

\$2.50

PUBLISHED BY SCHOLASTIC INC.

JULY 1985

VOLUME 3  
NUMBER 7

A Hands-On Review  
COMMODORE 128

# FAMILY COMPUTING

## Leisure Time and Your Computer



Yankee  
Dave  
Winfield

Takes on Computers

What Are You  
Worth? Find Out  
With Our Original  
Programs for Apple,  
C 64, IBM PC/PCjr,  
TRS-80 Models III & 4

Build Math Skills  
With Software

Customize  
Your Computer

Plus:  
K-POWER  
for Kids



WORCESTER MA 01606  
\*\*\*\*\*5-DIGIT 01606  
450920 WLL 0001M091 1420 NOV85  
07#SL



ORIGINAL PROGRAMS FOR  
TARI, C64 AND VIC-20, IBM PC/PCjr,  
TRS-80 COCO & MODELS III AND 4

# FAMILY COMPUTING

## FEATURES

### 25 LEISURE TIME AND YOUR COMPUTER

Make the most of your summer with software. Sharpen your sports skills, type faster, shape up, compose a symphony, clear the SAT hurdles, and make your own computer game. PLUS: SOME SUMMER READING

### 35 YANKEE DAVE WINFIELD TAKES ON COMPUTERS

by June Rogoznica

The New York Yankee baseball player is helping disadvantaged kids get into the computer "ball-game." He tells how inside.

### 36 OFFICE WORK AT HOME

by Barbara E. and John F. McMullen

With a computer at home, you can do more than just "extend" your workday. Six professionals tell how they are adding a new dimension to their jobs. Find out if you can do the same.

### 38 BUYER'S GUIDE TO THE CUSTOMIZED COMPUTER

by Dan Gutman

A look at some offbeat peripherals including a home control system, a music processor, a speech module, weatherstations, robots, and more.

PLUS: THE COMPUTER-VIDEO CONNECTION



Page 25

### 42 A HANDS-ON REVIEW: COMMODORE 128

by Louis Wallace

Check out Commodore's latest arrival: A 128K machine that runs C 64 and CP/M software and has a numeric keypad.

PLUS: A LOOK AT THE NEW DISK DRIVE

### 44 HELPFUL HINTS

Recycling printer ribbons; a letter-quality trick; and more.

## K-POWER

### 57 An Interview with Lord British

Designer Richard Garriott searches for the "Ultimate" Ultima.

### 59 Dr. Cursor's Clinic

Sprites and bit-mapped computers.

### 60 Game Strategy

Tips, tricks, and hints.

### 62 Microtones

The Curly Calypso, a catchy computerized tune, and an interview with its Steve Miller-Band creators.

### 64 Contest

Rename the Special Ks, and win \$25!



Page 36

## PROGRAMMING

### 45 THE PROGRAMMER

### 46 TIPS TO THE TYPIST

### 47 BEGINNER PROGRAM

Use Age Splitter to find out your age translated into minutes or seconds, and find out how computers do math. For ADAM, Apple II series, Atari, C 64 & VIC-20, IBM PC/PCjr, TI-99/4A, and TRS-80 CoCo & Models III.

### 49 ARCADE GAME

Hit or Miss: solo Ping-Pong with a bowling ball, for your Apple II series, Atari, C 64, IBM PC/PCjr, and TRS-80 CoCo & Model III.

### 53 FEATURE PROGRAM

Atari's player-missile graphics made easy with these utilities.

## PRODUCTS

### 65 WHAT'S IN STORE

### 65 NEW HARDWARE/MARKET UPDATE

Teknika monitor, Epson and Juki printers, and the scoop on Apple peripherals and IBM in-house software.

### 68 SOFTWARE GUIDE AND REVIEWS

## DEPARTMENTS

### 4 EDITOR'S NOTE

### 8 HOME-SCHOOL CONNECTION

by Mindy Pantiel and Becky Petersen

Mastering math: How the computer and software can help boost math skills.

### 14 HOME/MONEY MANAGEMENT

by Kimball J. Beasley

Find out what you're worth, using our original program for ADAM, Apple, C 64, IBM PC/PCjr, and TRS-80 CoCo & Model III.

### 19 COMPUTING CLINIC

### 20 TELECOMPUTING

by John Jainschigg

Teleconferencing: The computer cafe.

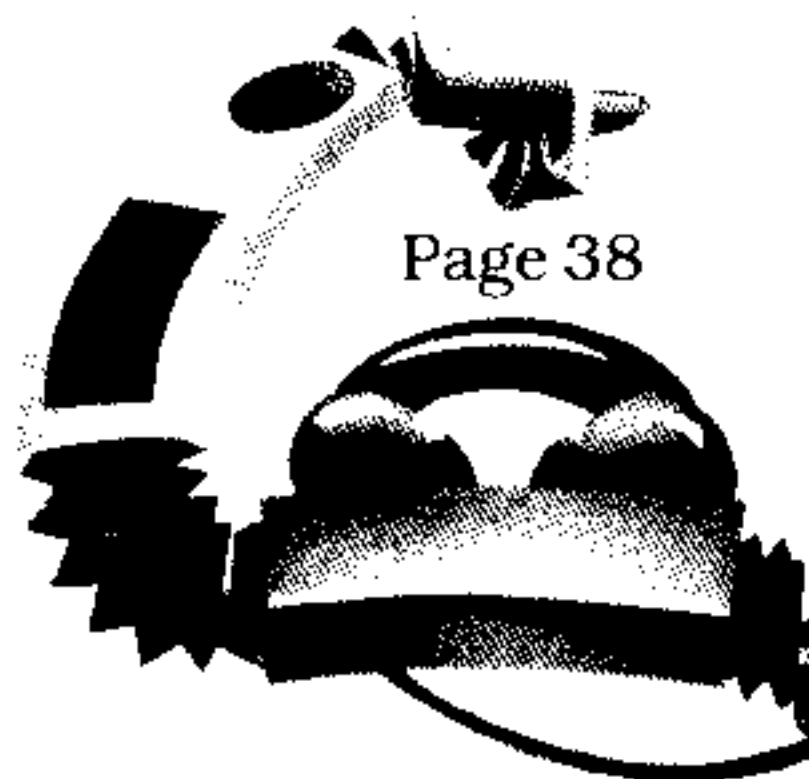
### 78 CLASSIFIED

### 80 ADVERTISERS' INDEX

FAMILY COMPUTING (ISSN 0738-6079) is published monthly by Scholastic Inc., 730 Broadway, New York, NY 10003. Subscriptions: in the U.S. and possessions, 12 issues for \$19.97; outside the U.S. add \$6 (surface mail) or \$25.97 (air-mail). Office of publication: 351 Carver Rd., P.O. Box 2700, Monroe, OH 45050-2700. Second-class postage paid at Monroe, OH 45050-9998 and additional offices. POSTMASTER: Send address changes and notice of undelivered copies to FAMILY COMPUTING, P.O. Box 2511, Boulder, CO 80302. Printed in U.S.A. Copyright © 1985 by Scholastic Inc. All rights reserved.

COVER PHOTOGRAPH BY VINCENT CECI

Page 68



Page 38



# EDITOR'S NOTE

## NO REGRETS

"Dave passed through town this afternoon and wanted to make sure you knew that IBM went out of the personal computer market."

I was in London, on vacation, when I heard those words. Although I knew that message had to be severely garbled, you can imagine its effect on my good time. Distracted over dinner, distressed at the theater, and sleepless back at the hotel. That's what I was. Finally, at 2 a.m., Shirrel Rhoades, our publisher, called and set the record straight—it was the PCjr. : discontinued

While I fretted over the Editor's Note in the May issue, due to reach readers any minute, in which I'd praised IBM for sticking with the jr, Shirrel seemed totally calm. On a personal level, he had a real investment at stake. He owns a PCjr.

Shirrel has more than once found himself in a position not uncommon among computer owners—he'd bought a computer that was taken out of production. In addition to the jr, Shirrel owns an ADAM, a TI-99/4A, TRS-80 Model III and 100, a TS 1500—and an Apple IIe.

When Coleco announced it would no longer manufacture the ADAM, Texas Instruments the 99/4A, Timex the 1500 and 2068 (1000s were already out of production), and IBM the jr, Shirrel rushed out and expanded his system and added to his software library. All of his computers still are being used.

I say, "Three cheers for computer enthusiasts!" Shirrel typifies them. He's thankful for all his computing feats. No regrets on his part. Even with computers no longer found on store shelves, Shirrel and/or members of his family boast a novel, im-

proved SAT scores, a collection of home-brewed computer games, a more efficient workday, work-free weekends, better control of their finances, and a host of other computer-related accomplishments.

That brings us to this issue and some of the additions you can make to your computer accomplishments. For many of us, the approach of summer means a slower pace and more leisure time. You can put that time to better use than ever with the help of your computer. Managing Editor June Rogoznica and Reviews Editor John Wallace have, with tremendous help from Research and Copy Associate Linda "Fax" Williams, assembled a special leisure-time section. With the right software package to help you, you'll find it a lot easier to achieve some long-held goals, ranging from athletic feats to a mastery of music or an increased reading rate. You'll find their editorial feats begin on page 25.

Our increased financial and business coverage is getting a strong response from readers, so you might want to read this month's Home/Money Management column on page 14, which shows you how to figure out what you're worth.

Since almost all readers are eager to know more about the newest computer models, our review of the Commodore 128 is a "must read." Each month we try to put together an entire issue that's a "must read." In large part, we do this by keeping you as well informed as we can.



CLAUDIA COHL  
EDITOR-IN-CHIEF

# FAMILY COMPUTING®

730 Broadway, New York, NY 10003

(212) 505-3580

EDITOR-IN-CHIEF: Claudia Cohl

DESIGN DIRECTOR: Vincent Cecil

## EDITORIAL

SENIOR EDITORS: Laura Bernstein,  
Anne Krueger

FEATURES EDITOR: Nick Sullivan

MANAGING EDITOR: June Rogoznica

REVIEWS EDITOR: John D. Wallace Jr.

COPY AND RESEARCH CHIEF: Roxane Farmanfarman

COPY AND RESEARCH ASSOCIATE: Linda Williams

PHOTO/SOFTWARE COORDINATOR: Suzette Harvey

ADMINISTRATIVE COORDINATOR: Barbara Schultz

ADMINISTRATIVE ASSISTANT: Minerva Jimenez

CONTRIBUTING EDITORS: Jeffrey Birstow,  
James Delson, Peter Favaro Ph.D., Charles H.  
Gajeway, Sarah Kortum, Tony Morris, Mindy  
Pantiel, Becky Petersen, Robin Raskin

K-POWER ASSISTANTS: David Langendoen,  
Damon Osgood, Alex Shakar

## ART

DESIGN ASSOCIATE: James C. Montalbano

DESIGN ASSISTANTS:

Doreen Maddox, Susan Taylor, Stephen E. Wilcox

## TECHNICAL

TECHNICAL DIRECTOR: Lance Paavola

TECHNICAL EDITOR: John Jainschigg

ASSOCIATE TECHNICAL EDITOR: Joey Latimer

CONTRIBUTING TECHNICAL EDITORS: Steven C.M.  
Chen, Joe Gelman

TECHNICAL ASSISTANTS: Maureen Bruno  
Susan Easum, Ken Meyer

## PUBLISHING

PUBLISHER: Shirrel Rhoades

BUSINESS MANAGER: Steven Abromowitz

PRODUCTION MANAGER: David J. Lange

BUSINESS/PRODUCTION COORDINATOR: Virginia Ferrara

CIRCULATION DIRECTOR: Deede Dickson

CIRCULATION MANAGER: John Squires

CIRCULATION ANALYST: Robin Andrews

PROMOTION/PRODUCTION COORDINATOR: Patricia Neal

CUSTOMER SERVICE REPRESENTATIVE: Maria Giresi

ASSISTANT TO THE PUBLISHER: Elizabeth Monaghan

## ADVERTISING SALES OFFICES

ASSOCIATE PUBLISHER/ADVERTISING:

Paul W. Raiss (212) 505-3585

MARKETING CONSULTANT:

Michael H. Tchong (212) 505-3586

ASSOCIATE ADVERTISING DIRECTOR:

Bruce Gardner (212) 505-3586

EASTERN ADVERTISING DIRECTOR:

Susan M. Belair (212) 505-3585

SOUTHWESTERN REPRESENTATIVE: Jim Bender

12011 San Vicente Blvd., Suite 302

Los Angeles, CA 90049

(213) 471-3455

NORTHWEST REPRESENTATIVE: Pamela Taylor

385 Sherman Ave., Suite 1

Palo Alto, CA 94306

(415) 322-1015

NATIONAL SALES ASSISTANT:

Anne Eagle (212) 505-3630

TELEMARKETING DIRECTOR:

Greg Rapport (212) 505-3587

TELEMARKETING REPRESENTATIVES:

Marianne Ettisch (212) 505-3615

Carol Graziano (212) 505-3629

TELEMARKETING SALES ASSISTANT:

Megan Van Peebles (212) 505-3636

## NEED SUBSCRIPTION ASSISTANCE?

Please send change of address to FAMILY COMPUTING, P.O. Box 2511, Boulder, CO 80302. For other problems, call (800) 525-0643 and please have a copy of your canceled check and mailing label handy.

### SCHOLASTIC INC. CORPORATE:

Maurice R. Robinson, founder, 1895-1982

PRESIDENT, CHIEF EXECUTIVE OFFICER, AND CHAIRMAN OF THE BOARD: Richard Robinson

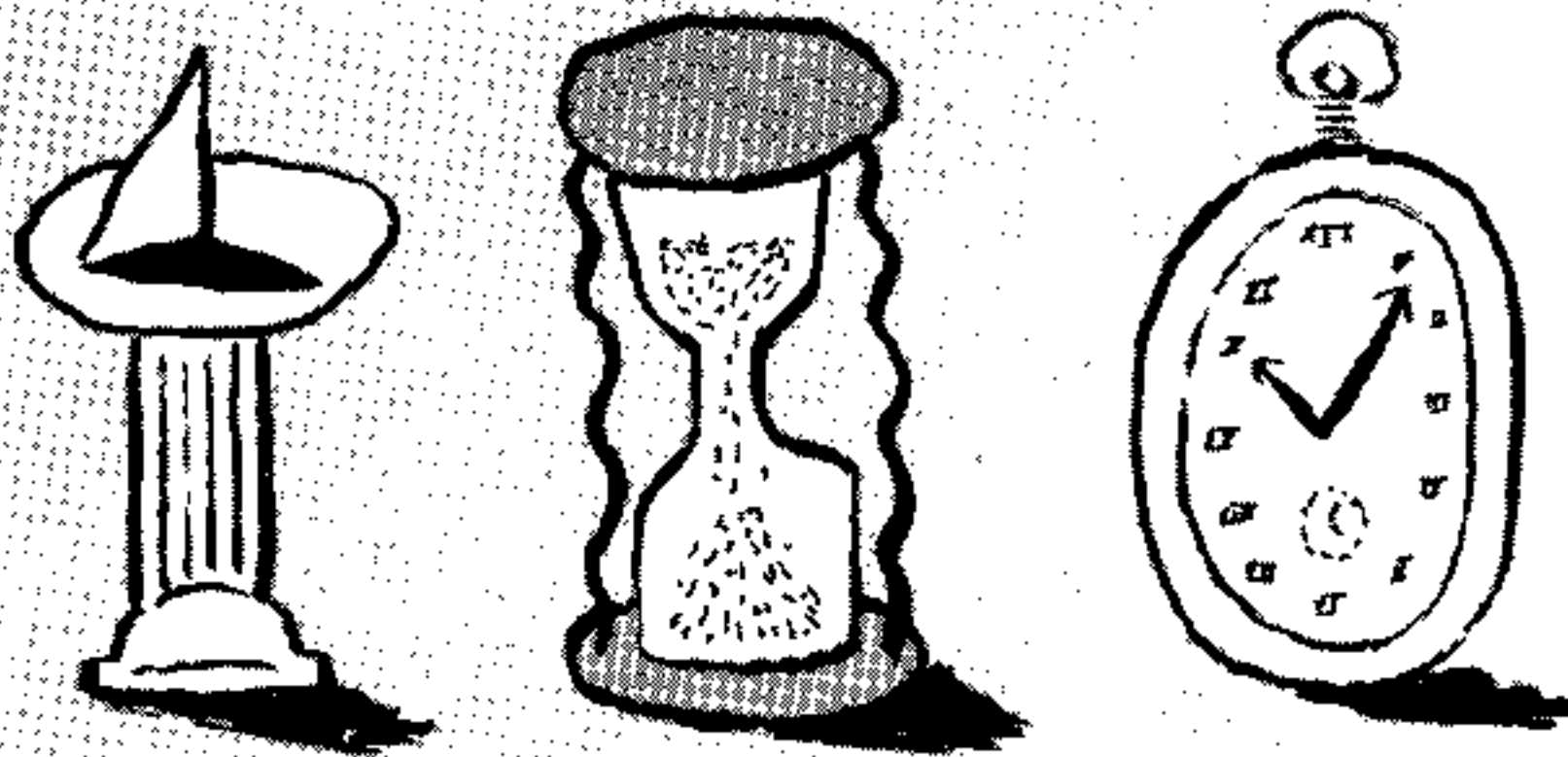
VICE-CHAIRMAN OF THE BOARD EMERITUS: Jack K. Lippert

**NATIONAL ADVISORY COUNCIL:** Dr. Sidney P. Marland, Jr., chairman, former superintendent of schools and U.S. Commissioner of Education • Dr. Gregory Anrig, president, Educational Testing Service • Elaine Banks, past president, National Association of Elementary School Principals • Michael J. Guerra, executive director, secondary schools, National Catholic Educational Association • Dr. Lola Jane May, mathematics consultant, Winnetka, Illinois, public schools • Dr. Wilson Riles, former superintendent of public instruction, State Department of Education, California • Dr. Richard Ruopp, president, Bank Street College of Education, New York, New York • Patsy R. Scales, library and media specialist, Greenville (South Carolina) Middle School • Elaine Steinkemeyer, president, The National PTA



# AGE SPLITTER

BY JOEY LATIMER



How old are you in minutes? In seconds? *Age Splitter* will tell you what your age is in these units—and in months, weeks, days, and hours, too! Just type in the program listing for your computer, and SAVE it to disk or cassette. When you type RUN, the program will ask you to type in your age in years. Use numerals only, and press RETURN or ENTER when you're done. Your computer will churn away for a split instant, and then print out the results. Press "P" to go back to the beginning and start over, or "Q" to quit.

### PROGRAM NOTES

*Age Splitter* demonstrates how PRINT statements can be used to evaluate and display the results of mathematical expressions. The program starts by asking for your age in years, accepting this number via an INPUT statement, and placing it in a variable called AGE. Then a series of PRINT statements multiply the value in AGE by different numbers, to calculate how many months, weeks, days, hours, minutes, or seconds old you are, and print these figures out on the screen in combination with text. Semicolons are used to keep the result of each expression and its identifying text together on the same screen line.

If you keep playing with the program, you'll sooner or later enter a number for

years that's so great that your computer will be unable to print out the number of seconds it contains in normal fashion. Instead, you'll see an expression something like this where the seconds should be:

1.5768E+10.

This is a form of scientific notation that your computer uses to save printing unnecessary zeroes when displaying very large or very small numbers. The left-hand side of the expression contains only the significant digits of the figure, expressed as a decimal number between 1 and 10. The right-hand side of the expression stands for the power of 10 the left-hand side is multiplied by to achieve the final value.

1.5768E+10 simply means  $1.5768 \times 10$  to the 10th, which translates to 1.5768  $\times 10$  billion, or 15 billion, 768 million. That's a BIG number: the number of seconds in 500 years!

Programmers may enjoy the challenge of finding out the biggest and smallest numbers their computers can display normally. Different machine brands have different maximum and minimum limits.

If you devise a good enhancement of one of our beginner programs, we might mention it in a future issue. Send a printout of your program (no tapes or disks, please) to:

Beginner Programs—  
FAMILY COMPUTING  
730 Broadway  
New York, NY 10003

### ADAM/Age Splitter

```

10 HOME
20 PRINT "Type your answer;"
30 PRINT "then press <RETURN>."
40 PRINT
50 PRINT "How many years old are you";
60 INPUT age
70 HOME
80 PRINT "If you are ";age;" years old,"
90 PRINT "you have lived more than ..."
100 PRINT
110 PRINT age*12;" months, or"
120 PRINT age*52;" weeks, or"
130 PRINT age*365;" days, or"
140 PRINT age*365*24;" hours, or"
150 PRINT age*365*24*60;" minutes, or"
160 PRINT age*365*24*60*60;" seconds."
170 PRINT
180 PRINT "Press <P> to play again,"
190 PRINT "or <Q> to quit."
200 GET k$
210 IF k$ = "P" OR k$ = "p" THEN 10
220 IF k$ <> "Q" AND k$ <> "q" THEN 200
230 END
    
```

### Apple/Age Splitter

```

10 HOME
20 PRINT "TYPE YOUR ANSWER; THEN PRESS <RETURN>."
30 PRINT
40 PRINT "HOW MANY YEARS OLD ARE YOU";
50 INPUT AGE
60 HOME
70 PRINT "IF YOU ARE ";AGE;" YEARS OLD,"
80 PRINT "YOU HAVE LIVED MORE THAN ..."
90 PRINT
100 PRINT AGE*12;" MONTHS, OR"
110 PRINT AGE*52;" WEEKS, OR"
120 PRINT AGE*365;" DAYS, OR"
130 PRINT AGE*365*24;" HOURS, OR"
140 PRINT AGE*365*24*60;" MINUTES, OR"
150 PRINT AGE*365*24*60*60;" SECONDS."
160 PRINT
170 PRINT "PRESS <P> TO PLAY AGAIN,"
180 PRINT "OR <Q> TO QUIT."
190 GET K$
200 IF K$ = "P" THEN 10
210 IF K$ <> "Q" THEN 190
220 END
    
```

### Atari/Age Splitter

```

10 OPEN #1,4,0,"K:"
20 PRINT CHR$(125);
30 PRINT "TYPE YOUR ANSWER; THEN PRESS <RETURN>.";
40 PRINT
50 PRINT "HOW MANY YEARS OLD ARE YOU";
60 INPUT AGE
70 PRINT CHR$(125);
80 PRINT "IF YOU ARE ";AGE;" YEARS OLD,"
90 PRINT "YOU HAVE LIVED MORE THAN ..."
100 PRINT
110 PRINT AGE*12;" MONTHS, OR"
120 PRINT AGE*52;" WEEKS, OR"
130 PRINT AGE*365;" DAYS, OR"
140 PRINT AGE*365*24;" HOURS, OR"
150 PRINT AGE*365*24*60;" MINUTES, OR"
160 PRINT AGE*365*24*60*60;" SECONDS."
170 PRINT
180 PRINT "PRESS <P> TO PLAY AGAIN,"
190 PRINT "OR <Q> TO QUIT."
200 GET #1,K
210 IF K=ASC("P") THEN 20
220 IF K<>ASC("Q") THEN 200
230 END
    
```

## BEGINNER PROGRAM

### Commodore 64/Age Splitter

```
10 PRINT CHR$(147);
20 PRINT "TYPE YOUR ANSWER; THEN PRESS <RETURN>."
30 PRINT
40 PRINT "HOW MANY YEARS OLD ARE YOU";
50 INPUT AGE
60 PRINT CHR$(147);
70 PRINT "IF YOU ARE";AGE;"YEARS OLD,"
80 PRINT "YOU HAVE LIVED MORE THAN ..."
90 PRINT
100 PRINT AGE*12;"MONTHS, OR"
110 PRINT AGE*52;"WEEKS, OR"
120 PRINT AGE*365;"DAYS, OR"
130 PRINT AGE*365*24;"HOURS, OR"
140 PRINT AGE*365*24*60;"MINUTES, OR"
150 PRINT AGE*365*24*60*60;"SECONDS."
160 PRINT
170 PRINT "PRESS <P> TO PLAY AGAIN, OR <Q> TO QUIT."
180 GET K$
190 IF K$="P" THEN 10
200 IF K$<>"Q" THEN 180
210 END
```

### IBM PC/Age Splitter

```
10 KEY OFF
20 CLS
30 PRINT "TYPE YOUR ANSWER; THEN PRESS <ENTER>."
40 PRINT
50 PRINT "HOW MANY YEARS OLD ARE YOU";
60 INPUT AGE
70 CLS
80 PRINT "IF YOU ARE";AGE;"YEARS OLD,"
90 PRINT "YOU HAVE LIVED MORE THAN ..."
100 PRINT
110 PRINT AGE*12;"MONTHS, OR"
120 PRINT AGE*52;"WEEKS, OR"
130 PRINT AGE*365;"DAYS, OR"
140 PRINT AGE*365*24;"HOURS, OR"
150 PRINT AGE*365*24*60;"MINUTES, OR"
160 PRINT AGE*365*24*60*60;"SECONDS."
170 PRINT
180 PRINT "PRESS <P> TO PLAY AGAIN,"
190 PRINT "OR <Q> TO QUIT."
200 K$=INKEY$
210 IF K$="P" THEN 20
220 IF K$<>"Q" THEN 200
230 END
```

### TI-99/4A/Age Splitter

```
10 CALL CLEAR
20 PRINT "TYPE YOUR ANSWER;"
30 PRINT "THEN PRESS <ENTER>."
40 PRINT
50 PRINT "HOW MANY YEARS OLD ARE YOU";
60 INPUT AGE
70 CALL CLEAR
80 PRINT "IF YOU ARE";AGE;"YEARS OLD,"
90 PRINT "YOU HAVE LIVED MORE THAN ..."
100 PRINT
110 PRINT AGE*12;"MONTHS, OR"
120 PRINT AGE*52;"WEEKS, OR"
130 PRINT AGE*365;"DAYS, OR"
140 PRINT AGE*365*24;"HOURS, OR"
150 PRINT AGE*365*24*60;"MINUTES, OR"
160 PRINT AGE*365*24*60*60;"SECONDS."
170 PRINT
180 PRINT "PRESS <P> TO PLAY AGAIN, OR <Q> TO QUIT."
190 CALL KEY(3,K,S)
200 IF K=80 THEN 10
210 IF K>81 THEN 190
220 END
```

### TRS-80 Color Computer/Age Splitter

```
10 CLS
20 PRINT "TYPE YOUR ANSWER;"
30 PRINT "THEN PRESS <ENTER>."
40 PRINT
50 PRINT "HOW MANY YEARS OLD ARE YOU";
60 INPUT AGE
70 CLS
80 PRINT "IF YOU ARE";AGE;"YEARS OLD,"
90 PRINT "YOU HAVE LIVED MORE THAN ..."
100 PRINT
110 PRINT AGE*12;"MONTHS, OR"
120 PRINT AGE*52;"WEEKS, OR"
130 PRINT AGE*365;"DAYS, OR"
140 PRINT AGE*365*24;"HOURS, OR"
150 PRINT AGE*365*24*60;"MINUTES, OR"
160 PRINT AGE*365*24*60*60;"SECONDS."
170 PRINT
180 PRINT "PRESS <P> TO PLAY AGAIN,"
190 PRINT "OR <Q> TO QUIT."
200 K$=INKEY$
210 IF K$="P" THEN 10
220 IF K$<>"Q" THEN 200
230 END
```

### TRS-80 Model III/Age Splitter

```
10 CLS
20 PRINT "TYPE YOUR ANSWER; THEN PRESS <ENTER>."
30 PRINT
40 PRINT "HOW MANY YEARS OLD ARE YOU";
50 INPUT AGE
60 CLS
70 PRINT "IF YOU ARE";AGE;"YEARS OLD, YOU HAVE LIVED M
ORE THAN ..."
80 PRINT
90 PRINT AGE*12;"MONTHS, OR"
100 PRINT AGE*52;"WEEKS, OR"
110 PRINT AGE*365;"DAYS, OR"
120 PRINT AGE*365*24;"HOURS, OR"
130 PRINT AGE*365*24*60;"MINUTES, OR"
140 PRINT AGE*365*24*60*60;"SECONDS."
150 PRINT
160 PRINT "PRESS <P> TO PLAY AGAIN, OR <Q> TO QUIT."
170 K$=INKEY$
180 IF K$="P" THEN 10
190 IF K$<>"Q" THEN 170
200 END
```

### VIC-20/Age Splitter

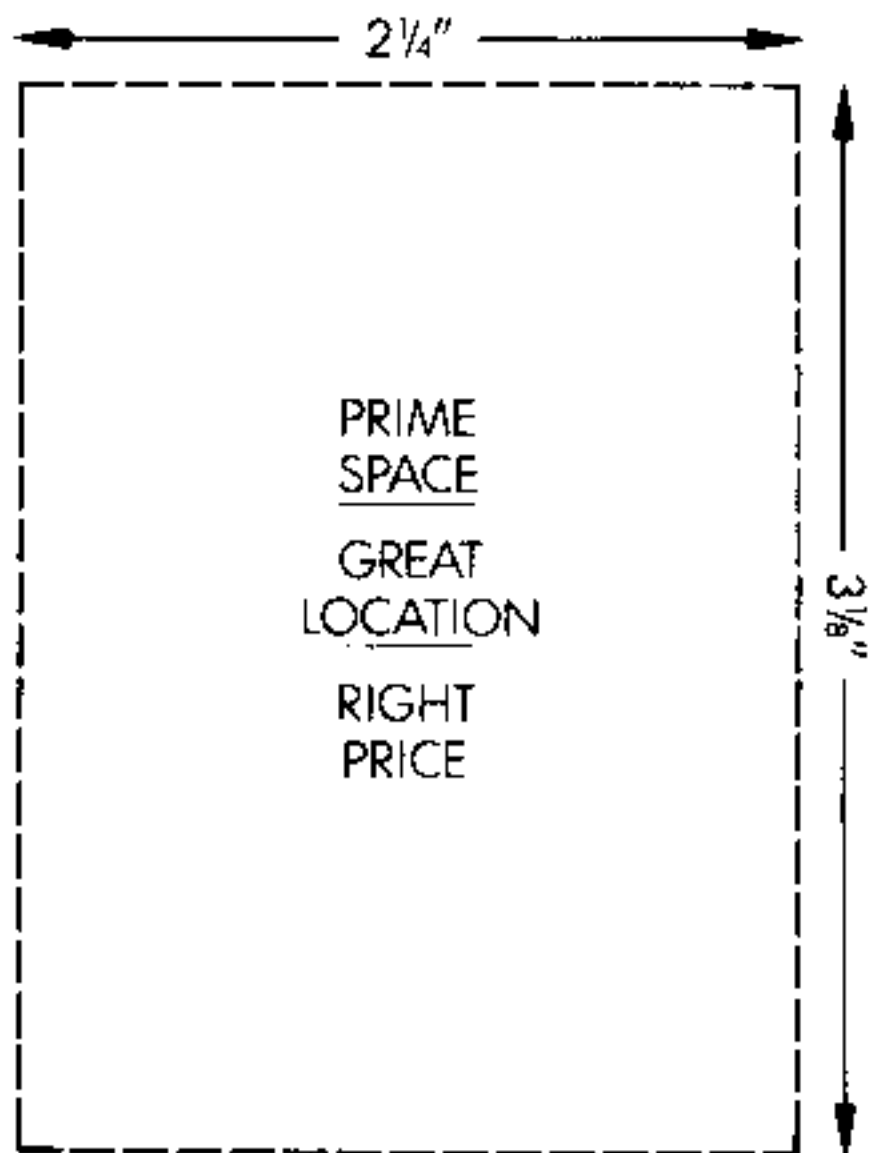
```
10 PRINT CHR$(147);
20 PRINT "TYPE YOUR ANSWER;"
30 PRINT "THEN PRESS <RETURN>."
40 PRINT
50 PRINT "HOW MANY YEARS OLD"
60 PRINT "ARE YOU";
70 INPUT AGE
80 PRINT CHR$(147);
90 PRINT "IF YOU ARE";AGE;"YEARS"
100 PRINT "OLD, YOU HAVE LIVED"
110 PRINT "MORE THAN ..."
120 PRINT
130 PRINT AGE*12;"MONTHS, OR"
140 PRINT AGE*52;"WEEKS, OR"
150 PRINT AGE*365;"DAYS, OR"
160 PRINT AGE*365*24;"HOURS, OR"
170 PRINT AGE*365*24*60;"MINUTES, OR"
180 PRINT AGE*365*24*60*60;"SECONDS."
190 PRINT
200 PRINT "PRESS <P> TO PLAY"
210 PRINT "AGAIN, OR <Q> TO QUIT."
220 GET K$
230 IF K$="P" THEN 10
240 IF K$<>"Q" THEN 220
250 END
```

**GAMES** REVIEWED BY JAMES DELSON

Title Manufacturer Price	Brief description	Hardware/ Equipment required	Backup policy	Ratings						
				O	D	PS	GQ	EU	V	
ADVENTURE CONSTRUCTION SET Electronic Arts 2755 Campus Drive San Mateo, CA 94403 (415) 571-7171 \$39 (C 64); \$49 (Apple, IBM) ©1984	Innovative build-it-yourself role-playing adventure lets you create an unlimited number of your very own fantasy challenges. Clumsy design system makes this best for serious role-playing fans, ages 10+. †	C 64. Planned for Apple II series; IBM PC/PCjr.	90-day warranty; \$7.50 thereafter or if user-damaged.	★	A	★	★	★	A	★
DREADNOUGHTS Avalon Hill 4517 Harford Road Baltimore, MD 21214 (301) 254-5300 \$30 ©1985	Excellent introductory strategy and tactics game for ages 10+, puts you in control of the great W.W. II German vessel, <i>Bismarck</i> , as you prowl through the Atlantic in search of British convoys. †	Reviewed on Apple II series. Also for C 64.	Unlimited warranty; \$10 fee if user-damaged.	★	★	★	★	★	E	★
H.E.R.O. Activision 2350 Bayshore Frontage Rd. Mountain View, CA 94043 (415) 960-0410 \$24-\$39 ©1984-85	Explore caverns, using dynamite, phasers, special lamps, and more in colorful maze/flying game. Fun and easily played by ages 10+.	Reviewed on C 64. Also for Apple II series, 48K; Atari, 32K (cass.).	1-year warranty.	★	★	★	★	★	A	★
INCUNABULA Avalon Hill 4517 Harford Road Baltimore, MD 21214 (301) 254-5300 \$30 ©1985	Trade goods, forge alliances, wage war by controlling a pre-Christian culture in a superb historical/economic/financial game for 1-7 players, ages 12+. †	IBM PC/PCjr, 128K.	Unlimited warranty; \$10 fee if user-damaged.	★	★	★	★	★	D	★
INFIDEL Infocom 55 Wheeler St. Cambridge, MA 02138 (617) 492-1031 \$39-\$44 ©1983	Set off across the desert in search of a lost tomb in this challenging text adventure—filled with the usual Infocom puzzles and dry humor. Good intermediate level challenge for adventurers, ages 12+.	Reviewed on Apple II series, 48K. Also for Atari, 48K; Macintosh, 128K; C 64; IBM PC, 64K/PCjr, 128K; TI-99/4A, 48K; TRS-80 Models I/III, 48K.	90-day warranty; \$5 fee thereafter or if user-damaged.	★	★	★	★	NA	D	★
ON-FIELD FOOTBALL Gamestar 1302 State St. Santa Barbara, CA 93101 (805) 963-3487 \$31 ©1985	1-2 players each control fully animated 4-man teams in knockout football simulation. Run, kick, pass, receive, intercept, and more in excellent challenge for ages 10+.	C 64. Joystick.	90-day warranty.	★	★	★	★	★	D	★
POGO JOE Screenplay 1095 Airport Road Minden, NV 89423 (800) 334-5470 \$29 ©1983	Hop around a wide variety of screens from precipice to precipice, avoiding bouncing foes in compelling game, especially good for young joystick pros, ages 8+.	Reviewed on Atari, 48K. Also for C 64. Joystick.	90-day warranty; \$12.50 fee thereafter, if user-damaged, or for backup.	★	★	★	★	★	A	★
ROCK N' BOLT Activision 2350 Bayshore Frontage Rd. Mountain View, CA 94043 (415) 960-0410 \$29 ©1985	Fun, nonviolent, building game requires 1-2 players, ages 5+, to connect moving girders to complete a 100-floor building.	C 64.	1-year warranty.	★	★	★	★	★	E	★
SPY HUNTER Coleco Industries 999 Quaker Lane S. West Hartford, CT 06110 (203) 725-6660 \$29 ©1984	Drive your Bond-like supercar across a dangerous stretch of road, avoiding innocent motorists while eliminating the bad guys. Use machine guns, missiles, smokescreens, and go on to a boat chase. For ages 8+.	Coleco ADAM.	90-day warranty.	★	★	★	★	★	A	★
STARCLASH II Baen Software 8 West 36th St. New York, NY 10018 (212) 947-8244 \$29 ©1984	Try to gain control of a corner of the universe in flexible, outerspace strategy and tactics game for 1-2 players, ages 12+.	IBM PC, 64K.	30-day warranty; \$5 fee thereafter; user makes backup.	★	★	★	★	★	A	★

**RATINGS KEY** O Overall performance; D Documentation; PS Play system; GQ Graphics quality; EU Ease of use; V Value for money; ★ Poor; ★★ Average; ★★★ Good; ★★★★ Excellent; (★ to ★★★★★ depending on price; N/A Not applicable; E Easy; A Average; D Difficult; † Longer review follows chart

# DIRECT ACCESS



Your Direct Access ad reaches a paid circulation of more than 375,000 FAMILY COMPUTING subscribers every month — at home. They're already very interested in computers and computing.

## PLACING YOUR AD

To Place Your Ad in Direct Access  
Call (212) 505-3636

## Attention 99/4A OWNERS EXTENDED BASIC ONLY \$48.95

(Newest Version)

Join and Support Your 99/4A National Assistance Group

For "Today and Tomorrow"

"The World's Largest Computer Assistance Group"

Now Serving

Thousands of 99/4A owner members in all 50 states and in 31 countries!

### Special to Members!

- \* Terminal Emulator III Available free to members (see membership pack for details)
- \* Continued Full Technical Assistance advice on expansion, service, etc. for your 99/4A!
- \* New Disk Manager and Screen Dump Programs Reside in memory, always ready to use, "even with other modules plugged in."
- \* Nashua Diskettes 1st quality, life-time guarantee only 94¢ each.
- \* New Super Assembly Language Graphics Demo will prove 99/4A Computer superior to others!

### AVAILABLE NOW !!!

### NEW EXPANSION SYSTEM !!!

FOR MORE INFORMATION CALL 24 HOURS (305) 583-0467

Please enroll me as a member of 99/4A National Assistant Group enclosed is a check or money order for \$10 for a 1-year membership. Please send me my complete membership package including discount software and accessories list, monthly updates on new products and software available to me and my family. I also will receive my membership number for any technical assistance I may need.

LAST NAME \_\_\_\_\_ FIRST NAME \_\_\_\_\_ MID. INIT \_\_\_\_\_  
ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_  
ZIP \_\_\_\_\_ PHONE \_\_\_\_\_ DATE \_\_\_\_\_

99/4A NATIONAL ASSISTANCE GROUP

National Headquarters Box 290812

Fort Lauderdale, FL 33329 Attn: Membership Division

# PCjr LIVES!

Feel like an Edsel owner? Well, cheer up. The real value of a computer is in the software it can run. And, as the world's largest manufacturer of PCjr<sup>®</sup> enhancements, Racore has the hardware you need to run as much IBM<sup>®</sup> PC and PC XT software as you care to.

For example, our Drive Two<sup>™</sup> package snaps on top of your PCjr and makes it, essentially, a dual drive IBM PC. You also get our unique PC mode switch. It allows your jr to run PC graphics, like those in Lotus 1-2-3<sup>™</sup> and Symphony<sup>™</sup>. You can't do that with any other system. For even more versatility, snap on our 10MB fixed disk enhancement. It gives your jr performance approaching that of a PC XT.

Both the 10MB and the Drive Two systems include a parallel printer port, a battery operated clock calendar and a built-in power booster. You can also add a direct memory access (DMA) controller board for maximum IBM PC compatibility. In addition, we manufacture a low cost memory expansion board that fits neatly inside our disk drive enhancement packages.

To unleash the full potential of your jr, call or write today. Racore Corporation, 10 Victor Square, Scotts Valley, California 95066.

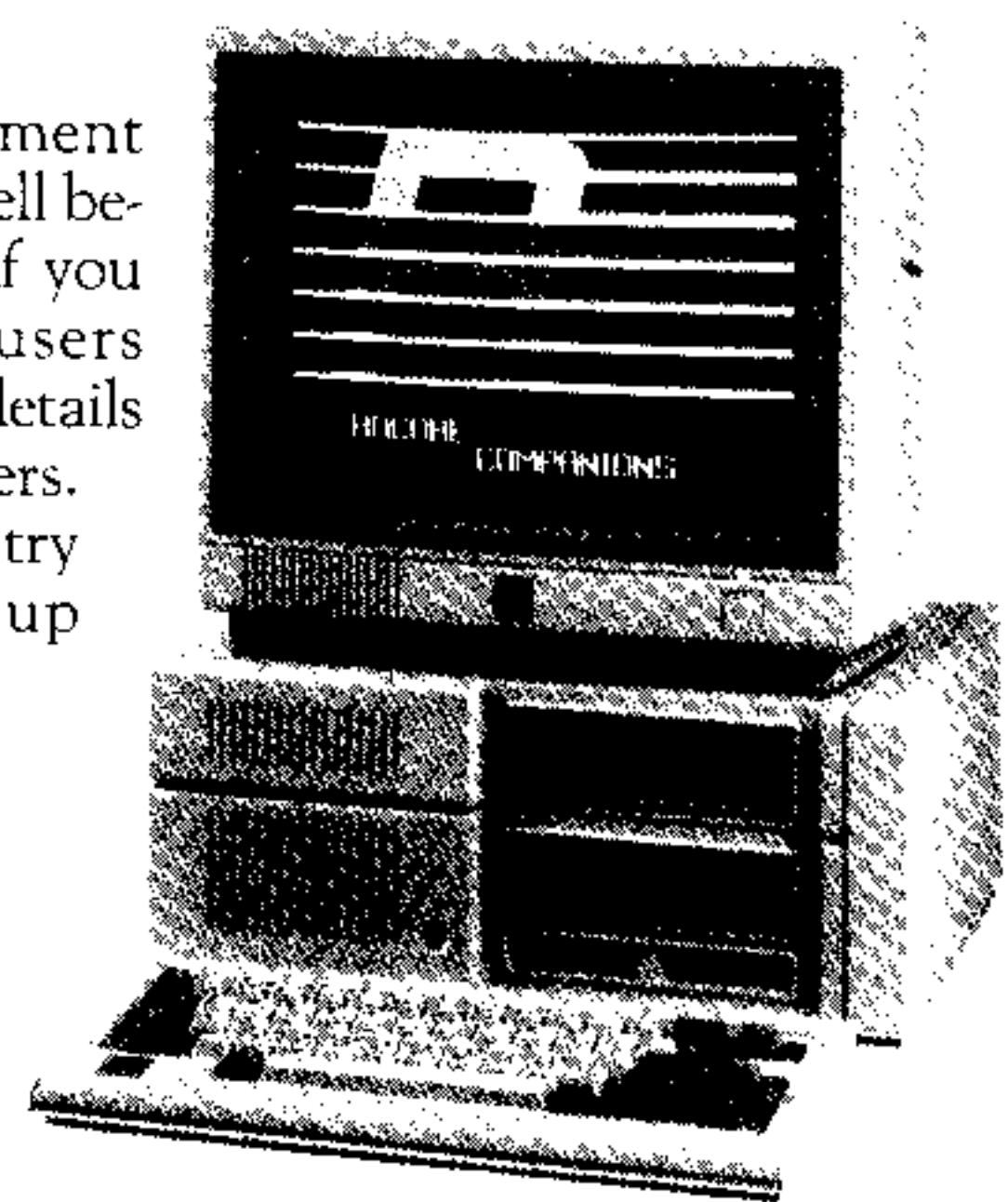
P.S. Have you priced an Edsel lately?

## Interested in a Users Group?

Our commitment to support goes well beyond hardware. If you are in a PCjr users group, tell us the details and we'll tell others. If you aren't, we'll try to match you up with one.

## "PCjr Lives" T-shirts

Top quality cotton. To order, call today.



## Racore

Corporate Offices: (800) 325-1833

In California: (800) 255-7227

Mid-Atlantic/Great Lakes area: (800) 321-8908

Southeast area: (800) 241-6490

IBM PC, PC XT and PCjr are registered trademarks of International Business Machines Corp.  
1-2-3 and Symphony are trademarks of Lotus Development Corp.  
Drive Two is a trademark of Racore Corp. © Copyright 1985 Racore Corp.