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NEW
AMIGA
A PREVIEW

FAMILY COMPUTING

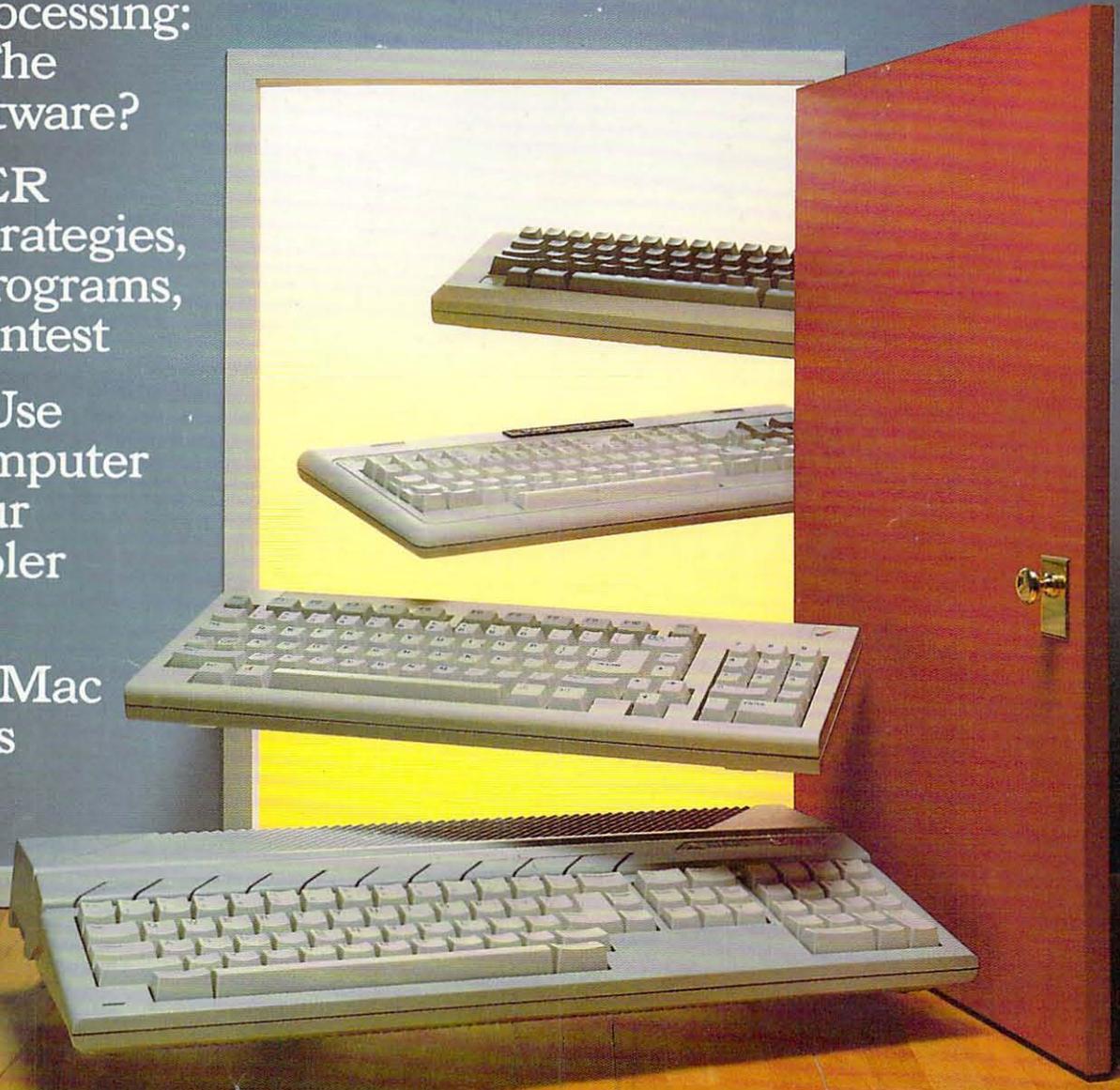
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K-POWER
Game Strategies,
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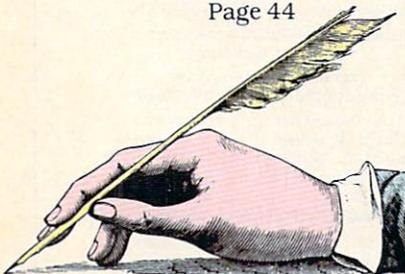
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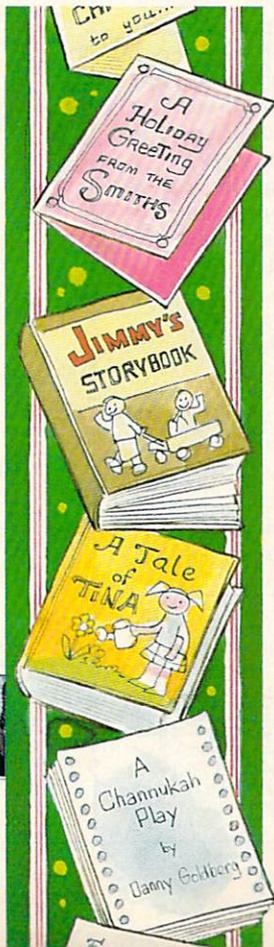
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COVER PHOTOGRAPH BY WALTER WICK

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GAMES

PRETZELS AND POPCORN FUN

Boot Up a Tried-and-True Computer Game for a Relaxing Evening With Friends

BY JAMES DELSON

Everybody loves playing games. Sure, there are different levels of expertise and types of games. But whether it's pingpong in the basement, croquet in the backyard, or a crossword puzzle on the couch, gaming is an integral part of our lives.

Everyone has a favorite. More times than not, the preferred choice will be a game you've played many times, whose rules and nuances you've memorized. These games can be a minivacation from the ordinary trials and tribulations of life.

"Pretzels and popcorn fun" is a good term to describe playing these familiar games. It conjures up the image of a relaxed evening with family or friends and a good-natured contest in which the outcome isn't nearly as important as the companionship.

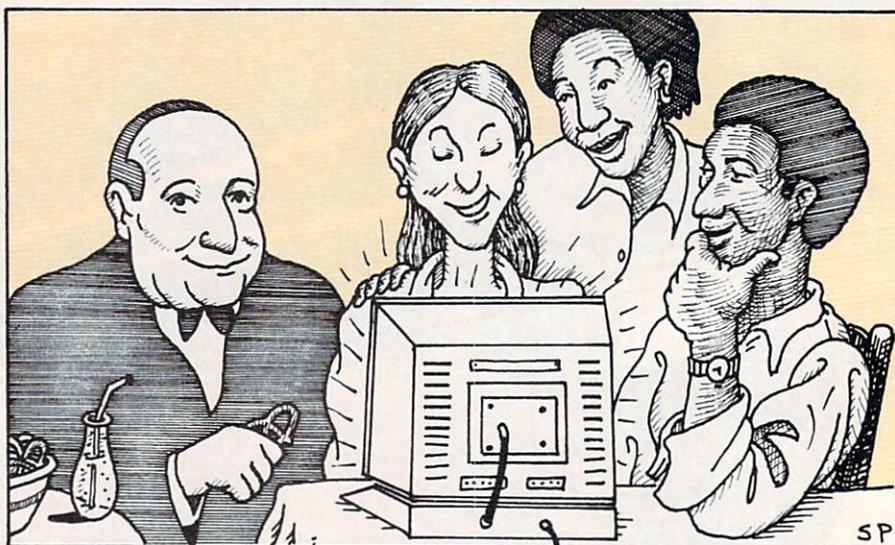
Traditional board games include classics like "Monopoly," "Scrabble," and "Clue"; newer titles like "Trivial Pursuit"; and more esoteric fare, such as "Diplomacy," and "Dungeons and Dragons."

NEW-FOUND TRADITIONS

Then, of course, there's the whole new field of computer games. A burgeoning interest in them has spawned a number of "popcorn programs." That's to be expected if you consider that more computer games have been introduced in the past three years than board games in the last two decades!

Some programs have become cult favorites, including *Diplomacy*, *Archon*, *Lode Runner*, *Rails West!* or *President Elect*. Also enjoyable are newly discovered gems such as *Field of Fire*, *Racing Destruction Set*, *The Ancient Art of War*, or *On-field Football*.

Want to boot up a tried-and-true program with your friends for a night of enchantment? Shall it be a dazzling car race, a plot to rule the world, or simply a campaign to be president? To help choose which one to serve with your pretzels and



popcorn, here's a list of eminently playable games that the hard-working playtesters and reviewers for FAMILY COMPUTING find the most appealing. Like you, these gifted amateurs enjoy relaxing at the end of the day by escaping into a fantasy world.

All games that run on a Commodore 64 also work on a C 128.

Game listings for Atari will not run on the 520ST.

Fast-Playing

Less than two hours

ARCADE

Includes strategy/arcade

These go a step beyond the classic arcade games and require a little skill and strategy to play well.

Archon (Electronic Arts); 64K Apple; 48K Atari; C 64; 64K IBM PC; \$23-\$35.

Archon II: ADEPT (Electronic Arts); 64K Apple; 64K Atari; C 64; \$33-\$40.

B.C. II, Grog's Revenge (Sierra On-Line); C 64; \$35.

B.C.'s Quest for Tires (Sierra On-Line); C 64; \$35.

Beach-Head (Access); 48K Atari; C 64; \$35.

Beach-Head II: The Dictator Strikes Back (Access); 48K Atari; C 64; \$40.

Boulder Dash (Micro Fun/First

Star); 32K Atari; C 64; \$30; 128K IBM PC/PCjr; \$35.

Broadsides (Strategic Simulations, Inc.); 48K Apple; 48K Atari; C 64; \$40.

Jumpman (Epyx); 48K Apple; 48K Atari; C 64; \$18.

Raid on Bungeling Bay (Broderbund); C 64; \$30.

Spy Hunter (Coleco Industries, Inc.); ADAM (cart.); \$30.

Star Raiders (Atari); 16K Atari; \$18.

FLIGHT SIMULATORS

Although these games require many hours of practice, they're easy to play once the basic skills have been mastered.

F-15 Strike Eagle (MicroProse Software); 64K Apple; 48K Atari; C 64; 64K IBM PC/PCjr; \$35.

Flight Simulator (Microsoft); 128K IBM PC/PCjr/XT/AT; \$50.

Flight Simulator II (subLOGIC); 48K Apple; 48K Atari; C 64; \$50; \$40 for Atari and Commodore cassette versions.

Mig Alley Ace (MicroProse Software); 48K Atari; C 64; \$35.

Skyfox (Electronic Arts); C 64; planned for 64K Apple; \$33-\$40.

FINANCIAL

Quick Monopoly-like thrills are achieved in very little time.

Conglomerates Collide (Rockroy, Inc.); 48K Apple; \$30.

JAMES DELSON IS FAMILY COMPUTING'S games critic.

GAMES

Fortune Builder (Coleco Industries Inc.); ADAM (cart.); \$30.

SPORTS

Colorful, fast-moving and always fun, for a whole game's worth or even for a few minutes.

The Activision Decathlon (Activision); 16K Atari (cart.); C 64; \$25-\$30.

Julius Erving and Larry Bird Go One-On-One (Electronic Arts); 48K Apple; 48K Atari; C 64; 64K IBM PC; \$33-\$40.

Microsoft Decathlon (IBM); 64K IBM PC; 128K IBM PC XT; requires color adapter; \$35.

On-Court Tennis (Gamestar); C 64; \$30.

On-Field Football (Gamestar); C 64; \$30.

Pitstop II (Epyx); 64K Apple; 48K Atari; \$40.

Summer Games (Epyx); 64K Apple; 48K Atari; C 64; \$40.

CONSTRUCTION SETS

Either as build-it-yourself games (which take more time) or as good old arcade fun, these adventures have great play systems and are never dull.



Lode Runner (Broderbund); 48K Apple; 48K Atari; C 64; 128K IBM PC/PCjr/XT; \$35-\$40.

Mail Order Monsters (Electronic Arts); C 64; \$33.

Mr. Robot and His Robot Factory (Datamost); 48K Apple; 32K Atari; C 64; \$20.

Pinball Construction Set (Electronic Arts); 48K Apple; 48K Atari; C 64; 64K IBM PC; \$23-\$40.

Racing Destruction Set (Electronic Arts); C 64; \$33.

Slow-Playing

More than two hours

STRATEGY AND TACTICS

An evening's stimulating activity or just a true pretzel-and-popcorn slugfest, these games are easy to play once you figure them out.

The Ancient Art of War (Broderbund); 128K IBM PC/PCjr/XT; \$45.

Battle for Normandy (SSI); 48K Apple; 40K Atari; C 64; 64K IBM PC; \$40.

Chickamauga (Game Designer's Workshop); 48K Atari; \$35.

Dreadnoughts (The Avalon Hill Game Co.); 48K Apple; C 64; \$30.

Field of Fire (SSI); 48K Atari; C 64; \$40.

Legionnaire (The Avalon Hill Game Co.); 48K Apple; 32K Atari; C 64; \$30.

Monty Plays Scrabble (Epyx); C 64; \$40.

Operation Whirlwind (Broderbund); 48K Atari; C 64; \$40.

Paris in Danger (The Avalon Hill Game Co.); 48K Atari; \$35.

Reforger 88 (SSI); 48K Apple; 48K Atari; \$60.

Sargon III (Hayden Software); 64K Apple; 64K Atari; C 64, 64K IBM PC/PCjr; 128K Macintosh; \$50.

The Shattered Alliance (SSI); 48K Apple; 40K Atari; \$20.

POLITICS AND FINANCE

These games, I think, are the most rewarding kind to relax with because they're provocative and achieve the maximum amount of player interaction. May last all night.

Cartels and Cutthroats (SSI); 48K Apple; C 64; 128K IBM PC/PCjr; \$40.

Cosmic Balance II (SSI); 48K Apple; 48K Atari; C 64; \$40.

Diplomacy (The Avalon Hill Game Co.); 256K IBM PC/PCjr \$50; 48K TRS-80 Model III or 4; \$25.



Geopolitique 1990 (SSI); 48K Apple; C 64; \$40.

Incunabula (The Avalon Hill Game Co.); 128K IBM PC/PCjr; \$30.

M.U.L.E. (Electronic Arts); 48K Atari; C 64; \$23.

President Elect (SSI); 48K Apple; C 64; \$40.

Rails West! (SSI); 48K Apple; 40K Atari; C 64; \$40.

The Seven Cities of Gold (Electronic Arts); 64K Apple; C 64; 64K IBM PC; \$33-\$40. 

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Now the Programmer



ILLUSTRATION BY BARTON STABLER

N O V E M B E R

TIPS TO THE TYPIST

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Helpful hints on how to type in programs, and what to do if a program doesn't work.

FUN/LEARNING PROGRAM

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Test your vocabulary against a friend's, and learn about computer logic, with *Word Wars*.

ARCADE GAME

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You'll need fast reflexes and nerves of steel to beat *Get 'Em*.

FEATURE PROGRAM

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Back by popular demand, our multifunction filebox program, *Home Information Manager*, is presented here for the Apple II series.

PROGRAMMING P.S. Page 65 Corrections to previous months' programs.

ILLUSTRATION BY JIM CHERRY III

Cherry

TIPS TO THE TYPIST

Typing in FAMILY COMPUTING'S programs is a great way to become familiar with your computer and get some free software "to boot." But it's frustrating to type in a long program only to find it doesn't work as it should. When this happens, simple typing errors are most often the cause. So to help you gain greatest value from the time you spend computing with us, we've put together some tips on how to avoid typing errors—and what to do if a program doesn't run right. Read them carefully and you'll be up and running in no time!

SOME GENERAL RULES

- 1. Do** read instructions and program headings carefully. Make sure your computer has enough memory, the right version of BASIC, and the appropriate peripherals (joysticks, printers, disk drives, etc.) for a program.
 - 2. Don't** let fatigue and boredom contribute to inaccuracy. If you're new to programming, try typing in shorter programs first. Type in a longer program in easy stages, **SAVE**ing each installment as you go.
 - 3.** Until you are fairly familiar with BASIC, **do** assume that every word, number, letter, space, and punctuation mark in a program listing must be copied accurately if the program is to function as intended.
 - 4. Do** watch out for potential trouble spots. About 90 percent of all typing errors occur in **DATA** statements: long lines filled with numbers or incomprehensible secret codes. If possible, have someone else read **DATA** to you as you type, and help you proofread it if you have trouble later on. Proofreading from a printout is best.
 - 5. Do** be aware that program listings printed in FAMILY COMPUTING sometimes differ from what you will see on your computer's screen or in printouts you produce at home. Our program listings are printed 54 characters wide. Thus, a single BASIC program "line" (sometimes called a "logical line") may appear as several lines in our listing. If you are typing along and reach the right margin of the printed listing, don't press **RETURN** or **ENTER** until you've checked to see if the program "line" you're typing really ends there. The way to tell is to check if the line following begins with a multiple of 10 that follows in sequence from the previous logical line. **REM** statements are the exception and typing them in is optional.
- Several computers (ADAM, Apple, Atari, and TI) format BASIC programs according to unique rules of their own. Don't let this throw you—just type in the listing exactly as printed in the magazine and your computer is guaranteed to accept it, even though it may end up looking a little different on your screen.
- 6.** One foolproof way to correct an error in a BASIC program line is to type the line in again from the beginning, and press **RETURN** or **ENTER** to set it in place of the old one in your computer's memory.

WHICH PROGRAMS WILL RUN ON MY COMPUTER?

Unless a program heading indicates otherwise, programs

will run on any version of the computer specified, with the following exceptions:

- Apple programs run under Applesoft (*not* Integer) BASIC on the Apple II (with language card), II plus, IIe, and IIc.
- IBM compatibility of BASIC programs is determined by both the hardware and the version of BASIC used. Our programs for IBM PC & compatibles are composed on IBM PC & PCjr's, and tested under most versions of BASIC available for these machines. They are then tested on a variety of IBM-compatible machines under the versions of BASIC supplied with them. Each "IBM PC & compatibles" program listing is supplemented by a rundown of the machines and versions of BASIC under which the program is guaranteed to work. Most programs will probably run on many other PC Compatibles and under other versions of BASIC.
- TI programs not marked "w/TI Extended BASIC" should be run under standard (console) TI BASIC.

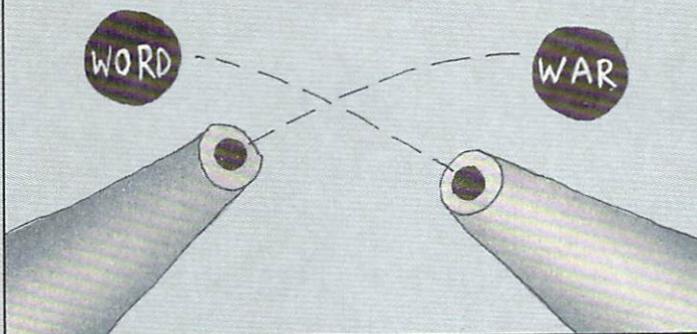
DEBUGGING HINTS

Sometimes even the most careful typist makes a mistake. Don't expect your program to run right off the bat. If you have problems, remain patient and follow these general instructions for a probable quick fix.

- 1.** Write down any error messages you receive.
- 2.** If necessary, look these up in your manual, and check the indicated lines for simple mistakes. Also check related lines (see No. 4, below), such as the **DATA** statements corresponding to a **READ** routine. Correct all the problems you can find, and **SAVE** a corrected copy of the program before typing **RUN** again. If you're lucky, all systems will be **GO**; if not
- 3.** **LIST** the program in screen-size chunks (check your manual for instructions on how to **LIST** parts of a program). Even better, if you have a printer, get a printout. Compare what you've typed in—letter by letter—to the published program. Make sure that you haven't typed the numeral 0 (which is slashed in our listings) for the letter O (which isn't), swapped a small letter "l" for the numeral one, dropped or mixed up some punctuation, switched uppercase text for lowercase, or vice versa (particularly in **DATA** statements or within quotes), or miscounted the characters (and/or spaces) between a pair of quotes. Get someone to help you if possible.
- 4.** Check your **DATA** statements—then check them again. Mistakes in **DATA** statements are the single most common cause of program failures. Bad data can cause a program to malfunction at any point, which can be misleading. If you can't find your error in the lines the computer specifies, check your **DATA** statements line by line, letter by letter, comma by comma. Then have someone else check it for you.
- 5.** If all else fails, turn off your computer and relax. Then try again the next day—exhausted proofreaders are careless proofreaders.

WORD WARS

BY JOEY LATIMER



Pit yourself against a friend in a battle of words—play *Word Wars*! The object of the game is to type in a word with either a lower or higher value (the computer decides which) than the word the other player chooses. The computer, acting as judge and referee, also adds challenge to the game by deciding how many letters should be in each word and what the first letter should be. After you've each typed in a word of the right length, beginning with the proper letter, the computer figures out their values. Depending on whether the goal was to produce a lower- or a higher-valued word, one player wins the round. In the rare case that both players' words have equal value, the round is considered a tie.

The computer determines the value of each word by adding up the "ASCII" codes of each letter. ASCII (American Standard Code for Information Interchange) is the numeric code your computer uses internally to represent letters, numbers, and other characters. In ASCII, the capital letter "A" is represented by the number 65, "B" with 66, on up to "Z"—which is coded as 90. Lowercase letters, punctuation marks, etc., are represented by different ranges in the ASCII code, and minor details may vary from one type of computer to another. (Check your computer manual for an ASCII table.)

However, you don't have

to think in terms of ASCII codes to play *Word Wars*. All a player *really* has to remember is that an "A" counts for less than a "B," which counts for less than a "C," etc. Note also that *Word Wars* won't work reliably unless you enter words (and answer the computer's questions) in all capital letters and avoid using punctuation. Make sure the CAPS LOCK key (or equivalent) is down before you play!

To make the game fair, *Word Wars* will ask players to verify that the words they enter are actually in the dictionary. Players should agree to accept whatever dictionary they have on hand as an authority.

THE LOGIC OF WORD WARS

At the beginning of each round, the computer decides randomly if players should aim for lower- or higher-valued words. The statement that makes the decision looks something like this:

$HL = (RND >= 0.5)$

This strange-looking statement is really a simple assignment statement (it *assigns* the value on the right to the variable on the left), just like $x = 1$. In other words, the expression inside the parentheses has an actual numeric value that is assigned to variable HL.

Such an expression, called "Boolean" after the 19th-century mathematician George Boole, is either true or false. In this case, the random number RND ei-

ther is greater than or equal to ($>=$) 0.5 (and the expression is true) or it is *not* (and the expression is false). Other examples of Boolean expressions are $(X=Y)$ and $(A<2 \text{ OR } B>3)$.

How does BASIC represent the logical value (true or false) of a Boolean expression as a number? On many computers, the value -1 stands for "true" and 0 stands for "false." We say these computers have "negative logic." Others (e.g., ADAM, Apple II series, and Atari) use $+1$ to mean "true" and, again, 0 to mean "false." We say those computers have "positive logic." To find out which your computer has, just type in something like `PRINT (3=3)`—without a line number—at your BASIC prompt, and press RETURN or ENTER. It's certainly true that 3 equals 3, so either 1 or -1 will be displayed on your screen.

The Boolean expression $(RND >= 0.5)$ uses the RND function to generate a random decimal fraction between 0 and 1, and compares it to 0.5. If the random number is greater than or equal to 0.5, the expression is true and variable HL is given the value -1 (or $+1$ on systems using positive logic). This makes the higher-valued word win the current round. If the random number is less than 0.5, the expression is "false" and HL gets the value 0, making the lower-valued word win.

At each round's conclusion, the values calculated for each player's word are compared by another Boolean expression:

$CM = (L(2) > L(1))$

Here, L(1) is the value of the first player's word, and L(2) the value of the second player's. The variable CM is

given the value -1 (or $+1$) if the second player's word has a higher value than the first player's. Otherwise, it's given the value 0.

Using the values for HL and CM, we can create a table that anticipates all possible outcomes of a round. Each value is expressed in terms of negative logic ($-1 = \text{"true"}$). (See below.)

Note that when HL and CM differ, player 1 wins, whereas when HL and CM are the same, player 2 wins. A third Boolean expression makes use of this fact:

$1 - (HL = CM)$ (on systems with negative logic), or $1 + (HL = CM)$ (on systems with positive logic).

The expression $(HL = CM)$ has the value -1 (or $+1$) when HL and CM are the same, 0 when they differ. Thus, the expression $1 - (HL = CM)$ (or $1 + (HL = CM)$ on positive systems) produces a value of 1 when player 1 wins, and 2 when player 2 wins!

OTHER FEATURES

Most versions of *Word Wars* use a RANDOMIZE statement or randomizing procedure to make sure the game doesn't play the same way each time. Readers unfamiliar with the use of random numbers in computer programs may wish to refer to *Character Race* in last month's issue.

As always, if you come up with a good enhancement or modification of one of our Beginner programs, we'd like to see it, and maybe mention it in a future issue. Send a print-out (no tapes or disks, please) to:

Beginner Programs
FAMILY COMPUTING
730 Broadway
New York, NY 10003

If HL has valueand CM has valuethen:
0 (low wins)	0 (player 1 high)	player 2 wins
0 (low wins)	-1 (player 2 high)	player 1 wins
-1 (high wins)	0 (player 1 high)	player 1 wins
-1 (high wins)	-1 (player 2 high)	player 2 wins

ADAM/Word Wars

```

10 DIM s(2)
20 r = 1
30 HOME
40 PRINT "TO RANDOMIZE, INPUT A"
50 INPUT "NUMBER GREATER THAN 1. ";n
60 FOR i = 1 TO n
70 n = RND(1)
80 NEXT i
90 HOME
100 PRINT TAB(12);"*WORD WARS*"
110 PRINT
120 PRINT "ROUND #";r
130 PRINT
140 hl = (RND(1) >= .5)
150 ln = INT(RND(1)*3)+5
160 al = INT(RND(1)*26)+65
170 IF hl THEN d$ = "HIGHER-":GOTO 190
180 d$ = "LOWER-"
190 PRINT "IN THIS ROUND, PLAYERS WILL"
200 PRINT "AIM FOR ";d$;"VALUED WORDS."
210 PRINT "THE WORDS MUST BE ";ln;" LETTERS"
220 PRINT "LONG AND MUST BEGIN WITH THE"
230 PRINT "LETTER ";CHR$(34);CHR$(al);CHR$(34);"."
240 FOR j = 1 TO 2
250 PRINT
260 PRINT "YOUR WORD, PLAYER ";j;
270 INPUT w$
280 IF LEN(w$) <> ln OR LEFT$(w$,1) <> CHR$(al) THEN 2
60
290 s(j) = 0
300 FOR k = 1 TO ln
310 s(j) = s(j)+ASC(MID$(w$,k,1))
320 NEXT k
330 NEXT j
340 PRINT
350 PRINT "ARE BOTH THESE WORDS IN YOUR"
360 INPUT "DICTIONARY? ";yn$
370 IF LEFT$(yn$,1) <> "Y" THEN 90
380 PRINT
390 IF s(1) <> s(2) THEN 430
400 PRINT "BOTH THESE WORDS HAVE"
410 PRINT "THE SAME VALUE."
420 GOTO 460
430 cm = (s(2) > s(1))
440 PRINT "PLAYER ";1+(hl = cm);" WINS, WITH A"
450 PRINT d$;"VALUED WORD."
460 PRINT
470 PRINT "PRESS <E> TO END OR ANY OTHER"
480 PRINT "KEY TO PLAY ANOTHER ROUND."
490 GET kp$
500 IF kp$ = "E" OR kp$ = "e" THEN END
510 r = r+1
520 GOTO 90
    
```

Apple II series/Word Wars

```

10 DIM S(2)
20 R = 1
30 HOME
40 PRINT "PRESS ANY KEY TO RANDOMIZE.";
50 POKE -16368,0
60 IF PEEK(-16384) < 128 THEN N = RND(1):GOTO 60
70 POKE -16368,0
80 HOME
90 PRINT TAB(15);"*WORD WARS*"
100 PRINT
110 PRINT "ROUND #";R
120 PRINT
130 HL = (RND(1) >= 0.5)
140 LN = INT(RND(1)*3)+5
150 AL = INT(RND(1)*26)+65
160 IF HL THEN D$ = "HIGHER-":GOTO 180
170 D$ = "LOWER-"
180 PRINT "IN THIS ROUND, PLAYERS WILL AIM FOR"
190 PRINT D$;"VALUED WORDS. THE WORDS MUST"
    
```

```

200 PRINT "BE ";LN;" LETTERS LONG AND MUST BEGIN"
210 PRINT "WITH THE LETTER ";CHR$(34);CHR$(AL);CHR$(34
);"."
220 FOR J = 1 TO 2
230 PRINT
240 PRINT "YOUR WORD, PLAYER ";J;
250 INPUT W$
260 IF LEN(W$) <> LN OR LEFT$(W$,1) <> CHR$(AL) THEN 2
40
270 S(J) = 0
280 FOR K = 1 TO LN
290 S(J) = S(J)+ASC(MID$(W$,K,1))
300 NEXT K
310 NEXT J
320 PRINT
330 PRINT "ARE BOTH THESE WORDS IN YOUR"
340 INPUT "DICTIONARY? ";YNS
350 IF LEFT$(YNS,1) <> "Y" THEN 80
360 PRINT
370 IF S(1) = S(2) THEN PRINT "BOTH THESE WORDS HAVE T
HE SAME VALUE.":GOTO 410
380 CM = (S(2) > S(1))
390 PRINT "PLAYER ";1+(HL = CM);" WINS, WITH A"
400 PRINT D$;"VALUED WORD."
410 PRINT
420 PRINT "PRESS <E> TO END OR ANY OTHER KEY TO"
430 PRINT "PLAY ANOTHER ROUND."
440 GET KPS
450 IF KPS = "E" THEN END
460 R = R+1
470 GOTO 80
    
```

Atari 400, 800, 600/800XL, & 130XE/Word Wars

```

10 DIM D$(10),W$(20),YNS(1),S(2)
19 REM --PREPARE TO GET KEYPRESS IN LINE 400--
20 OPEN #1,4,0,"K:"
30 R=1
40 PRINT CHR$(125)
50 POSITION 15,0:PRINT "*WORD WARS*"
60 PRINT
70 PRINT "ROUND #";R
80 PRINT
90 HL=(RND(0))>=0.5)
100 LN=INT(RND(0)*3)+5
110 AL=INT(RND(0)*26)+65
120 IF HL THEN D$="HIGHER-":GOTO 140
130 D$="LOWER-"
140 PRINT "IN THIS ROUND, PLAYERS WILL AIM FOR"
150 PRINT D$;"VALUED WORDS. THE WORDS MUST"
160 PRINT "BE ";LN;" LETTERS LONG AND MUST BEGIN"
170 PRINT "WITH THE LETTER ";CHR$(34);CHR$(AL);CHR$(34
);"."
180 FOR J=1 TO 2
190 PRINT
200 PRINT "YOUR WORD, PLAYER ";J;
210 INPUT W$
220 IF LEN(W$)<>LN OR W$(1,1)<>CHR$(AL) THEN 200
230 S(J)=0
240 FOR K=1 TO LN
250 S(J)=S(J)+ASC(W$(K,K))
260 NEXT K
270 NEXT J
280 PRINT
290 PRINT "ARE BOTH THESE WORDS IN YOUR"
300 PRINT "DICTIONARY";
310 INPUT YNS
320 IF YNS<>"Y" THEN 40
330 PRINT
340 IF S(1)=S(2) THEN PRINT "BOTH THESE WORDS HAVE THE
SAME VALUE.":GOTO 380
350 CM=(S(2)>S(1))
360 PRINT "PLAYER ";1+(HL=CM);" WINS, WITH A"
370 PRINT D$;"VALUED WORD."
380 PRINT
390 PRINT "PRESS ANY KEY TO PLAY ANOTHER ROUND.";
    
```

```

40 PRINT TAB(5);"*WORD WARS*"
50 PRINT
60 PRINT "ROUND #";R
70 PRINT
80 HL=(RND(0))>=0.5)
90 LN=INT(RND(0)*5)+4
100 AL=INT(RND(0)*26)+65
110 IF HL THEN D$="HIGHER-":GOTO 130
120 D$="LOWER-"
130 PRINT "IN THIS ROUND,"
140 PRINT "PLAYERS WILL AIM"
150 PRINT "FOR ";D$;"VALUED"
160 PRINT "WORDS. THE WORDS"
170 PRINT "MUST BE";LN;"LETTERS"
180 PRINT "LONG AND MUST"
190 PRINT "BEGIN WITH THE"
200 PRINT "LETTER ";CHR$(34);CHR$(AL);CHR$(34);"."
210 FOR J=1 TO 2
220 PRINT
230 PRINT "YOUR WORD,"
240 PRINT "PLAYER";J;
249 REM --CLEAR W$ FOR NEW INPUT--
250 W$=""
260 INPUT W$
270 IF LEN(W$)<>LN OR LEFT$(W$,1)<>CHR$(AL) THEN 230
280 S(J)=0
290 FOR K=1 TO LN
300 S(J)=S(J)+ASC(MID$(W$,K,1))
310 NEXT K
320 NEXT J
330 PRINT
339 REM --CLEAR YNS FOR NEW INPUT--
340 YNS=""
350 PRINT "ARE BOTH THESE WORDS"
360 INPUT "IN YOUR DICTIONARY";YNS
370 IF LEFT$(YNS,1)<>"Y" THEN 30
380 PRINT
390 IF S(1)<>S(2) THEN 430
400 PRINT "BOTH THESE WORDS HAVE"
410 PRINT "THE SAME VALUE."
420 GOTO 460
430 CM=(S(2)>S(1))
440 PRINT "PLAYER";1-(HL=CM);"WINS, WITH A"
450 PRINT D$;"VALUED WORD."
460 PRINT
470 PRINT "PRESS ANY KEY TO PLAY"
480 PRINT "ANOTHER ROUND."
490 GET KPS:IF KPS="" THEN 490
500 R=R+1
510 GOTO 30

```

PROGRAMMING P.S.

Corrections to previous months' programs

Commodore 64 w/disk drive or Datassette (printer optional)/Home Information Manager (August 1985, pages 61-64)

In the September issue we recommended you make some changes to prevent malfunction in case you try to GET or STORE a filebox that's completely empty. Here are those changes again, with additional ones.

Please change lines 1690, 1850, 1860, and 1930 to read as follows:

```

1690 ON SE-2 GOTO 1750,1800,1780
1850 FOR J=1 TO FT:PRINT#2,CHR$(34);FS(J);CHR$(34):NEX
T J:IF RT=0 THEN 1870
1860 FOR J=1 TO RT*FT:PRINT#2,CHR$(34);YS(J);CHR$(34):
NEXT J
1930 FOR J=1 TO FT:INPUT#2,FS(J):NEXT J:IF RT=0 THEN 1
950

```

Also, add line 1955:

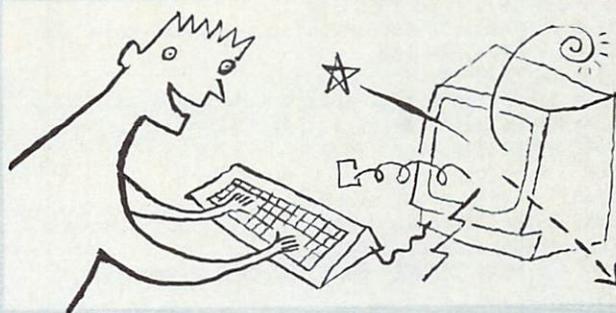
```

1955 MAX=0:IF FT>0 THEN MAX=INT(2700/FT)

```

GET 'EM

BY JOEY LATIMER



Get 'Em is a fast-paced game, guaranteed to give your reflexes a workout. As in a western, the object is to "Get 'em before they get away!" But instead of chasing bank robbers, in *Get 'Em* you try to hit valuable targets before they turn into less precious, or even harmful, ones.

On the left side of the screen, a puck bounces up and down. On the right, separated by deadly bars, are the targets, which

change every moment. On all systems but the Macintosh (which uses graphic figures), the targets are characters—"+", "*", "S", and "/"—which add or subtract different points from your score when hit. To go for a target, press the space bar when you think the puck is lined up properly. This will send it shooting sideways toward the targets. If you miss one and hit a bar, you lose—so be careful!

ADAM/Get 'Em

```

10 LOMEM: 29000
20 DIM d$(4),tr(19)
29 REM --TURN OFF CURSOR--
30 POKE 16953,0
40 hs = 0:s = 0:sp$ = CHR$(32)
50 FOR i = 1 TO 4:READ d$(i):NEXT i
60 FOR i = 28000 TO 28012:READ a:POKE i,a:NEXT i
70 HOME
80 PRINT "Score:0";TAB(15);"High Score: ";hs
90 HTAB 2:INVERSE:PRINT SPC(29)
100 FOR i = 3 TO 21:VTAB i:HTAB 2:PRINT sp$
110 VTAB i:HTAB 30:PRINT sp$:NEXT i
120 HTAB 2:PRINT SPC(29):NORMAL:PRINT
130 PRINT "Pnts: +=100 *=250 $=500 /=-100";
140 INVERSE:c = 2:j = 20:FOR i = 4 TO 20 STEP 2
150 VTAB i:HTAB j:PRINT SPC(30-j);
160 tr(c) = j:j = j+1-2*(i >= 12)
170 c = c+2:NEXT i:NORMAL
180 FOR i = 3 TO 21 STEP 2
190 q = ABS(INT(RND(1)*8)-3):IF q = 0 THEN q = 1
200 VTAB i:HTAB 29:PRINT d$(q);:tr(i-2) = q:NEXT i
209 REM --"CALL 28007" PREPARES FOR KEYPRESS--
210 f = 1:a = 4:d = INT(RND(1)*18)+3:CALL 28007
220 VTAB d:HTAB a:INVERSE:PRINT sp$;:NORMAL
229 REM --"PEEK(64885)" TELLS LATEST KEYPRESS--
230 IF PEEK(64885) = 32 THEN CALL 28007:GOTO 340
240 l = INT(RND(1)*19)+3:IF l/2 = INT(l/2) THEN 270
250 q = ABS(INT(RND(1)*8)-3):IF q = 0 THEN q = 1
260 VTAB l:HTAB 29:PRINT d$(q);:tr(l-2) = q
270 VTAB d:HTAB a:PRINT sp$;
280 d = d+f:IF d > 3 AND d < 21 THEN 220
289 REM --THIS POKE AND CALL MAKE A SOUND--
290 f = -f:POKE 28006,144:CALL 28000
300 POKE 28006,141:CALL 28000

```

ARCADE GAME

```

310 POKE 28006,34+f:CALL 28000
320 FOR t = 1 TO 5:NEXT t:POKE 28006,159:CALL 28000
330 GOTO 220
340 IF d/2 = INT(d/2) THEN nd = tr(d-2):GOTO 360
350 nd = 29
360 VTAB d:HTAB a:PRINT sp$;
370 a = a+1:IF a = nd THEN 390
380 VTAB d:HTAB a:INVERSE:PRINT sp$;:NORMAL:GOTO 360
390 IF nd <> 29 THEN 500
400 p$ = d$(tr(d-2))
410 pt = 50-25*(p$ = "*")-40*(p$ = "+")-60*(p$ = "/")
420 v = SGN(pt):x = 50-20*(v < 0)
430 POKE 28006,144:CALL 28000
440 FOR i = v TO pt STEP v:s = s+v*10
450 VTAB 1:HTAB 8:PRINT s;sp$;
460 POKE 28006,128:CALL 28000
470 POKE 28006,x:CALL 28000
480 x = x-v:NEXT i:POKE 28006,159:CALL 28000
490 GOTO 210
500 POKE 28006,128:CALL 28000
510 POKE 28006,50:CALL 28000
520 POKE 28006,144:CALL 28000
530 FOR t = 1 TO 100:NEXT t
540 POKE 28006,159:CALL 28000
550 HOME:PRINT "Sorry, you missed!"
560 PRINT:PRINT "Your score: ";s
570 PRINT:PRINT "High score: ";hs
580 IF s <= hs THEN 610
590 hs = s:PRINT:PRINT "Congratulations!"
600 PRINT:PRINT "You beat the high score!"
610 PRINT:PRINT "Press <E> to end, or"
620 PRINT "any other key to play again."
630 GET kp$
639 REM --"POKE 16953,95" TURNS CURSOR BACK ON--
640 IF kp$ = "E" OR kp$ = "e" THEN POKE 16953,95:END
650 s = 0:GOTO 70
1000 DATA +,*,$,/
2000 DATA 58,102,109,211,255,201,0,62,0,50,117,253,201

```

Apple II series/Get 'Em

```

10 DIM D$(8)
20 HS = 0:S = 0:SPS = CHR$(32)
30 FOR I = 0 TO 36:READ A:POKE 768+I,A:NEXT I
40 FOR I = 1 TO 8:READ D$(I):NEXT I
50 HOME:PRINT " SCORE: 0";TAB(21);"HIGH SCORE: ";HS
60 INVERSE:PRINT SPC(38):PRINT
70 FOR I = 1 TO 19:PRINT SPS;:HTAB 38:PRINT SPS:NEXT I
80 PRINT SPC(38):PRINT:NORMAL
90 PRINT " POINTS: +=100 *=250 $=500 /=-100";
100 INVERSE:J = 25:FOR I = 4 TO 20 STEP 2
110 VTAB I:HTAB J:PRINT SPC(38-J)
120 J = J+1-2*(I >= 12):NEXT I:NORMAL
130 FOR I = 3 TO 21 STEP 2:VTAB I:HTAB 37
140 PRINT D$(INT(RND(1)*8)+1):NEXT I
150 F = 1:A = 4:D = INT(RND(1)*17)+3:POKE -16368,0
160 VTAB D:HTAB A:INVERSE:PRINT SPS;:NORMAL
170 IF PEEK(-16384) = 160 THEN POKE -16368,0:GOTO 240
180 L = INT(RND(1)*19)+3:IF L/2 = INT(L/2) THEN 200
190 VTAB L:HTAB 37:PRINT D$(INT(RND(1)*8)+1)
200 VTAB D:HTAB A:PRINT SPS;
210 D = D+F:IF D > 3 AND D < 21 THEN 160
220 F = -F
230 POKE 8,70-10*F:POKE 6,2:CALL 768:GOTO 160
240 VTAB D:HTAB A:PRINT SPS;:A = A+1
250 P = SCRNI(A-1,2*(D-1))+16*SCRNI(A-1,2*(D-1)+1)-128
260 IF P <> 32 THEN 280
270 VTAB D:HTAB A:INVERSE:PRINT SPS;:NORMAL:GOTO 240
280 IF P = -96 THEN 360
290 P$ = CHR$(P)
300 PT = 50-25*(P$ = "*")-40*(P$ = "+")-60*(P$ = "/")
310 V = SGN(PT):X = 50+60*(V > 0)
320 FOR I = V TO PT STEP V:S = S+V*10
330 S = S+V*10:VTAB 1:HTAB 9:PRINT S;SPS
340 POKE 8,X:POKE 6,1:CALL 768

```

```

350 X = X-V+4*(V < 0):NEXT I:GOTO 150
360 POKE 8,200:POKE 6,100:CALL 768
370 HOME:PRINT "SORRY, YOU MISSED!"
380 PRINT:PRINT "YOUR SCORE: ";S
390 PRINT:PRINT "HIGH SCORE: ";HS
400 IF S <= HS THEN 430
410 HS = S:PRINT:PRINT "CONGRATULATIONS!"
420 PRINT:PRINT "YOU BEAT THE HIGH SCORE!"
430 PRINT:PRINT "PRESS <E> TO END OR ANY"
440 PRINT "OTHER KEY TO PLAY AGAIN.";
450 GET K$:IF K$ = "E" THEN END
460 S = 0:GOTO 50
1000 DATA 165,8,201,2,176,2,169,2,74,133,10,164,8
1010 DATA 240,8,173,48,192,234,234,136,208,251,56
1020 DATA 165,7,229,10,133,7,176,235,198,6,208,231,96
2000 DATA +,*,*,$,/,/,/

```

Atari 400, 800, 600/800XL, & 130XE/Get 'Em

```

10 DIM C$(36),D$(8),T$(1),P$(1),SP$(1),L0(4,2),CH(4)
20 OPEN #1,4,0,"K:":OPEN #6,12,0,"S:"
30 POKE 82,0:POKE 752,1
40 C$=CHR$(160):C$(36)=C$:C$(2)=C$:SPS=CHR$(32)
50 HS=0:S=0
60 FOR I=1 TO 8:READ T$:D$(LEN(D$)+1)=T$:NEXT I
70 FOR I=1 TO 4:READ A,B,C
80 CH(I)=A:L0(I,1)=B:L0(I,2)=C:NEXT I
90 PRINT CHR$(125);
100 POSITION 3,0:PRINT "SCORE: 0"
110 POSITION 19,0:PRINT "HIGH SCORE: ";HS
120 PRINT SPS;SPS;C$:FOR I=2 TO 20
130 POSITION 1,I:PRINT CHR$(160)
140 POSITION 38,I:PRINT CHR$(160):NEXT I
150 PRINT SPS;SPS;C$
160 PRINT " POINTS: +=100 *=250 $=500 /=-100";
170 FOR I=1 TO 4:POSITION L0(I,1),L0(I,2)
180 PRINT CHR$(CH(I));:NEXT I
190 J=13:FOR I=3 TO 19 STEP 2
200 POSITION 38-J,I:PRINT C$(1,J)
210 J=J-1+2*(I>=11):NEXT I
220 FOR I=2 TO 20 STEP 2:POSITION 37,I
230 N=INT(RND(0)*8)+1:PRINT D$(N,N):NEXT I
240 POKE 764,255:F=1:A=4:D=INT(RND(1)*16)+3
250 POSITION A,D:PRINT CHR$(160);
260 K=PEEK(764):IF K=33 THEN POKE 764,255:GOTO 330
270 L=INT(RND(1)*19)+2:IF L/2<>INT(L/2) THEN 290
280 POSITION 37,L:N=INT(RND(1)*8)+1:PRINT D$(N,N)
290 POSITION A,D:PRINT SPS;
300 D=D+F:IF D>2 AND D<20 THEN 250
310 F=-F:SOUND 0,100-7*F,10,8
320 FOR T=1 TO 5:NEXT T:SOUND 0,0,0,0:GOTO 250
330 POSITION A,D:PRINT SPS;
340 A=A+1:LOCATE A,D,P:IF P<>32 THEN 360
350 POSITION A,D:PRINT CHR$(160);:GOTO 330
360 IF P=160 THEN 430
370 P$=CHR$(P)
380 PT=50-25*(P$="*")-40*(P$="+")-60*(P$="/")
390 V=SGN(PT):X=50+150*(PT>0)
400 FOR I=V TO PT STEP V:S=S+V*10
410 POSITION 10,0:PRINT S;SPS;:SOUND 0,X,10,8
420 X=X+5-9*(V>0):NEXT I:SOUND 0,0,0,0:GOTO 240
430 SOUND 0,200,10,8
440 FOR DE=1 TO 15:NEXT DE:SOUND 0,0,0,0
450 PRINT CHR$(125);:PRINT "SORRY, YOU MISSED!"
460 PRINT:PRINT "YOUR SCORE: ";S
470 PRINT:PRINT "HIGH SCORE: ";HS
480 IF S<=HS THEN 510
490 HS=S:PRINT:PRINT "CONGRATULATIONS!"
500 PRINT:PRINT "YOU BEAT THE HIGH SCORE!"
510 PRINT:PRINT "PRESS <RETURN> TO PLAY AGAIN."
520 GET #1,K:IF K<>155 THEN 520
530 S=0:GOTO 90
1000 DATA +,*,*,*,$,/,/,/
1010 DATA 8,1,1,10,38,1,138,1,21,136,38,21

```



COMMODORE 64 & 128 (C 64 MODE)/DANCE OF THE SUGAR-PLUM FAIRY

```

10 DIM V1(104,3),V2(92,3),V3(95,3)
20 S=54272
30 FOR I=0 TO 24:READ A:POKE I+S,A:NEXT I
40 X1=S+4:X2=S+11:X3=S+18
50 H1=S+1:L1=S:H2=S+8:L2=S+7:H3=S+15:L3=S+14
60 FOR I=1 TO 104:READ V1(I,1),V1(I,2),V1(I,3):NEXT I
70 FOR I=1 TO 92:READ V2(I,1),V2(I,2),V2(I,3):NEXT I
80 FOR I=1 TO 95:READ V3(I,1),V3(I,2),V3(I,3):NEXT I
90 POKE 53280,4:POKE 53281,0:PRINT CHR$(147)
100 POKE 214,10:PRINT
110 PRINT TAB(5);"DANCE OF THE SUGAR-PLUM FAIRY"
120 P1=1:P2=1:P3=1:T1=0:T2=0:T3=0
130 POKE H1,V1(P1,1):POKE L1,V1(P1,2)
140 POKE H2,V2(P2,1):POKE L2,V2(P2,2)
150 POKE H3,V3(P3,1):POKE L3,V3(P3,2)
160 POKE X1,17:POKE X2,17:POKE X3,17
170 T1=T1+1:T2=T2+1:T3=T3+1
180 IF T1=V1(P1,3) THEN T1=0:P1=P1+1:POKE X1,16
190 IF T2=V2(P2,3) THEN T2=0:P2=P2+1:POKE X2,16
200 IF T3=V3(P3,3) THEN T3=0:P3=P3+1:POKE X3,16
210 IF P1=105 THEN 120
220 GOTO 130
1000 DATA 0,0,0,0,0,68,68,0,0,0,0,0,28
1010 DATA 133,0,0,0,0,28,133,0,0,0,15
2000 DATA 0,0,4,42,62,4,0,0,4,47,107,4,0,0,4,50,60,4
2010 DATA 0,0,4,39,223,4,0,0,4,42,62,4,0,0,4,47,107,4
2020 DATA 0,0,4,50,60,4,0,0,4,39,223,4,0,0,4,50,60,2
2030 DATA 42,62,2,50,60,4,47,107,4,39,223,4,42,62,4
2040 DATA 37,162,2,37,162,2,37,162,4,35,134,2,35,134,2
2050 DATA 35,134,4,33,135,2,33,135,2,33,135,4,31,165
2060 DATA 2,42,62,2,33,135,2,42,62,2,31,165,4,0,0,4
2070 DATA 0,0,4,50,60,2,42,62,2,50,60,4,47,107,4,67
2080 DATA 15,4,63,75,4,50,60,2,50,60,2,50,60,4,47,107
2090 DATA 2,47,107,2,47,107,4,42,62,2,42,62,2,42,62
2100 DATA 4,39,223,2,47,107,2,42,62,2,47,107,2,39,223
2110 DATA 4,0,0,4,0,0,4,50,60,2,42,62,2,50,60,4,47,107

```

```

2120 DATA 4,39,223,4,42,62,4,37,162,2,37,162,2,37,162
2130 DATA 4,35,134,2,35,134,2,35,134,4,33,135,2,33,135
2140 DATA 2,33,135,4,31,165,2,42,62,2,33,135,2,42,62,2
2150 DATA 31,165,4,0,0,4,0,0,4,42,62,2,35,134,2,42,62
2160 DATA 4,39,223,4,0,0,4,37,162,2,31,165,2,37,162
2170 DATA 4,35,134,4,0,0,4,33,135,2,28,49,2,33,135,4
2180 DATA 31,165,4,0,0,4,31,165,1,39,223,1,47,107,1
2190 DATA 63,75,1,42,62,4,31,165,4,21,31,4,25,30,4,21
2200 DATA 31,4,28,49,4,21,31,4,29,223,4,21,31,4,28
2210 DATA 49,4,21,31,4,25,30,4,21,31,4,28,49,4,21,31
2220 DATA 4,29,223,4,21,31,4,28,49,4,0,0,4,31,165,2,25
2230 DATA 30,2,31,165,4,28,49,4,23,181,4,25,30,4,22,96
2240 DATA 2,22,96,2,22,96,4,21,31,2,21,31,2,21,31,4
2250 DATA 19,239,2,19,239,2,19,239,4,31,165,4,28,49,4
2260 DATA 25,30,4,0,0,4,0,0,4,33,135,2,25,30,2,33,135
2270 DATA 4,33,135,4,47,107,4,50,60,4,42,62,2,42,62,2
2280 DATA 42,62,4,37,162,2,37,162,2,37,162,4,29,223,2
2290 DATA 29,223,2,29,223,4,31,165,4,29,223,4,23,181,4
2300 DATA 0,0,4,0,0,4,31,165,2,25,30,2,31,165,4,28,49
2310 DATA 4,23,181,4,25,30,4,22,96,2,22,96,2,22,96,4
2320 DATA 21,31,2,21,31,2,21,31,4,19,239,2,19,239,2
2330 DATA 19,239,4,25,30,4,28,49,4,25,30,4,0,0,4,0,0
2340 DATA 4,29,223,4,28,49,4,23,181,4,0,0,4,26,156,4
2350 DATA 25,30,4,21,31,4,0,0,4,23,181,4,28,49,4,25
2360 DATA 30,4,0,0,4,28,49,4,25,30,4,28,49,4,10
2370 DATA 143,4,0,0,4,10,143,4,0,0,4,10,143,4,0,0,4
2380 DATA 10,143,4,0,0,4,10,143,4,0,0,4,10,143,4,0,0
2390 DATA 4,10,143,4,0,0,4,10,143,4,0,0,4,10,143,4,12
2400 DATA 143,4,10,143,4,14,24,4,10,143,4,14,239,4,10
2410 DATA 143,4,15,210,4,10,143,4,17,195,4,10,143,4
2420 DATA 19,239,4,21,31,4,11,48,4,10,143,4,21,31,1
2430 DATA 18,209,1,16,195,1,15,210,1,14,239,4,10,143
2440 DATA 4,14,24,4,9,247,4,12,143,4,10,143,4,11,218
2450 DATA 4,11,218,4,11,218,4,15,210,4,11,218,4,17,195
2460 DATA 4,15,210,4,8,97,4,15,210,4,15,210,1,14,24,1
2470 DATA 12,143,1,11,218,1,10,143,4,12,143,4,10,143
2480 DATA 4,14,24,4,10,143,4,14,239,4,10,143,4,15,210
2490 DATA 4,10,143,4,17,195,4,10,143,4,19,239,4,21,31
2500 DATA 4,11,218,4,10,143,4,12,143,1,11,218,1,10
2510 DATA 143,1,9,104,1,8,225,4,11,218,8,23,181,1
2520 DATA 21,31,1,18,209,1,16,195,1,15,210,4,10,143
2530 DATA 8,21,31,1,18,209,1,17,195,1,15,210,1,14,24
2540 DATA 4,9,104,8,18,209,1,16,195,1,15,210,1,14,24
2550 DATA 1,12,143,4,11,48,4,10,143,4,15,210,4

```

M I C R O N O T E S

News from the computer-music front . . . Random House Software has announced the release of **Making Music on Micros**—a musical approach to computer programming by **Dr. Fred T. Hofstetter**. The package includes step-by-step instructions and a disk loaded with songs, samples, sounds, and subroutines. *Making Music*, \$69.95 for the Apple II series and IBM PC/PCjr computers, teaches BASIC programming, music composition, and displays music notation.

For those Commodore 64 owners who've been jealously watching Macintosh users pull down menus and play with windows, this program's for you. From **Broderbund, The Music Shop** is available in standard C 64 and MIDI format. It lets you write, edit, play, and print original music compositions. Included are several sample arrangements of popular and classical songs. The program is \$44.95.

In need of a good computer-music reference book?

You've come to the right place. For Atari lovers, there's **Dr. C. Wacko's Miracle Guide to Designing and Programming Your Own Atari Computer Arcade Games**. It's \$12.95 (\$29.95 with disk) from **Addison Wesley**, and contains a fun-loving, zany approach to creating sounds and music for your games. C 64 users will enjoy **Bill L. Behrendt's Music and Sound for the Commodore 64** from Simon and Schuster/The General Reference Group. This book—\$14.95 (\$29.95 with disk)—does a good job of taking the mystery out of programming sound on the 64, and includes a library of interesting sound effects.

Also useful is **Commodore Magic** by **Michael Callery** from E.P. Dutton's Hard/Soft Press, \$12.95 (\$21.95 with disk), and **ADAM's Companion** from **Avon Books**. Chapter nine of *ADAM's Companion* offers a thorough explanation of how music is made on the ADAM, and includes a table of frequency values for musical notes and technical info for creating three-voice compositions. The book costs \$9.95.

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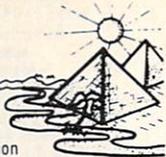


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