

Math Marvels™

3 math games from one of America's leading educational publishers

Encourages problem solving and conceptual thinking while improving math skills

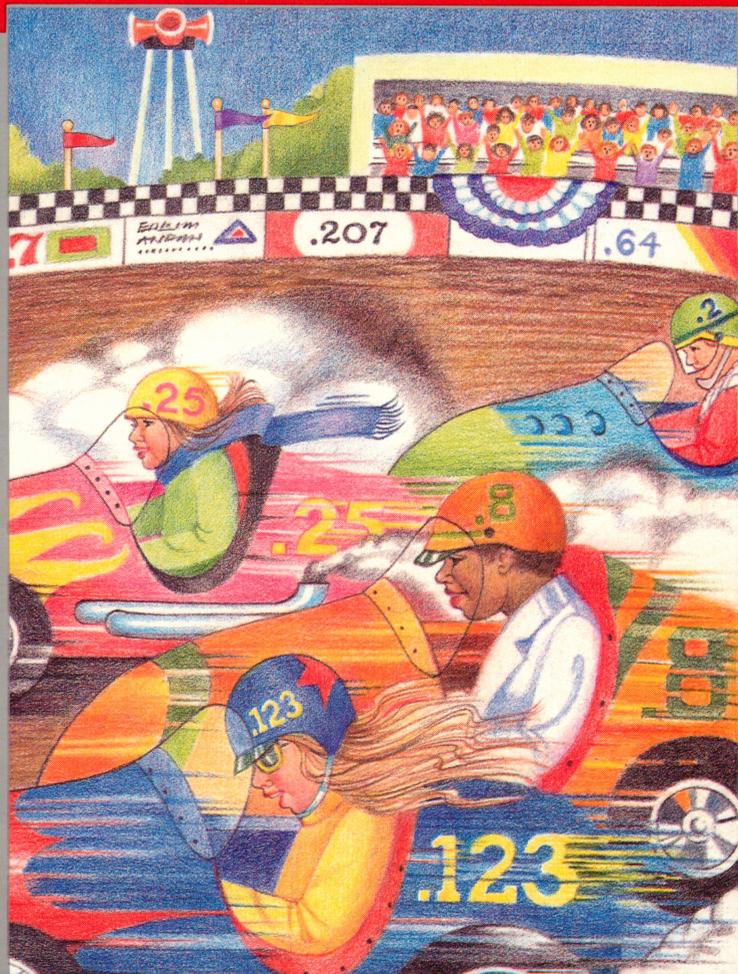
Developed by experienced math teachers and textbook editors

Engaging, imaginative, and instructional so children learn more

Supports recommended curricula for children, ages 9-12

Exercises for the subject of decimals

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Math Marvels

The House
for 3rd

You're already using numbers every day to tell time, count money, and measure distances. Soon you may want to do more exciting things with numbers ... such as finding out how far the moon is from the earth ... measuring the amount of rainfall in your backyard ... or even figuring out the size of an elephant by looking at its footprints. First, you have to know more about numbers.

Our math activities are designed to challenge you. Getting the right answers is important. But having fun while you find them counts too.

We invite you to play alone or with a friend. Everything you need to know about getting started is in this fold-out booklet.

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A Note to Parents

The Houghton Mifflin math activities harness the full potential of the computer to engage young users in active and positive experiences with numbers. The games are designed to encourage concept development and experimentation with problem-solving strategies as well as to improve computation and estimation skills. Although the activities go beyond drill and practice, they reinforce basic skills in a highly motivating context. The concepts presented are typically introduced and reviewed during grades 3-6. To enjoy **Math Marvels**, your child should be familiar with adding, subtracting, multiplying, and dividing decimals of up to four digits.

The math activities were designed by Doug Super, author of one of Houghton Mifflin's mathematics series and coordinator of Mathematics and Computer Education for a school district in British Columbia. Doug holds a Masters of Science in Mathematics and taught math to elementary and secondary school students for nine years. **Math Marvels** was programmed by Graeme Clark, Dan Nagata, and Gail Newell. Commodore translations were programmed by Brandon Software, Wayne Brown, and Doug Waechter.

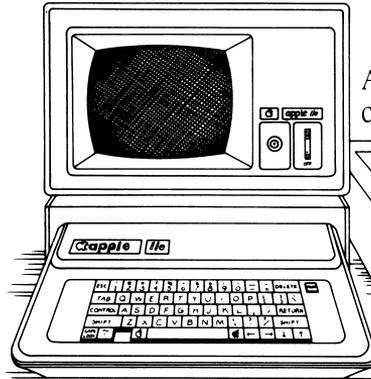


Houghton Mifflin math activities are available for Apple II, Commodore 64, and IBM PC and PCjr.

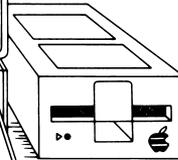
Standing at the forefront of American educational publishing is a Houghton Mifflin tradition. Houghton Mifflin has published quality textbooks and related materials for schools and colleges for over a hundred years. Houghton Mifflin is also a leading publisher of fiction, poetry, and nonfiction for adults and young readers, and such important reference works as *The American Heritage Dictionary*. Houghton Mifflin is pleased to present educational computer software offerings that continue this tradition of publishing excellence.

Equipment You Will Need

Apple® II (requires Applesoft BASIC), **II Plus, IIe, or IIc**—each with 48K memory

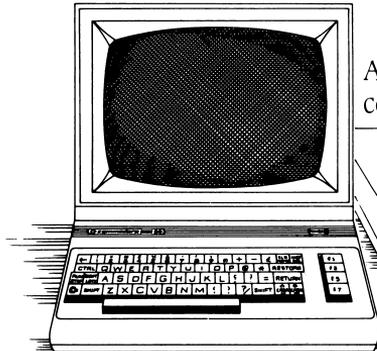


A monochrome or color monitor

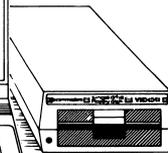


An Apple diskette drive

Commodore 64



A monochrome or color monitor



A Commodore diskette drive
1541 or 2031

Make sure that your equipment is properly installed. Your hardware manuals contain instructions and information.

Apple is a registered trademark of Apple Computer, Inc.

Commodore is a registered trademark of Commodore Business Machines, Ltd.

Getting Started

Loading the program is easy.

For Apple Computers

1 Slide the game diskette into the diskette drive according to the rule "Apple label up and in last." If you have more than one drive, use drive #1. Close the drive door.

2 Turn on the monitor.

3 Turn on the computer. The switch is on the left of the rear panel.

4 If you have an Apple IIe or IIc, depress the **CAPS/LOCK** key once.

For the Commodore 64

1 For the Commodore 64, turn on the diskette drive. Slide the game diskette into the drive according to the rule "Commodore label up and in last." Close the drive door.

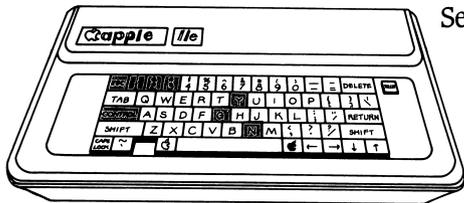
2 Turn on the monitor.

3 Turn on the computer. The switch is on the right side panel. Check to see that your **SHIFT/LOCK** key is not depressed.

4 Type: load"! ",8
Press: **RETURN**
Type: run
Press: **RETURN**

The Menu

A menu of activity choices will appear automatically.



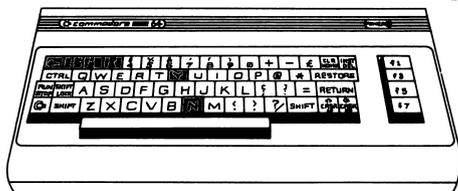
Apple II

Select an activity by typing **[1]**, **[2]**, or **[3]**.

To learn how to play a game, type **[Y]** for “Yes” when you see “Do you wish instructions (Y or N)?” Type **[N]** for “No” and the game will begin.

You can return to the menu at any time.

If you have an Apple computer, press the **[ESC]** key on your keyboard. If you have a Commodore 64, press the **[←]** key. Watch the monitor and you’ll see the message “Do you wish to play again (Y or N)?”



Commodore 64

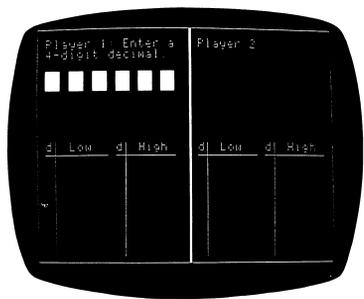
Type **[Y]** for “Yes” and you’ll go back to the game you’ve just played. Type **[N]** for “No” and you will return to the menu. From the menu you can choose another game.

The sound can be turned off.

For the Apple computers, press the **[CTRL]** key at the same time as the **[C]** key. If you have a Commodore 64, turn the volume control on your monitor. This silences the game you are playing.

Decimal Hunt

Hunt for a secret decimal number by making strategic guesses.



To begin, each player makes up and types in a secret 4-digit decimal number. Players take turns guessing each other's number. The first player to guess the other's number wins the game. When you play alone, the computer tries to find the number you made up while you try to find the one it made up for you.

After each guess, a player is told if the guess is too high or too low and how many digits in the mystery

number were guessed correctly. For example, if the number to be guessed is 2.034, and you guess 1.462, the computer will indicate

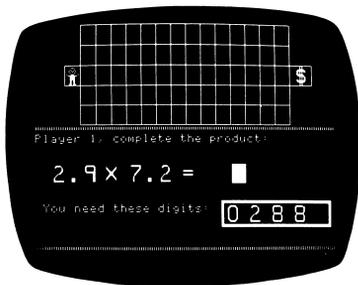
$$\begin{array}{r|l} d & \text{low} \\ 2 & 1.462 \end{array}$$

This means that your guess is too low, but two of the digits appear in the mystery decimal number. Now you have to guess which two digits are correct. By elimination and substitution, you can eventually guess the correct decimal number. Remember you must also put the decimal point in the correct place.

A Hint About Strategy: The first decimal numbers you try will be random guesses. You can make better guesses by paying attention to the computer's clues. Remember which digits you have already guessed so you won't waste a turn.

Multi-Maze

Find the answers to decimal multiplication problems and seek the treasure at the end of the maze.



In this activity, players must multiply decimals in order to move through a maze to the treasure. The digits which appear in the answer are revealed to players. They are arranged from lowest to highest in a box on your screen. Your task is to rearrange the digits and add a decimal point in the correct place.

Type your answers from left to right. For example, in the problem 2.9×7.2 , the digits in the answer are

shown as 0, 2, 8, 8. To rearrange the digits correctly, you would type in the digits and a decimal point in the following order: 2, 0, ., 8, 8.

If you make a mistake, your opponent gets a turn. On your next turn, you will have the same problem to solve. Any digits you placed correctly during earlier turns will reappear. You must solve one problem before going on to another.

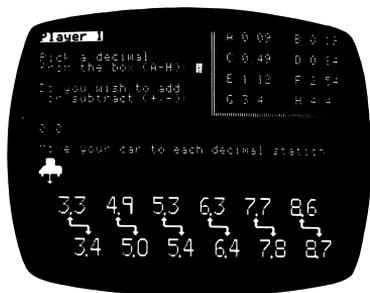
A correct answer allows you to move through the maze. Type **[U]** to go Up, **[D]** to go Down, and **[R]** to go Right and **[L]** to go Left. But watch out. Your turn ends when you run into a hidden tree. The first player to reach the money wins. (If you have an Apple IIe or IIc, you can use the arrow keys to move your playing piece.)

When you play alone, you can only move through the maze if you solve a problem within three tries. If you solve the problem on your first try, you get a bonus move. The computer keeps track of the number of moves it takes you to get through the maze. Every time you play alone, you can set a new personal record.

A Hint About Strategy: Estimate the size of the answer. Is it in the tenths, hundredths, or thousandths? Try first to figure out which digit belongs in the units place (the first position to the left of a decimal point).

Decimal Rally

Maneuver your rally car by adding and subtracting decimals along a number line.



The object of this activity is to move your rally car into six decimal stations shown on the bottom of your screen. You drive your car by adding or subtracting decimals given by the computer. They are labeled A, B, C, D, E, F, G, and H.

When the game begins, each player's car is parked at 0.0 on the number line. Taking turns, players select decimals from A-H and then press the

key or the key to add or subtract them. The computer then illustrates the arithmetic problem in the center of your screen and moves your car. At the start of each turn, your car begins at the place where it was left at the end of your last turn.

It usually takes several turns to drive a car into one of the decimal stations. After successfully checking into a station, a player gets another move. The first player to check in at all six intervals wins the game.

A Hint About Strategy: You can move your car to the decimal stations in any order. Try to plan ahead. Know where you are, decide where you want to be, and figure out which of the decimal choices will get you there.

Math Marvels™

As a leader in educational publishing for over a century, Houghton Mifflin was one of the first companies to develop software for schools. Proven in schools, we're now offering this educational software for children to use at home.

Math Marvels will help your children learn both math skills and concepts. The level of the games is graduated, so your child can grow into more challenging math tasks. Because the games were developed by the same editors and teachers who design some of America's best-selling school material, you are assured of educational value in every package.

The games are simple to start, easy-to-play, and exciting—your children will want to play again and again. The more they play, the more they learn. If you're looking for software that's a perfect combination of instruction and entertainment, trust the company parents and educators have relied on for over 100 years: Houghton Mifflin.

