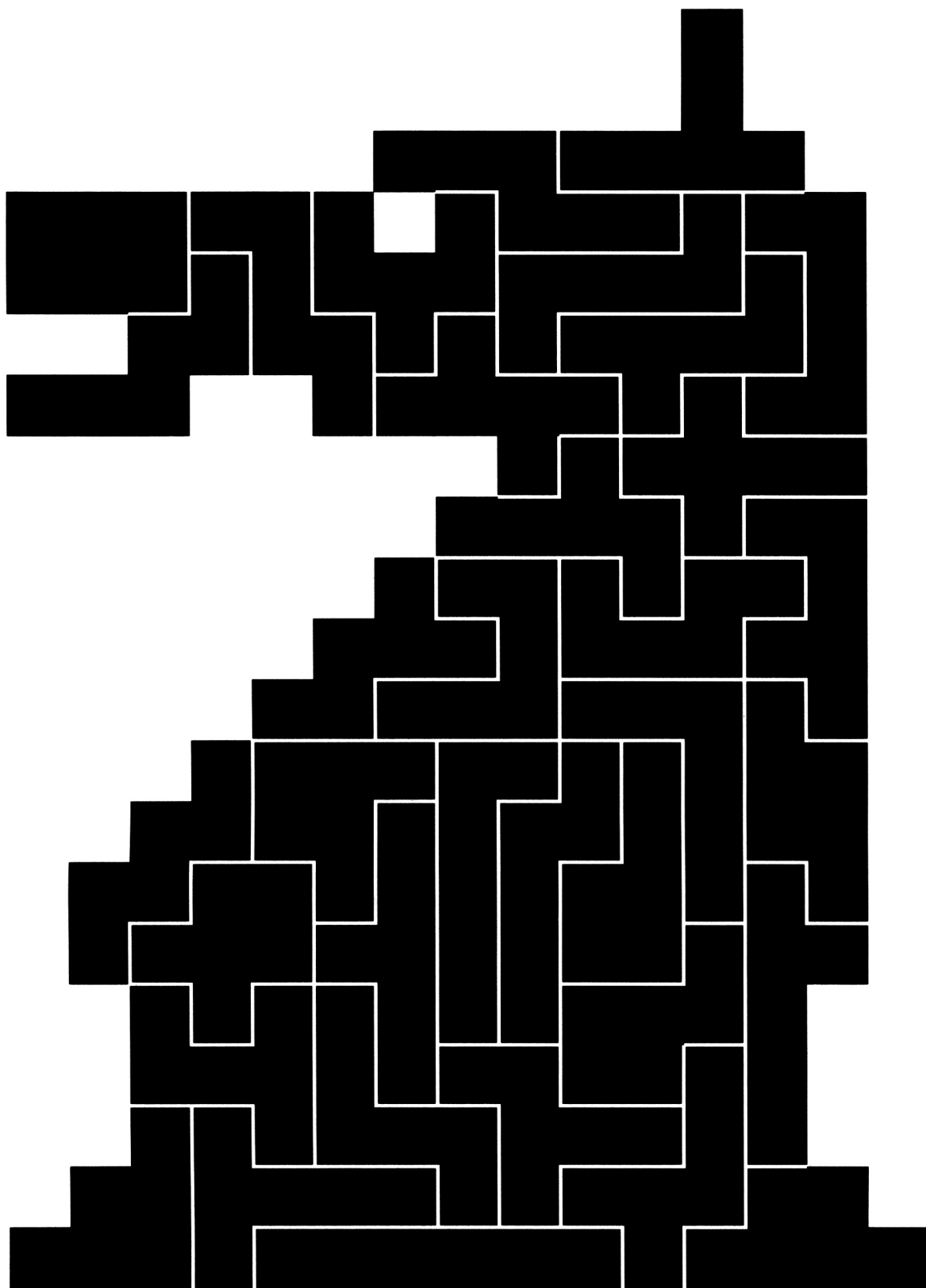


MacPoly



MacPoly™

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Warranty

If your disk should fail within 60 days of purchase, return it to Sabaki Corporation for a free replacement. After 60 days, please return it with \$5 and we will rush you a new one.

Trademarks

This manual uses the words **pentomino**, **Macintosh**, and **MacPoly**. **Pentomino** is a trademark of Dr. Solomon Golomb. **Macintosh** is a trademark licensed to Apple Computer, Inc. **MacPoly** is a trademark of Sabaki Corporation.

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DEDICATION

For Jocelyn

For Jocelyn and other kids who like jigsaw puzzles.

ACKNOWLEDGEMENTS

Thanks

Thanks first to Apple Computer, Inc. of Cupertino, California, for building **Macintoshes**. Manx Software Systems, Inc. of Shrewsbury, New Jersey, created the C compiler and tools I used to write **MacPoly**. This manual was typeset by the George Lithograph Co. of San Francisco.

Dr. Solomon Golomb is the father of polyominoes. Without his work, the subject would be unnamed and unknown. T.R. Dawson, editor of Fairy Chess Review, printed the most spectacular polyomino puzzles, including the knight on the cover.

I researched **MacPoly** in the New York Public Library, the Queensborough Public Library, and the Cleveland Public Library. Special thanks to the John G. White Chess Collection of the Cleveland Public Library for having copies of Fairy Chess Review.

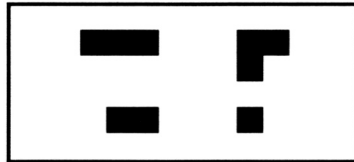
Friends, some of them from the New York MacUsers' Group, tested **MacPoly** and suggested improvements. Toby Horowitz and Debby Hershkowitz entered many puzzles into **MacPoly**.

Thank you all.

1. INTRODUCTION

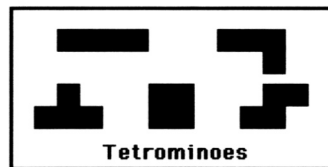
What Are Polyominoes?

Polyominoes are shapes made of squares. The simplest polyominoes are the monomino (one square), the domino (two squares) and the two triominoes (three squares each).



Tetrominoes and Pentominoes

There are five tetrominoes (four squares each) and twelve pentominoes (five squares each).



What Are Polyominoes Good For?

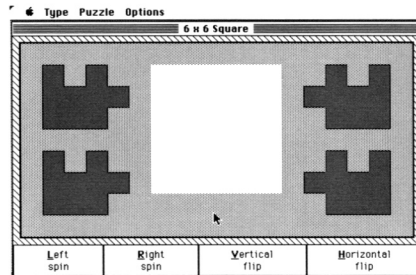
Jigsaw puzzles, like this one.



2. How To Play

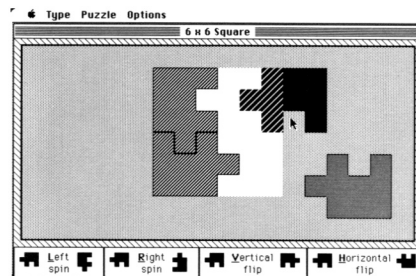
To Start

Insert the **MacPoly** disk and turn on the **Macintosh**; the first puzzle appears. The pieces are gray and the solution shape white.



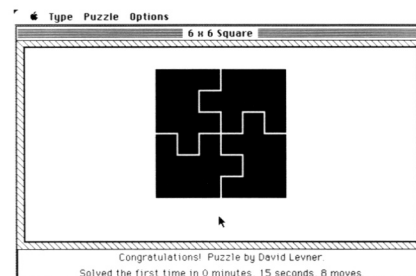
The Object

You must cover completely the white space with the gray pieces to solve the puzzle.



If You Succeed

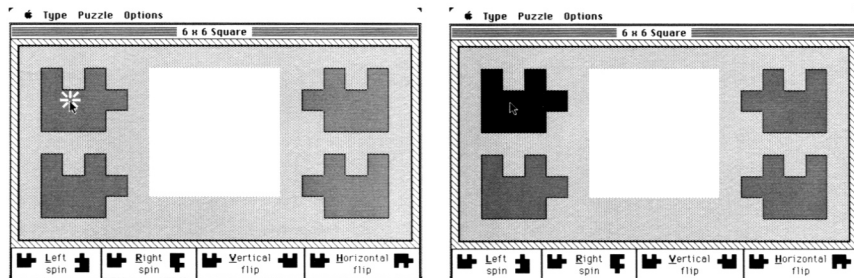
If you succeed, **MacPoly** congratulates you and redraws the pieces as black against a white background.



Most puzzles have more than one solution.

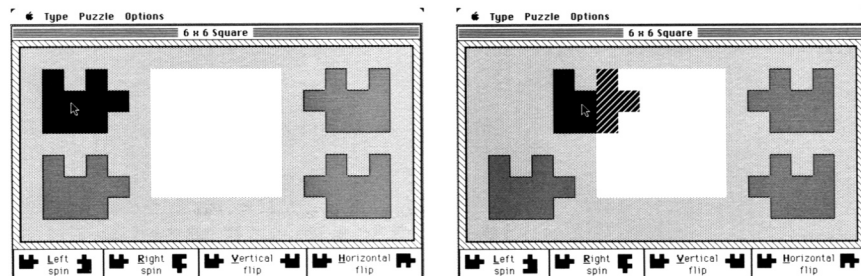
To Select A Piece

Clicking the mouse inside a piece selects it and turns it black.



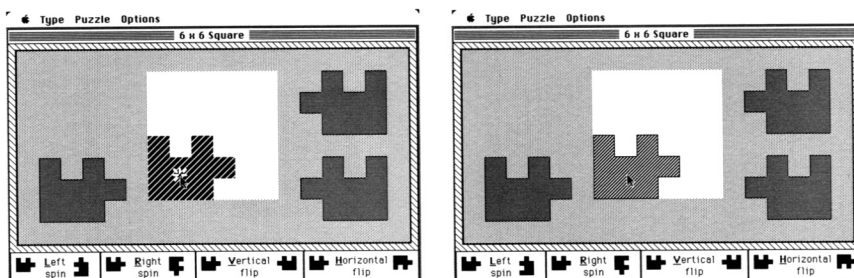
To Move The Piece

As you move the mouse, the piece is pulled along. You don't have to hold the mouse button down. The appearance of the piece changes as it moves from the light gray background into the white space.



To Let The Piece Go

Another mouse click releases the piece.



To Drag The Piece

To drag a piece requires four steps: (1) position the mouse inside the piece; (2) press and hold the mouse button down; (3) move the mouse; (4) let the button go. For another description of dragging, see page 55 of the **Macintosh Owners' Manual**.

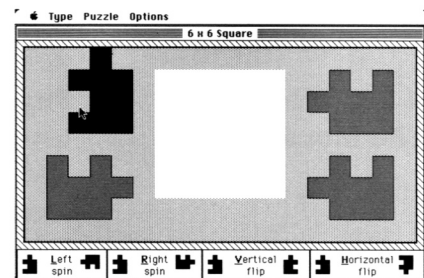
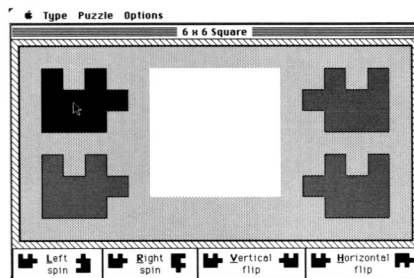
If Two Pieces Overlap

If two pieces cover one another, the overlap is drawn as dark gray.

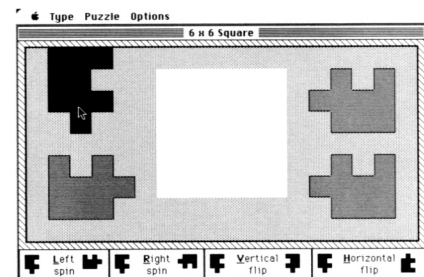
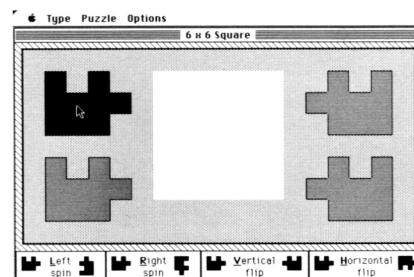


To Spin The Piece

Typing the letter 'L' spins the piece to the left (counter-clockwise).

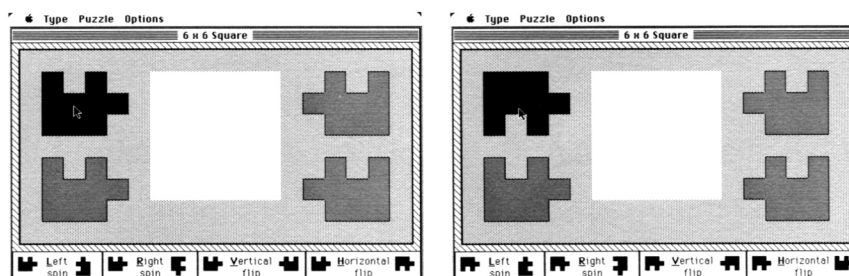


Typing 'R' spins the piece to the right (clockwise).

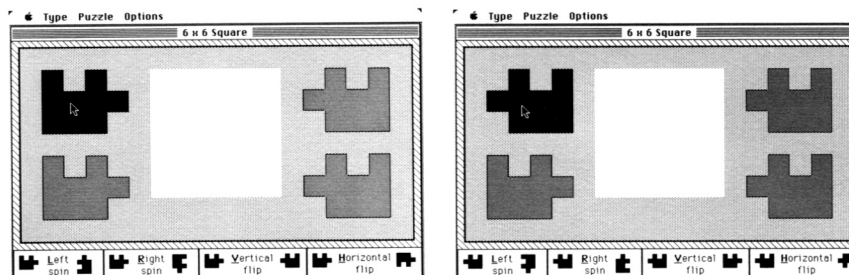


To Flip The Piece Over

Typing 'H' flips the piece about its horizontal axis.



Typing 'V' flips the piece about its vertical axis.

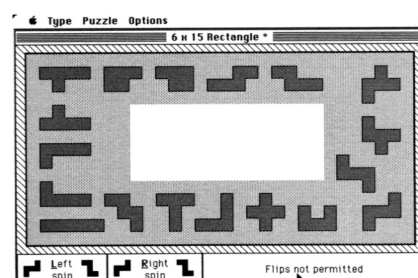


If You Prefer The Mouse

Flips and spins can also be done with mouse clicks in the lower four boxes. Be sure you first release the selected piece, and it turns gray. Otherwise it will be pulled along with the mouse.

One-Sided Polyominoes

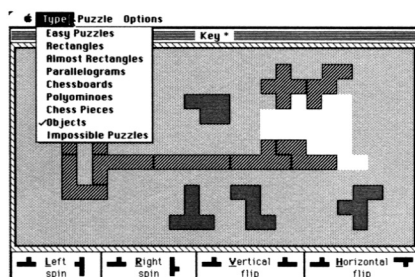
Some puzzles have one-sided polyominoes that don't flip over. You can't use the flip commands in these puzzles.



3. MacPoly's Menus

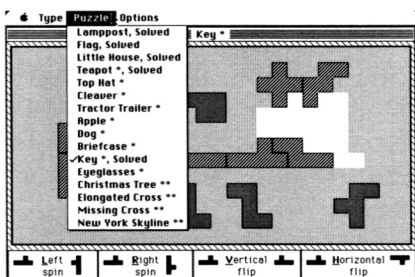
Type Menu

The Type menu lets you choose from nine kinds of puzzles: easy puzzles, rectangles, almost rectangles, parallelograms, polyominoes, chess boards, chess pieces, objects, and impossible puzzles.



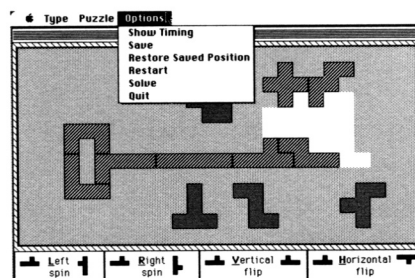
Puzzle Menu

For each type, you will find a selection of puzzles in the Puzzle menu. A puzzle with one or more stars (*) after its name is difficult. The word "Solved" appears after the name of a puzzle if you ever solved it.



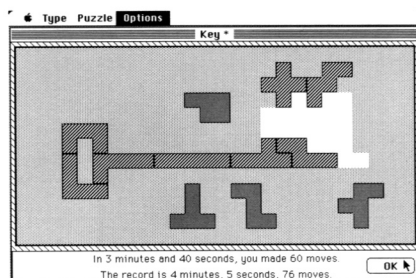
Options Menu

There are six commands under Options: Show Timing, Save, Restore Saved Position, Restart, Solve, and Quit.



Show Timing

Displays the time spent on the current puzzle, and the number of selection, spin, and flip operations performed. Click the OK button to resume playing.



Save

Saves the current arrangement, if no pieces overlap.

**Restore Saved
Position**

Sets up the pieces as they were last saved.

Restart

Returns the pieces to their original positions.

Solve

Draws a solution to the puzzle, if one exists. It may not be the only solution.

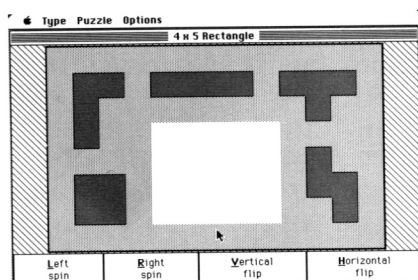
Quit

Ends **MacPoly** and returns to the **Macintosh** desktop.

4. Why Some Puzzles Are Impossible

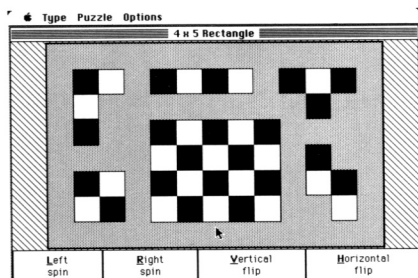
Impossible Puzzles Cannot Be Solved

One of the types of puzzles is “Impossible Puzzles”. Please don’t spend too much time working on them; there truly are no solutions. Instead, try to understand why the puzzles can’t be solved. For example, consider the 4 x 5 rectangle and the five tetrominoes.



Why The 4 x 5 Rectangle Can't Be Built

Coloring the squares black and white makes it easier to see why there is no solution. Four of the tetrominoes have two black squares and two white, and one has three black squares and one white, for a total of eleven black and nine white squares. The five of them can never cover a 4 x 5 rectangle which has ten black and ten white squares.



Math Books Explain Why Other Puzzles Are Impossible

Checkerboard reasoning explains the 4 x 5 rectangle, but other impossible puzzles are more complex. The book *Polyominoes*, listed in the bibliography, has two chapters describing why some puzzles can’t be solved.

5. Bibliography

Overview

This bibliography lists sources of previously published puzzles, from books and the magazine *Fairy Chess Review*.

Unfortunately, some of this material is hard to find. The best book on polyominoes (3) is out of print. *Fairy Chess Review* stopped publishing in the 1950s, and few copies remain.

Books

1. Dudney, H. E., *The Canterbury Puzzles*. New York: Dover Publications Inc., 1958, pages 119,120 and 221.
2. Gardner, Martin, *The Scientific American Book of Mathematical Puzzles and Diversions*, New York, Simon and Schuster, 1959, pages 124-140.
3. Golomb, Solomon, W., *Polyominoes*. New York, Scribner and Sons, 1965.
4. Loyd, Sam, *Sam Loyd's Cyclopedia of Puzzles*. New York, Corwin Books Inc., 1976, pages 97, 238, 254, 351, 371, and 373.

Articles

1. Benjamin, H. D., *Fairy Chess Review*, Problem 2622, vol. 3, no. 4, Feb. 1937, page 41.
2. Dawson, T. R., and Lester, W. E., *Fairy Chess Review*, "A Notation for Dissection Problems", vol. 3, no. 5, April 1937, pages 46-47.
3. Hansson, F., *Fairy Chess Review*, Problem 6630, vol. 6, no. 3, Dec., 1945, page 16.
4. Stead, W., *Fairy Chess Review*, Problem 9455, vol. 8, no. 8, Feb. 1953, page 56.
5. Stead, W., *Fairy Chess Review*, Problem 9543, vol. 8, no. 9, April 1953, page 66.
6. Stead, W., *Fairy Chess Review*, Problem 9783, vol. 8, no. 13, December 1953, page 99.
7. Stead, W., *Fairy Chess Review*, Problem 10003, vol. 8, no. 17, Aug. 1954, page 134.
8. Stead, W., *Fairy Chess Review*, "Dissection", vol. 9, no. 1, December 1954, pages 1-4.

6. Copying The **MacPoly** Disk

Copy The MacPoly Disk For A Backup

Please make a copy of the **MacPoly** disk and save it in case something goes wrong with the original.

Please Don't Make Copies For Others

Copying the **MacPoly** disk for others is against the law. **MacPoly** is registered with the United States Copyright Office.

Thank You

Thank you for buying **MacPoly**. Sabaki Corporation welcomes your comments; please send them to the address below.

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