



*Personal Computer  
Education Series*

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# Arithmetic Games Set 2

by Science Research Associates, Inc.

# ARITHMETIC GAMES SET 2

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## DISCOVERY MACHINE™

The DISCOVERY MACHINE takes a number IN. It does something to the number and gets a new number. Then it sends the new number OUT.

You try to discover the rule the machine is using. For example, it might add 4 to each "in" number. In another game it might multiply the "in" number by 3 and then add 2. You win when you can guess three "out" numbers in a row.

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## NUMBER CHASE™

In NUMBER CHASE, the computer makes up a secret number. You try to guess the number. The computer gives you clues. One or two can play NUMBER CHASE.

When two play, they take turns, and each has his or her own number to guess.

When you play alone, you try to guess the computer's number. You can also make up a number for the computer to guess.

GAMES 2 requires an IBM Personal Computer with at least 64K, one disk drive and a Color/Graphics Monitor Adapter with a television set or monitor.

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# HOW TO PLAY DISCOVERY MACHINE

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**CAUTION:** The first time you use the Arithmetic Games Set 2 diskette you must follow the procedure on page 6.

1. You may start DISCOVERY MACHINE by simply inserting the diskette into drive A and turning on the computer.
2. The computer will ask a few questions. Type the answers. Press ENTER after each answer.
3. One question is: "How many tries will you need to discover the rule?" This lets you set a goal. Type a number from 3 to 10. Then press ENTER. The machine tells you whether you reach your goal. Whatever your goal is, you can take up to ten tries to discover the rule.
4. First the machine gives you an example. It shows a number going in. The machine runs. Then it shows you the number that comes out.

IN	OUT
2	8

PRESS ENTER

5. Next the machine gives you an "in" number. You type the "out" number. Then press ENTER.

IN	OUT
2	8
8	→ What is your answer?

6. The computer tells whether your answer is right or wrong. If it's wrong, the computer puts in the right "out" number.
7. Use the results of each turn to help you discover the rule.

8. When you give three correct "out" numbers in a row, the machine knows you've discovered its rule. You win, and the machine will show you the rule.

Your rule was:  
Divide the number by 8

IN	OUT
48	6

48/8 = 6  
PRESS ENTER

NOTE: The computer uses / instead of ÷.

9. If two are playing and both get their third correct answer on the same turn, the game is a tie.
10. If you don't discover the rule in ten tries, the computer will show you the rule.
11. To give up press ESC.

To correct a mistake, use the ← key on the top row of the keyboard.

The DISCOVERY MACHINE knows six kinds of rules:

*Rules with one operation*

*EXAMPLE*

- |                                       |         |
|---------------------------------------|---------|
| 1. Add or subtract                    | IN + 3  |
| 2. Add or subtract                    | 16 - IN |
| 3. Add, subtract, or multiply         | 7 × IN  |
| 4. Add, subtract, multiply, or divide | IN ÷ 5  |

*Rules with one or two operations*

- |   |                       |
|---|-----------------------|
| 5. Add, subtract, multiply, or divide         | 3 × IN + 4            |
| 6. Add, subtract, multiply, divide, or square | (IN) <sup>2</sup> + 4 |

One or two can play. When two play, each tries to discover a different rule.

# HOW TO PLAY NUMBER CHASE

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CAUTION: The first time you use the Arithmetic Games Set 2 diskette you must follow the procedure on page 6.

1. You may start NUMBER CHASE by simply inserting the diskette into drive A and turning on the computer.
2. The computer will ask a few questions. Type the answers. Press ENTER after each answer.
3. Each player sets a goal. This is the number of tries you'll get to guess the secret number. The most is 15.
4. The screen shows guesses and information about them. When it's your turn, type your guess. The cursor ( $\square$ ) shows where each digit will go. When you finish typing the number, press ENTER.
5. The computer compares each guess with the secret number. Then the chart tells you the following:

I: How many of your digits are in the correct place

O: How many of your digits are correct but out of place

+ (or  $\times$ ): The sum (or product) of the digits not guessed. If you've guessed all but one, you'll see that digit.

EXAMPLE: Secret number 41356  
Your guess 14452

- 1 digit in correct place (5)  
2 digits correct but out of place (1 and one 4)  
18 is the product of unguessed digits ( $3 \times 6$ )
6. Starting with the third turn, you can press H to get hints. A hint counts as a turn.
  7. To give up, press ESC. The computer will tell you the secret number.

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8. In a one-player game, you can choose a number for the computer to guess. Then you will both be guessing four-digit numbers.

Be sure to write the number for the computer on a piece of paper. You'll need to look at it as you play. **BE CAREFUL!** If you give wrong answers to the computer, you may lose!

If you make a mistake, use the ← key to back up. You use the space bar to move the cursor. When the cursor is under the mistake, type a new digit.

There are four NUMBER CHASE games:

LEVEL 1 Secret numbers that have two digits, like 47

LEVEL 2 Three digits

LEVEL 3 Four digits

LEVEL 4 Five digits

# Initial Setup of ARITHMETIC GAMES SET 2

1. Insert DOS diskette in drive A and turn on computer.
2. The computer will ask for the date. Answer and press "ENTER."

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## IMPORTANT:

The next instruction is different depending on the number of diskette drives on your IBM Personal Computer.

Follow instruction 3A if you have one diskette drive and 3B if you have two diskette drives.

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- 3A. If your IBM Personal Computer has one diskette drive
  - When "A>" appears on screen, type `b:setup1` and press "ENTER."
  - You will see the message:  
"Insert diskette for drive B:"
  - Remove the DOS diskette, insert the GAMES 2 diskette and press "ENTER."
  - You will see the message:  
"Insert the DOS diskette when the system asks for drive A: Insert the GAMES 2 diskette when the system asks for drive B:"
- 3B. If your IBM Personal Computer has two diskette drives
  - When "A>" appears on screen insert the GAMES 2 diskette in drive B. Type `b:setup2` and press "ENTER."
  - You will see the message:  
"Insert the DOS diskette in drive A: Insert the GAMES 2 diskette in drive B:"
4. The computer will now copy DOS from the IBM System diskette to your GAMES 2 diskette.  
Please follow the instructions on the video display.
5. When the computer is finished you will see the message:
  - "Your GAMES 2 diskette is now ready for use.  
PLEASE PUT A WRITE PROTECT TAB OVER THE NOTCH IN THE DISKETTE." Doing this will protect your GAMES 2 diskette from accidental erasures.
6. To use GAMES 2 refer to Step 1 under "HOW TO PLAY".



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