W · O · R · M · S · ? ™
DAVID S MAYNARD

OBJECT

The worms capture territories by laying trails from dot to dot. Each dot lies in the center of a territory.

SCORING

1 point goes to the worm that lays the last (sixth) trail in a territory. Scores are shown on the bottom of the screen.

STARTING

Choose the type of worm you want for each color that will be playing. Then start the game and begin training your worm!

TYPES OF WORMS

There are five worms built into the program. You may also play with worms you have saved from previous games (see Reference Card). The five worms are as follows:

NEW The worm is untrained. You must train it as you play the game.

AUTO This worm is just like NEW, but the computer trains the worm to make smart moves as it plays the game.

WILD The computer trains the worm randomly for all possible moves before the game begins.

SAME The worm which played this color in the last game is used again in this game.

----- The worm is asleep and doesn't play.

WORMS? ™   COMMODORE 64

Number of Players: One to four

To Load: Turn on the disk drive, turn on the computer, and insert the program disk. Type LOAD"EA",8,1 followed by a **RETURN** . (See your Disk Drive User's Manual if you need additional instructions.)

Play Commands

Starting: **f1** key   Resets the program
            f3 key   Lets you choose a type of worm (NEW, WILD, etc.)
            f5 key   Lets you select the next worm position (pink, green, etc.)
            f7 key   Starts the game; during a game, it takes you back to the f3/f5/f7 menu

Moving: **SPACE BAR**   Changes the worm's direction (when the worm is waiting to be told what to do)

          any letter key Tells the worm to move

Other: **RUN/STOP**   Pauses/restarts game

          0 to 9 keys   Sets the speed of the worms (0 is the slowest, 9 is fastest, 6 is the default)

Note: The G and F commands described on the fourth page of the manual do not work for the Commodore 64 version of WORMS?

To Save Worms:

First: ● Initialize a blank disk, following the instructions in your Disk Drive User's Manual.

Then: ● Load the WORMS? program disk, remove the program disk from the drive, then insert a blank, formatted disk into the drive.
        ● Use **f5** to select the worm you want to save.
        ● Press **S** The computer will respond SAVE? RETURN.
        ● Press **RETURN** for "yes." (If you don't want to save that worm, press any other key to return to the f3/f5/f7 menu.)
        ● The computer will ask FILE NAME: Enter a worm name no longer than 4 characters, then press **RETURN** . The screen will go blank as the worm is being saved onto the disk.

To Load Worms:

First: ● Load the WORMS? disk. Then put the disk with the saved worms into the disk drive.

Then: ● Use the **f5** key to indicate which color you want your saved worm to play.
        ● Press **L** . The computer will respond LOAD? RETURN.
        ● Press **RETURN** and the computer will ask FILE NAME:
        ● Enter the worm's name and press **RETURN** . The screen will go blank as the worm is loaded.

To Update Worms (for resaving a previously "saved" worm after you've taught it some new moves):

First: • Make sure the disk with the saved worms is in the disk drive.

Then: • Press the [f5] key to select the worm which needs updating.
• Press [U] for update. The computer will respond UPDATE (worm's name)? RETURN.
• Press [RETURN] and the new moves will be added to the worm's file. The screen will go blank during this time.

Directory:

First: • Boot the disk with the saved worms on it.

Then: • Type LOAD"$",8 and hit the [RETURN] key. Then type LIST. You will see the list of saved worms: (worm name).WRM

A COPY OF MAYNARD'S SOLITAIRE (shown on the package) IS INCLUDED ON THE PROGRAM DISK. IT IS CALLED DEMO AND CAN BE LOADED FOLLOWING THE "TO LOAD WORMS" INSTRUCTIONS ABOVE.

Additional Credits:

    Target Compiler: Nautilus Systems
    Forth System: Norm Lane
    Charles Moore and the whole fig-FORTH community

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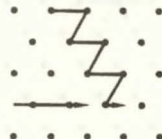
How to Play
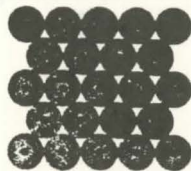
A. The screen is covered with dots. Each dot lies in the center of a territory.
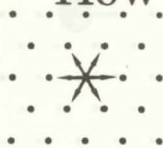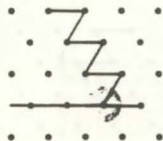
B. Worms start in the center and can move in one of 6 directions. See the Reference Card for movement commands.
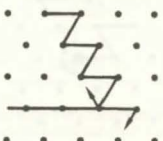
C. When worms move, they leave a trail behind. Notice a trail is half in one territory and half in another.

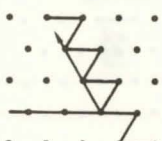D. Move your worm in the direction you want. The worm cannot move along an existing trail.

Once a worm recognizes a movement pattern, it will move automatically, until it runs into something.
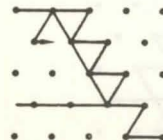
E. The worm that needs a movement command is flashing, and its name is underlined at the bottom of the screen.
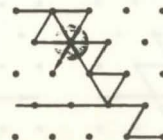
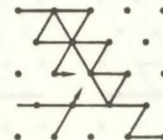F. When a worm adds a new trail to a dot's territory,

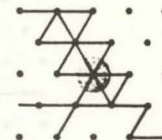all other existing trails in the territory turn to that color.

G. Several moves later, the red worm is coming back. It is changing the territory's color again.

H. The red worm has scored a point by laying the last (sixth) trail in the territory. The territory flashes when the point is scored.
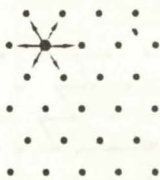
I. Red and black are headed for the same dot. The worms will die because they cannot move.

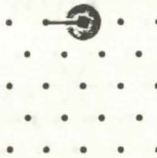J. When all the worms are dead, the game is over. Each territory flashes, and the score is shown.

How Worms Understand Their Training

Step 1. The worm starts in the center territory. It can move in one of six directions, but it doesn't know which to choose.

Let's train the worm to zigzag. Move it to the right.

Step 2. Now the worm is in a new territory with one trail going off to the left (⟶). Move the worm to the lower left (⬎).
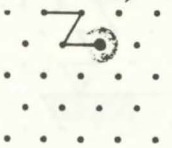
The worm will now remember that when it encounters ⟶ it moves ⬎

Step 3. In this territory, there is a trail coming in from the upper right (⟋). Move the worm to the right (⬐).
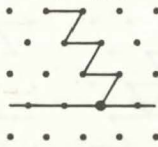
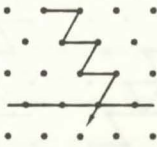Now it will remember that when it encounters ⟋ it moves ⬐

Step 4. Since the worm remembers this configuration from step two, it remembers to

move to the lower left. And so it continues .

Step 5. . . until the worm moves into a configuration (⬐) it does not recognize. The player must now tell the worm what to do.

Step 6. If you move the worm to the lower right, it encounters ⟋ in the next territory.

The worm recognizes this from Step 3, so it will move ⬐

OTHER COMMANDS:

Keys 1 to 9 set speed of the worms. Speed can be set any time during the game.

    1 is slowest.
    7 is the default.
    9 is fastest.

ESC — Freezes the game; press key again to resume game.
  G — Turns grid off so dots disappear; press key again to have dots reappear. (This command can only be used at the beginning of a game.)
  F — Territories that flash because they have had the last (sixth) trail laid continue flashing for the rest of the game; press this key again to turn continual flashing off.
  S — Saves worms onto separate disk.
  L — Loads worms from separate disk.
  U — Updates already saved worms.
  D — Directory of saved worms.