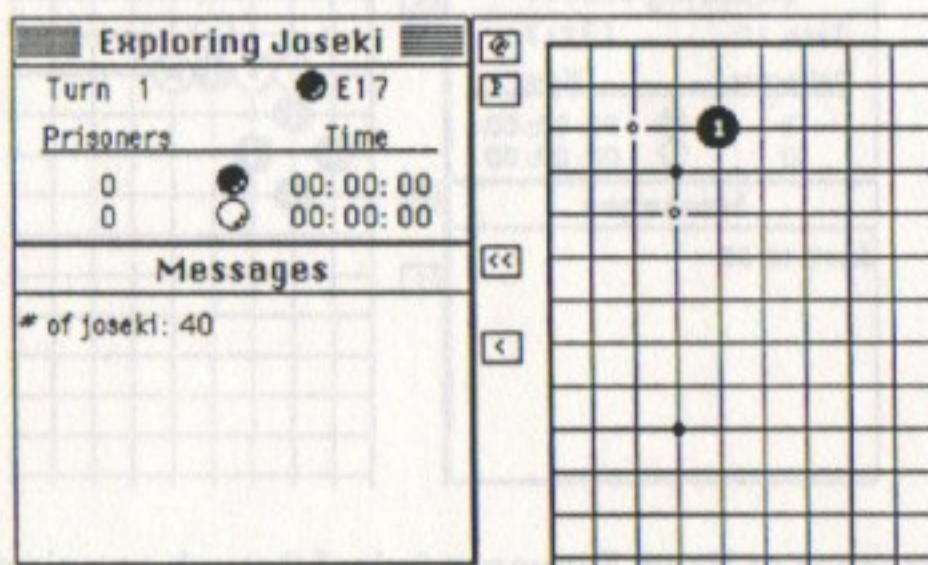
Joseki exist only on a 19x19 board, and are the lazy man's shortcut to *perfect* play. Unlike a chess opening, which covers the entire board, a joseki covers only part of the board. While any joseki is *locally* equitable by definition, judging its appropriateness requires analysis of the situation on the board as a whole. To assist you in this analysis, NEMESIS' Joseki Tutor™ has over 1000 joseki and is designed to let you explore them in the context of your games.

Joseki Corner (⌘ J)

Choose Joseki Corner to begin your exploration and click in any corner. This automatically selects the Moves option. You may switch corners anytime by choosing Joseki Corner again.

Hint (⌘ H) [in the Play Menu] ?

Moves (⌘ M)



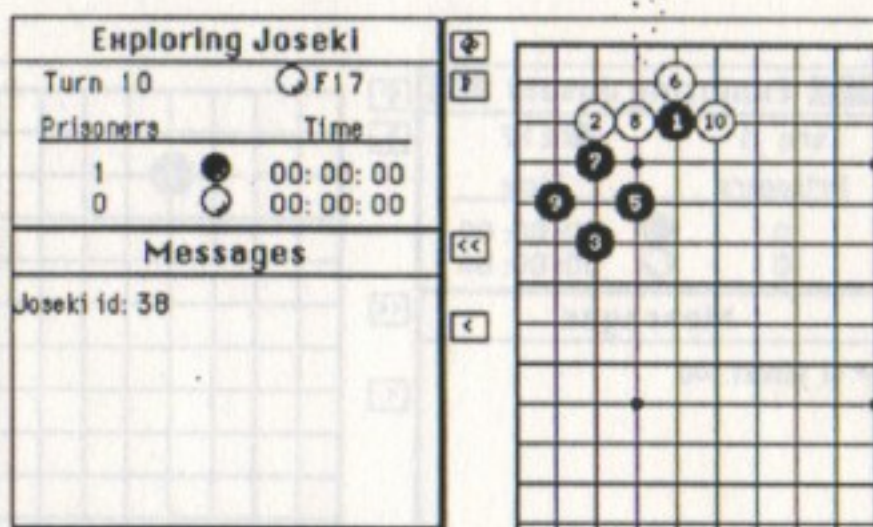
Once you begin **Exploring Joseki** you are allowed to place hypothetical moves anywhere on the board. When you want assistance, select **Hint** or **Moves**.

Hint: When you select **Hint** you will be shown all available joseki moves for the player whose turn is next (they appear as boxes for Black's choices or circles for White's). The **Messages Window** will display the number of joseki sequences left. Just press **RETURN** or **ENTER** and NEMESIS will play one of the indicated moves at random. If you wish to pick your own choice, click on any intersection. If you have selected a non-joseki move, then the next time you ask for information via **Hint**, **Next Sequence** or by turning on **Moves**, NEMESIS will tell you *No more joseki moves*.

Moves: Each time you make a move you can use **Hint** for a suggestion. Or, if you turn on **Moves**, NEMESIS automatically computes the next joseki suggestions each time you place a move. Select **Moves** again to turn off these automatic suggestions. When you select **Joseki Corner**, **Moves** is automatically turned on.

Next Sequence (⌘ J) ☐

Prior Sequence (⌘ I) ☐



Choose **Next Sequence** or **Prior Sequence** to leaf through completed joseki lines. Each time you select these options, NEMESIS will display all the moves of the joseki line and will show the joseki number in the Messages Window. Using these options is like turning the pages of a joseki dictionary, with one joseki per page. When you reach the end of the *book* in some direction, NEMESIS will beep and redisplay the current sequence. However, if the corner is symmetric, NEMESIS will automatically switch orientation (once) and continue from the opposite end of the *book*.

Examining completed sequences is ideal for determining the best joseki in game context. If you select this option part way through a joseki, the lines will be limited to continuations from that position. It is not enough to find a line you like. You must also verify that your opponent cannot redirect the line into an unfavorable variation. You may check for unfavorable variations by using **Unplay** to retract all but the first move of the sequence (or use ⌘ D [Delete all Moves], ⌘ R [Replay]), and then leaf through all remaining sequences. If you locate an unfavorable joseki, repeat this process to see if you could redirect this line into another favorable line. The message displays the number of each joseki line for easier identification. All joseki will not be displayed in any one exploration. Some are content sensitive and only appear in specific board settings.

If you like a particular joseki and wish to incorporate it into your game, leave it completely played out on the board and select **Play**. A dialog box will appear and give you the option to keep or discard the hypothetical joseki moves as part of your game. (In this context answer Yes.)

To explore different joseki lines, use **Unplay** or **Delete all Moves** to back up to some earlier position, and then select **Hint**, turn on **Moves**, **Guess**, or choose a move.

Guess (⌘ G)

Choose **Guess** at any point to test your knowledge of the remaining joseki lines. When you select **Guess**, NEMESIS will take the side of the next player and pick randomly among his available choices. She will not show you your choices, even if **Moves** has been selected. It's your job to guess a valid choice. (Of course you can always use **Hint**.) NEMESIS will beep until you succeed, at which point she will pick her next random choice.

If you want to study one particular joseki only which you have completed either move by move, or using completed sequences, **Unplay** all of the joseki moves or select **Delete all Moves**. Now you can either review the joseki using **Replay Move** or **Instant Replay** (having selected a replay speed from the **Play Menu**).

Using Pass (⌘ -) from the Play Menu: If it is *your turn* when you enter Joseki Exploration, you will see *your* next moves in the corner selected. Selecting **Pass** instead of playing a move will effectively change whose turn it is, so that you will see *your opponent's* next moves instead, (if any). In a game this pass would be identical to playing elsewhere on the board. If there are no opponent's next moves, there are no joseki allowing you to play elsewhere. In this case NEMESIS will say *No more joseki moves left*. You can always retract your pass with **Unplay Move** or select **Pass** again to switch whose turn is next.

*Note: whenever you take back moves while Exploring Joseki, either via **Unplay** or **Delete all Moves**, NEMESIS turns off the current display option. When you have reached your desired position, you must reselect a display option using **Hint**, **Guess**, or **Next Sequence** (i.e. you no longer in any of these options). Or - you can play a move and if **Moves** is turned on, NEMESIS will automatically continue displaying your choices.*

Tactics Menu

Tactics	
Tactics Target	⌘T
✓ Group Tactics	
String Tactics	
<hr/>	
Moves	⌘M
<hr/>	
Next Sequence	⌘]
Prior Sequence	⌘[
<hr/>	
Guess	⌘G

If you have just purchased the Tactical Wizard, be sure to read your read.me file found on your disk so that you properly install this program.

During a game you are constantly faced with problems involving the potential life and death of stones, either yours or your opponent's. NEMESIS' Tactical Wizard can assist you in analyzing these problems.

Go Master is equipped with a sample Tactical Wizard. While Exploring Tactics with this sample, the Search Width is restricted to 1. If the problem is not resolved using this single tactical line, NEMESIS will display the message *Uncertain Outcome*. A problem is considered resolved when the target is either killed or saved and NEMESIS cannot see an alternative line worth further exploration. The sample tutor restricts you to only viewing this first line. Given a simple problem, however, even her limited capacity is adequate. If you have purchased Tactical Wizard, NEMESIS will use her full capacity of unlimited Search Width to solve a problem.

Currently NEMESIS has the same limitation as the problem books. NEMESIS stops the sequence when it is *obvious* that the problem is solved. *Obvious*, however, is in the strength of the beholder. If you are a complete beginner and need guidance in understanding life and death, read *Elementary Tactics* in the *Instant Go* section. If you don't recognize the terms group, linkages, or eyes read the entire section first!

Tactics Target (⌘ T)

Choose **Tactics Target** to begin **Exploring Tactics** and click on a stone to designate the target you would like to kill or save. Whenever you have selected a black target and it is Black's turn NEMESIS will assume you want to save it; if it is White's turn she will assume you want to kill it. You may switch targets anytime by choosing **Tactics Target** again. Once you have selected a target, NEMESIS will allow you to enter whatever moves you would like. When you want advice from NEMESIS, you will need to select **Hint**, **Moves**, or **Next Sequence**. *Before selecting a target you may wish to turn on **Continuous Display** under **Tactics Controls** in **Setup Everything**.*

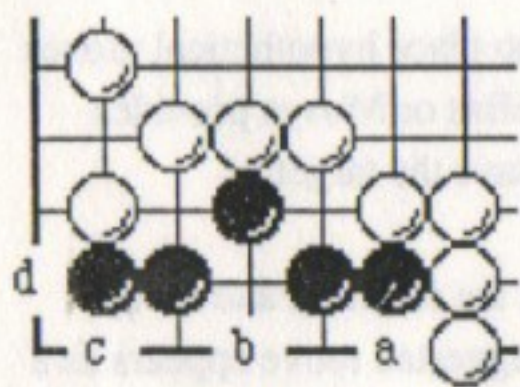


Figure 12a.

Figure 12a is a sample problem to be solved under **Group Tactics**. White wants to kill the group of Black stones. Moves *a, b, c, d* are a few reasonable first moves to select among.

Group Tactics

Group Tactics, when selected, means the target will be considered a group. If you don't understand what a group is, you should spend some time reading the section on *Instant Go*. Remember a Group is a set of strings of the same color connected by linkages. NEMESIS will perform analysis to make/prevent the formation of two eyes (permanent life). This is the classic *Tsume-Go* in Japanese problem books. In these books, the group is always already tightly surrounded, and the task is to kill or save the group, depending upon whose move it is. Thus NEMESIS will decline to analyze the target group if it is not enclosed tightly enough. Currently NEMESIS also does not handle groups with large territory boundaries (large-knights and double skip) without assistance.

String Tactics

When selected, **String Tactics** means the target will be treated as a string. NEMESIS will use simple capture/save techniques (temporary life) in which the target tries to gain enough liberties (currently 5) or counter-attack and capture surrounding stones while the attacker tries to surround the target and reduce its liberties. Currently NEMESIS will need your assistance to analyze ko (repetition) problems properly.

Hint (⌘ H) [in the Play Menu] ? Moves (⌘ M)

Once you begin **Exploring Tactics** you are allowed to place hypothetical moves anywhere on the board. When you want assistance, **Hint** or **Moves** provides manual or automatic recommended moves to kill or save the target.

Hint: When you select **Hint**, NEMESIS will analyze the situation and recommend the next move for whomever's turn it is. The suggested move appears as a solid black box if it is Black's turn or a circle if it is White's. If the suggestion results in the death of the target, the stones are shown faded (as they appear in the scoring mode). If the move leads to the life of the target, the stones retain their normal vitality. The **Messages Window** will also inform you what the final outcome is.

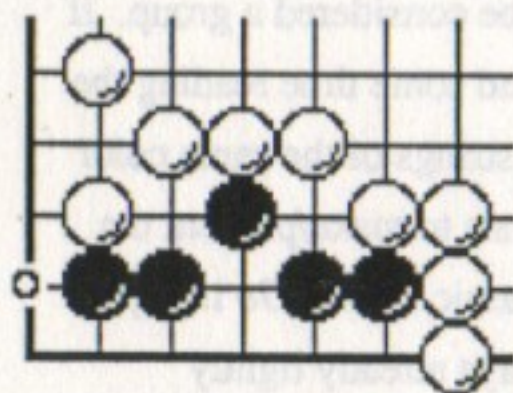


Figure 12b.

Figure 12b shows a sample solution hint for the problem in Figure 12a. Since it is White's turn, the suggestion shown is White's.

Selecting **Hint** again tells NEMESIS to compute a different choice. Of course, eventually NEMESIS will run out of reasonable choices, at which point she will give the message: *All Choices Rejected* and clear out your list of rejected moves (allowing her to start over in the future).

To make the suggested move, just click on the intersection or press **Return** or **Enter**. If you wish to try your own move click on another intersection.

Moves: Each time you make a move, you can use **Hint** for a suggestion or you can turn on **Moves** to have NEMESIS automatically compute the next suggestion. As soon as you place a move NEMESIS will again automatically suggest the next move. Select **Moves** again to turn off automatic move generation.

Making your own moves: Tactical Wizard is designed to interactively assist you in analyzing problems. You may speed up analysis or confine the analysis to particular variations by placing the moves you are sure of and asking NEMESIS for help for those moves you need assistance with. Alternatively you can find out why your move doesn't work by placing it and letting NEMESIS analyze the situation from there.

Next Sequence (⌘) ☐

Prior Sequence (⌘) ☐

Choose **Next Sequence** or **Prior Sequence** to leaf through completed tactical lines. The earliest sequences, by definition, must be failing lines for one player or another, and contain potential traps. Of course, with some opponents these lines will work anyway. Selecting **Next Sequence** again and again, shows how NEMESIS refines the line until she succeeds or determines that there is no solution. If the current player has a winning move, the final sequences always show the working technique. You can sometimes continue past winning solutions to examine alternate solutions. At the end of each line NEMESIS will respond with one of the following messages: *Target is Dead*, *Target is Alive*, *Target not enclosed tightly enough*, *Target Removed*, *Uncertain Outcome*, *All Choices Rejected*. The **Mouse Traps** [and] are not on the 9x9 board.

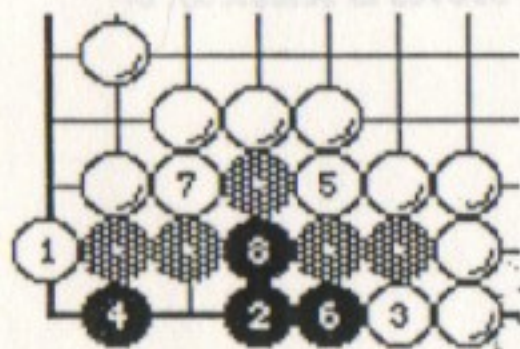


Figure 12c.

Figure 12c shows a sample solution sequence for the problem shown in Figure 12a.

If you like a particular tactical result and wish to incorporate it into your game, select **Stop!** and a dialog box will appear giving you the option to keep or discard the hypothetical moves as part of your game. (In this context answer **Yes.**)

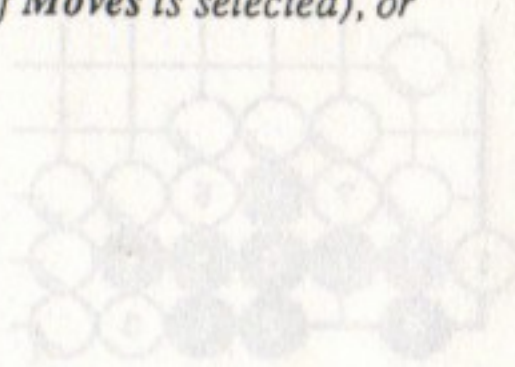
To leave **Next Sequence** or **Prior Sequence**, use **Unplay** or **Delete all Moves** to back up to some earlier position, and then select **Hint**, **Guess**, or choose a move.

Guess (⌘ G)

Choose **Guess** mode at any point to test yourself against NEMESIS. When you select **Guess**, NEMESIS will take the side of the next player and play her best move to kill or save the group. She will not show you your choice, even if you have selected **Moves**; it's your job to try to defeat her. (If you need help, you can use **Hint**.) You can play anywhere on the board and NEMESIS will respond to kill or save the target.

Using Pass (⌘ -) from the Play Menu: If it is *your turn* when you enter Tactical Wizard, then it is *your* next move for the target selected. Selecting **Pass** instead of playing a move will effectively change whose turn it is, so that it will be *your opponent's* next move instead. In a game this pass would be identical to playing elsewhere on the board. You can always retract your pass with **Unplay Move** or select **Pass** again to switch whose turn is next. **Pass** can also change the side NEMESIS takes in the **Guess** mode.

Note: whenever you take back moves during Exploring Tactics, either by Unplay or Delete all Moves, Nemesis turns off any current display option (Guess, or Next Sequence). When you have reached your desired position, you must either reselect a display option, use Hint (even if Moves is selected), or make a new move.



Diagrams Menu

Diagrams

Base position
lowercase letters
UPPERCASE LETTERS
White marks
Black marks
Variation stones

Selecting any item in the **Diagrams Menu** switches you into **Diagramming** mode. **Diagramming** allows you to create a variety of Go diagrams, including variations, game records, and Go problems. All of the Go diagrams in our user manual were made with NEMESIS' **Diagramming** and a screen capture program. Higher resolution can be achieved via a high quality printer.

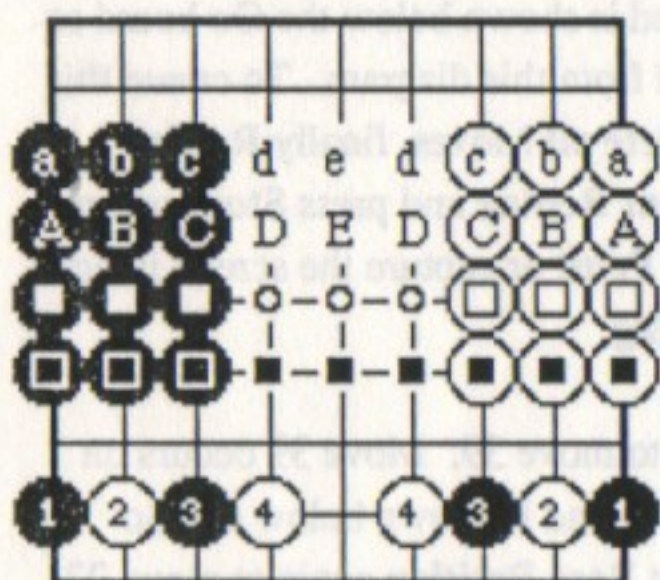
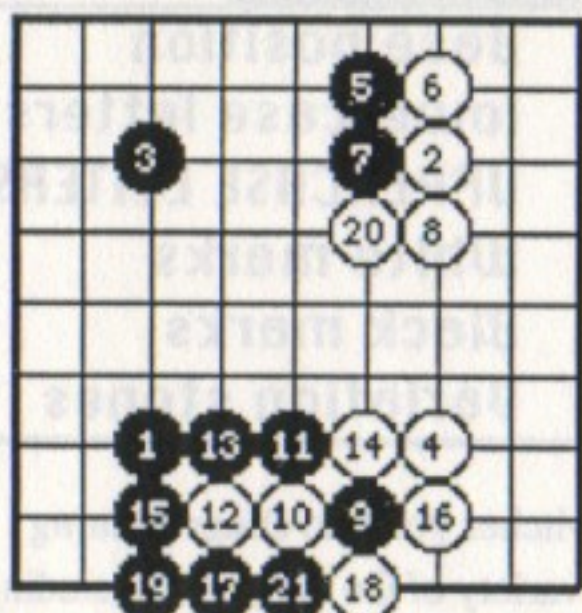


Figure 13 shows the variety of markings supported by **Diagramming** as they appear on each color stone and empty intersection. These markings were made with lowercase letters, UPPERCASE LETTERS, White marks, Black marks, and Variation stones.

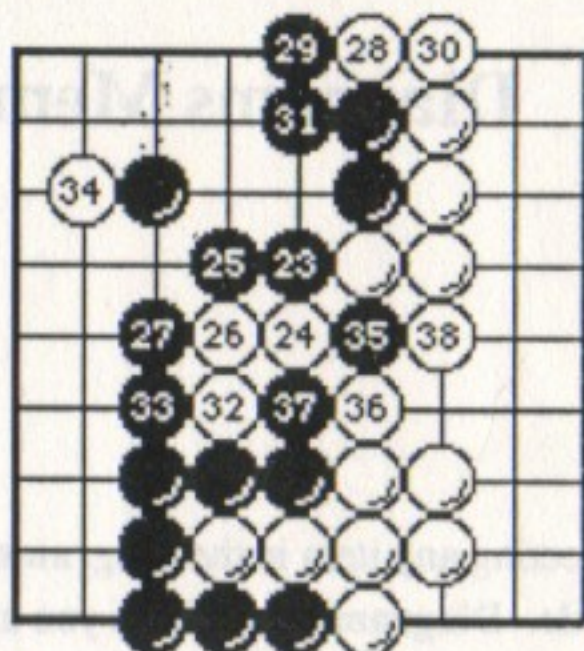
Markings are associated with a specific turn and are automatically removed if you back up or go forward in your game record. You can erase any individual mark by clicking on the intersection again. This has no effect on your position in the current marking sequence selected.

Figures 14a and 14b are two diagrams which depict an entire game record.



22@9

Figure 14a. (1-22)



39@24

Figure 14a. (23-39)

Figure 14a. contains the first 22 moves of the game. Move 22 occurs on the intersection previously occupied by move 9 and is shown below the Go board as 22@9. Note: captured stones are not removed from this diagram. To create this diagram first select **Base position**, second **Delete all Moves**, finally **Replay Move** until you replay 22 moves (or use **Instant Replay** and press **Stop!** when you reach move 22). At this point you should **Print** or capture the screen image. *Saving the game will not save any Diagramming.*

Figure 14b starts with move 23 and continues to move 39. Move 39 occurs on the intersection previously occupied by move 24 and is shown below the Go board as 39@24. To create this diagram select **Base Position** again at move 22. This unnumbers the first twenty-two stones, then removes all captured stones, and clears the list of repeated moves on occupied intersections below the board. Next, select **Instant Replay**. This completes the second diagram and you are ready to **Print**.

Base position

Base position unnumbers all the stones on the board and displays the actual appearance of the board. In Figure 14b the **Base position** was selected at turn twenty-two. If Figure 14b was created immediately after creating the diagram in Figure 14a, the board would have been restored to the way it looked at turn twenty-two, removing all captured stones showing in 14a.

Base position is initially set to turn zero until you reset it with this command. All moves placed hereafter by **Replay Move** or **Instant Replay** will be numbered with their correct turn numbers. If you have replayed some moves and select **Base position** again, the board is reset to the new base. If you **Unplay** a move placed prior to the **Base position**, the **Base position** resets back to the turn number before that unplayed move. If you then **Replay** that move, it will be numbered (i. e., not a part of the new **Base position**). Selecting **Variation stones** automatically resets the **Base Position** to the current turn.

Stones replayed after the **Base position** stay on the board even if they are captured. If a stone played occurs on an already occupied intersection, it is shown below the board (e. g., in Figure 14a 22@9 appears because stone 22 was played on the same intersection as stone 9).

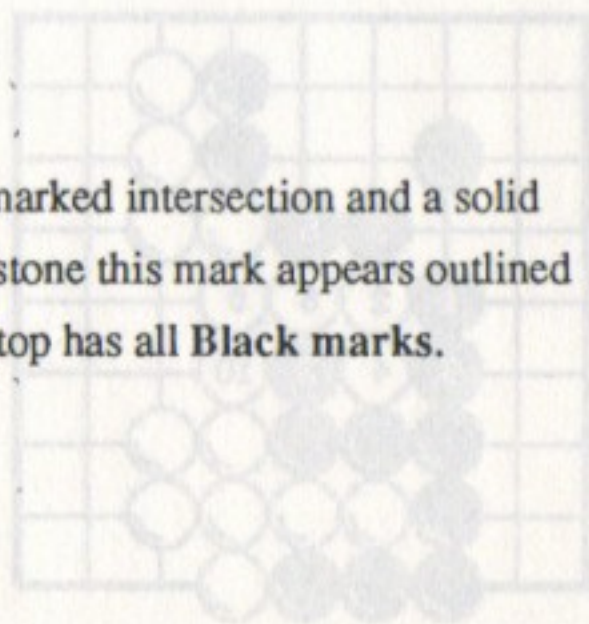
lowercase letters

UPPERCASE LETTERS

Select either **lowercase letters** or **UPPERCASE LETTERS** and click on any intersection or stone to add the letter *a* or *A* to it. Select another board intersection to place *b* or *B*. Each time you select an unmarked intersection the next letter of the alphabet will be displayed. If you select an intersection that is already marked, the first time you click the marking will be removed; the second time you click the next letter in sequence will be displayed. Reselecting these options restarts the lettering at *a* or *A*.

Black marks

After selecting **Black marks**, click on any unmarked intersection and a solid black square will be placed there. On a black stone this mark appears outlined in white. In Figure 13, the sixth line from the top has all **Black marks**.



White marks

After selecting **White marks**, click on an empty intersection and a white circle will be placed there. Click on an unmarked black stone and a solid white square will be placed there; click on an unmarked white stone and a black outlined white square will be shown. In Figure 13, the fifth line from the top has all **White marks**.

Variation stones

Selecting **Variation stones** is analogous to lowercase letters. The difference is that you are adding alternating black and white stones numbered in sequence starting with the number one (1). The first stone is the color of the player whose turn it is when you select **Variation stones**. Variations don't ever start by skipping the current player's turn (you can of course get around this restriction by passing in your game and then selecting **Variation stones**).

Variation stones are *not* real moves and cannot be unplayed. To remove a variation stone click on it again in this mode (this would be equivalent to passing or playing elsewhere). Each time you select **Variation stones**, the numbering restarts at one, providing multiple sequences on the board with the same numbers. In Figure 13 the bottom row of stones depicts two variation sequences. Each sequence starts with a black stone because it was Black's turn in the game when we selected **Variation stones**.

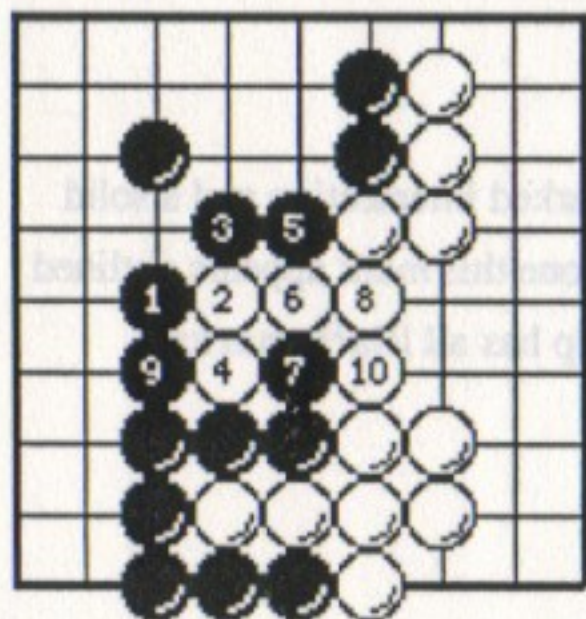


Figure 14c. A Variation

Figure 14c is a variation diagram for the game showed in Figures 14a and 14b. To create this diagram follow the same steps to create 14a. Then select **Variation stones** and place the variation stones.

An Introduction to *Instant Go*

Material in this section is drawn from the articles entitled *Instant Go* by Bruce Wilcox. If you are new to Go, we suggest you try a few games with NEMESIS on a 9x9 board before reading further. Once you have mastered the theory in this section you will be ready to continue with the complete set of *Instant Go* articles. These articles are described in our brochure and are valuable to all Go players up to the three (3) dan level.

Linkages

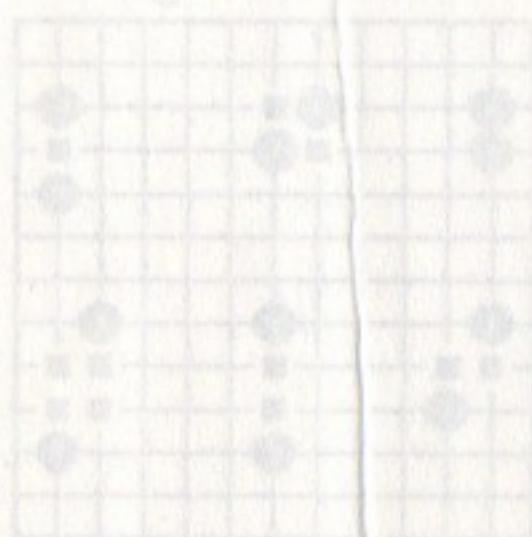
Linkages are specific relationships between close friendly stones (stones connected by adjacent horizontal or vertical lines). The stones which form the linkage are called endpoints. They may or may not be part of a longer string. Edge linkages are special in that there is only one endpoint; the edge of the board acts as the other endpoint.

Below are the only linkage patterns. The in-line linkage shown below is the linkage which connects stones in the same string. The other linkages described are usually not between stones in the same string. If a pair of stones for a stone and the edge) is not joined via one of the patterns below, it does not form a linkage. Shorter linkages are shown for longer ones. The linkages from shorter to longer are:

Edge Linkages



Stone Linkages



Link Type

- a in-line
- b diagonal
- c single-skip
- d small-knight
- e double-skip
- f large-knight
- g triple-skip

Elementary Tactics

When a non-Go player looks at the board, he sees lots of stones scattered here and there. At this level of perception, there are hundreds of points, and the non-Go player is quickly overwhelmed by it all. When a Go player looks at the board he sees groups of connected stones and fenced off vacant areas. There are only a small number of these, so he can quickly evaluate what is happening and focus his attention on the critical areas. The key to seeing the board this way is through linkages.

Linkages

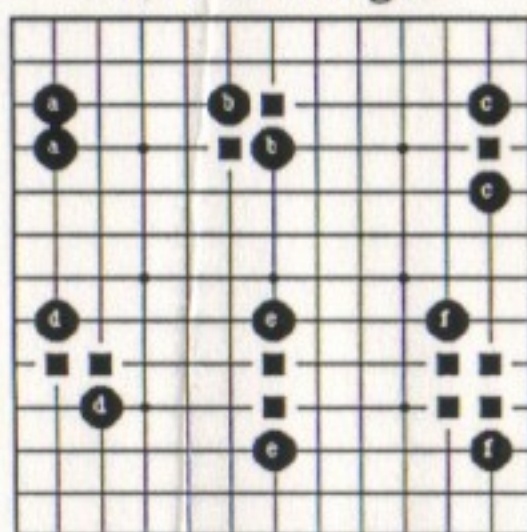
Linkages are specific relationships between close friendly stones (**Stone linkages**), or a stone and an edge (**Edge linkages**). Linkages provide connections between stones and form barriers which opposing stones cannot connect across. If you remember the definition of **String**, it is a set of stones solidly connected by adjacent horizontal or vertical lines. The stones which form the linkage are called **endpoints**, they may or may not be part of a longer **String**. **Edge linkages** are special in that there is only one real **endpoint**, the edge of the board acts as the other **endpoint**.

Below are the *only* linkage patterns. The **in-line** linkage shown below is the linkage which connects stones in the same **String**. The other linkages described are usually not between stones in the same **String**. If a pair of stones (or a stone and the edge) is not related via one of the patterns below, it does not form a linkage. Shorter linkages are stronger than longer ones. The linkages, from shortest to longest, are:

Link Type

- a in-line
- b diagonal
- c single-skip
- d small-knight
- e double-skip
- f large-knight
- g triple-skip

Stone Linkages



Edge Linkages

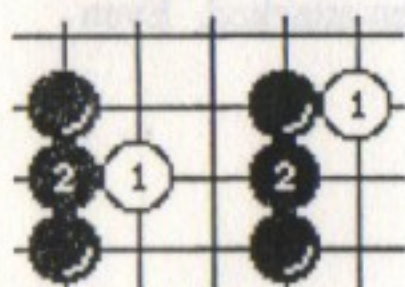


The intersections with bold boxes are linkage *path points* which can be used to join the linkage endpoints into a solid wall (**String**), or points which the enemy might occupy to disconnect your stones, so that your stones cannot form a single **String**.

Linkages can be *threatened* or *attacked*. These are two distinct concepts. A linkage is *threatened* by an enemy stone adjacent or diagonal to a *path point*. Whenever your linkage is threatened, immediately secure it by playing on the *path point* closest to the enemy stone.

Below are threats against stone linkages (1) and correct defenses (2). Edge linkages are handled similarly. **In-line** and **diagonal** linkages *cannot* be threatened.

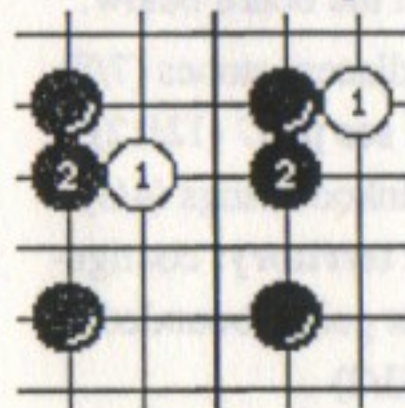
single-skip



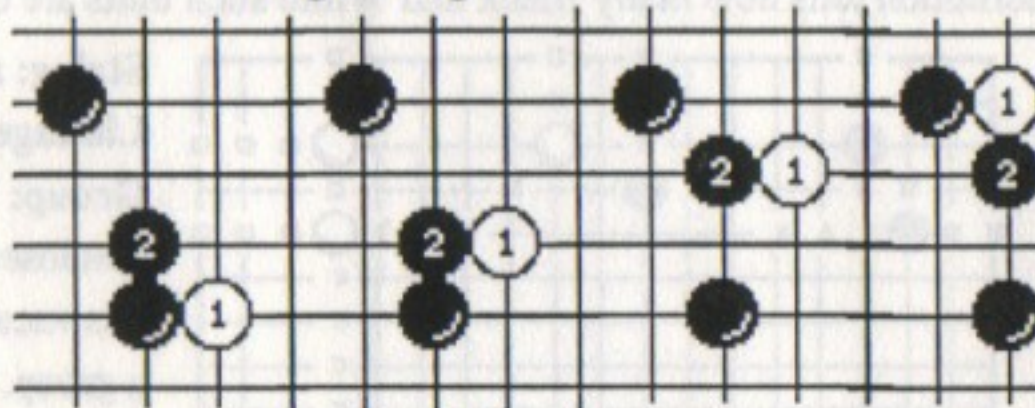
small-knight



double-skip

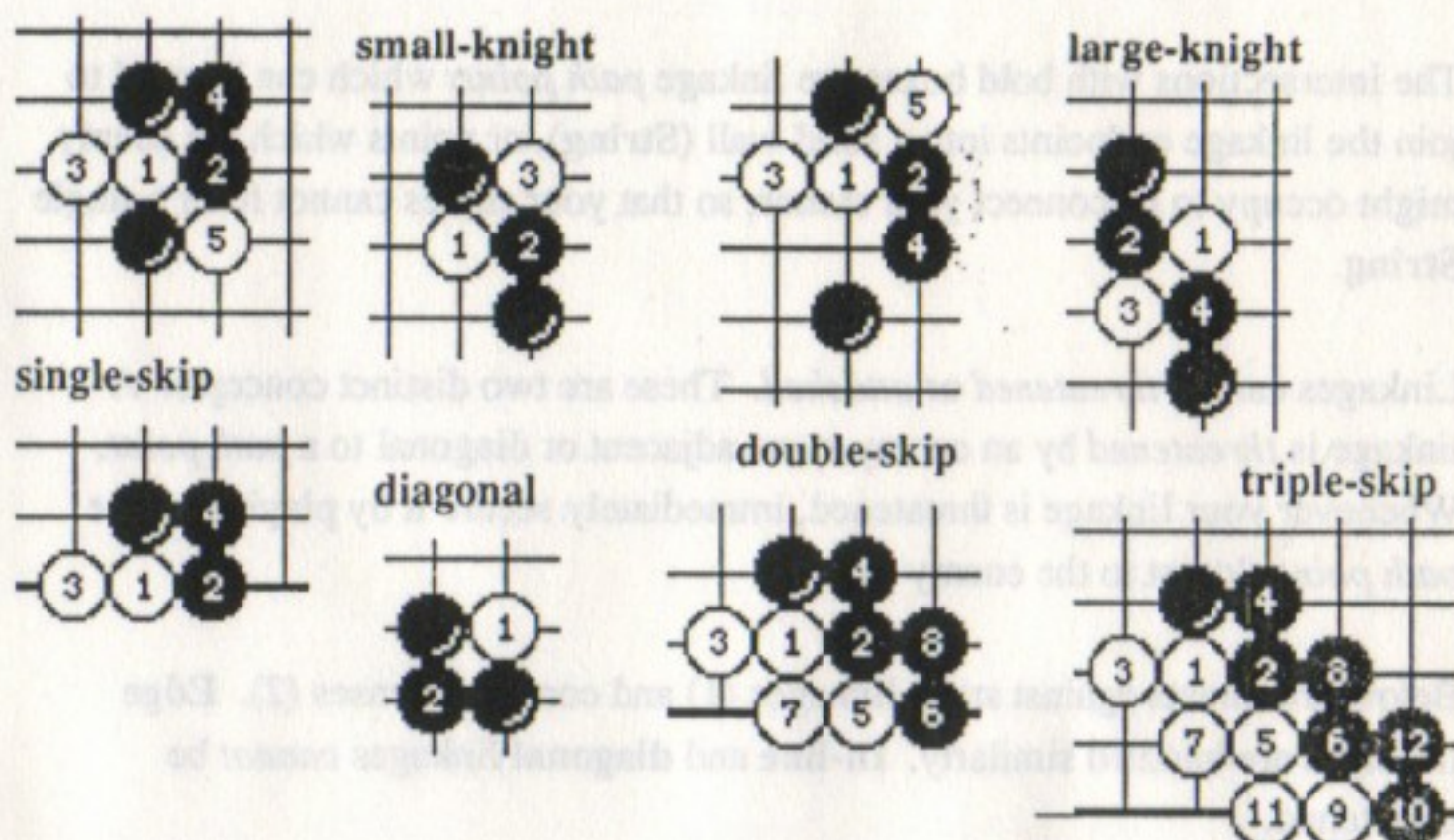


large-knight



A linkage is *attacked* whenever an enemy stone is directly upon a *path point*. When a linkage is attacked, defend the linkage *even if* you cannot rejoin the linkage endpoints. This will help you attack your opponent's stones later.

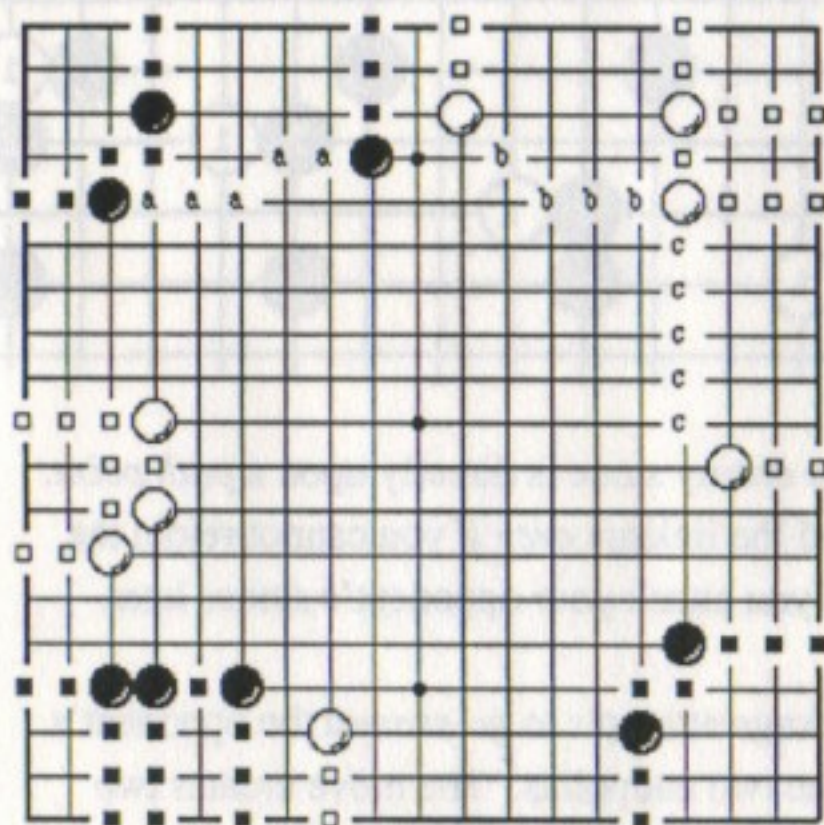
A move defending an attacked linkage attempts to *go around* the opponent's stone on the path point to rejoin the two endpoints. The move creates two shorter linkages, one from each endpoint to the defending move.



Above are attacks (1) against Black linkages and correct Black responses (2). Each response creates two shorter linkages which become the focus of continued attack and defense. Many linkages can be disconnected when attacked. Even so, they still separate enemy stones!

Board Perception

Now that you know linkages, you can perceive the board the way a strong Go player does. The basic perceptual terms are defined below. The (b/w) after a definition tells how many Black and White such units are on the board below.



- String:** adjacent stones (7/8)
- Linkage:** see p. 37 (12/12)
- Group:** linked strings (4/5)
- Enclosed territory:** contiguous vacant points bounded by a group. (3/2)
- Potential Territory:** vacant points between adjacent groups, bounded by sector lines. (1/2)
- Sector lines:** delimit the open boundary, (a, b, c), of potential territory. (1/2)

At the highest level, the board is composed of positions (contiguous groups and potential territories) and neutral regions. The neutral regions are in the center and between opposing stones along the edges of the board. The goal of each player is to protect his own positions, carve out more from the neutral regions, and restrict or destroy enemy positions.

Principles of Defense and Offense

Defense

The tactical rule is: *Defend linkages*. Otherwise everything falls apart.

The strategic rule is: *Avoid enclosure*. Otherwise you run a high risk of being captured, and everything else of yours becomes implicitly weaker.

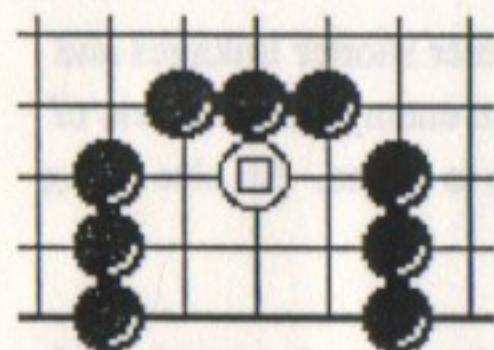
Offense

The tactical rule is: *Attack from a safe base*. Keep yourself linked to an existing group to ward off counterattack.

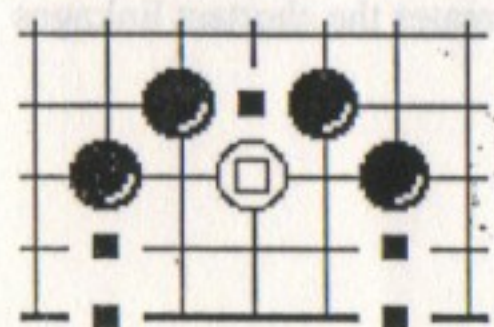
The strategic rule is: *Keep your opponent separated*. The more Groups he has to manage, the harder it will be for him to manage them simultaneously.

Enclosing Technique

To enclose stones you must build a wall around them. Stones in this wall must be joined together by linkage connections (*i.e. linked*).



Solid walls (**in-line** linkages) are inefficient and the enemy can easily escape as she is unlikely to wait for you to finish your trap.

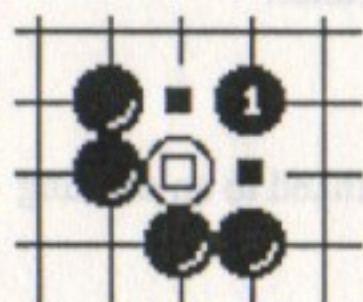


Walls using other linkages achieve the same effect faster. If White tries to escape by attacking the containing linkages, Black defends them to keep White enclosed.

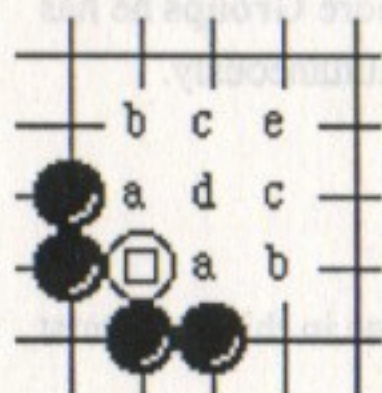
To enclose stones, locate where they are open to the rest of the board, then make a move which creates two linkages closing off the open access. An enclosing move always creates *at least* two linkages, and always results in the target being surrounded by a continuous ring of stones, path points, and possibly the edge.



White's stone can expand in the directions shown.



B1 creates two single skip linkages to contain White.



All possible enclosing moves are indicated.
Symmetric moves use the same letter.

To select from among the many enclosing choices: prefer shorter linkages and do not create linkages under *attack* (i.e., which have an enemy stone on one of their path points). Threatened linkages are acceptable to create. All else being equal, choose the move with the most liberties.

In the diagram above, *a* and *b* moves create linkages already under attack, and so must be rejected. *c*, *d*, *e* are acceptable choices. *d* creates the shortest linkages and is therefore best.

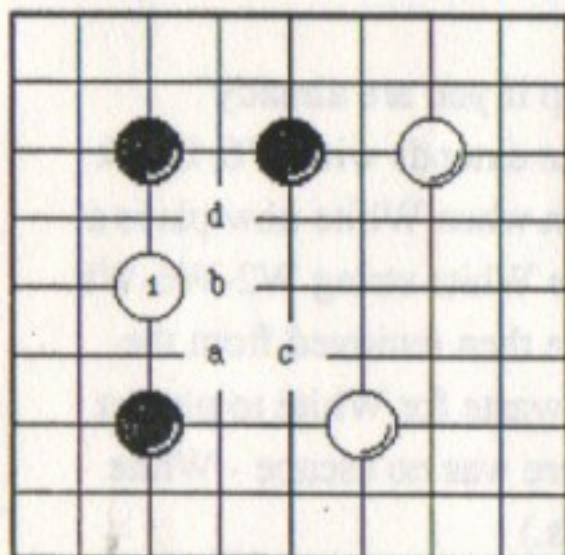
Killing Stones

Now that you can enclose, you are licensed to kill. Killing consists of two steps:

1) Enclose target and then 2) Fill liberties.

1) Enclose Target

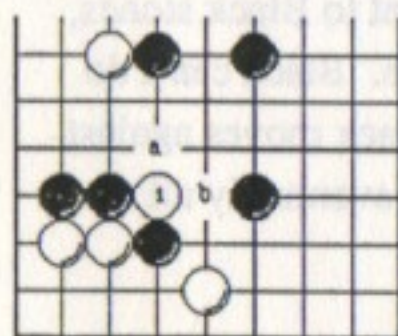
Whatever your target is, you must first enclose it. If you don't, the target can expand and become harder to kill, if not impossible.



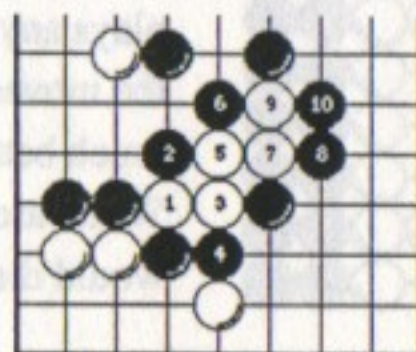
White has just invaded Black's position with W1. If Black wants to kill W1, he must first enclose it with *a*, *b*, or *c*. *a* and *b* are similar. *c* is too weak, since moves *a* and *b* result in smaller linkages. *d* is not possible, since it creates a **large-knight** linkage already under attack. *a* is the correct choice, since it would have more liberties than *b*.

2) Fill liberties

You can only fill one liberty per turn, but it matters which one, since your opponent's stones can get different liberty counts depending on where he plays. Fill his *best liberty* first, the one which would gain him the most liberties if he played there. However, play only liberty-filling moves that are adjacent or diagonal from one of your existing stones (*i.e. Attack from a safe base*).



The Situation



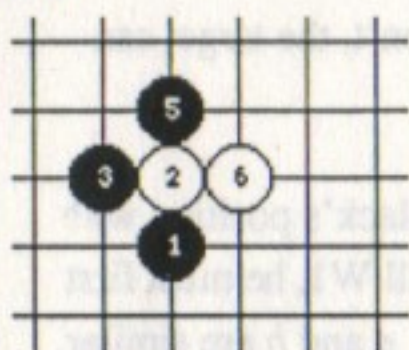
The Solution

W1 is already enclosed, with liberties *a* & *b*. The best liberty is *a*. If White moved there his stones would have four (4) liberties. If White moved at *b*, he would only have 3 liberties. *a* is diagonal from a safe base, so it is acceptable. If Black repeatedly applies the liberty-filling rules with each move, he will succeed in capturing W1.

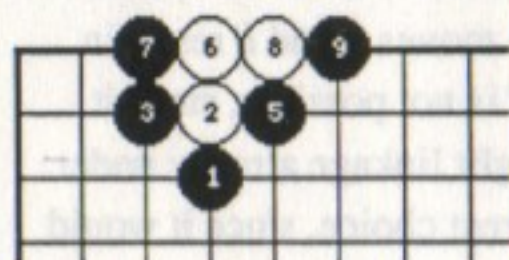
Saving Stones

Temporarily

Stones threatened with capture can be temporarily saved in two ways. Either put another stone adjacent to the one to be saved (*extend*), or *capture* an adjacent stone.



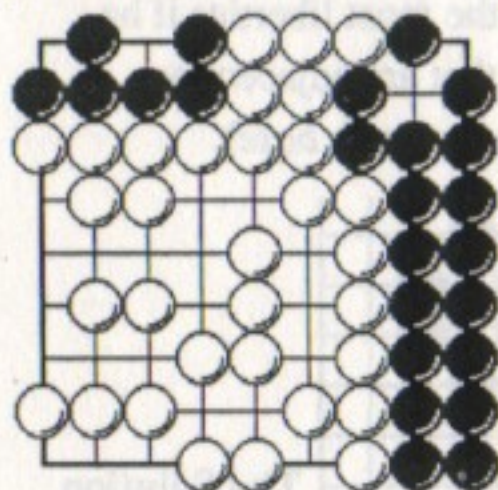
Black threatens W2 with B5. White saves his stone by extending with W6. It will take Black three (3) more turns to capture.



Extending doesn't help if you are already enclosed. When White extends with W6, Black persists with B7. Even when White now plays at W8, Black B9 kills the White string W2-W6-W8. Note: W2-W6-W8 are then removed from the board. (It was a total waste for White to play at W6 and W8, since there was no escape - White only increased her loss.)

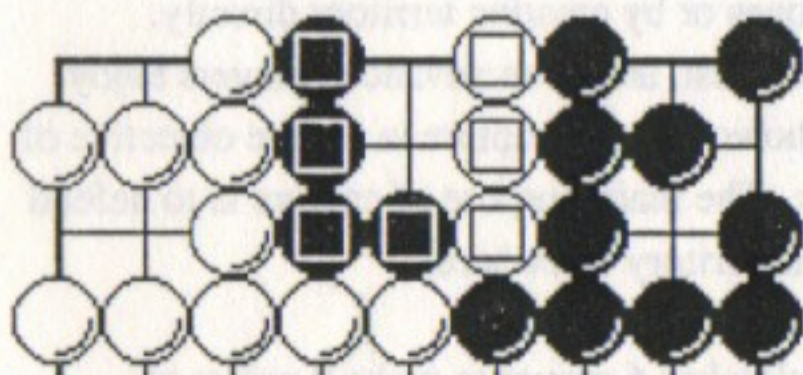
Permanently

While threatened stones can be saved temporarily, the opponent can always persist. What is needed is permanent salvation.

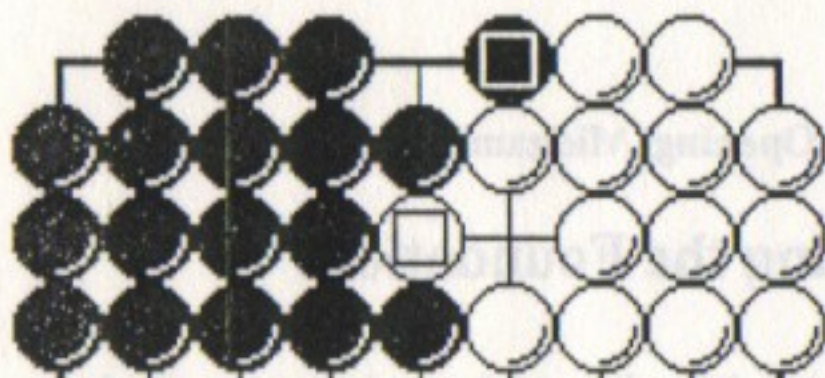


Presto! Nothing here can be killed! If White plays any more moves adjacent to Black stones, the moves are dead via suicide. Black can't do much better. While not all Black moves against White are immediate suicide, eventually all would die.

The above diagram illustrates eyes, single vacant points surrounded by a player's stones. Enemy stones placed within an eye die immediately, unless they are capturing. Groups with two eyes can never be killed, since a move on any one eye does not capture stones. More generally, groups with two separate territories cannot be killed, since each can become an eye. Likewise, a big enough territory can always be split in two.



Here is an unusual form of life. Neither player can attack on either liberty of the marked stones without also making it possible for his opponent to kill her stones. This is a *seki* (stalemate). The two shared liberties belong to no one, and will not be counted in the final score.



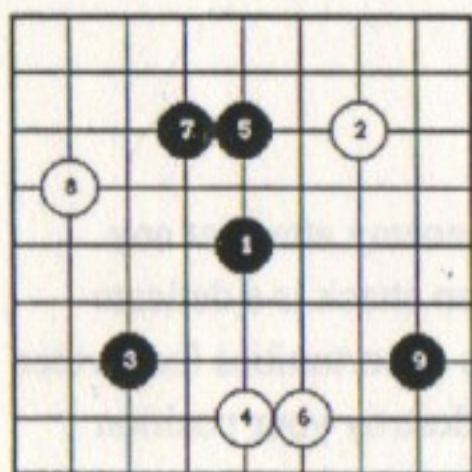
One last bizarre form of life is **Double Ko**. Whenever one player captures a stone, the other player captures the other stone. No one can be killed. Eventually both must pass to avoid board repetition.

Elementary Strategy

Game Themes

Creation versus Destruction

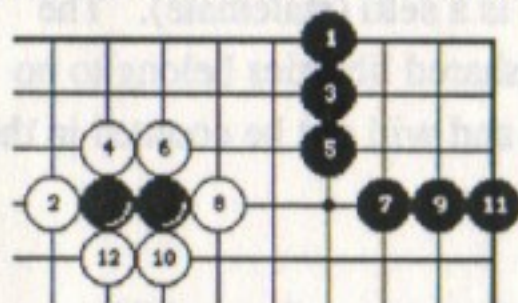
Go has two basic themes: creation and destruction. Each turn you must decide whether to fortify your own positions or to attack your opponent's. In some situations the choice is forced; in others the choice is a matter of personal preference. Because the standard board is so big (19x19), you may also sometimes completely ignore the opponent's moves in one area by playing elsewhere.



The ultimate in playing elsewhere is *mirror Go*. After taking the center, Black mirrors White's moves. This has even been done in professional games. This strategy was also used against NEMESIS during his first computer Go tournament. After turn 350 the game was still tied. Luckily, when NEMESIS then passed, the rival program lost by continuing to play.

Capture versus Territory

You can make points by capturing stones or by creating territory directly. Beginners are often overcome by blood lust, and even advanced players enjoy the thrill of the hunt. Keep in mind, however, that capture is not the objective of the game—making the most points is. The main purpose of capture is to defend your claims. It is often better to make territory elsewhere.



Black takes 6 moves to make 9 points of territory. White takes 6 moves to make 4 points by capture (2 territory and 2 prisoners).

Game Phases

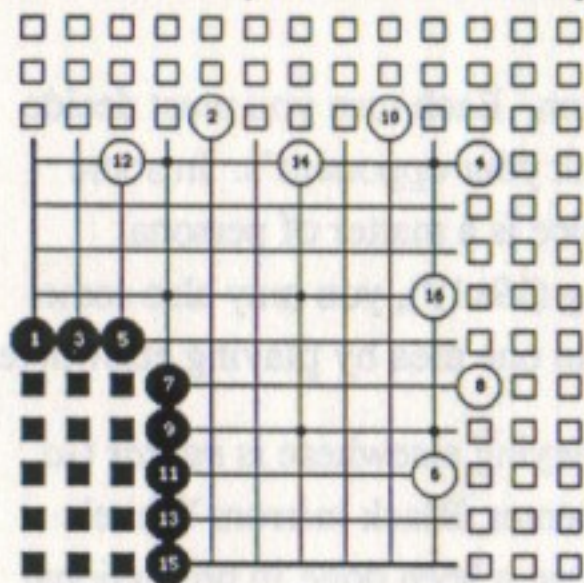
Each game consists of three phases: Opening, Midgame, and Endgame.

Opening: Laying the Foundations

Normally both players begin by staking their claim to the various empty regions of the board. This is called the opening.

Sketching

A novice might begin by placing his stones in a line to build a wall, then build successive walls to enclose territory. This is a sure way to lose. The way to win is to distribute your stones broadly at first and later link them. This is sketching.



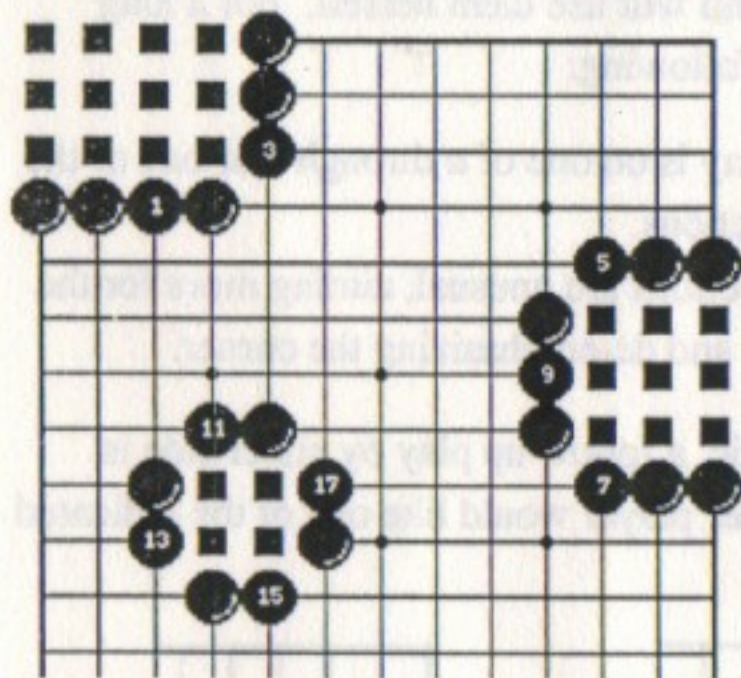
Black has secured 15 points.

White controls 65 points. Even if Black can reduce White by half, White will win easily.

Sketching, by its very nature, creates positions open to enemy attack at any moment. When to reinforce your territory to ward off an attack is a delicate matter of timing. If you defend too soon, you will miss opportunities for further expansion. If you wait too long, your opponent might destroy your position without cost to himself.

The Edge

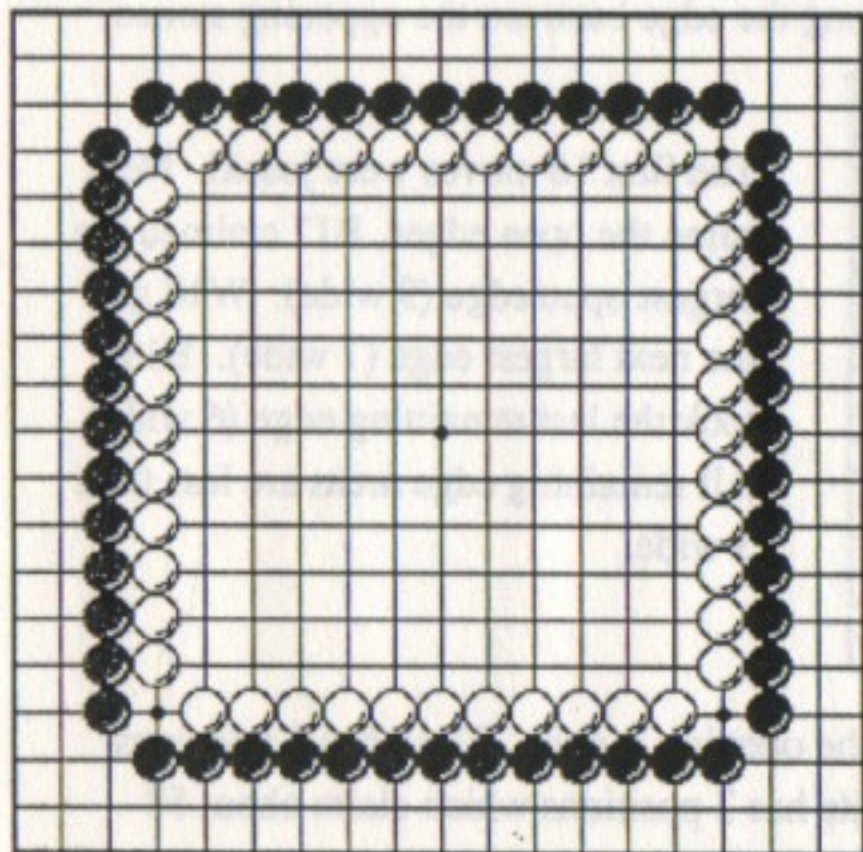
When sketching, use the edges as part of the boundary. This reduces the number of moves needed to control an area.



The edge gives you more for less. A 12 point corner is firmly sketched in 2 moves and completed in 7. A 9 point side is firmly sketched in 3 moves and completed in 9. A 4 point center is firmly sketched in 4 moves and completed in 8.

3rd and 4th Lines

To take advantage of the edge, you should begin sketching in the corners and then spread out to the sides. But where should you play? The answer is on the 3rd and 4th lines from the board's edge.



This diagram shows the comparative value of the 3rd and 4th lines.

Black uses 52 stones to make 140 points (2.7 pts. per stone).

White uses 44 stones to make 121 points (2.75 pts per stone).

The point/stone ratio is worse on any other line.

Corner Moves (Joseki)

Over the centuries, standard sequences have been developed in the corners which are considered equitable for both players. These are called joseki. NEMESIS can show you many joseki, and will use them herself. For a long time you can survive knowing only the following:



Usually opening play is on one of *a* through *c* or one of the highlighted intersections.

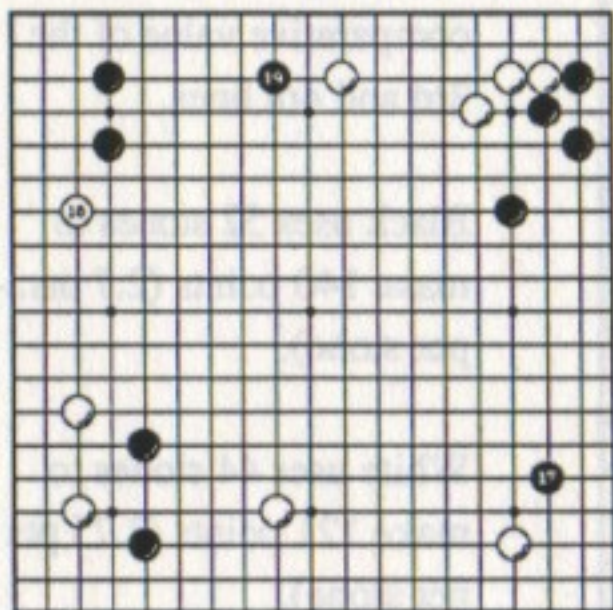
Highlighted intersections are unusual, aiming more for the corresponding side and de-emphasizing the corner.

If the first move in a corner is asymmetric, a follow up play by either side is equally big. In the diagrams below, either player would like one of the indicated points, usually in the order shown.



Widest Open Edge

The rule for playing on the sides of the board is to play in the widest unclaimed edge area (between opposing stones), if it is at least 3 points wide. To decide how wide it is, count the points along the edge between the opposing stones.



The first 16 moves were joseki. Next came the open edges. B17 claimed the largest open edge (9 wide). W18 got the next largest edge (7 wide). B19 took the last remaining edge (6 wide). All remaining edge areas are less than 3 wide.

At the end of the above diagram, the opening is over. Black has 3 positions which claim about 64 points. White has 3 positions which claim about 58 points. In usual tournament play, White is given points called *komi* to compensate him for playing second. Usual *komi* is 5.5 to 8.5 points (thus there can be no tie game). With *komi* added to White's score, the game is still close.

Midgame: Attack and Defense

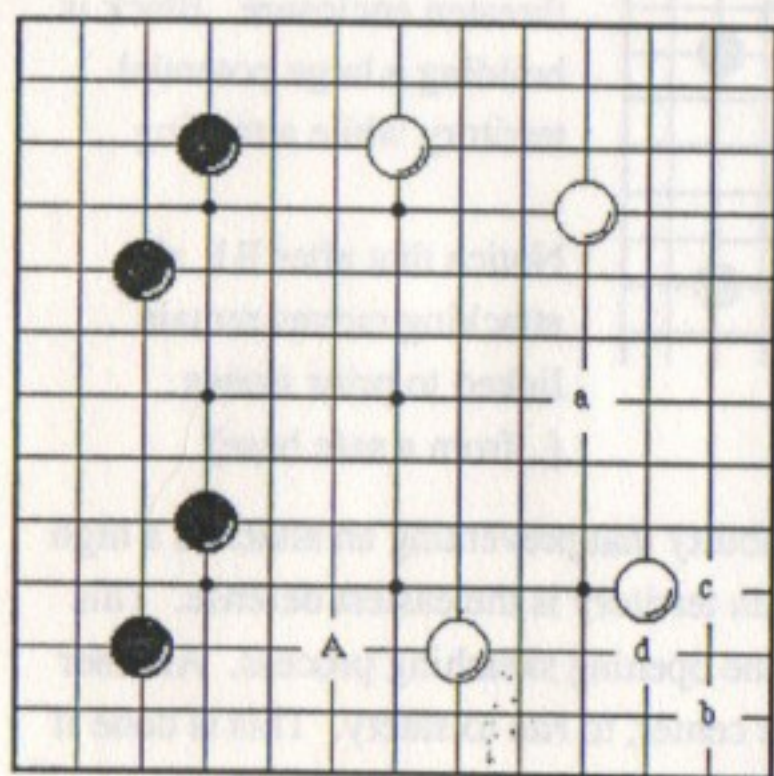
During the midgame, positions are secured or attacked. The midgame normally begins when all opening moves are exhausted. However, if a player concludes he is falling behind—that his positions are smaller than his opponent's, he must declare war! He must invade his enemy's open areas before they become secure. This begins the midgame, even though the opening is not complete.

The midgame is often filled with excitement. A weak group, such as that created by an invasion, can be tortured for many turns as it attempts to live. During this phase, losing a strategic group may cause you to lose the entire game.

Attacking Open Areas: Invasion

Invading (placing a stone in an enemy's territory) creates a weak group subject to severe enemy attack. Invading is best done only when you are losing. If you must invade, do so in the middle of a large open area: this will give the invading stone room run to safety or make life locally.

If a large open area is not available, then the enemy should be drawn into a contact fight (a fight in which opposing stones touch). Contact forces the opponent to spend time defending his weak stones (those with few liberties) and keeps him from utilizing his positional advantage. Look for opportunities to sacrifice a few worthless stones to let others live.



White's claims are double Black's (70 to 35). For Black to continue the opening with A would be foolish.

Black should invade the open area near *a*. Invading at *b* is a mistake; the area is not open. If Black must invade near here, he should engage in a contact fight with *c* or *d*.

If White plays first, *a* is a good defense.

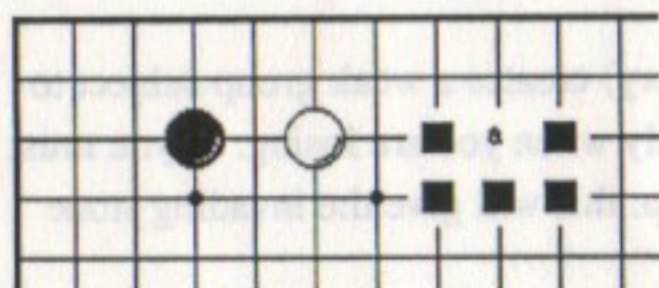
Defending Open Areas: Linkages

Defense is easy. Just keep adding stones until everything is linked up. Then secure all of your linkages.

Attacking Groups: Squeezing

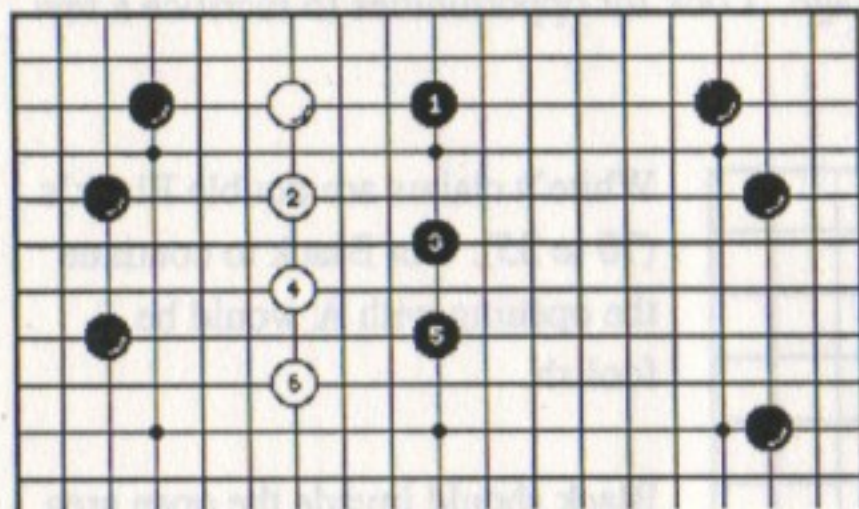
Rarely can you kill a group you attack. Nevertheless, attacking is the key to victory. This is because you can often combine an attacking move and a territory move into one play. This is not usually true for defensive moves. Thus when you attack, you get "free" value.

To begin an attack, play an edge squeeze. This prevents the target from securing life-giving territory immediately.



Black should play *a* or on a highlighted intersection. This prevents White from extending along the edge for territory.

Once you've kept him from easy life, threaten to enclose him. This continued squeezing forces him to run away, while you build a wall to make territory. If he fails to run, enclose him.

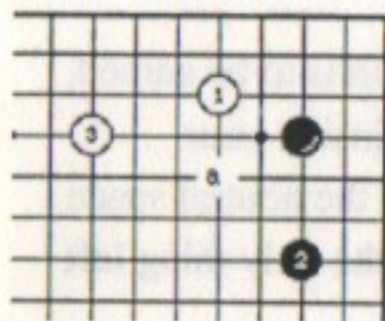


Black squeezes on the edge with B1, then continues to threaten enclosure. Black is building a large potential territory while attacking.

Notice that after B1, all attacking moves remain linked to prior stones (...from a safe base).

Defending Groups: Extending

A group under attack is such a severe liability that preventing an attack is a high priority. Extending along the edge to gain territory is the easiest defense. This is so valuable that it often intrudes into the opening sketching process. Another defense consists of extending toward the center, to *run* to safety. This is done if there is no possibility of expansion along the edge.



In this simple corner sequence, White attacks Black with W1. Rather than be squeezed, Black extends for territory with B2. White then does likewise with W3. Black could choose to squeeze W1 by playing B2 near W3. White would then have to run (e.g. to *a*).

Endgame: Last Minute Quibbling

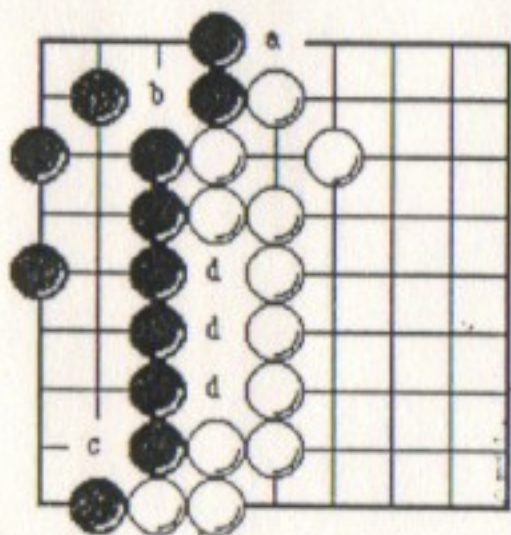
Eventually the battles of the midgame are resolved—all areas are well defined and all groups are alive or dead. In the final phase both players quibble over boundary placement until there are no more profitable moves left.

The endgame may only consist of quibbling, but as with all petty disputes, it lasts long after the major arguments have been settled. The opening typically lasts 40-60 moves, with the midgame continuing for another 60-100 moves. The endgame drags on for 150-200 moves, and you must remain ever vigilant, since many points can still be gained or lost.

Before ending the game, territories must be secured against two weaknesses: gaps and defects, then any neutral points should be played on. Finally, you should pass.

Gaps and Defects

Gaps are places in the boundary of territory where no stone exists. The enemy can march safely through a gap, destroying territory. A defect is a place where two boundary stones are only diagonally joined. If the enemy plays on the defect he keeps the stones from joining, possibly capturing one of them. If so, the defect is dangerous, and a play should be made to secure it.

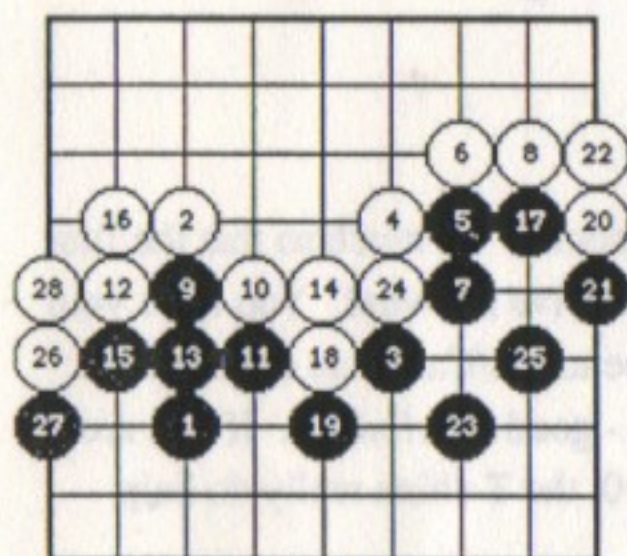


a is a gap, thru which Black can enter White's territory. *b* & *c* are defects. If White plays at *b* his stone can be captured immediately. If White plays at *c*, White will kill a Black stone shortly thereafter. *c* is a dangerous defect, which Black should protect as soon as possible. *d*'s are neutral points. They can never be territory, and should be taken when all other points have been resolved.

Passing

Why do players pass? They pass because there are no more points to be gained. Playing inside your own territory cannot gain points. Playing inside your opponent's territory usually leads to a quick death. So if all of the neutral space has been claimed and all gaps and defects have been handled, the only thing left to do is pass.

Sample Game

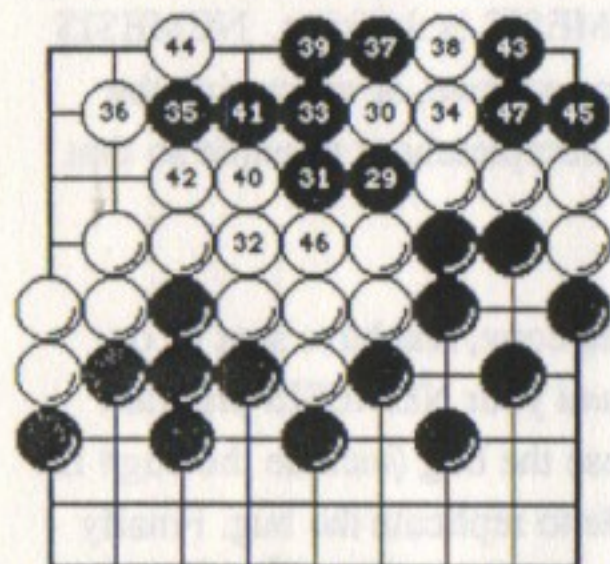


Game Record 1 (moves 1-28)

The game begins peacefully with both players quickly taking the corners. the opening ends with W4.

Black heads for the endgame with B5, aiming to dent White's boundary. The rest of this diagram shows the endgame carried out to apparent conclusion.

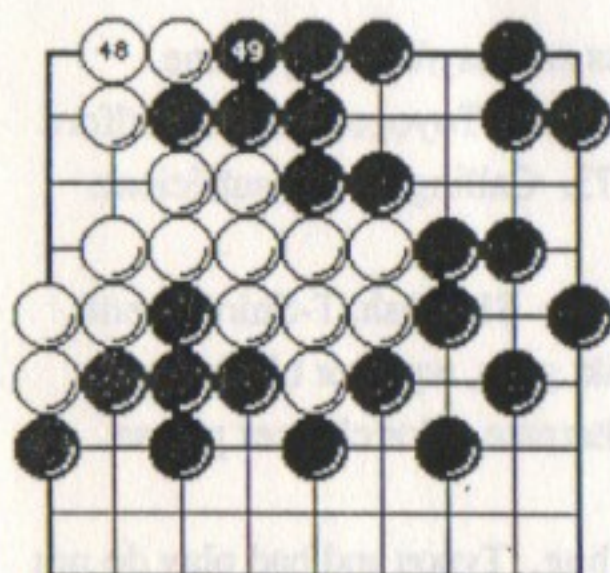
If both sides now passed, White would win. Black=40 White=41



Game Record 2 (moves 29-47)

But...

Whereas Black has dutifully protected her defects, White has not. Black plays B29 to see what happens, and White's position crumbles.



Game Record 3 (moves 48-49)

White tries to defend with W30, but in the sequence to B47 she loses 7 stones.

After B49 both players pass. The final score is:

Black=59 White=22

Since all points belong to one side or the other, the score must add up to 81 (9x9).

In this example: $59+22=81$.

Policies (Advantages) for Registered Users ONLY!

Bug Reporting

Bugs

If you discover a bug, we would like to know about it. So much so that the first qualified person to report a particular bug will receive a reward. You have your choice of \$10, a t-shirt (\$12 value) (Shipped free to US/Canadian destinations only), or a credit applicable to future purchases - good indefinitely. If you are one of the many who really doesn't want the \$10, the T-shirts really do help spread Go!

There are two types of bugs you may encounter - those when you are working with the interface and those that occur while NEMESIS is thinking. NEMESIS is thinking when she is giving you a hint, selecting a move, or estimating the score. Please describe how the bug happened as completely as possible so that we can re-create the bug.

To qualify for a reward you must own a registered copy, and have sent us on your original disk (if possible) the game record *and* your NEMESIS program file, along with a clear explanation of how to cause the bug (include the bug# if NEMESIS volunteers one). We must also be able to replicate the bug. Finally you must be the first! When two or more users report a bug the postmark or date of receipt (if there is no postmark) is used.

Send your disk along with your name and address and day/evening phone number (include your registration # if you know it) to: Toyogo, Inc. 76 Bedford Street, Suite #34, Lexington, Massachusetts 02173. Calling us is insufficient.

Please specify which type of reward you would like: \$10 cash, T-Shirt, Credit. For the T-shirt, specify color: (white, yellow, pink, gray, aqua, or blue), and size: (X-large, large, medium, small). Give us alternate color choices please.

Toyogo has the final word on what constitutes a bug. Typos and bad play do not qualify though we are glad to hear about them.

Suggestions

We are interested in improving the game and welcome suggestions as well as examples of poor play. While we can't promise it will be helpful or addressed in the next release, we will consider all suggestions seriously and will eventually respond. Examples of particularly bad play or consistent *holes* in NEMESIS' play is helpful to us as we use these examples in our test screen of our future versions.

Other NEAT Policies

If you are not the first to report a particular bug, if or when we have fixed it in your version release, you'll be sent the fixed program. This may include fixes to bugs you haven't found.

All future products as well as version upgrades are offered to registered users at a discount. Our newest product **NEMESIS™ Tactical Wizard™** will be discounted \$20 off the retail price of \$59 if you own **NEMESIS™ Go Master®** prior to Tactical Wizard's release in September of 1989. This offer will expire December 31, 1989.

Finally if you have the misfortune to misplace or destroy your diskette and have not had the foresight to back it up, we will be more than happy to replace it if you send us a blank diskette.