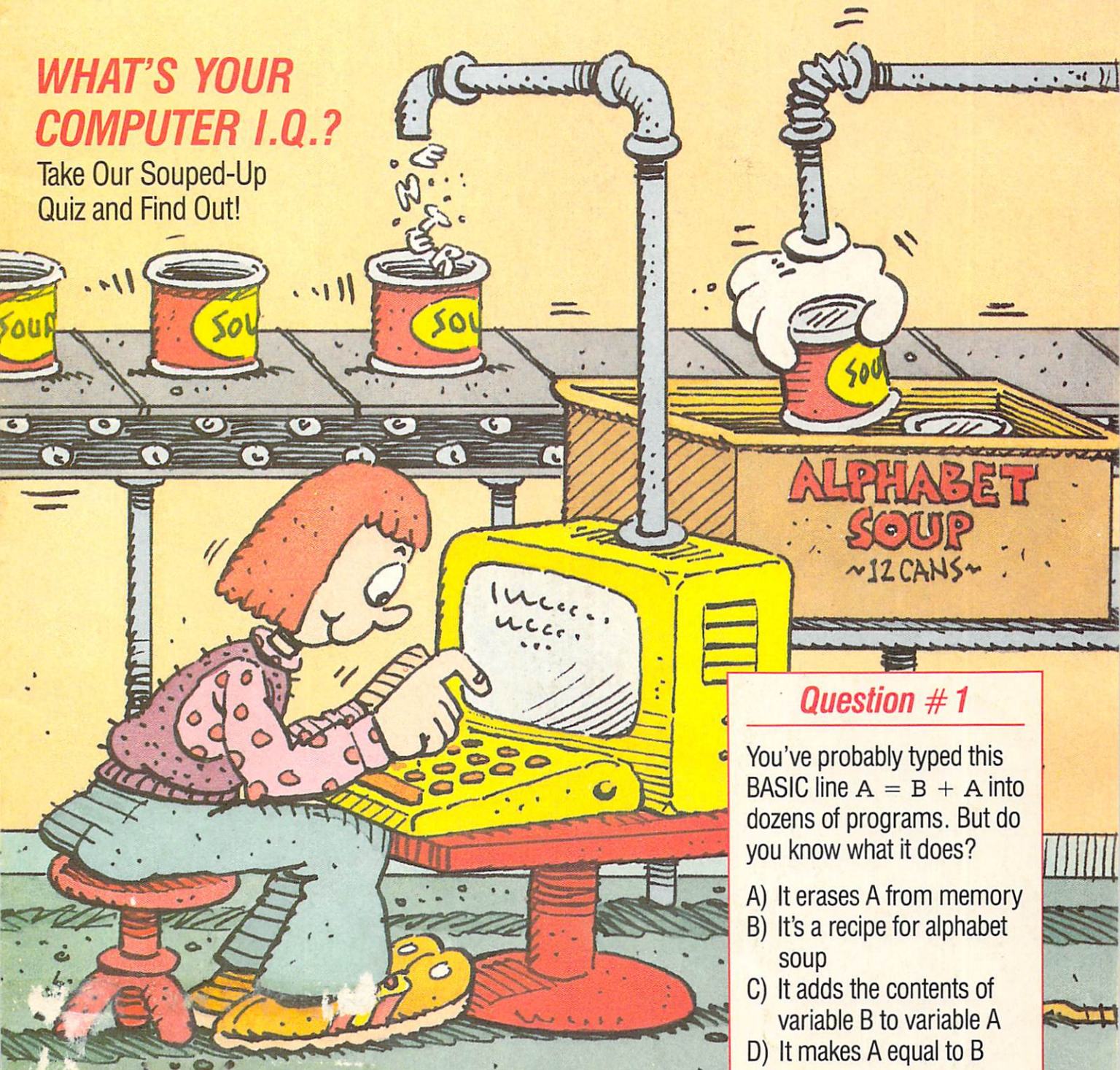CHILDREN'S TELEVISION WORKSHOP • APRIL 1985 • $1.75

# enter

## THE WORLD OF COMPUTERS AND NEW TECHNOLOGY

## WHAT'S YOUR COMPUTER I.Q.?

Take Our Souped-Up Quiz and Find Out!

ALPHABET SOUP ~12 CANS~

### Question #1

You've probably typed this BASIC line A = B + A into dozens of programs. But do you know what it does?

A) It erases A from memory
B) It's a recipe for alphabet soup
C) It adds the contents of variable B to variable A
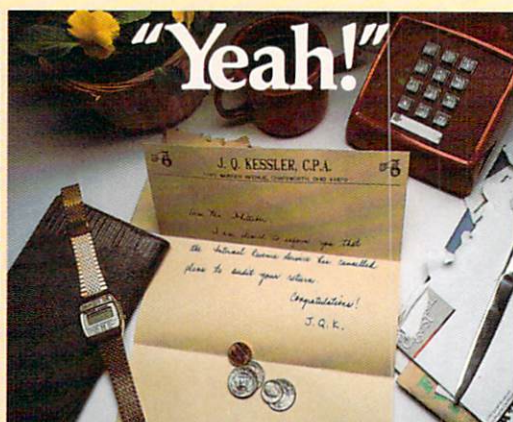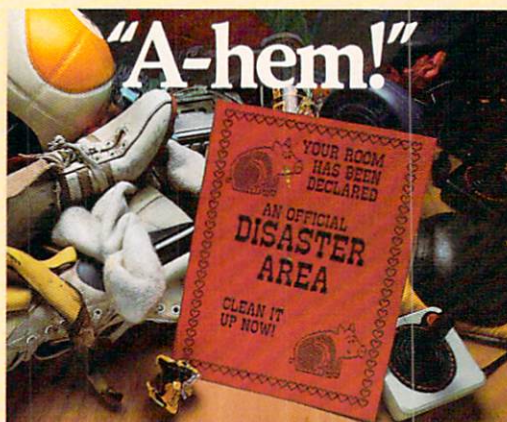D) It makes A equal to B

# Express Yourself!

A few minutes and a few keystrokes. That's all it takes to turn your personal computer into a personal print shop.

Everything you need is in the program: typefaces, border designs, background patterns, pictures, symbols and a starter kit of colored paper and matching envelopes. The Print Shop will also guide you along, step by step, even if you've never touched a computer before.

So think what you'd like to say, then put it in your own words with The Print Shop.

## "A-hem!"
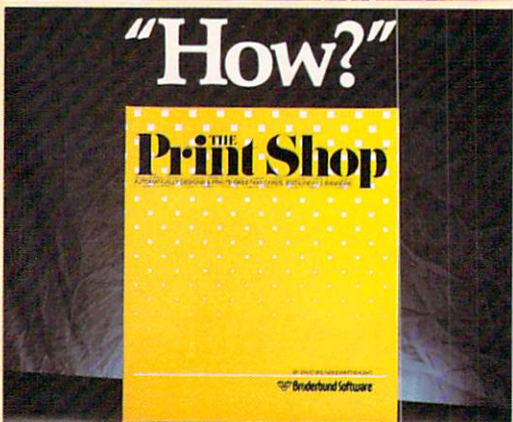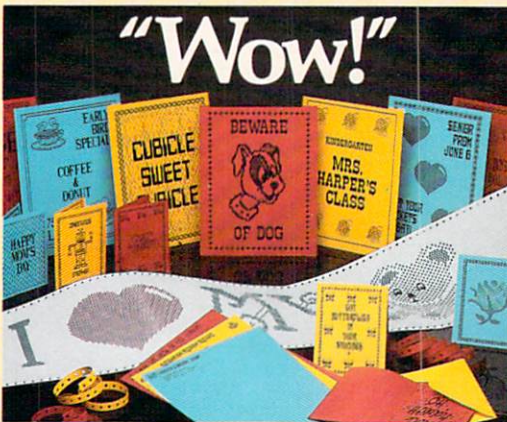
*Make quite an impression with just five easy keystrokes.*

YOUR ROOM HAS BEEN DECLARED AN OFFICIAL DISASTER AREA CLEAN IT UP NOW!

## "Yeah!"

*Everybody's creative with The Print Shop. You just can't help it!*

J. Q. KESSLER, C.P.A.

## "Whew!"

*Your originality shines through, so good news becomes even better.*

SUSIE FINALLY HAD THE BABY... ...AND IT'S TWINS!

## "Pop!"
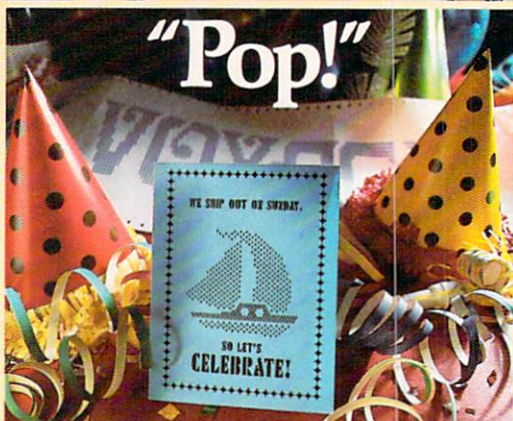
*Dozens of pictures and symbols to suit every purpose and occasion.*

WE SHIP OUT ON SUNDAY, SO LET'S CELEBRATE!

## "Wow!"

*Letterheads, logos, banners and signs. If you can imagine it, you can make it!*

EARLY BIRD SPECIAL · COFFEE & DONUT · CUBICLE SWEET CUBICLE · BEWARE OF DOG · KINDERGARTEN MRS. HARPER'S CLASS · SENIOR PROM JUNE 6 · HAPPY MOM'S DAY · I ♥

## "How?"

*Keep your creativity flowing...put it in your own words with The Print Shop.*

The Print Shop

Brøderbund Software

Expand the creativity of The Print Shop with Graphics Library™ Disk 1, now available.

## Brøderbund™

## FEATURES

PAGE 14

PAGE 9

## DEPARTMENTS

## PROGRAMMING

Cover: Illustration © Elwood Smith

# INSIDE STORY

## WHEN YOU WISH UPON A COMPUTER

"I wish my computer could...."
When we asked you to finish that sentence (in our October input poll), we figured that some of your answers would be funny. We also thought a lot of them would be predictable. Well, they were...and they weren't.
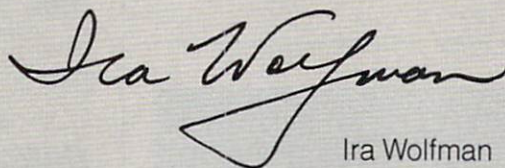
Many of the answers went something like this: "I wish my computer could:

"Do more complicated graphics."
"Fix bugs in my programs—automatically."
"Do times tables."
"Do my homework."
"Clean my room."
"Control a robot."
"Make hot meals."

We expected answers like those. What we *didn't* expect was that 20 percent of the kids who filled out our poll would have the same wish: "I wish my computer could talk to me."

That result made us wonder. *Why* would a kid want a computer that could talk? After all, there already are peripherals that let computers speak. These voice synthesizers read words in a slightly "robotic" voice. But maybe our readers wanted more than that from a talking computer. Maybe you were thinking about a computer that would have conversations, like HAL in *2001* and *2010*, or the program "Joshua" in *WarGames* ("Good afternoon, Dr. Falken. How about a nice game of chess?").

We'd like to know what you think. How would your computer be different if it could talk? What would you want to talk about with it? What could a talking computer tell you that a human being couldn't? If you've ever wanted to have a talking computer, tell us why. Write to us at "Talking Computers," ENTER, 1 Lincoln Plaza, New York, NY, 10023. We'll let you know what we find out.

*Ira Wolfman*

Ira Wolfman
Editor

## COMPUTER PROSE



Have you read the latest—and only—Racter book? It's a book of stories and poems called *The Policeman's Beard is Half Constructed*, and it is unique.

What makes it unique? Well, to begin with, the author is a computer. Racter was instructed by programmer William Chamberlain to follow precise rules of English grammar. The program used its huge vocabulary to create a series of phrases. The result is being sold for $9.95 at bookstores.

What does a computer-written book sound like? Here's a sample: "Bill sings to Sarah. Sarah sings to Bill. Perhaps they will do other dangerous things together....They have love but they also have typewriters. That is interesting."

Not great writing, to be sure, but it's more interesting than some user's manuals we've read.

## SPACE FACE

Computers could soon give you a new look.

Researchers at Elizabeth Arden's cosmetic development facility in Indianapolis, Indiana, have developed a computer make-up makeover program. It puts make-up on a customer without placing a pinch of powder on her face. The makeover is done graphically on a video picture of the customer's face. It shows what a customer would look like with different combinations of lipstick, eyeshadow, and other make-up.

Right now, this computer system can only be found in Bloomingdale's department store in New York City. But companies like Japan's Shiseido Cosmetics are developing similar computer programs. The idea might work— as long as computers don't make people look like PCs.

## ROBOT ODDITY

What's four feet tall and can dance and tell jokes at the same time? Well, you won't be seeing Robutler the robot on the *Tonight Show* anytime soon, but it *will* be making the rounds of a lot of conventions and parties this year.

This mechanical servant was conceived and built by New Yorkers Norman Mack and Glen David as a high-tech gimmick. Robutler comes equipped with three on-board computers and infrared sensors that keep it from

bumping into things and running over people. Robutler also has a vocabulary of 50,000 words, which includes 46 foreign languages. If *that* wasn't enough, it can greet people who are wearing specially coded name tags. Robutler can even be programmed to remember the names!

If you don't feel like chatting, Robutler will be happy to do a comedy routine. Need a dance partner? Robutler is ready—but just be sure the infrared sensors are working. We wouldn't want to be in *your* shoes if they aren't.
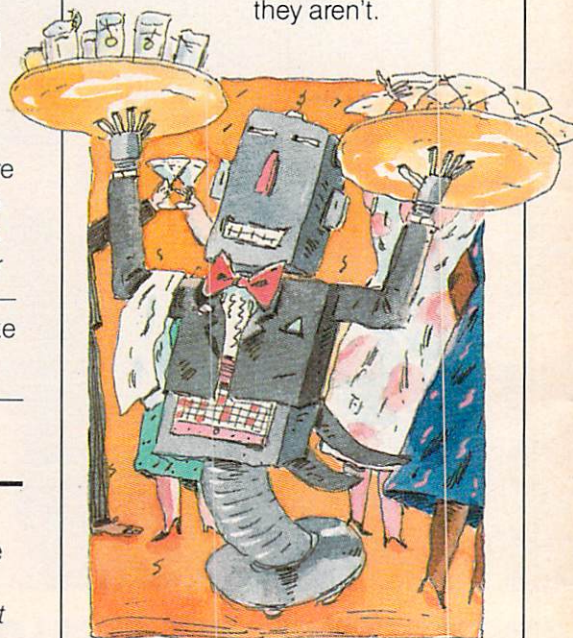


## ALL IN THE FAMILY

A few years back, you didn't see many robots around Wampum, Pennsylvania. Then Devon Smith got to work. Using scrap metal, rubber, glass and plastic

from the junkyard he operates, Devon built the state's first family of robots.

Devon is now the proud owner of a papa robot called Jupiter, a mama robot named Venus, son robot Sun and dog robot Pluto. They can't move around like real robots, but they *are* cost-effective. The entire family cost Devon only $29.95 to build.

Devon's robot family is very sociable. They turn up at county and state fairs. Venus and Jupiter, in fact, were married at a shopping mall opening.

But are these four robot-types really a family? Absolutely. Look closely and you can see the resemblance: each member has '68 Chevy station wagon taillights for eyes. Except, that is, for Sun. His eyes came from a '64.

■ ■ ■

## MURPHY'S COMPUTER

You may have heard of Murphy's Law. It says that anything that *can* go wrong, *will* go wrong. Now there's a computer version of this same law, created by Gail Christie and Gary Bullard in their book *Almost Free Computer Stuff for Kids* (New American Library).

For instance, the "Law of the Hacker" says that nothing is ever so bad that it can't be made worse by trying to fix it. And the "Law of Printer Performance" claims that a watched printer never jams. But the first computer law—the "Law of Cybernetic Entymology" —says it all: There's always one more bug.

■ ■ ■

## PHONES IN FLIGHT

Look! Up in the sky! It's a bird; it's a plane; it's a phone booth!
A phone booth?

Well, would you believe a pay phone? Last fall, nine airlines installed pay phones that can be used while their planes are cruising at 30,000 feet. By transmitting a signal to one of 37 ground stations around the country, this new system lets you plug into the regular phone system.

The phones, mounted on the wall, have a cordless handset that can be carried back to your seat. Conversations can last up to 40 minutes.

Not too many people will be
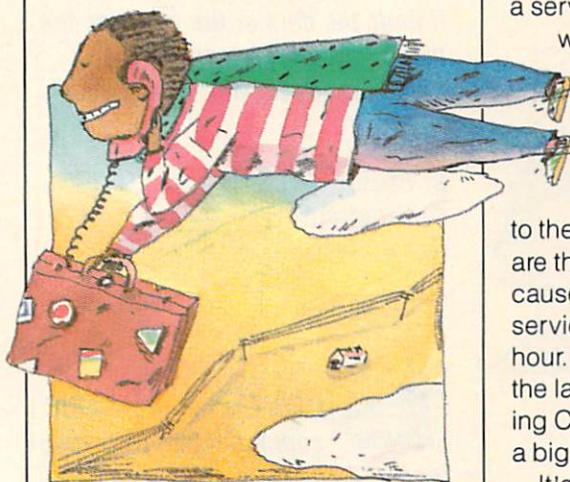


calling just to shoot the breeze— it costs $7.50 for the first three minutes and $1.25 for each minute after. You can run up some sky-high bills if you're calling from up in the wild blue yonder.

■ ■ ■

## REUNIONS IN SPACE

"OK, we're beaming down Aunt Bertha..."

No, this isn't a scene from the family reunion episode of *Star*



*Trek*. It's the story of a video conference company called "The Meeting Channel," and their special holiday gift.

What's a video conference? It's a service that companies use when they want two groups to meet without travelling long distances. Using a satellite, The Meeting Channel beams video images of each group to the other. Big companies are the main customer. That's because the video conference service costs about $1,100 an hour. But as a special "gift" during the last holiday season, The Meeting Channel offered its service at a big discount to families.

It's a great way to get families together, but it must have been very tough to pass the turkey via satellite. ▣

# GOTO The Head

## HOW MUCH DO YOU KNOW ABOUT PROGRAMMING?

Sure it's easy to sound *like a whiz kid. All you've got to do is throw around a few computer terms like "byte," "boot up" and interface."*

Talking about computers is one thing. But how much do you know about programming them? Do you know BASIC from baseball? Loops from lollipops? Answer the questions on these pages, then GOTO the next page for the answers. (Question number one is on ENTER's cover.)

**2.** Floppy disks are becoming as common as phonograph records. But do you know about the different kinds of disks? If so, finish this sentence: A double-sided disk is:
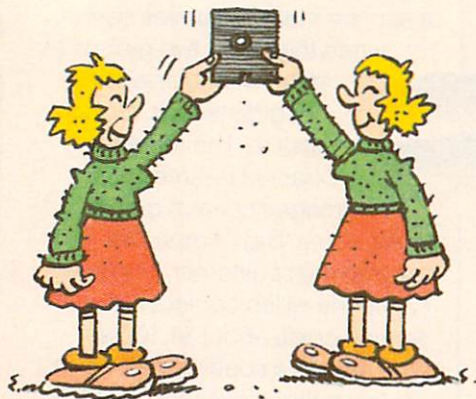
**A.** Useful for twins.
**B.** A disk with two different kinds of tracks on it.
**C.** A disk that has data stored on both sides.
**D.** A new kind of frisbee.

**3.** While we're talking about disks, what happens when you save a file on a floppy? How does your computer find it again? When you want it to LOAD the file, does your computer say, "Gee, I know it was around here someplace"?

No, we didn't think so. Instead, it finds the data or file by using the disk format. Which one of the following is part of a disk format?

**A.** Buffer
**B.** Sector
**C.** Quadrant
**D.** Carburetor

**4.** PRINT is the first BASIC command that everyone learns. But it's not always as simple as it seems. For example, here's a line from another BASIC program: **10 PRINT "X"**

**This program line will:**

**A.** Print the value of variable X.
**B.** Print whatever you tell it to print.
**C.** Print the last letter you wrote to your grandmother.
**D.** Print the letter X.

**5.** Computers are supposed to rescue us from long, boring paperwork. So how come we have to spend so much time writing long, boring programs? You might not have

# Of The Class

BY RICHARD CHEVAT

to—if you know about programming commands that are designed to give us short cuts.

For example, if you want your program to perform the same operation many times, the best way to do it is:

**A.** Run the program many times
**B.** Use a FOR NEXT loop.
**C.** Write a subroutine for each operation.
**D.** Write the program once, then make several copies.
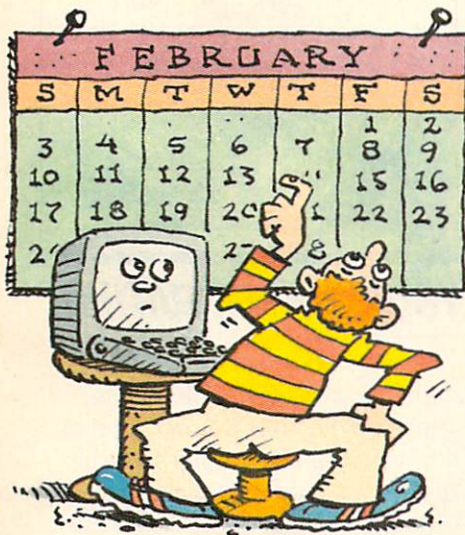


**6.** DATA statements are a BASIC programmer's nightmare. If you don't believe it, try typing in a program with 300 items in 10 DATA statements (and don't forget the commas). Your first reaction might be to throw the DATA statements out the window. But where must DATA statements go in a BASIC program?

**A.** Anywhere, as long as they're in order.
**B.** On the even-numbered lines on Mondays, Wednesdays and Fridays, odd-numbered lines on Tuesdays and Thursdays, and nowhere on the weekends.
**C.** At the end.
**D.** Right after a READ statement.

**7.** All home computers come with BASIC. But many schools teach other computer languages like Logo. Logo is on the go, and it's going to grow. So if you know the answer below, pick one from the row. If not, you'll score low, you know? An important feature of LOGO is:

**A.** You can write poetry with it.
**B.** It uses frogs.



**C.** It was the first programming language for non-scientists.
**D.** It lets you make up your own programming commands.
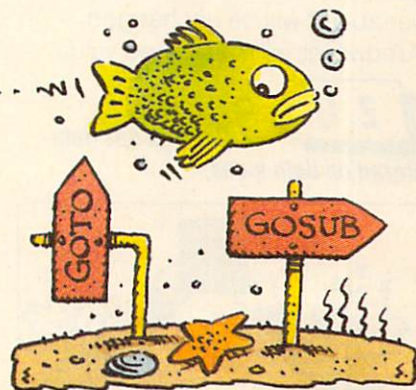


**8.** GOTO and GOSUB are two common BASIC commands. They're easy to understand, right? GOTO goes to someplace and GOSUB goes someplace in a submarine, right? (On the subway? In the sub-basement?)

The difference between a GOTO and a GOSUB is:

**A.** A GOTO will not work in a subroutine.
**B.** You cannot use a RETURN after a GOTO.
**C.** A GOSUB stores the next line number, so a subroutine can RETURN there.
**D.** You cannot use a GOTO underwater.

*(Answers on next page)*

# Did You GOTO the Head of the Class?

## ANSWERS TO THE QUIZ

**1. C**

**It adds the contents of variable B to variable A.**



The statement A = B + A adds variable B to variable A. After the computer executes this statement, variable B will be unchanged. A, however, will have a new value.

**2. C**

**A disk that has data stored on both sides.**



All disks have magnetic material on both sides, but only a two-sided disk will let you use both sides.

**3. B**

**Sector.**
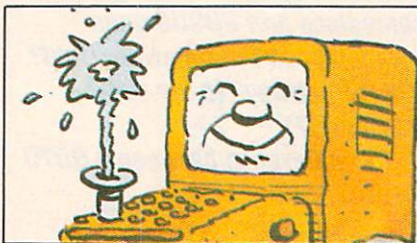


Home computers format disks into several *sectors*. For example, formatted Apple DOS 3.3 disks have 16 sectors.

**4. D**

**The letter X.**

The quotation marks make the difference. They tell the computer



to print exactly what appears between them—in this case, the letter "X." Without the quotation marks, the answer would be A.

**5. B**

**Use a FOR NEXT loop.**
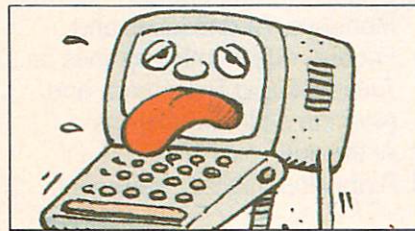


If you have to do something more than twice, look for a way to put it in a FOR NEXT loop.

**6. A**

**Anywhere, as long as they're in order.**
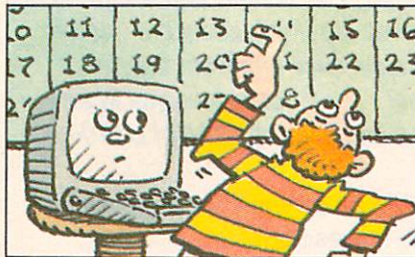


All the DATA statements in BASIC programs are treated as one long list of items. Each READ command takes the next item from that list.

**7. D**

**It lets you make up your own commands.**

Logo lets you build up commands out of other commands. For example, SQUARE might be a command that draws a square. You

could create it by putting together four other commands that draw straight lines.



**8. C**

**A GOSUB stores the next line number, so a subroutine can return there.**

This is the only difference between a GOTO and a GOSUB, but it is an important one. It makes the GOSUB especially useful in keeping your program simple.
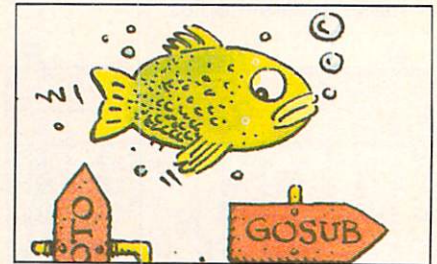


## YOUR POWER RATING:

For each question you answered correctly, give yourself 10 points. Then use the table below to find out how you rate. If your total score is:

**70-80:** Class act! You really know your stuff.

**50-60:** Data way! You missed a bit, but otherwise you're on-line.

**30-40:** Your disk is a little too soft. Boot up and try again.

**0-20:** Too much *Pac-Man*, too little programming. You'd better sign up for remedial BASIC Training. See your local ENTER recruiter.

*RICHARD CHEVAT is ENTER's Technical Editor.*

# Do It!

## PROJECTS & PROGRAMS THAT MAKE THE MOST OF YOUR MICRO

BY JIM LEWIS

U H-OH! thought Scott Rose when the loudspeaker at school announced he should report to the front office. What had this 14-year-old Chicago resident and ENTER youth advisor done to get in trouble? He tried hard to remember, but came up blank.

Scott entered the front office. The teacher who had called him was waiting there.

"Scott," the teacher said, "it's about the banners around school."

Scott gulped. An avid Chicago Cubs fan, he had used his computer and Broderbund's *Print Shop* software to make dozens of posters for the school's Cubs Day when that Chicago baseball team was going for the pennant.



Scott Rose, 14: His computer is a "printing press."

"Well, Scott," the teacher said, "I want you to make some banners for me to announce Book Week."

Banners! Make computer-created signs for a teacher! What a break! "Boy was I relieved," says Scott. "I even got paid $6 to make six banners. And I thought I was in trouble."

### PRINTING WITH A PURPOSE

Across the country, young computer-users like Scott are coming up with ways to get more out of software. They've done inventive things with programs that let them print, keep track of numbers, and store stacks of information. Here's a look at how computers are beginning to make an impact on everything from book reports to bowling pins.

Making banners isn't the only way Scott uses his printing software. *Print Shop* and similar software can turn your computer into a one-person printing plant.

*(Continued on next page)*

**Database software: Keep track of your facts.**

"For instance," says Scott, "I don't buy cards anymore. I make my own." He's also used this software to create party invitations, a front cover for his brother's book report, a "Welcome Home" banner for when his father returned from a business trip, graphics for the school newspaper, even polling place signs for election day. And next month, the centerpieces at Scott's Bar Mitzvah will be created with *Print Shop*.

"It's not difficult," he says. There are graphics in the *Print Shop* soft-ware menu that you can pull into any design you're making. Or you can use the graphics editor to make your own designs.

Other computer users are getting princely work from printing software. In Palo Alto, California, Dan Lhamon used *Fancy Font* software to add a unique twist to a history project. His project was to create a newspaper like one you might have read in Colonial times. "So I used *Fancy Font*'s Gothic-style lettering to make the newspaper really look like it came from



**All the news fits with printing programs...**



**...like Springboard Software's The Newsroom.**

Colonial times," says Dan, 14. "That's the kind of typeface they would use back then....It looked neat."

In Wilmette, Illinois, 16-year-old Ilana Strubel used her Macintosh *MacPaint* software to make up birthday party invitations, and then send thank you notes to everyone who came to her party.

At Hunter College High School in New York, 17-year-old Greg Trautman used his *MacPaint* software to create posters and signs for a dance. He also used the program's varied design and picture elements to create a computer dating form. The computer dating idea helped raise $500 for school clubs.

A new software package promises to make life easier for school newspaper staffs. Springboard Software's *The Newsroom* allows a staff to create their newspaper right on the computer. This software lets users write articles, create graphics and even lay out pages right on the screen.

What's the advantage of using the computer to create everything from banners to newspapers to computer dating forms? "The computer makes it look professional," says Greg Trautman. If students see banners or questionnaires that *look* professional, adds Greg, "they're more likely to take what you're doing seriously."

There are a number of other ways to put printing software to good use. For instance:
● PRINTING TICKETS. Football, basketball, and other school teams can use this type of software to print tickets for their games.



**Looking Good: School reports printed by computer.**

● DESIGNING PROGRAMS. Drama clubs can use printing software to make programs for their performances.
● MORE COMPLICATED PRINTING PROJECTS. Using word processing and print software, teams can create play books, and drama clubs can print up individual scripts for each player.

## COUNTING ON YOUR COMPUTER

Then there's business software. Spreadsheets may not sound like something a teenager could make good use of, but think again. Plenty of young computer users are getting the most for the money, thanks to this software.

For instance, 14-year-old Chris Divis of Palo Alto, California, used *Multiplan* accounting software to calculate the best way to run a student car wash. He wanted to figure out a price that gave people a real deal on car cleaning, yet still made money for students. He



**A hit! Scott's computer banners got him a printing job with a teacher.**

**Greg Trautman's posters "made people take notice."**

started by making a list of all the supplies needed for washing cars—sponges, soap, buckets, towels, and labor. He entered the cost of these items into *Multiplan,* estimated the number of cars that would be washed, and was able to figure out how much to charge to make a profit.

"It was easy," says Chris. "There isn't any programming involved. You just have to gather the information, and enter it into the computer." Best of all, adds Chris, if any cost or number changed, the computer could immediately calculate how that would effect the bottom line.

Spreadsheets can help any group plan out the costs of holding a dance, dinner, bake sale or other fund-raising effort.

And if accounting software can calculate cash, imagine how well it can keep track of bowling pins. That's what Ebrahim Keshavarez, a

17-year-old high school student from New York used *VisiCalc* software to do. As record keeper for the school bowling team, Ebrahim set up *VisiCalc* to keep an up-to-date record of the team roster, individual

averages, total pin counts and other team information.

## DEVELOPING DATABASES

You probably know all about databases. They can be a big help for people who are plugged in to mainframe services like The Source or CompuServe. You can access encyclopedias and other information sources that can cut your homework time in half.

But you can also use your own database software to store records and keep your information easily accessible. Scarborough's *Phi Beta Filer* and Grolier's *Friendly Filer* are two low-cost examples of database programs you might find handy.

In Culver City, California, 10-year-old Matthew Frank discovered he could use a database program to



**Broderbund's Print Shop makes its mark.**

## SOFTWARE SOLUTIONS

Here are details about the software packages mentioned.

**THE PRINT SHOP,** Broderbund Software. Apple II series, Commodore 64 and Atari. $49.95. Additional *Graphics Library* disks available, $24.95

**THE NEWSROOM,** Springboard Software. Apple II series, IBM PC and PCjr, 2-disk package, $49.95. Commodore 64 version planned for Fall, 1985.

**FRIENDLY FILER,** Grolier. Apple II series, IBM PC and PCjr. $39.95. Additional Friendly Files disks available; $14.95 each.

**PHI BETA FILER,** Scarborough Systems. Apple II series, Commodore 64, IBM PC and PCjr. $49.95.

**MULTIPLAN,** Microsoft Corp. Apple II series, IBM PC, PCjr and all MS/DOS machines. $195 and up.

help him prepare for a test. *Phi Beta Filer* from Scarborough Software comes with a built-in test on state capitals. There are other programs to test you specifically on this material. But Matthew was able to use the program's database capabilities to add other information about each state and quiz himself on this information, too. He also discovered that he learned a lot by just entering the data into his computer. "I had to know it for school," says Matthew. "This helped me learn faster."

These database programs can be used to test you again and again on any subject—verbs in foreign language class, dates in history, formulas in math. You can set up the information and then use it any way you want.

There are ways school clubs can make good use of this kind of software. At George Washington High School in Denver, Colorado, the school's Honor Society was having trouble staying in touch with members. Then they entered members' names in a database program, and got a mailmerge program that would combine names with messages. "Now they can send announcements to the right people just by pressing a button," says Irwin Hoffman, director of computer science at the school. "They don't have to look up names and class lists every time, just once."

Really want to get cooking with software? Take a look at what 11-year-old Danielle Janitch, her brother Mike, 12, and Lynne Perry, 11, are doing in Florissant, Missouri. These three computer-users are cooking



*Pixel pictures for almost every event.*

up a plan to create a recipe database. Their Recipe Service will contain the neighborhood's very best recipes. When the disk is done, Lynne, Danielle and Mike hope to sell it to people who want to spice up their dinners by calling up something delicious from this cookbook database. It gives a whole new meaning to the term "computer menu."

Database software can be a storehouse of other information. Here are two examples:
● SCHOOL TEAM STRATEGIES. Teams can use database software to compile detailed scouting reports about their opponents. Databases can also be used to set up individual training programs for players.
● EQUIPMENT INVENTORIES. Any club or team can compile an inventory of equipment they have or need.

## WHAT ABOUT YOU?

We've given you a sampling of the ways teenagers across the U.S. are making creative uses of applications and business software. But what about you? Are you using software in practical ways—to help with homework, keep track of paper routes, record collections or other valuable everyday ways? Tell us about it. If we use your story, you'll get an official ENTER T-shirt. Don't forget to include your name, address, phone number and T-shirt size. Write to: "The Useful Computer," ENTER Magazine, 1 Lincoln Plaza, New York, N.Y. 10023. Ⓔ

# RIPTIDE'S HACKER HERO

## THOM BRAY IS BOZ, THE DIGITAL DETECTIVE

### BY PATRICIA E. BERRY

He's a sloppy guy who wears glasses. He has 20 pens jammed into a pocket protector in his shirt. And, most important, he's got a one-track, high-tech mind. For years, that's the typical way that Hollywood has pictured the computer hacker.

"I guess everybody thinks of computer hackers that way—as nerds," says actor Thom Bray. Thom plays Murray Bozinski (also known as "Boz"), the high-tech whiz who stars every week on the NBC-TV series *Riptide*.

But it now appears that things are changing in Hollywood. Murray, you see, is not your run-of-the-mill hacker. Sure, he may *look* like the typical computer nut. And, yes, he does fiddle with a robot and invent new electronic gadgets almost every episode. But Murray, and the actor who plays him, are bringing new meaning to the word "nerd." To find out how this is happening, ENTER went on-location in Southern California to interview Thom Bray while he was shooting an episode of *Riptide*.

### A HACKER LIKE ME

Murray Bozinski is a detective. Together with his two old friends Nick Ryder and Cody Allen (played by Joe Penny and Perry King), Murray runs a detective agency aboard Cody's sailboat, the *Riptide*. While playing Murray, Thom has developed a very clear idea of who this hacker-turned-private-eye really is:

"I'd like to think that Murray has a clear sense of right and wrong," says Thom. "If he sees something that's wrong, he rushes to make it right, never stopping to think about the consequences."

Thom is also clear about who Murray is not: "The idea of Murray as a John Wayne-type comes across as funny. It wouldn't be funny if he tried to be a quaking nerd. That's so obvious. I don't think most people who are called nerds are really like that," says Thom. "I think they have a clear sense of who they are and a dignity about themselves—a real clear focus."

As Murray, Thom tries to make this dignity shine through. "Murray is pretty non-judgemental. He takes a lot of things at face value. He listens. He wants to understand. Even if he doesn't quite *get* something, he doesn't laugh at people's weaknesses.

"Perhaps some people would call that nerdiness," adds Thom. "Then more people should be nerdy."

### HOW TO BE A HACKER

Once Thom developed a clear sense of Murray's character, he still had to learn a lot of technical terms *fast*. After all, if Murray is an electronic genius, he has to sound

# 'MAYBE MORE PEOPLE SHOULD BE NERDY...'

like one. "At first, it was...wow...it was a mouthful," Thom says, describing all the high-tech terms he uses through the show. "Some of it's gibberish. But a lot of it's real."

Some of the computer work on the show is real, too. But Thom's not the one doing it. "We have a computer consultant who comes in, runs the programs, does the graphics" and helps with the technical descriptions in the script.

Playing a hacker requires more than just typing and talking like one, though. So Thom got some extra help—he took "hacker lessons" from his wife's brother, a computer programmer at Atari. What better person to imitate, asks Thom, than

a person who's "designing the rival home computer to the Commodores of the world"?

But some of Thom's best training happens at home with his own computer, a Macintosh, that he uses to write plays and run his fan club. "It's so easy," he says. "You just sit down and go 'beep.' You don't have to remember anything."

## KNOWING MURRAY

If you think being an actor means just reading lines, think again. Thom *is* Murray 15 hours a day, five days a week, 23 weeks a year. To make his character realistic, Thom

has to "know" Murray's life outside of what you see on the TV screen. Thom can tell you what Murray was like as a kid, what he thinks about, and what his dreams are.

Murray may be a nerd, admits Thom, but he's also "a genius who can maneuver in this high-tech world without batting an eye. He probably had a science teacher in school who took him under his wing. And the school probably had some high-tech equipment.

"Before there were computers, he was probably into mechanical things," Thom continues, "like fixing toasters at the age of six. He's a bit naive, maybe, 'cause he's spent most of his life locked up in his rooms with his inventions."

Thom knows Murray is the kind of guy who's always brainstorming ideas. "In the still of the night he probably invents things that you and I can't even imagine. We wouldn't even know what he's talking about." It was this high-tech skill that made Nick and Cody go after Murray.

In the very first episode of *Riptide*, Murray is a famous game designer. But he's got a problem. The company he works for, Dynagame, is tampering with his designs. Enter Nick and Cody, who convince Murray to join their detective agency.

As if this weren't enough, there's Roboz, the strange-looking orange robot. "It's just a toy that he happens to use to help him. It's like a dog," explains Thom. In reality, Roboz isn't a robot at all. It's a radio-controlled prop that is run off-
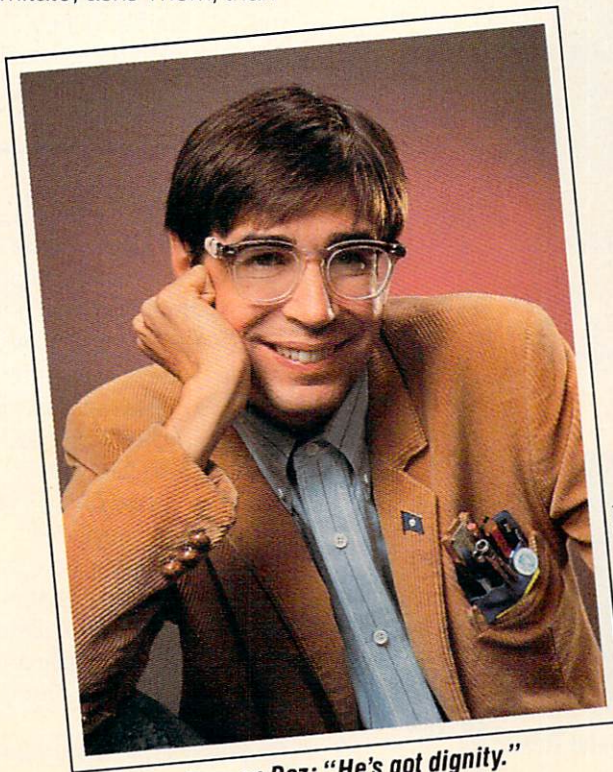


*Bray on Boz: "He's got dignity."*

PHOTOS COURTESY NBC–TV

# 'HIGH-TECH HOMEWORK' TURNS THOM TO BOZ.

camera by technicians. The text and graphics that appear on its screen are programmed by a graphics team hired by Stephen J. Cannell Productions, the company that created *Riptide*.

## BOZ ON BREAK-INS

Thom worries about Boz's influence on viewers. He likes the fact that Murray is not just a quaking nerd. But sometimes Thom is concerned about the things Murray has to do during the show. There are times, for instance, when a script calls for Murray to break into a computer.

"Murray doesn't break in to misuse the information or hurt somebody by using information—unless that information is incriminating. He only breaks in to advance the investigation of a wrong-doing," says Thom. He adds that he can excuse the break-ins on the show when the purpose is to solve a crime or help someone.

Actually, Thom isn't so sure that computer break-ins in real life are as much a crime as some people have made them out to be. "The problem with this area of crime is that it's much too easy to do," says Thom. "The notion that it should be a crime in the first place should have some question marks over it. Maybe this information is public domain. Maybe it shouldn't be stored in this manner" if it's not supposed to be accessible to the public.

Still, Thom doesn't approve of break-ins. Trespassing and stealing are illegal, he points out, no matter how you do them. "It's no different than it ever was, except you're stealing off a computer screen. It doesn't make it any more right or wrong. It's just a new way of doing it. And unfortunately, kids have a means of doing it now because they're smart and they've got the equipment to do it. That'll change, I think. They'll find ways of keeping them out."

## ROLE CALL

There's a knock at the door of Thom's trailer on the *Riptide* set. It's almost time for him to get into costume and turn into Murray.

But it really doesn't take much for Thom to make the change to Murray. Thom becomes Murray just by switching his ordinary lenses for a librarian-type pair with tape holding them together.

Hmmm. Glasses are all it takes to turn a thoughtful actor into a computer hacker. Makes you wonder: is there really anything so bad about being a nerd?  ▣


PHOTO COURTESY OF NBC

*Murray, with the guys: He's a nerd with John Wayne appeal.*

*PATRICIA E. BERRY is ENTER's associate editor.*

# enter

# C·E·N·T·E·R

## THE COMPUTER-USER'S HANDS-ON HANDBOOK

### A P R I L , 1 9 8 5
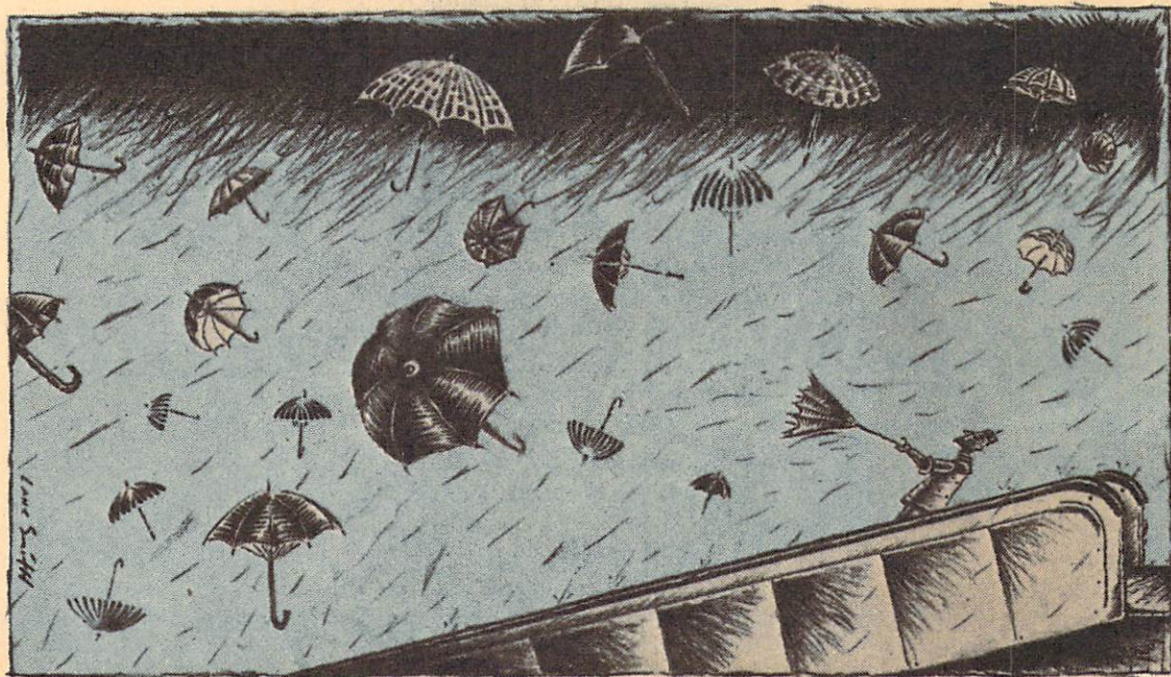
© LANE SMITH

## • F E A T U R I N G •

### BY RICHARD CHEVAT

### FLOPPY DISCUSSION

**DEAR ENTER:** What did computers use before cassette tapes and floppy disks?

Exactly when was the floppy disk invented? How is a disk different from a tape?

We get a lot of questions like the ones above. This issue, we've set aside extra space to answer all the questions at once.

The first important computer memory device was invented decades before the electronic computer. It wasn't invented in Japan, and didn't have microscopic parts, but it *was* floppy. It was the Hollerith punch card, invented for use in the 1890 census by Herman Hollerith. The Hollerith card was a 3″ by 6″ card with lots of tiny holes in it. It was used with a mechanical, not electronic, computer.

Magnetic tape was first used with early electronic computers in the 1940s. The tape was on big spools, like reel-to-reel acoustic tape. Cassettes became popular in the 1960s. Computer tape is made of the same material as that used to record music. It is coated with a substance that can be electrically charged or magnetized. Then it is magnetized according to a code of some kind. The code can be used for video, musical, or computer information.
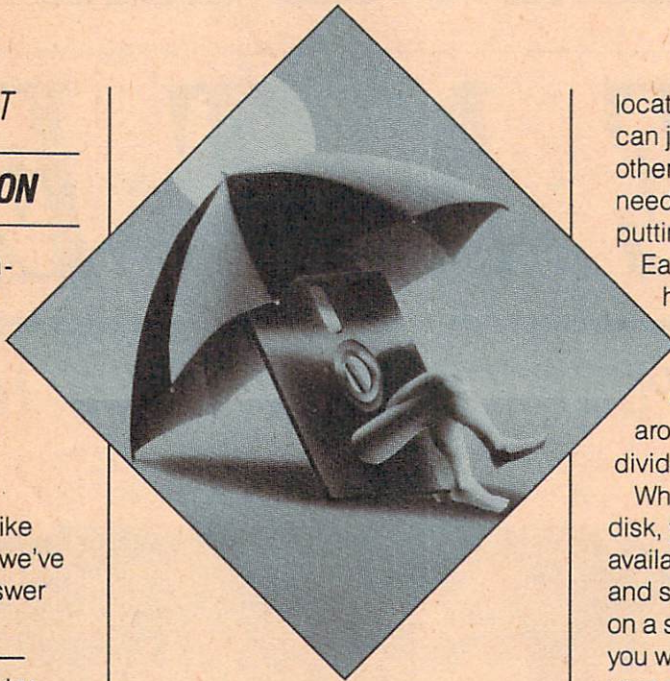
When tape is used to hold computer memory, information is stored as rows of magnetized spots. Each spot represents one *bit* of information (a zero or one in binary code). Eight of these bits represents a byte, or single character. This is called "external memory," because the tape (or disk) is not part of your computer's circuits.

Magnetic tape was a big advance over paper cards. Information that took boxes of bulky cards to store could be kept on a single 12″ spool of tape. However, tape has its own problems. If you want a piece of information halfway through a tape, you have to run through everything that comes before it.

The floppy disk solved that problem. The first floppy, designed by Shugart Associates, appeared in 1976. Disks are "random access" devices. If you want information stored at

locations far apart on a disk, you can jump from one spot to the other. It's like lifting a record needle from one groove and putting it down in another.

Each piece of data on a disk has an address based on the *track* and *sector* it is located in. A *track* is a ring of information that goes around the disk. Each track is divided into *sectors*.

When you store information on a disk, your computer puts it in any available sector. Then the track and sector number are recorded on a special catalog track. When you want to get information back, your computer uses the track and sector numbers to send the disk drive head to the right place on the disk.

Floppies are the most popular form of computer memory today. But other ways of storing information—including hard disks, video discs, and compact disks—may become more popular in the future. Compact disks, for example, may be able to hold up to 5 *million* pieces of information.

And to think—it all started with a floppy piece of cardboard.

—*Richard Chevat and Mike Edelhart*

### SINGLE AND DOUBLE DENSITY

**DEAR ENTER:** What is meant by single-density and double-density disks?　　—David Stofka　　Cuyahoga Falls, OH

**DEAR DAVID:** Disks store data

along circular tracks, like grooves in a record. A double-density disk has about twice the number of data tracks as a single-density disk. That allows it to store about twice as much information. But to use a double-density disk, you must have a double-density disk drive.

## COMPUTING IN OTHER COUNTRIES

**DEAR ENTER:** Do other countries have computers? For example, are computers made in Canada, the Soviet Union, Africa and Australia? —David Hite, Telfort, TN

**DEAR DAVID:** There probably are very few countries in the world where computers are not in use. Many of the computers used by governments and businesses in other countries are American-built *mainframes*. (Mainframes are large-scale computers with hundreds of thousands of K memory. They can run several programs at once.) American personal computers made by Commodore, IBM, Apple and others are sold around the world.

Computers are also being manufactured in other countries. In fact, Sinclair Research, a British company, has probably sold more home computers than anyone else in the world. The Timex-Sinclair computers that until recently were sold in this country are a version of the British Sinclair. There are other British computers, including the Acorn and BBC.

Japan is another country that has a large home computer industry. Sanyo and Toshiba are two Japanese companies that are now selling computers in the U.S.

## DEDICATED AND TRUE-BLUE

**DEAR ENTER:** What does it mean when a computer is dedicated? Is my home computer a dedicated computer? —Stu Boyd, Gladstone, NJ

**DEAR STU:** A *dedicated* computer is one designed to perform a single job. The program that instructs the computer on its job is actually built into the machine.

There are many different types of dedicated computers. Some word processors are dedicated computers. They handle word processing very well, but you can't run any other programs on them. Another dedicated computer is the game machine you find at the local arcade. It's designed to play one and only one game.

Most home computers are not dedicated. That doesn't mean they're not loyal to you. It means they can perform many different tasks—from playing games to creating graphics to testing you with a quiz. You change the task by simply putting different software into the machine. Or you can write a program to make the machine do what you want it to. You can't do that with a dedicated computer.

## DOES THE TI HAVE SPRITES?

**DEAR ENTER:** I own a Texas Instruments computer, and I was wondering if the TI had sprites. If it doesn't, is there anything I can do so I can program with sprites? —Raymond Salles, Warner, OK

**DEAR RAYMOND:** The TI 99 4/A does not come with built-in sprites. However, the Extended BASIC cartridge made for that computer will let you program with sprites. Your problem will be finding one, now that the 99 4/A is no longer being manufactured. We'd suggest you write to the TI 99 4/A International User's Group at PO Box 67, Bethany, OK, 73008. When it was in the stores, the cartridge sold for $79.

In addition to sprites, Extended BASIC for the TI has other programming advantages. For one thing, it allows you to write IF/THEN statements with conditional clauses such as IF $A = B$ THEN $A = 0$. It also allows you to put more than one statement on a program line. ▣

*RICHARD CHEVAT is ENTER's Technical Editor.*

*If you have a question about computers, write to: ASK ENTER, ENTER, CTW, 1 Lincoln Plaza, New York, NY 10023.*

# BASIC TRAINING

## PROGRAMS FOR YOUR COMPUTER
### Apple, Adam, Atari, Commodore 16 and 64, IBM, Kaypro, TI 99/4A, Timex-Sinclair, TRS-80, VIC-20

Welcome to our special 10-page edition of BASIC Training, the programming section that asks the question, if God intended people to type, why weren't we made with 26 fingers?

In case you haven't noticed, in this April issue of ENTER we are paying special attention to new things to do with your computer. (If you want old things to do with your computer, just keep reading last year's ENTERs over and over.) Among the great computer projects we have for you are:

FLOPPY DISK ACCESSORIES: Turn those old floppies into great-looking wallets, watch bands and handbags, with the look and feel of genuine hand-tooled leather.

101 USES FOR COMPUTER

© AKIO MATSUYOSHI
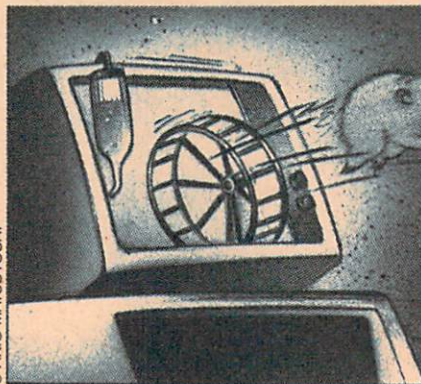
BOXES: Did you ever wonder why computer manufacturers tell you to save the boxes their products come in?

We'll tell you 101 easy and fun things you can make with them, from dining room furniture to your very own microwave oven.

COMPUTERS AND NATURE:

Turn your old micro into a bird house, a hamster cage or an aquarium, or add a peripheral and construct all three!

Of course, if you insist on *programming* your computer, we have some special treats in this issue. One is ENTER's text-adventure program, "Cursor, Foiled, Again!" We also have a special programming Challenge with a $100 grand prize. And, as an extra special April treat, we're including two extra pages of programs.

Meanwhile, the rest of us will get to work on a project called Computer Music. See, first you get a half-dozen computers, then you fill them with different amounts of water, then you...
—*Richard Chevat, Technical Editor*

## DRAW!
## TIMEX-SINCLAIR

Here's a drawing program for all Timex-Sinclair computers. It's simple to use. Push the U key to draw up, D to draw down, L to draw left and R to draw right.

This is a simple program, but it can be even more fun if you add extra features. How about using some of Timex-Sinclair's graphics characters? You could also add a subroutine that lets the user clear the screen by pressing C.

To add more features, just write a separate subroutine for each feature and add it to the end of the program. Then add one additional IF statement after line 100 for each subroutine. But remember, each IF statement slows down your program.

```
10   REM DRAW
20   LET X = 0
30   LET Y = 0
40   SLOW
50   LET C$ = INKEY$
60   IF C$ = " " THEN GOTO 50
70   IF C$ = "U" THEN GOSUB 120
80   IF C$ = "D" THEN GOSUB 150
90   IF C$ = "L" THEN GOSUB 180
100  IF C$ = "R" THEN GOSUB 210
110  GOTO 50
119  REM GO UP
120  IF Y = 43 THEN RETURN
130  LET Y = Y + 1
140  GOTO 230
149  REM GO DOWN
150  IF Y = 0 THEN RETURN
160  LET Y = Y - 1
170  GOTO 230
179  REM GO LEFT
180  IF X = 0 THEN RETURN
190  LET X = X - 1
200  GOTO 230
210  IF X = 63 THEN RETURN
220  LET X = X + 1
230  PLOT X, Y
240  RETURN
```
—*Michael Feldman*

# CURSOR, FOILED AGAIN!

## APPLE, ADAM, ATARI, COMMODORE 16 AND 64, IBM, KAYPRO, TI 99/4A, TIMEX-SINCLAIR, TRS-80, VIC-20

Last month, ENTER featured an adventure game called "Cursor, Foiled Again!" written by Senior Editor Jim Lewis. At the start of the game, you were zapped by the evil Cursor, and shrunk to microscopic size. Your mission was to find Cursor and force him to give you the enlarging beam. Without that beam, you would continue shrinking into nothingness.

This month, we present the program version of "Cursor". This is a shorter version of the story, because the entire text would take several pages.

The main loop of the program (lines 40–170) is very simple. The heart of it is an ON __ GOSUB statement in line 50. At the start of every loop this line checks the value of variable RM (for RooM). This is the number of the room or place the player is currently occupying. The statement sends the program to the subroutine that holds the description and questions for that room. At the end of each subroutine, a new value for RM is set, depending on the choices the player makes.

The rest of the main loop consists of IF statements that check if the player has won or lost, and a routine to report on the player's status.

Once you have learned how the main loop works, it's very easy to add new rooms. You can fill in scenes from "Cursor" that we left out, invent new scenes, or write your own adventure.

The program below is for Apple and Adam computers. You can adapt it for other computers by following these rules:
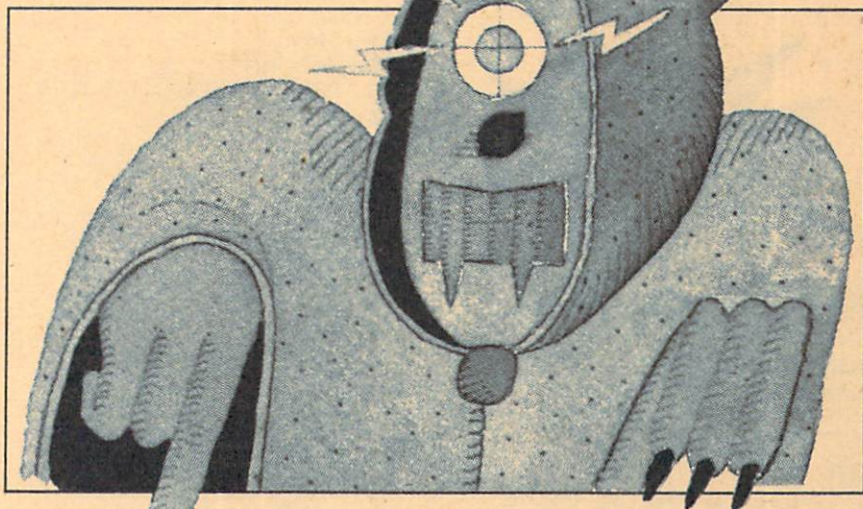
**COMMODORE 16 AND 64, VIC-20 AND MICROSOFT BASIC (for Kaypro and other computers):** Replace HOME with: PRINT CHR$(147)

**IBM AND TRS-80:** Replace HOME with CLS.

**TIMEX-SINCLAIR:** Replace HOME with: CLS. Break up all multiple statement lines. Change line 20 to: DIM IN$(10, 10)

You must change all IF statements to Timex-Sinclair syntax.

**TI 99/4A:** Replace HOME with: CALL CLEAR. If you don't have Extended BASIC, you must break up all multiple statement lines.

**ATARI:** Replace all HOME commands with PRINT CHR$(125).

The program keeps an inventory of what the player is carrying in the string array, IN$. But Ataris don't have string arrays. If you want to keep an inventory, you must change these lines to the correct string format for Atari: 130, 140, 150, 450, 470, 490, 510, 680, 890, 1100, 1570. Or you can leave out the inventory by replacing those lines with REM statements.

## APPLE, ADAM:

```
10    REM CURSOR
20    DIM IN$(10)
30    X = 1:TI = 0:RM = 1
40    REM START OF LOOP
50    ON RM GOSUB 240,590,
      800,990,1200,1360,1480,
      1650,1710,1790,1810,1860,
      1930,2010,2120
60    IF RM = 18 THEN 190
70    TI = TI + 1
80    IF TI > 20 THEN 180
90    IF RM = 10 THEN 210
100   REM REPORT
110   HOME
120   PRINT "YOU HAVE USED UP";
      TI;"   MINUTES"
130   PRINT "YOU ARE
      CARRYING:      "
140   FOR D = 1 TO X
150   PRINT IN$(D): NEXT D
160   FOR D = 1 TO 2000: NEXT D
170   GOTO 40
180   PRINT "YOU RAN OUT OF
      TIME AND DISAPPEARED"
190   PRINT "GAME OVER"
200   GOTO 230
210   PRINT "YOU DID IT! YOU
      REWIRED IN THE CORRECT
      ORDER"
220   PRINT "THE ENLARGING
      BEAM ZAPS YOU BACK TO
      FULL SIZE"
230   END
240   REM CLASSROOM
```

*(Program continues on next page)*

*(Program continued from previous page)*

```
250  HOME
260  PRINT "YOU ARE IN YOUR
     SCHOOL'S COMPUTER
     ROOM"
270  PRINT "AND HAVE JUST
     BEEN ZAPPED BY A BLUE
     BEAM OF LIGHT"
280  PRINT "YOU FIND YOURSELF
     SHRINKING"
290  PRINT "YOU MUST FIND
     CURSOR WITHIN ";20 - TI;
     "MINUTES"
300  PRINT "OR YOU WILL
     DISAPPEAR COMPLETELY"
310  PRINT : PRINT "YOU SEE IN
     FRONT OF YOU:"
320  IF BP <> 0 THEN 340
330  PRINT "A BUS PASS (1)"
340  IF GU <> 0 THEN 360
350  PRINT "A PIECE OF GUM (2)"
360  IF RB <> 0 THEN 380
370  PRINT "A RUBBER BAND (3)"
380  PRINT "CHOOSE ONE (BY
     NUMBER)"
390  INPUT CH
400  ON CH GOTO 420,440,460
410  GOTO 380
420  IN$(X) = "BUS PASS"
430  BP = 1: GOTO 480
440  IN$(X) = "GUM"
450  GU = 1: GOTO 480
460  IN$(X) = "RUBBER BAND"
470  RB = 1
480  X = X + 1
490  PRINT "THERE ARE TWO
     COMPUTERS HERE"
500  PRINT "YOU CAN ENTER
     ONE OF THEM"
510  PRINT "THE
     LOOPINS (1) OR
     THE WIDGEE(2)"
520  PRINT "PICK
     ONE"
530  INPUT CH
540  ON CH GOTO
     560,570
550  GOTO 530
560  RM = 2: GOTO 580
570  RM = 9
580  RETURN
590  REM LOOPINS COMPUTER
600  HOME
610  PRINT "YOU ARE IN THE
     LOOPINS COMPUTER"
620  IF BW = 1 THEN 700
630  PRINT "YOU SEE A BLUE
     WIRE"
640  PRINT "YOU PICK IT UP"
650  IN$(X) = "BLUE WIRE":X =
     X + 1
660  BW = 1
670  PRINT "YOU ARE HOT ON
     CURSOR'S TRAIL"
680  PRINT "BUT IT'S DARK IN
     HERE"
690  PRINT "YOU COULD USE
     SOME LIGHT"
700  PRINT "AHEAD YOU SEE
     THREE PORTS"
710  PRINT "MDM(1),CRT(2), AND
     KBD(3)"
720  PRINT "WHICH WAY DO YOU
     GO?"
730  INPUT CH
740  ON CH GOTO 760,770,780
750  GOTO 670
760  RM = 12: GOTO 790
770  RM = 6: GOTO 790
780  RM = 7
790  RETURN
800  REM THE SCREEN
810  HOME
820  IF GW = 1 THEN 880
830  PRINT "YOUR KEY TURNED
     ON THE SCREEN"
840  PRINT "BY ITS LIGHT YOU
     SEE A GREEN WIRE"
850  PRINT "YOU PICK IT UP"
860  IN$(X) = "GREEN WIRE":X
     = X + 1
870  GW = 1
880  PRINT "ON THE SCREEN IS
     A RIDDLE"
890  PRINT "IT SAYS: CATCH ME
     AT THE DATABASE WHERE
     YOU FIND THE PIE"
900  PRINT "BELOW THE RIDDLE
     ARE TWO DATABASES TO
     CHOOSE FROM"
910  PRINT "Q-CIRCLE(1) AND R-
     SQUARE(2)"
920  PRINT "WHICH DO YOU
     CHOOSE?"
930  INPUT CH
940  ON CH GOTO 960,970
950  GOTO 920
960  RM = 13: GOTO 980
970  RM = 4
980  RETURN
990  REM R SQUARE
1000 HOME
1010 PRINT "YOU ARE IN THE R
     SQUARE DATABASE"
1020 PRINT "YOU MUST HAVE
     GOT CURSOR'S JOKE ABOUT
     PIE R SQUARED"
1030 PRINT
1040 IF YW = 1 THEN 1090
1050 PRINT "IN FRONT OF YOU IS
     A YELLOW WIRE"
1060 PRINT "YOU PICK IT UP"
1070 IN$(X) = "YELLOW WIRE":X
     = X + 1
1080 YW = 1
1090 PRINT "YOU TURN A
     CORNER, AND THERE IS
     CURSOR"
1100 PRINT " 'I'VE HIDDEN THE
     ENLARGING BEAM IN THE
     CPU' HE CACKLES"
1110 PRINT : PRINT "THERE'S
     ONLY ONE WAY TO GET
     THERE"
1120 PRINT "BY BUS(1) OR
     TRAIN(2)"
1130 PRINT "CHOOSE ONE"
1140 INPUT CH
1150 ON CH GOTO 1170,1180
1160 GOTO 1110
1170 RM = 14: GOTO 1190
1180 RM = 8: GOTO 1190
1190 RETURN
1200 REM THE CPU
1210 HOME
1220 PRINT "YOU ARE IN THE
     CENTRAL PROCESSING
     UNIT"
1230 PRINT "YOU MUST REWIRE
     THE COMPUTER"
1240 PRINT "TO PRODUCE THE
     ENLARGING BEAM"
1250 PRINT "USE YOUR
     WIRES -- BUT YOU ONLY GET
     ONE CHANCE"
1260 PRINT "WHICH SEQUENCE
```
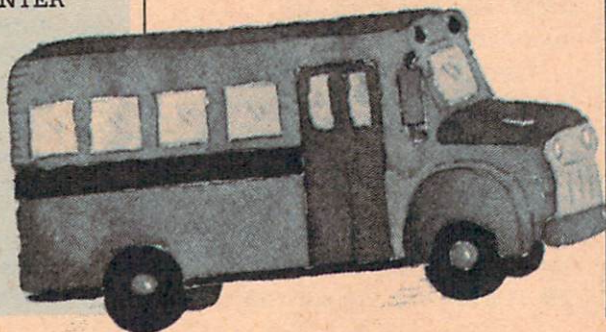
```
      DO YOU CONNECT THE
      WIRES IN?"
1270 PRINT "GREEN, BLUE,
      YELLOW (1)"
1280 PRINT "BLUE, GREEN,
      YELLOW (2)"
1290 PRINT "YELLOW, BLUE,
      GREEN (3)"
1300 INPUT CH
1310 ON CH GOTO 1320,1330,1340
1320 RM = 11: GOTO 1350
1330 RM = 10: GOTO 1350
1340 RM = 11
1350 RETURN
1360 REM THE CRT
1370 HOME
1380 PRINT "YOU ARE STANDING
      IN FRONT OF A CRT"
1390 PRINT "THERE IS A
      KEYHOLE UNDER IT"
1400 FOR D = 1 TO 2000: NEXT D
1410 IF K <> 0 THEN 1430
1420 RM = 3: GOTO 1470
1430 PRINT "UNFORTUNATELY,
      YOU DON'T HAVE THE KEY"
1440 PRINT "YOU GO BACK TO
      THE LOOPINS TO LOOK FOR
      IT"
1450 RM = 2
1460 FOR D = 1 TO 2000: NEXT D
1470 RETURN

1480 REM KBD
1490 HOME
1500 PRINT "KBD STANDS FOR
      KEYBOARD"
1510 PRINT "THERE IS A KEY
      HERE – DO YOU TAKE IT? Y/
      N"
1520 INPUT CH$
1530 IF CH$ = "N" THEN 1560
1540 IN$(X) = "KEY":X = X + 1
1550 K = 1
1560 PRINT "THERE ARE
      FINGERS TYPING ALL
      AROUND YOU"
1570 PRINT "YOU CAN STAY HERE
      OR GO BACK TO LOOPINS"
1580 PRINT "STAY HERE?(1) OR
      GO BACK?(2)"
1590 INPUT CH
1600 ON CH GOTO 1620,1630
1610 GOTO 1570
```

```
1620 RM = 15: GOTO 1640
1630 RM = 2
1640 RETURN
1650 REM TRAIN
1660 HOME
1670 PRINT "THIS TRAIN IS A
      LOCAL"
1680 TI = 31
1690 FOR D = 1 TO 2000: NEXT D
1700 RETURN
1710 REM WIDGEE
1720 HOME
1730 PRINT "AN EVIL GUY LIKE
      CURSOR WOULD NEVER GO
      TO"
1740 PRINT "A COMPUTER
      NAMED WIDGEE"
1750 PRINT "YOU MUST RETURN
      TO THE CLASSROOM"
1760 RM = 1
1770 FOR D = 1 TO 2000: NEXT D
1780 RETURN
1790 REM YOU WIN
1800 RETURN
1810 REM WRONG SEQUENCE
1820 HOME
1830 PRINT "SORRY – THAT WAS
      THE WRONG SEQUENCE"
1840 RM = 18
1850 RETURN
1860 REM MODEM
1870 HOME
1880 PRINT "YOU ARE IN THE
      MDM- THE MODEM"
1890 PRINT "YOU ARE
      TRANSMITTED BACK TO
      THE CLASSROOM"
```

```
1900 RM = 1
1910 FOR D = 1 TO 2000: NEXT D
1920 RETURN
1930 REM Q CIRCLE
1940 HOME
1950 PRINT "YOU ARE IN THE Q
      CIRCLE DATABASE"
1960 PRINT "THERE'S NO PIE
      HERE"
1970 PRINT "YOU MUST RETURN
      TO THE CRT"
1980 FOR D = 1 TO 2000: NEXT D
1990 RM = 3
2000 RETURN
2010 REM THE BUS
2020 HOME
2030 IF BP = 1 THEN 2070
2040 PRINT "SORRY, YOU DON'T
      HAVE A BUS PASS."
2050 PRINT "YOU MUST GO BACK
      TO THE CLASSROOM TO
      GET IT"
2060 RM = 1: GOTO 2100
2070 PRINT "GOOD THING YOU
      HAD A BUS PASS"
2080 PRINT "YOU ARE ON THE
      BUS GOING TO THE CPU"
2090 RM = 5
2100 FOR D = 1 TO 2000: NEXT D
2110 RETURN
2120 REM SQUASHED
2130 HOME
2140 PRINT "YOU GOT SQUASHED
      BY A FINGER"
2150 RM = 18
2160 RETURN          —Richard Chevat
```
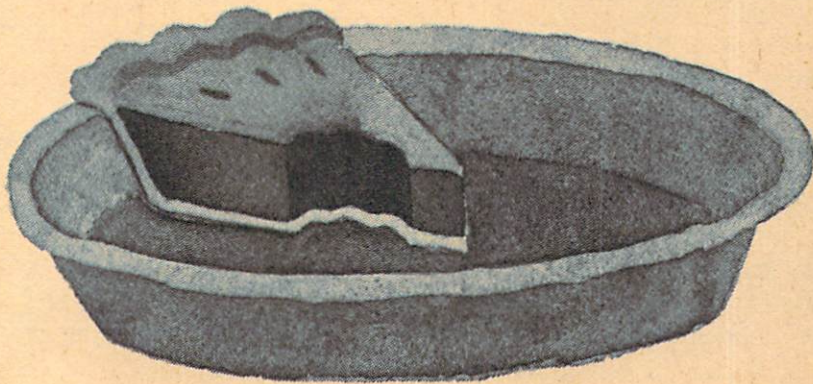
## CHALLENGE # 13:
## Win $100 in ENTER's First Annual Game-Writing Contest!



© AKIO MATSUYOSHI
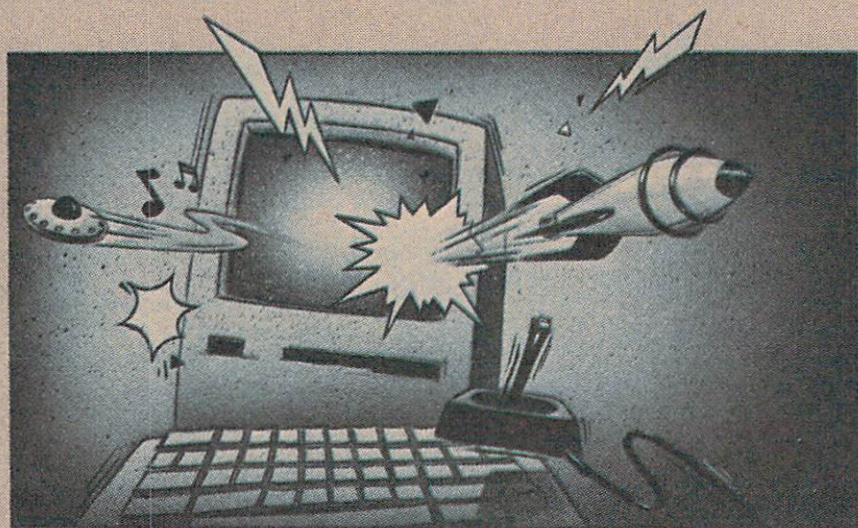
Sharpen your pencils and warm up your keyboards—it's time for ENTER's first game-writing contest! We're looking for one terrific, action-packed game program that will delight, amaze and keep our readers coming back for more. If you are our grand prize winner, you'll win $100 and have your name and program printed in ENTER.

### The Judging

Entries will be judged first of all on originality. Does your game have an unusual or interesting theme, or it is just the same old shoot-em up? Do you need a strategy to win, or is using a joystick the only skill involved?

Playability is another important factor. Is it fun? Does it make you want to keep playing, or stop after a few minutes? Does the game get harder as it goes along? Are there different levels or screens that add interest?

We'll also be looking for games that combine more than one feature of your computer. Does it use sound *and* color? Have you added nifty extra touches, like a fancy display for the high score?

The fourth feature we'll be looking at is your programming style. Is the program easy to understand or is it more mixed up than a bowl of spaghetti? Have you crammed the most game playing into the shortest possible program?

### The Rules

1) Your game must allow for more than one player.
2) It must involve some kind of screen movement run by keyboard or joystick input.
3) It must report on the players' progress (for example, through comments or by keeping score).
4) All games must be written in BASIC.
5) All programs must be your *own original* work. Adaptations of other people's programs are *not* acceptable. Any variations of common games like eat-the-dots *(Pac-Man)* or Surround *(Tron)* will be disqualified.
6) All entries must include: Your name, age, address and phone number, and a printout of your program. Hand-written programs will only be accepted if they are *clearly* written. If you have a disk or tape drive, you can also submit your game as follows: on disk for Apple, Atari, IBM, TRS-80, Commodore and VIC-20; on tape for Adam, TI 99/4A and Timex-SInclair. Please include a large self-addressed stamped envelope if you want your disk or tape returned.

### On Your Mark, Get Set, Program!

Your program must be in the mail by April 7, 1985. The winner will be printed in our July/August issue. When you're ready, send your entry to:

GAME CONTEST
ENTER MAGAZINE
1 Lincoln Plaza
New York, N.Y. 10023

Good luck. May the best program win!

## WINNER OF CHALLENGE #10: SOLAR ECLIPSE
### IBM PCjr AND PC WITH COLOR GRAPHICS CARD

Challenge # 10 was called Scienterrific, and that's just what this program is. Written by Scott Master, age 13, of Auburn, Nebraska, it displays different views of a solar eclipse. We liked it because of the good combination of text, art and animation.

NOTE: In the program, numbers in italics mean press the space bar that number of times. For example, PRINT "*2* E means type PRINT, followed by a quotation mark, followed by 2 spaces, followed by an E.

```
10    SCREEN 1:KEY OFF:CLS
20    COLOR 0,14
30    PRINT "Eclipse of the sun"
40    CIRCLE (100,100),40,3
50    PAINT (100,100),14,14
60    FOR A = 10 TO 95
70    CIRCLE (A,100),47,0
80    FOR DL = 1 TO 2:NEXT DL
90    NEXT A
100   FOR DL = 1 TO 500:NEXT DL
110   CLS
120   COLOR 0,5
130   CIRCLE (17,82),15,3
140   PAINT (17,82),5,5
150   CIRCLE (67,82),4.5,3
160   PAINT (67,82),5,5
170   CIRCLE (187,82),40,2
180   PAINT (187,82),2,2
190   LINE (17,70)-(0,70),0
200   LINE (17,94)-(0,94),0
210   LINE (17,69)-(17,95),0
220   PAINT (16,80),0,0
230   LINE (67,70)-(67,92),0
240   PAINT (65,82),0,0
250   LINE (187,115)-(68,87),2
260   LINE (187,49)-(68,77),2
270   LINE (68,77)-(0,60),1
280   LINE (68,87)-(0,104),1
290   LINE (68,87)-(33,84),1
300   LINE (68,77)-(33,80),1
310   LINE (67,87)-(67,77),1
320   LINE (33,84)-(33,80),1
330   PAINT (34,82),1,1
340   PRINT "2 E 5 M 12 S"
350   PRINT "2 A 5 O 12 U"
360   PRINT "2 R 5 O 12 N"
370   PRINT "2 T 5 N"
380   PRINT "2 H"
390   FOR A = 1 TO 9
400   PRINT
410   NEXT A
420   PRINT "1 P 4 U 9 S 5 This is what"
430   PRINT "1 E 4 M 9 U 5 happens in a"
440   PRINT "1 N 4 B 9 N 5 solar eclipse"
450   PRINT "1 U 4 R 9 L"
460   PRINT "1 M 4 A 9 I 5 The SUNLIGHT"
470   PRINT "1 B 13 G 5 hits the moon"
480   PRINT "1 R 13 H 5 and forms a"
490   PRINT "1 A 13 T 5 dark shadow"
500   FOR DL = 1 TO 4000:NEXT DL
510   LOCATE 15,1
520   PRINT "1 P 4 U 9 S 5 called the"
530   PRINT "1 E 4 M 9 U 5 UMBRA, and a"
540   PRINT "1 N 4 B 9 N 5 lighter shadow"
550   PRINT "1 U 4 R 9 L 5 called the"
560   PRINT "1 M 4 A 9 I 5 PENUMBRA"
570   PRINT "1 B 13 G 18"
580   PRINT "1 R 13 H 18"
590   PRINT "1 A 13 T 18"
600   FOR DL = 1 TO 4000:NEXT DL
610   CLS
620   PRINT TAB(20) "THE END"
630   END                 —Scott Master
```
*(BASIC Training continues on next page)*

---

### CORRECTION

The co-author of "Christmas Alarm" in our December issue was Michael, not José, Santos. Lines 110 and 140 in that program should have read:

```
110       IF A = 13 THEN A = 1
140       PLAY "T13; V13; 01; C;
          D;E;F;G;F;E;D;C"
```

---

### BASIC RECOMMENDS

If you're interested in writing your own adventure games, you should look at *Creating Adventure Games On Your Computer* by Tim Hartnell. This 196-page paperback book shows you how to write an elaborate adventure program called "Werewolves and Wanderer."

At first, the adventure is presented as a story without any programming, like our "Cursor Foiled Again" last issue. Then the book takes you through the step-by-step process of writing a program based on the story.

You begin with a bare floorplan of the rooms. Each chapter shows you how to add another element to the story, from monsters to hidden treasure. You learn how to handle player movements and battles between characters. By the end, you're adding all kinds of details—like changes in the weather. The result is a full-scale adventure.

The book contains three other complete adventure game programs. None of them is simple. But if you follow the book's instructions and do things one step at a time, you'll learn to write adventures of your own that will impress and delight your friends.

*Creating Adventure Games On Your Computer* is written to be used with all major home computers. It is published by Ballantine Books and sells for $9.95.

(BASIC Training cont. from previous page)

## SPACE WEIGHTS:
**APPLE, ADAM, ATARI, COMMODORE 16 AND 64, IBM, KAYPRO, VIC-20, TI 99/4A, TIMEX-SINCLAIR, TRS-80,**

This program is like, real heavy, you dig? How heavy is it? That all depends on which planet you're standing. When you enter your weight in pounds, the program gives you your weight on eight of the nine planets in the solar system. (Of course, even if you could go to all of the planets, you couldn't really stand on them. Some, like Jupiter, are not solid.)

"Space Weights" was sent to us by Eric Langhorst, age 13, of Howells, Nebraska. Below is the program for Commodore 16, 64 VIC-20 and Kaypro computers. Following that are instructions for adapting to other computers.

```
5    REM SPACE WEIGHTS
10   PRINT CHR$(147)
20   PRINT "WELCOME TO: **
     SPACE WEIGHTS **"
30   PRINT "THIS PROGRAM
     WILL ASK YOU HOW MUCH
     YOU"
40   PRINT "WEIGH ON EARTH
     AND THEN COMPUTE THAT"
50   PRINT "TO HOW MUCH YOU
     WOULD WEIGH ON THE"
60   PRINT "OTHER 8
     PLANETS.":PRINT
70   PRINT "TYPE YOUR WEIGHT
     AND HIT RETURN"
80   INPUT A
90   PRINT CHR$(147)
100  M=A*.37:V=A*.9:
     MA=A*.38
110  J=A*2.6:S=A*1.16
120  U=A*.93:N=A*1.43
130  PRINT "ALL WEIGHTS IN
     POUNDS"
140  PRINT
150  PRINT "YOUR WEIGHT ON:"
160  PRINT "MERCURY=";M
170  PRINT "VENUS=";V
180  PRINT "EARTH=";A
190  PRINT "MARS=";MA
200  PRINT "JUPITER=";J
210  PRINT "SATURN=";S
220  PRINT "URANUS=";U
230  PRINT "NEPTUNE=";N
240  PRINT "PLUTO: DATA NOT
     KNOWN"
250  PRINT
260  PRINT "DO YOU WANT TO
     TRY AGAIN? (Y/N)"
270  INPUT X$
280  IF X$="Y" THEN GOTO 10
```
—Eric Langhorst
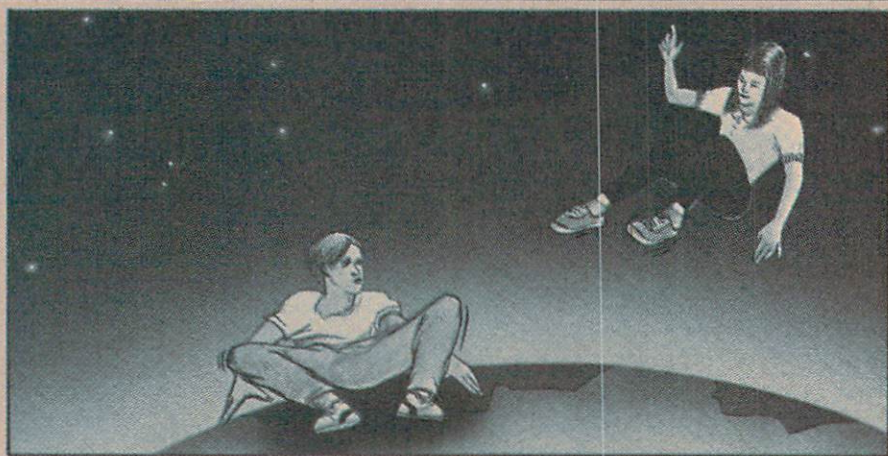
**APPLE, ADAM:** Change lines 10 and 90 to HOME.

**ATARI:** Change lines 10 and 90 to: PRINT CHR$(125). Add this line:

```
7    DIM X$(2)
```

**IBM, TRS-80:** Change lines 10 and 90 to: CLS.

**TI 99/4A:** Change lines 10 and 90 to: CALL CLEAR. If you don't have Extended BASIC, break up all multiple statement lines.

**TIMEX-SINCLAIR:** Change lines 10 and 90 to: CLS. Break up all multiple statement lines.

## SOUND EFFECTS: COMMODORE 64

This program doesn't just *produce* sound effects. It also has a sense of humor. What else would you call it when a sound program gives you "Silence" as one of your choices?

Another feature of this program is the "Funny Sound" option. After you select this, try pressing different keys on your C-64.

Sound Effects was written by John Garris, age 14 of San Mateo, California.

```
10   S=54272
20   FOR X=S TO S+24
30   POKE X,0:NEXT
40   POKE S+24,15:A=48
50   POKE 53280,0
60   POKE 53281,0
70   PRINT CHR$(147)
     TAB(15)CHR$(17)CHR$(153)
     "SOUNDMAKER"
80   PRINT "1) AIRPLANE
     MOTOR"
90   PRINT "2) LASER BEAM"
100  PRINT "3) SIREN"
110  PRINT "4) MACHINE GUN"
120  PRINT "5) GONG"
130  PRINT "6) FUNNY SOUND"
140  PRINT "7) SILENCE"
150  GET A$
160  IF A$="" THEN 200
170  C=ASC(A$)
```
*(Program continues on next page)*

```
180   IF C>55 OR C<49 THEN 150
190   A=C
200   ON A-48 GOSUB
      250,280,330,400,450,500,220
210   GOTO 150
220   FOR X=S TO S+23:POKE
      X,0:NEXT :RETURN
230   POKE X,0: NEXT
240   RETURN
250   POKE S+5,0:POKE S+6,240
260   POKE S+1,15:POKE S+4,129
270   POKE S+4,128:RETURN
```

```
280   POKE S+4,0:POKE S+5,0
290   POKE S+6,240:POKE S+4,17
300   FOR X=40 TO 22 STEP -1
310   POKE S+1,X:NEXT
320   POKE S+1,0:RETURN
330   POKE S+4,0:POKE S+5,0
340   POKE S+6,240:POKE S+4,33
350   FOR X=22 TO 45
360   POKE S+1,X:NEXT
370   FOR X=44 TO 23 STEP -1
380   POKE S+1,X:NEXT
390   RETURN
400   POKE S+4,0:POKE S+5,9
410   POKE S+6,0:POKE S+4,129
```

```
420   POKE S+1,16
430   FOR X=1 TO 50:NEXT
440   RETURN
450   POKE S+4,0:POKE S+5,9
460   POKE S+15,30:POKE S+4,21
470   POKE S+1,130
480   FOR X=1 TO 500:NEXT
490   RETURN
500   POKE S+4,0:POKE S+5,0
510   POKE S+6,240:POKE S+4,
      17
520   POKE S+1,PEEK (53266)
530   RETURN
```

—John Garris

# GRAPHER: ATARI

"Grapher" was written by Thomas Paciorkowski, age 16, of Bayonne, New Jersey. It will draw a two-color bar graph to represent a set of up to 21 numbers. To create a graph, press 2 when the program comes on. It will ask you for the name of the chart to be created. Then enter your data, which must be whole numbers between 1 and 95. When you have entered all your data, type in 999 and press RETURN. The program will save your data on your disk and return to the opening menu.

To see a chart you have already created, select 1 from the menu, and your graph will be displayed.

```
10    REM BAR CHART PROGRAM
20    DIM D$(8)
30    X=0:? " ":POKE 710,0
40    PRINT "1-RETRIEVE A
      CHART"
50    PRINT "2-CREATE AND
      SAVE A CHART"
60    PRINT :PRINT "YOUR
      CHOICE ";
70    INPUT C
80    PRINT "INPUT FILENAME"
90    PRINT "USE THIS FORMAT:"
100   PRINT "D:FILENAME.DAT"
110   INPUT D$:B=C*4
120   OPEN #1,B,0,D$
130   ON C GOTO 210, 140
140   X=X+1
150   IF X=22 THEN
      A=999:GOTO 180
```

```
160   PRINT "INPUT DATA";
170   INPUT A
180   PRINT #1,A
190   IF A=999 THEN CLOSE
      #1:GOTO 30
200   GOTO 130
210   GRAPHICS 23:COLOR 1
220   FOR V=95 TO 0 STEP -10
230   PLOT 0,V:DRAWTO 2,V
240   NEXT V
250   FOR S=7 TO 999 STEP 7
260   INPUT #1,A
270   IF A=999 THEN 340
280   FOR P=1 TO 6
290   IF INT(S/2)=S/2 THEN
      COLOR 1:GOTO 310
300   COLOR 2
310   PLOT S+P,95
320   DRAWTO S+P,95-A
330   NEXT P:NEXT S
340   CLOSE #1
350   IF PEEK(53279)=6 THEN 30
360   GOTO 350
```

—Thomas Paciorkowski

# TRS-80 COLOR COMPUTER RACER

You may have seen racing games before, but not like this.

When you run the program a racing car will appear at the top of your screen. Use the arrow keys to move the car left and right, and don't touch the walls! The longer you drive, the harder it gets.

Racer was sent to us by Phil Stroffolino, a student at the Williamson School in Media, PA.

```
10    POKE 360, 1
20    POKE 361, 121
30    SCREEN 0,1
40    CLS3:X=1167
50    L=X:T=5:W=22
60    POKE L,175
70    PRINT @480, STRING$(T,134);
      STRING$(W,175);STRING$
      (32-T-W,137);
80    POKE X,22
90    R=RND(3)
100   IF R=1 ELSE IF R=2 AND
      T+W<31 THEN T=T+1
110   R=RND(3)
```

```
120   IF R=1 AND W>2 THEN
      W=W-1 ELSE IF R=2 AND
      T+W<31 AND W<6 THEN
      W=W+1
130   L=X:I$=INKEY$
140   IF PEEK(343)=247 THEN X=
      X-1 ELSE IF PEEK(344)=
      247 THEN X=X+1
150   IF PEEK(X+32)=175 THEN 60
160   POKE L,175
170   FOR I=1 TO 10
180   POKE X,22:SOUND 180,1
190   POKE X,86:SOUND 1,1
200   NEXT I
210   RUN              —Phil Stroffolino
```

(BASIC Training continues on next page)

## STOP THAT BLOCK!: VIC-20

(BASIC Training cont. from previous page)

The aim of this game is to stop the colored block that is dashing across the bottom of your screen. There are four bars hanging over the block's path. Pressing one of the keys numbered 1 through 4 will start one of the bars descending. Any one of them can stop the block—if they hit it exactly as it passes under.

Sound easy? It's not. You have 10 tries to hit the block and you'll be lucky to do it the first time around. Why is it so hard? Because the block does not travel at a constant speed. The loop that moves it starts at line 110. But the RND function in line 130 makes sure that it moves randomly.

Once you have a program like this running, it's always fun to adjust it to your taste. Does it run too fast? Put in a delay loop? Do you think it needs sound? Or should it keep score? What other improvements can you think up?

```
10    DIM RF(4)
20    FOR K = 1 TO 4:READ X:RF
      (K) = X:NEXT K
30    F = 30720:R = 8164
40    S = 0:PRINT CHR$(147)
50    FOR I = 1 TO 4
60    FOR U = 1 TO RF(I)
70    POKE (7878 + (I*5) + (U*22)),
      160
80    POKE (7678 + (I*5) + F +
      (U*22)), (I+4)
90    NEXT U
100   NEXT I
110   FOR T = 1 TO 22
120   J = T
130   IF RND(0) > .9 THEN J = J − 1
135   FOR U = 1 TO 10:NEXT U
140   POKE R + J,209:POKE
      R + J + F,2
150   IF S = 1 THEN 190
160   GET S$:G = VAL(S$)
170   IF G > 0 AND G < 5 THEN S = 1
180   D = RF(G)
190   Y = (G*5) − 2
200   IF S > 0 THEN POKE
      7680 + Y + (D*22),160:POKE
      (7680 + Y + (D*22) + F),(G + 4):
      D = D + 1
210   IF D = 23 THEN 260
220   POKE R + J,32
230   FOR U = 1 TO 10:NEXT U
240   NEXT T
250   GOTO 110
260   IF J <> Y THEN GOTO 380
270   POKE R + J,214
280   FOR W = 1 TO 500:NEXT W
290   PRINT CHR$(147);"NICE
      SHOT"
300   PRINT "YOU SCORED";
      G*100;"POINTS"
310   SC = SC + G*100
320   COUNT = COUNT + 1
330   PRINT "SCORE IS    ";
      SC:PRINT "TRIES LEFT:
      ";10 − COUNT
340   PRINT:PRINT"PRESS ANY
      KEY TO CONTINUE"
350   GET F$:IF F$ = " " THEN 350
360   IF COUNT < 10 THEN 40
370   GOTO 430
380   FOR W = 1 TO 500:NEXT W
390   PRINT CHR$(147)
400   PRINT "MISSED!"
410   COUNT = COUNT + 1
420   GOTO 330
430   PRINT "YOU'RE OUT OF
      TRIES"
440   PRINT "TOTAL SCORE:";SC
450   PRINT:PRINT "PLAY
      AGAIN?"
460   GET F$:IF F$ = " " THEN 460
470   IF F$ = "Y" THEN RUN
480   DATA 20,17,13,8
```

—Doug Krehbiel, Charles Ardai

## NOW HEAR THIS!: TI 99/4A

Here are two short but sweet sound programs for the TI 99/4A. The first, "Pocket Canon," has nothing to do with artillery. A canon is a type of musical composition. The second program, "Echo," makes your TI sound like it's playing in an underground cavern.

Both programs were written by John Dyke of Niagara Falls, New York. Just type them in and RUN.

Turn the volume on your television up, and you'll see why they say good things come in small programs.

### POCKET CANON:

```
10   REM POCKET CANON
20   DIM F(7)
30   DATA 0,0, 262, 196, 220, 165,
     175, 131, 175, 196
40   READ N, U, F(0), F(1), F(2),
     F(3), F(4), F(5), F(6), F(7)
50   DEF M(X) = INT(X) - 8 * INT
     (X/8)
60   CALL SOUND
     (500,F(M(N/4)), 3, 1.5 *
     F(M(N/2)), 30 + 29 * (V > 31),
     2 * F(M(N)), 30 + 30 * (V >
     63))
70   N = N + 1 + 32 * (N > 31)
80   V = V + 1
90   GOTO 60
```

### ECHO:

```
5    REM ECHO
10   DIM A(6)
20   DATA 247, 262, 294, 330, 349,
     392, 440
30   FOR B = 0 TO 6
40   READ A(B)
50   NEXT B
60   B = INT (RND*6)
70   C = B
80   D = B
90   GOTO 130
100  D = C
110  C = B
120  B = INT(RND*6)
130  CALL SOUND(-200, A(B), 0,
     A(C), 9, A(D), 19)
140  CALL KEY(0,E,E)
150  IF E = -1 THEN 100
```

—John Dyke

# BASIC PLUS:
## Program Building Blocks

### BY MARK SUTTON-SMITH

Some people start typing in their programs before they know where they're going, or how they're going to get there. But if you want your programming to be easy and fun, you should always do it in a planned, organized way.

Last month, BASIC Plus gave you tips on how to start doing this, by using a method called *top-down* programming. If you missed last month's column (shame on you), "top-down" means planning your program in outline form, then filling in the details, testing one piece at a time.

This month, we look at the same process from another angle. We're going to see how to program those pieces. Since these pieces are called modules, the method is called—that's right, you guessed it—the modular approach.

### THE MODEL MODULE

In BASIC, a module is usually contained in a GOSUB routine. The idea is to isolate jobs that the program will have to do frequently, and put each one in its own subroutine. One module may take input from a joystick, and another may print a message.

Try to make your modules as flexible as possible. If there are two jobs the program has to do that are very similar, see if you can write one subroutine for both.
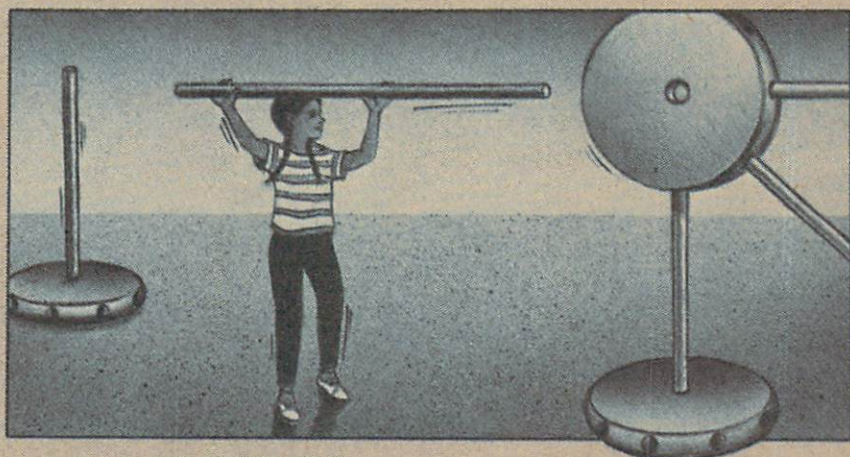
If you try to tell a module to do something it can't do—like draw a spaceship somewhere off the screen—it should be able to handle it. Each module should check for errors.

For example, it should check to make sure it isn't dividing numbers by zero. And it should know to give up rather than attempting the impossible, like drawing that spaceship in thin air.

### THE BLACK BOX

Think of a module as a "black box." You should know what has to go into that box—mainly, the type of variables it requires. For example, does the subroutine work with numbers or words? And you should know what results to expect—answers to equations, screen movement, messages.

Once a module is written, you don't have to think about how it does its job. There are certain parts of every program that you just wish would go away. These are ugly little chores, like drawing a bit-map picture on the screen or doing a complicated piece of math. Well, once you have a module that does these jobs, you'll never have to program one again.

For example, say you need a math routine that gives the square root of a number. The input is the number whose root you're searching for. The output is the root. Once you have that module, you can use it anywhere you need the square root of a number.

In general, modules make the complicated work of programming easier. They help you keep track of the new features you add to your programs. For these reasons—and others—good programming always involves using modules. ⏎

*MARK SUTTON-SMITH is an ENTER Contributing Editor.*

## FRACTURED FLOWCHART

There's no mistaking the diagram at right as anything but a flowchart. But look closer. Some arrows and other important information are missing. That's why this is a *fractured* flowchart.

Can you make this flowchart make sense by putting it back together? The original was sent in by Michael Sebring, 13, of Columbus, Ohio, but we've left out four arrows, a connector circle, and a Y and an N.

Check your answers on page 32.

**HOW TO WATCH A HORROR MOVIE**

START → DO YOU HAVE MONEY? —N→ ASK MOM FOR ALLOWANCE → BUY TICKET

GET FRIEND AND GOTO THEATER SHOWING "FRANKENSTEIN"

STOP ← CLOSE EYES AND SCREAM! ← BUY CANDY AND POPCORN ← ○ ← ANY MONEY LEFT?

Y

STAY FOR SECOND FEATURE ← N ← SCARED YET? ← FIND SEAT AND WATCH MOVIE
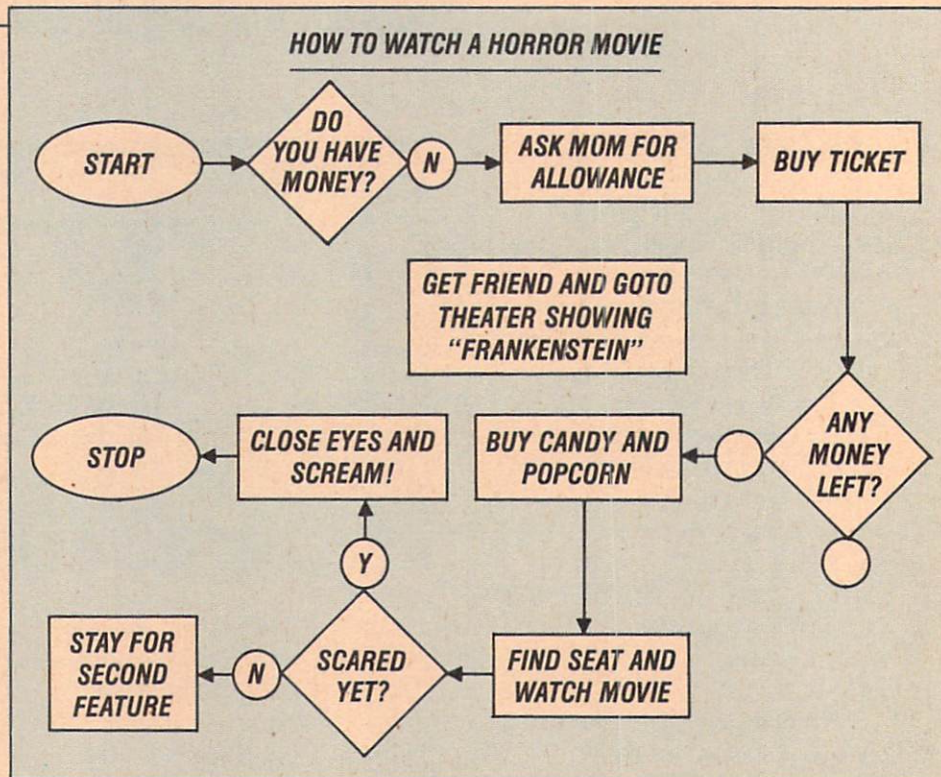
## ROCKET MAZE

If mazes are your game, we've got a space-age challenge ready for you. Try taking off with Bela Selendy's Apple IIe computer-generated maze.

10...9...8...Is your pencil ready?...7...6...5...Move to the maze entrance....4...3...2...Will you solve it?...1...GO!

EXIT
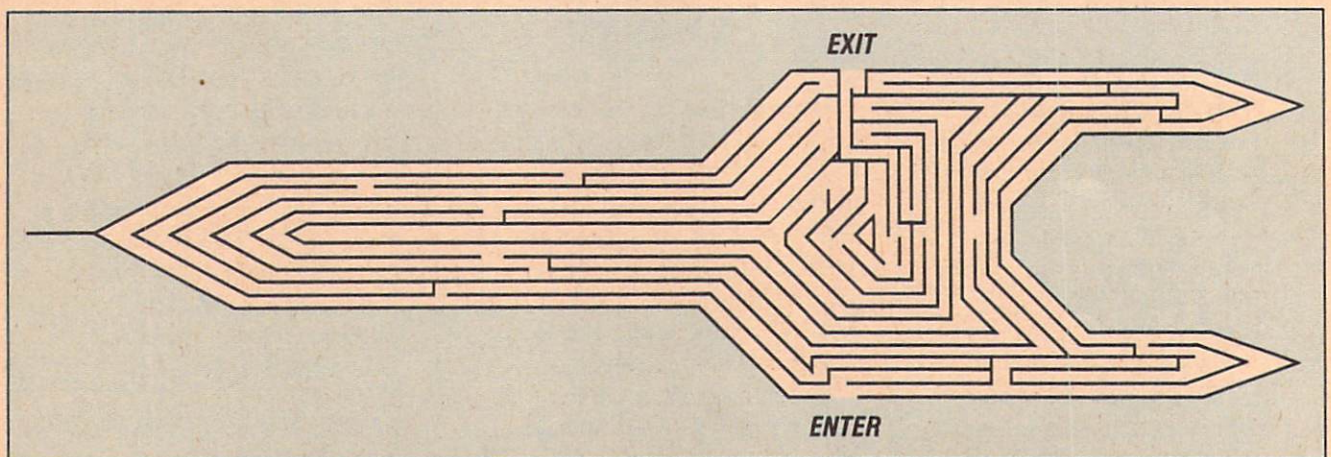
ENTER

## WORD SEARCH

Are word hunts too easy? Andrea Stith, Debbie Giordano, Patrick Rowe and Chris Cairns thought so. These sixth graders at West Point Elementary School in West Point, New York, sent ENTER something tougher—a combination computer quiz and word search.

The computer quiz comes first. You've got to come up with the high-tech words that match the definitions below. Finished? Next, you must find those words and circle them in the word search.

The answers are printed up and down, sideways and backwards. Can you find all 15? GOTO it, then check the solution on page 32.

Tough enough for you?

1. An input unit for a computer. (9 letters)
2. The term used for computer equipment like monitors, disk drives, keyboards, printers, and joysticks. (8)
3. Instructions given to a computer. (7)
4. The most common language used by home computers. (5)
5. The code word used to retrieve a program you have previously stored. (4)
6. The part of the computer's memory which can be modified by the user. (3)
7. A term used to begin a program. (3)
8. The device that holds the circuits for computers. (4)
9. Computer part that's like a television. (7)
10. A BASIC command used to display a character or word on the monitor. (5)
11. Information given to you by the computer. (6)
12. A mistake in a programming language. (5)
13. One of the most common means of storing information today. (4)
14. Eight binary digits in a computer. (4)
15. The smallest type of computer. (13)

```
      E A B R A M D H K L O
  L M L M I O M P I H K L I
  D I H A R D W A R E H I K
  D T S F P R I N T U I G J K
  I L F G M O N I T O R V B N
  S M I C R O C O M P U T E R
  K P Z O N L B Y T E S M P L
  O P E R J O L E T O P N I W
    Y R T S A H J K L O G H N
  S K Q R D L T Y U I G C U
  K T R U I O U T P U T H K
  R Y O M E R R O R G H J K L M
  D C D U L D R A O B Y E K J
  J K R S I O P R U S M K O J
    F U M K L O P B A S I C K
    N M T B H J K L G H J C V
    L O W E R T Y O I P M B
    D Q Z X V G Y I O P M
      P R O G R A M T O P
```

*(Answers on page 32)*

## ROCKET MAZE (Page 30)
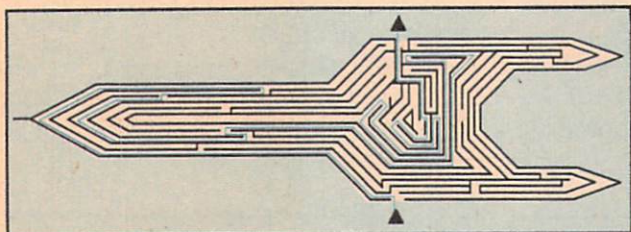


## WORD SEARCH (Page 31)

1. KEYBOARD
2. HARDWARE
3. PROGRAM
4. BASIC
5. LOAD
6. RAM
7. RUN
8. CHIP
9. MONITOR
10. PRINT
11. OUTPUT
12. ERROR
13. DISK
14. BYTE
15. MICROCOMPUTER
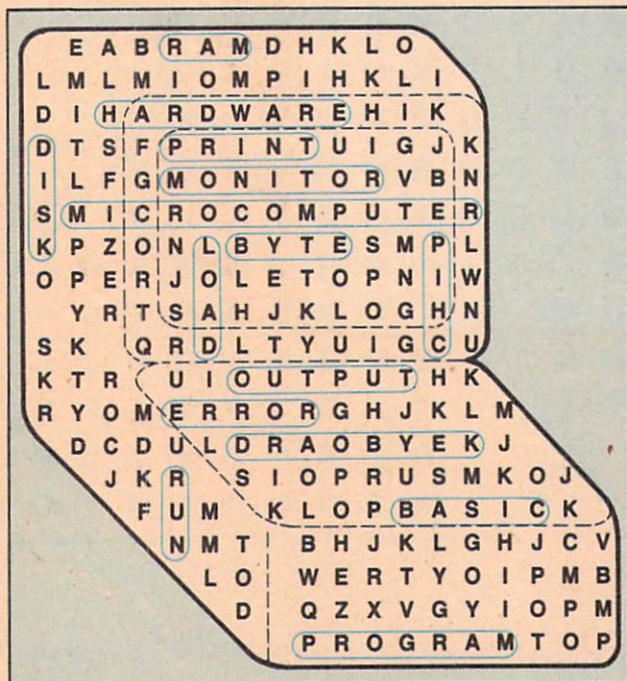


## FRACTURED FLOWCHART (Page 30)



HOW TO WATCH A HORROR MOVIE
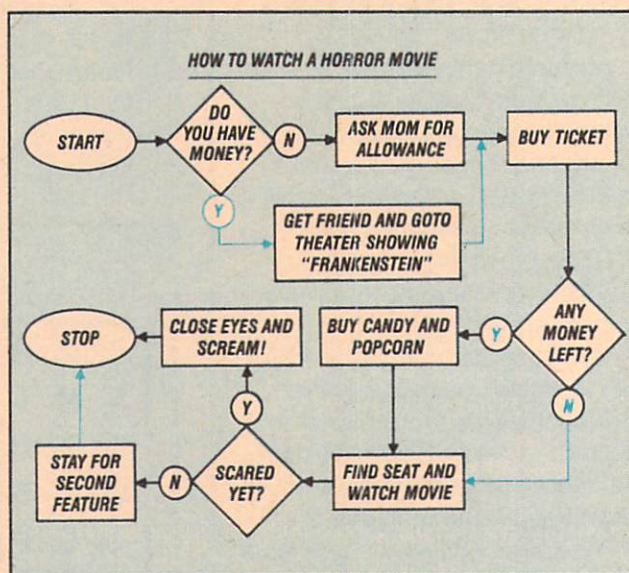
# NEXT

**WHATEVER HAPPENED TO THE FUTURE?:** An unpredictable look at yesterday's tomorrows. From mile-high skyscrapers to outer space cities, here's what experts thought life would be like in 1985.

**WALKING WITH COMPUTERS:** A young girl takes her first steps in four years—with help from a computer-driven system. Find out how Dr. Jerrold Petrofsky is using computers to help paralyzed people take that all-important first step.

**BASEBALL BYTES:** Meet baseball's high-tech schedule-makers. And find out how a computer helps ball teams stay on schedule from the first shout of "Play Ball!" to the last out in the World Series.

**HYSTERICAL HISTORY QUIZ:** A funny thing happened on the way to the disk drive. Take this offbeat computer quiz to find out about amazing—and absurd—moments in the history of computers.

# FEEDBACK

## FLOWCHART FLAW

In your Dec. 1984 issue, there is an error in the "Flowchart Manor" game. In the office where it says, "Search desk—take key," it should be "Search desk—take combination." Besides that, it was a very good game.

—David Hall
Circleville, OH

Dear David:
You're right. The key was in the laundry; the combination was in the desk. Thanks for pointing out the error.
By the way, that was the only error in the puzzle. To those readers (see below) who thought they found other errors, we say: try again! —Ed.

## FLOWCHART FLOOR

In your December 1984 issue, you said that when Big Bald Bubba went through Flowchart Manor the second time, he fell through to the laundry. But the only way you could fall through was if you weighed more than 125 lbs. Big Bald Bubba only weighs 124 lbs. So how could he have fallen through?

—Rhae Adams
Warrensburg, MO

Dear Rhae:
First, before we give you the answer, try the Flowchart one more time. Give up? During Big Bald Bubba's first trip around Flowchart Manor, you're right, he's



© BRAD HAMANN
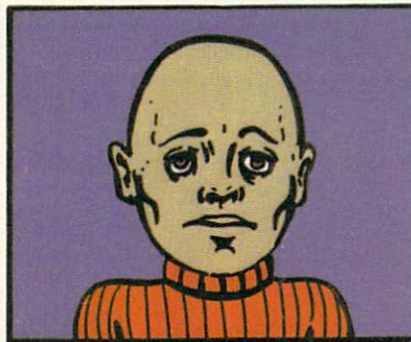
too light to drop through the trap door. But when he gets to the lab he picks up...right! a five pound bag of diamonds. Get it now? He's a whopping 129 pounds when he approaches the trap door for the second time. Bubba's fate is sealed, though, when he enters the freezer for the second time to get the big chill. —Ed.

## 'FEEDBACK' FEEDBACK

I like your "Feedback" column very much, but one thing I don't like is people complaining about your spelling a word wrong, forgetting things, or using the wrong title for a song, person, movie, etc. You probably don't have a lot of time to put this magazine out. I am embarrassed by these rude complaints. —Justin Hansen
Turton, SD

Dear Justin;
We work very hard to make the information in ENTER accurate. When we make a mistake and a reader catches it, that letter reminds us we have to stay on our toes. Believe it or not, it's helpful.
We appreciate your looking out for us. But if we didn't think a

reader's letter correcting an error in ENTER was worth printing, we wouldn't print it. (By the way, you'll also notice that we aren't shy about running letters that say how terrific we are along with the complaints.) —Ed.

## LIKE THIS ONE, JUSTIN

I liked the "Dune and 2010" (December 1984) story you did, and I hope you do more like that in the future.

—David Bevens
Collingdale, PA

## COMPUTER POET

I enjoy writing poems and working with computers. I did this poem on my IBM.

There was a computer named Sam,
Whose owner turned off its RAM,
The machine forgot,
The poor little tot,
Happened to be in a jam.

—Sarah Kovner
New York, N.Y. ⓔ

# THE HISTORIC HALL OF HACKERS

## HOW HOLLYWOOD PORTRAYS THE COMPUTER WHIZ

Times change. Five years ago, the image of the computer hacker (if anyone had an image at all) was that of the nervous "nerd" pictured on posters, with the reminder that you better not let *this* happen to you.

Not anymore. Now, it's *cool* to be a hacker—and dozens of computer programmers are turning up in movies, TV shows, comic strips and cartoons.

Take the 1983 box office hit *WarGames*—a movie that did for the programmer what Prince did for the color purple. Suddenly, it was okay to have an interest in computers. If Matthew Broderick could play with micros—well, it *must* be good stuff.

After years of portraying the



*Hackers get mad when someone steals an idea. That's what starts Jeff Bridges (left), the hacker hero in TRON (1982), on his adventure.*

© 1982 WALT DISNEY PRODUCTIONS

hacker as a nerd, Hollywood finally caught on to what the rest of the world already knew: computer people are not to be taken lightly. Witness *Tron* (Jeff Bridges a social outcast? No way!) and the TV shows *Whiz Kids* (Richie had no trouble getting dates) and *Knight Rider* (finally, a female computer specialist!).

## COMIC RELIEF

Make 'em laugh. That's the quickest way to win someone over. And comic strips are winning new friends by bringing micros into daily newspapers across the country. Jeff MacNelly's *Shoe* takes us through the ups and downs of input and output. And Oliver

*Oh! To be a hacker like* Sixteen Candles' *Anthony Michael Hall and still get a date with Molly Ringwald!*
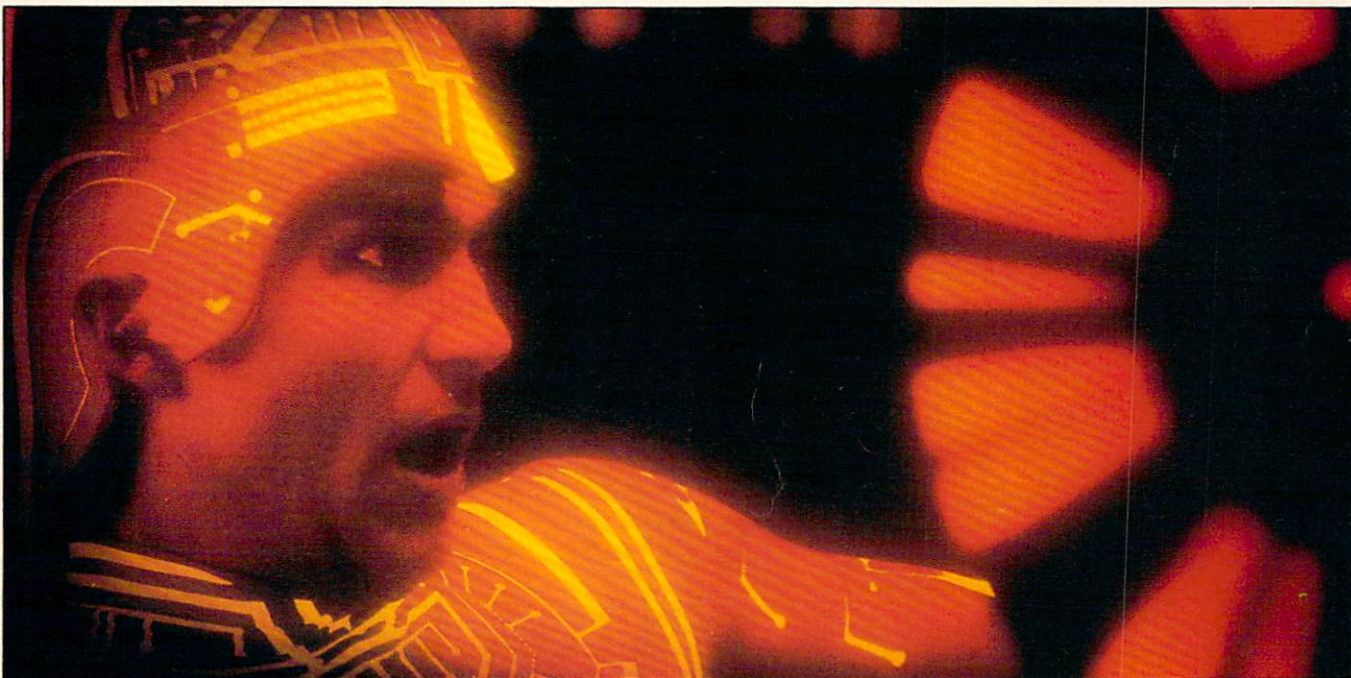


**TRON** *takes hacker-dom to heart. A crazed mainframe yanks Jeff Bridges into a computer-animated world where programs look like people.*

Wendell Jones, the computer prodigy in Berke Breathed's *Bloom County* strip, is a cartoon tribute to the whiz kids of the world.

## MEMORIES...

On these pages, ENTER skips down computer memory lane and takes a look at top hackers from the past. But these aren't *real* hackers. (Our apologies to Steve Wozniak, inventor of the Apple computer.) These are famous hackers from *media* history. Here's how computer users have been portrayed in movies, TV shows and in print over the years.

What can we learn from this? Well, hackers would say computer people were always *cool*. It just took the rest of the world years to figure it out. —*Patricia Berry*

*What happens when a hacker becomes a computer? Kurt Russell (left) found out in The Computer Wore Tennis Shoes, a 1970 movie that was a decade ahead of its time.*
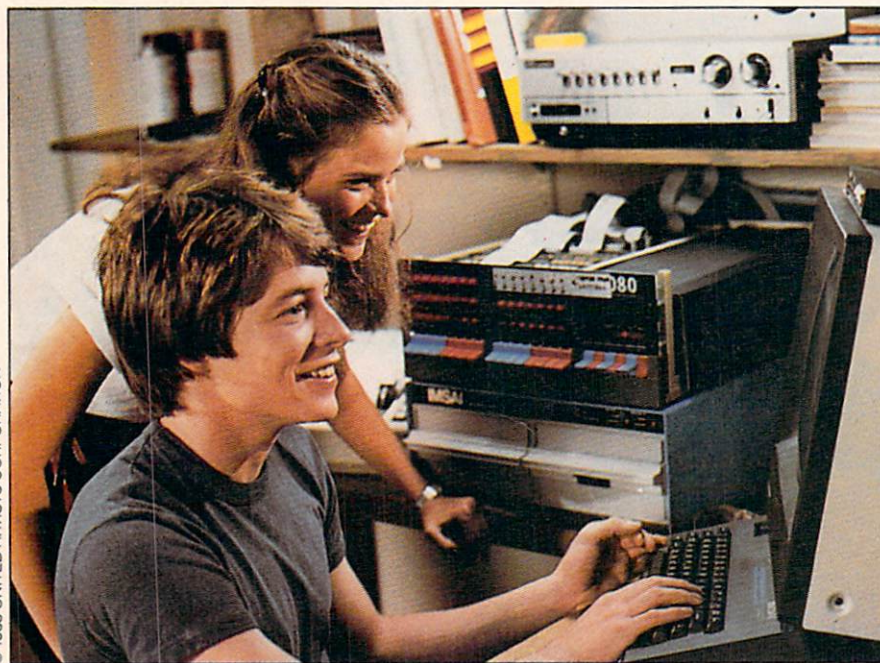
*The 1983 hit movie 'WarGames' put the spotlight on hackers like never before. Here Matthew Broderick shows Ally Sheedy how easy it is to change her grades.*

*'Knight Rider' might be stuck in neutral without KITT's programmer, played by Patricia McPherson.*

Can a hacker be cool and klutzy, and still
take on the Man of Steel? Richard Pryor tried, but his computer
turned against him in the 1983 movie 'Superman III.'

MEET MR. OLIVER WENDELL JONES AND HIS IBM 6000. OLIVER'S PARENTS ARE WORRIED THAT HE ISN'T RELATING WELL TO OTHER PEOPLE...

OLIVER WILL INSIST, OF COURSE, THAT HIS INTERPERSONAL RELATIONSHIPS HAVE NEVER BEEN BETTER...

BUMP!

TAP CLICK TAP CLICK TAP BEEP?

THANK YOU, OLIVER, BUT MY BUTT IS OKAY.

GOOD.
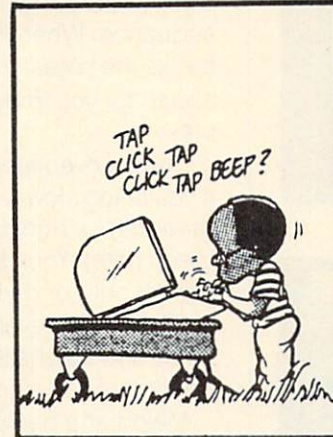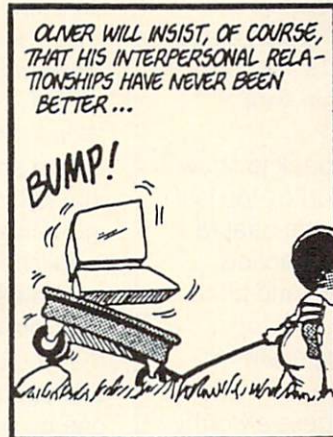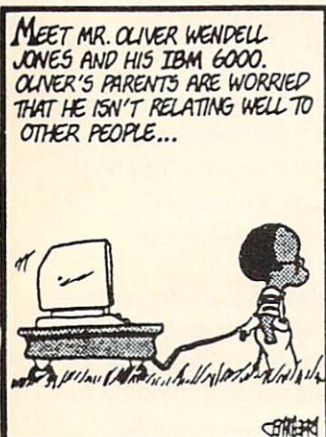
We know no hacker more amazing than Oliver Wendell Jones, the young computer-user in Berke Breathed's 'Bloom County.'

# SOFTWARE SCANNER

## E D U C A T I O N A L   S O F T W A R E   R E V I E W S

### BY HILDE WEISERT

## MELODIAN KEYBOARD

*(Concertmaster and Rhythm Master
software, Melodian, Inc., Commodore 64;
Keyboard and both programs, $239.85;
also available separately.)*

This is the most expensive and
most serious keyboard and music
software package I've seen so far.



**MELODIAN KEYBOARD**



**KID PRO QUO**



**THE PRINT SHOP**

What makes it different?
First, the keyboard is *big*—
about two and a half feet wide—
and plays three and a half
octaves. It means business, and
has a good, responsive touch—
like a real piano.

The *Concertmaster* software
lets you play, record, save, and
play back three-track music. It
includes most features you expect
in a music processor. You get a
choice of 19 instrument sounds, a
synthesizer to make new sounds,
and 35 pre-programmed songs
and rhythms. The excellent
screen display is divided into four
"windows." They include menu
choices, function key commands,
and a clear, scrolling musical
score.

But the *Rhythm Master* program
is what sets this package apart.
While a metronome ticks, *Rhythm
Master* plays a measure of music.
You watch a red cursor track the
notes on the score window, then
a yellow cursor repeats the
sequence. When the green cursor
tracks the notes, that's the go
ahead for you to begin your
playing.

There's even feedback to show
if you're too slow (a turtle), too fast
(a rabbit), or right on the beat (a
green note). You can practice
rhythm only, or rhythm and pitch,
at 12 difficulty levels. The top
levels should challenge almost
anybody.

Melodian's package is a worthy
addition to keyboard-software
systems. It's easy for beginners,
but I think that intermediate
musicians will be able to get a lot
out of it, too.

## ADVENTURES IN SPACE/ PLAYWRITER SERIES

*(Woodbury, Apple II, Commodore 64,
IBM PC and PCjr; $39.95)*

If a blank page makes your
mind go blank, you'll like this
software. It's an interactive first
step into word processing, and a
chance for you to create your
own book.

You and "Playwriter" series
software write a story together.
The *Adventures In Space*
program sets the scene in a
space voyage. Other "Playwriter"
software lets you create mysteries
and autobiographies.

The software asks you
questions: What's the hero's
name? Is the hero a boy or girl?
What does he/she dream of?
"Playwriter" then turns this data
into an entertaining story. A tale
might begin: "Wanda travels
to Cape Canaveral—on a
skateboard." You'll want to know
what happens next.

With its built-in word processor,
"Playwriter" can help you learn to
revise and edit a story. The final
pay-off is that "Playwriter"
guarantees your story is
published.

This software package comes
with lots of space-scene stickers
that you can use as illustrations,
and supplies you with binding for
one book. Refill cover/sticker
packs are $9.95. But since your
friends and relatives will all want
copies, you might want to try
making your own covers with
cardboard, paper and glue.

## FRIENDLY FILER

*(Grolier, Apple II, $39.95. IBM PC and PCjr versions planned. Friendly Files databases, $14.95 per disk)*

Database programs are like fancy file-card boxes. They help you get organized. With a database, you can set up a file—"Girl Scout Cookie Sales," for instance. You then enter information about who ordered the cookies, where they live, how many boxes they ordered, and whether or not they paid. When the cookies arrive, you can use the database program to print out a delivery list, a billing list, and the name of your best customer. Cookies aren't the only thing these programs can count. You can use database software to organize hobby, homework and other information.

As database programs go, *Friendly Filer* is no powerhouse. But it is a great introduction to this kind of software that can meet a lot of everyday needs. A character called InfoImp is your guide. This character keeps your attention, and shows how the software can be used. But the best parts of Friendly Filer were the "Practice" section and the separate *Friendly Files* database disks.

"Practice" lets you use a data file (called the "Animal File") that comes with the package to practice getting information from the database. Other databases are also available with information about presidents, science, U.S. facts, and trivia.

The program has limitations, such as only seven items per file screen, no calculations, and a bulky report format. But it is a serious information tool.

## KID PRO QUO

*(Softsync, IBM PC and PCjr, $49.95; Apple IIe and IIc, $39.95; Commodore 64, $29.95.)*

Some programs, like *Storymaker* (reviewed in October), let you write and illustrate stories, cards, newsletters, or book reports. *Kid Pro Quo* goes one step further. This software adds music to a word processing and graphics program. Of course, the music only plays and the picture only moves on-screen. Everything is silent and still when printed out.

This easy-to-use program comes with demo and tutorial sections. There are plenty of command prompts at the bottom of the screen. Drawing is a snap; the Commodore version lets you draw "freehand" with a joystick. That's much easier than using the cursor key commands on Apple and IBM versions.

While it's easy and fun, *Kid Pro Quo* would be a better homework tool if its 38-picture database had more graphics you could use in class. Personally, I'd like to see fewer animal pics and more maps.

## SURVEY TAKER

*(Scholastic, Apple II computers, $24.95)*

If you've ever filled out an ENTER Input poll, you've taken part in a survey. This program is aimed at you if you want to be the person who writes and asks the questions

The point of most surveys is to find out how many people think, have, or do something. This disk's sample survey shows the different types of questions you can ask. These include yes/no questions ("Do you like sardine ice cream?"), multiple choice questions ("What color are your eyes?"), and true/false questions ("I like taking tests").

You decide on a topic, write as many as 50 questions, and print out the survey. Once you've gotten answers, you can compare results between groups.

If possible, have people take the survey right on the computer. Otherwise *you* have to enter everybody's answers into the computer. This is a slow process.

Once you get results, this program is great. You can see your data in tables or colorful bar graphs. Unfortunately *Survey Taker* always prints *both* tables and graphs, even when you only want one. This software can help you spot trends, and think about better ways to ask your questions. You might even think of some new questions for our ENTER Poll.

## THE PRINT SHOP GRAPHICS LIBRARY

*(Brøderbund, Apple II and Commodore 64, $24.95)*

*Print Shop* owners will get a wild (and happy) look in their eyes when they see the familiar yellow box with the new title: *Graphics Library*. This disk, the first in a series, supplies 100 new graphics to use in *Print Shop*-created cards, banners and signs. You'll find a cute UFO, baseball hat and glove, the signs of the zodiac, *three* lovable dinosaurs, and more, more, more. This is a terrific extra for *Print Shop* owners. ▣

*HILDE WEISERT is a freelance writer and educational consultant.*

# USER VIEWS

*BY PHIL AND CHRISTINE WISWELL*

With this issue, *User Views* bids farewell to Bernie DeKoven. Bernie, who's been my partner on this column since ENTER's very first issue, plans to devote all of his time to developing software.

Beginning next issue, I'll be reviewing games with an avid 14-year-old game player—Billy Gillette. Meanwhile, "pinch-hitting" for this one issue is Christine Wiswell, my wife. As you'll see, Chris is a dedicated player who knows what it takes to make a great computer game.

—Phil Wiswell

## THE HITCHHIKER'S GUIDE TO THE GALAXY

*(Infocom, IBM PC, $39.95; also for most home computers)*

*Hitchhiker's Guide* is the funniest text adventure we've ever played. It is, of course, based on the hilarious science fiction novel of the same name. *Hitchhiker's* author, Douglas Adams, collaborated with Infocom on the game design.

As the main character, you wake up in bed, in the dark, with a whopping headache. Just getting the room to stop spinning is a serious chore. When you get the mail, you find a letter ordering the demolition of your house. As you look up, you see a bright yellow bulldozer crashing through the garden wall. Right away, you know

it's going to be one of *those* days.

Soon you meet up with your travelling companion, a chap with the odd name of Ford Prefect. Now the fun begins. Earth has been slated for demolition within the hour. You have to figure out how to escape by hitchhiking a ride on a passing spaceship. Once the planet-hopping begins, you won't believe what the galaxy has in store for you.

### WRAP-UP

**PHIL:** Infocom games have long been known for their sense of humor, but this one really frosts the cake. If you don't laugh, see a doctor.

**CHRIS:** The game is funny. And, like other Infocom games, it understands your full sentence commands. You almost believe there's someone in the computer talking to you.

**PHIL:** Unfortunately, the puzzles in this game are designed for adventure game veterans. Beginners may feel frustrated.

## PASTFINDER

*(Activision, Atari, Commodore 64, $31.95)*

*Pastfinder* is an arcade-style action game with beautiful three-dimensional graphics, smooth animation and good sound effects. You maneuver a small landcraft over constantly scrolling desert terrain. The craft, which stays near the center of the screen, can move right or left, shoot at any oncoming menace and jump over obstacles.

Your craft has one other skill—

picking up objects off the desert floor. These objects—tools and artifacts—are the real quest in *Pastfinder*. You use the tools to defend yourself against other desert inhabitants. And you gain points by trading in artifacts at base camps along the way.

### WRAP-UP

**PHIL:** *Pastfinder* reminds me of *Zaxxon*. The gameplay is simple and the three-dimensional scenes are wonderfully detailed. And here you do more than just shoot and dodge. You've got a mission—to retrieve those artifacts.

**CHRIS:** This is a beautiful-looking game, but it's also quite abstract. When you get right down to it, *Pastfinder* has nothing to do with exploring the past. It's a scrolling game where you jump and run and shoot at things.

## FORTUNE BUILDER

*(Coleco, ColecoVision and Adam, around $35.)*

*Fortune Builder* can be played alone, but it really works best as a two-player game. In fact, we think it's one of the best cooperative games we've played.

The premise is this: A group of investors wants $100 million turned into $250 million over five years. Players (each of whom starts with $100 million) try to do this by investing in 29 different types of money-making businesses, and by building roads and bridges.

At costs ranging from $25,000

to $15 million, you buy road sections, gas stations, motels, hotels, apartment buildings and condominiums, malls, fast food restaurants, stadiums, amusement parks, casinos, campgrounds, parks, factories, and much more. If you play cooperatively, you have a chance to plan your communities. If you play competitively, you can go for the financial jugular by building a coal mine next to your opponent's ski resort.

Either way, you've got to pay attention to your money: $100 million can disappear in no time at all.

### WRAP-UP

**CHRIS:** I like this game because the subject is real. It is truly involving.

**PHIL:** The design is simple, yet the gameplay is elegant. It can be cooperative or cutthroat. The choice is yours.

◆◆◆

## ADVENTURE CONSTRUCTION SET

*(Electronic Arts, Commodore 64, around $50.)*

Anyone who has ever played computer adventure games has probably longed to create his or her own games. Until now, that required a lot of patience and programming know-how. *Adventure Construction Set* has broken down these barriers. It offers an easy system for assembling animated fantasy role-playing adventures of great depth and variety.

You use built-in images to build rooms complete with traps and treasures. If you don't see the right trap or treasure, use the graphics editor to draw your own. You can

create up to 250 rooms, 500 monsters, and more than 5,000 objects for any single adventure. Assembling these adventures is very simple, thanks to a wonderful set of menu commands.

The beauty of this software is the way it lets you build a game around just about any theme. For instance, you can create a game around the real floorplan to the White House, Fort Knox, or Alcatraz Island. And in case you don't know or how to start building an adventure, the disk includes "Rivers of Light," a complete fantasy role-playing adventure set in Egypt. Even if you don't want to create your own games, "Rivers of Light" is worth the $50.

### WRAP-UP

**PHIL:** This is the product I've been waiting for to get back at my friends. I'm going to write the toughest game on record, something *so* impossible....

**CHRIS:** This is the product I've been waiting for to encourage my friends to play adventure games. I'll write the easiest game on record, something *so* simple....

◆◆◆

## AMAZON

*(Telarium, Commodore 64, $32.95; Apple II, $39.95)*

Michael Crichton has written some wonderful books, and *Amazon* is one of our favorites. So why is this adventure game *Amazon* not such a great game?

Part of the problem is with the game's sentence parser—the section of the program that interprets sentence commands. It is crude in comparison to the parsers found in adventures by companies like Infocom and

**PASTFINDER**



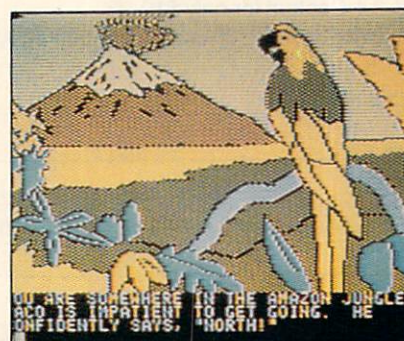**FORTUNE BUILDER**



**ADVENTURE CONSTRUCTION SET**



**AMAZON**

## SESAME STREET ORDER FORM

☐ Yes! Please send 1 year (10 issues) of
   Sesame Street for only $9.95.
☐ I prefer 2 years (20 issues) for only $18.95.

CHILD'S NAME                            AGE

ADDRESS

CITY              STATE             ZIP

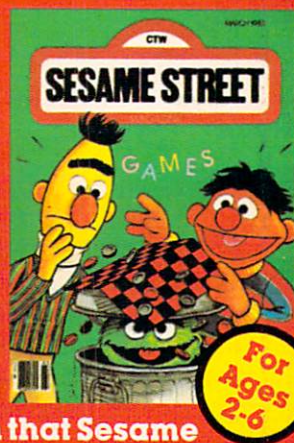LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

☐ BILL ME LATER              ☐ PAYMENT ENCLOSED

**MAIL TO:** Sesame Street Magazine
P.O. Box 2894, Boulder, CO 80322

Subscriptions to Canada and other countries, add $6.00 per year. Please remit in
U.S. currency. Allow 6-8 weeks for delivery.                    8H369

# ENJOY
## WITH
# SESAME STREET

**Sesame Street Magazine—**
Big Bird and his delightful
friends will bring dozens
of playful surprises, ten
terrific times a year. (It's
the entertaining education that Sesame
Street does best!) Puzzles, cut-outs, games,
A-B-C's, 1-2-3's...there's all the magic of the
TV super-series in every colorful issue.

*For Ages 2-6*

---

## THE ELECTRIC COMPANY ORDER FORM

☐ Yes! Please send 1 year (10 issues) of
   Electric Company for only $9.95
☐ I prefer 2 years (20 issues) for only $18.95

CHILD'S NAME                            AGE

ADDRESS

CITY              STATE             ZIP

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

☐ BILL ME LATER              ☐ PAYMENT ENCLOSED

**MAIL TO:** The Electric Company Magazine
200 Watt Street, P.O. Box 2922, Boulder, CO 80322

Subscriptions to Canada and other countries, add $6.00 per year. Please remit in
U.S. currency. Allow 6-8 weeks for delivery.                    8H377

# ENTERTAIN
## WITH
# ELECTRIC COMPANY

**The Electric Company
Magazine—as creatively
entertaining as the T.V.
show kids love. It's amus-
ing, playful, absorbing
and educational for beginning and
young readers. Enjoy ten colorful issues
filled with puzzles, posters, cut-outs, Spidey
super stories, jokes...and sunny smiles.**

*For Ages 6-10*

---

## 3-2-1 CONTACT ORDER FORM

☐ Yes! Please send 1 year (10 issues) of
   3-2-1 Contact for only $10.95.
☐ I prefer 2 years (20 issues) for only $19.95.

CHILD'S NAME                            AGE

ADDRESS

CITY              STATE             ZIP

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

☐ BILL ME LATER              ☐ PAYMENT ENCLOSED

**MAIL TO:** 3-2-1 Contact
E = MC Square, P.O. Box 2931, Boulder, CO 80322

Subscriptions to Canada and other countries, add $6.00 per year. Please remit in
U.S. currency. Allow 6-8 weeks for delivery.                    8H385

# EXPLORE
## WITH
# 3-2-1 CONTACT

**3-2-1 Contact—Science is
fun. And you can make it a
year-long learning adven-
ture for your favorite 8-12
year olds. 3-2-1 Contact
will bring ten big issues packed with
puzzles, projects, experiments, questions
and answers about the world around us. It's
an involving, fun way to learn!**

*For Ages 8-12*

Penguin Software.

For example, when you want to enter an office you type ENTER OFFICE, but get no response. Then you type GO OFFICE, but again no response. Finally you type GO IN and the inside of the office appears on screen. *Amazon* forces you to use its very rigid set of commands. No exceptions.

Fortunately, the story and puzzles are compelling enough to make us put up with this drawback. The plot-based puzzles lend the game an air of realism that many games miss. That's the Crichton influence.

You must explore the Amazon jungle, where danger lurks at every turn. If you are wise, you will keep in nearly constant touch with your worldwide computer headquarters.

### WRAP-UP

**PHIL:** If the sentence parser were better, this would be among my all-time favorite software adventure games.

**CHRIS:** Not me. Even after you get used to the odd commands, *Amazon* never lives up to its promise.

◆◆◆

## RAID ON BUNGELING BAY

(Brøderbund, Commodore 64, $29.95)

This a war game, a shoot-everything-that-moves game. Surprisingly, we like it anyway. That's mainly because everything about the gameplay—from graphics to animation to sound—works exceptionally well.

The constantly seesawing battle between your helicopter and the enemy takes place above an ever-changing terrain. The view is from your helicopter, which remains near the center of the screen at all times. Below you see the ocean and many different islands.
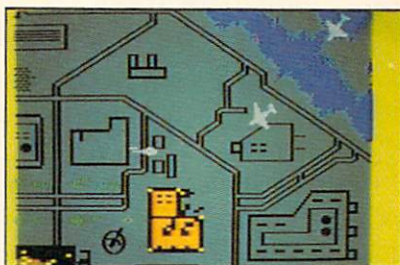
You begin by taking off from your aircraft carrier. Be sure to remember its position in order to dock for repairs, refueling, and rearming through the game. Your mission is to bomb as many enemy sites as you can find and to dodge through enemy defenses.

You'll face a staggering array of anti-aircraft guns, tanks, attack boats, radar detectors, jet fighter planes and, of course, heat-seeking missiles. You can barely keep your mind on your mission! If you wanted, you could really play this game without dropping one bomb. Just avoiding enemy defenses is enough of a challenge.

*Raid on Bungeling Bay* is a game that's definitely not for the faint-hearted.

### WRAP-UP

**PHIL:** After only a few plays, you begin developing the piloting skills you need to make your games last for half an hour or more of wall-to-wall action.

**CHRIS:** Wall-to-wall *violence*, you mean. It is a good game. But I wonder why Brøderbund didn't concentrate a bit more on *saving* lives, too, as they did in the game *Choplifter*.

**PHIL:** Here, all you end up thinking is "What should I destroy next?" ⊡

# CONNECTIONS

EDITED BY JESSICA WOLFE

## BY ERIC BABINET, 17

Last November, we ran a page of book reviews by ENTER youth advisor Eric Babinet. This month, Eric returns with another round of reviews. He sorted through 15 new computer books, and picked out five of the best. All these books should be available in your local bookstore or library.

### LET'S LEARN BASIC: A Kids' Introduction to BASIC programming on Atari Home Computers.
*By Ben Shneiderman; Little Brown, $8.95. (Also available in IBM, Commodore 64 and Apple versions)*

*Let's Learn BASIC* starts with the simplest programming concepts, and works its way through to more difficult ones. It's a very good introduction to programming for real beginners.

The book begins with information about printing strings and loops. It moves on to taking input, arithmetic, using variables, IF-THEN statements, and, finally, subroutines. Practice exercises— some easy, some challenging— appear at the end of each chapter. A final chapter gives an overview of the more complicated features of BASIC and the Atari computer.

*Let's Learn BASIC* is a very clear, well-organized introduction to programming. It's not much more than that; older kids and experienced computer-users will find it too simple. But I definitely recommend *Let's Learn BASIC* for programming beginners.

### THE WHOLE EARTH SOFTWARE CATALOG
*Edited by Steward Brand; Quantum Press/Doubleday, $17.50*

First, I skimmed *The Whole Earth Software Catalog*. Later, I sat down and read it more carefully. But that first quick look alone showed me that this book was put together carefully and intelligently.

Most of the *Catalog* is made up of software reviews. These evaluations include comments from one or more people, screen shots for most programs, descriptions of the systems that run the software, and the addresses of the manufacturers.

There are no negative reviews in the book; the purpose of the *Catalog* is to find good software.

The *Catalog* isn't only reviews, however. It also contains mini-editorials on such topics as the criteria for judging software and hardware, how to get free software, why you should bother learning how to program, and more.

The *Whole Earth Software Catalog* is very complete. The price is high, but the *Catalog* contains so much information, it's worth it.
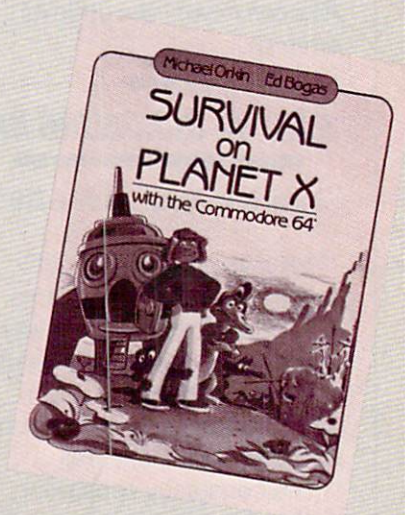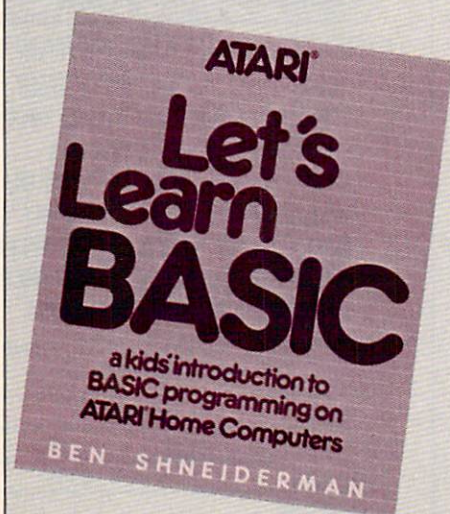
### SURVIVAL ON PLANET X (With The Commodore 64)
*By Michael Orkin and Ed Bogas; Reston Publishing, $12.95*

*Survival on Planet X* is a programming book with a difference. Within the context of an adventure story, the reader learns about programming in BASIC.

The story takes place (where else?) on the Planet X. Everything there has a name beginnning with X—xamsters, Xax, Xaviar, Xete and Xim. Vivian, the main character, is a teenage girl who is constantly running into trouble.

Each chapter tells Vivian's story and also introduces different commands and functions. Chapters end with short programs that relate to Vivian's space adventures. The new commands are thoroughly explained before they are incorporated in the programming.

Programs range from the very simple to the slightly difficult. However, even the difficult programs don't require a lot of

programming know-how. In fact, you don't have to know anything about programming to enjoy *Escape from Planet X*. It can be read without paying any attention to the programs.

The story is well-written, and the black and white illustrations are nicely done. Many of the programs include sound, simple graphics and animation. But the claim on the back cover that the authors have added "arcade-like excitement" in the programs is silly. Don't expect arcade action, or you'll be very disappointed.

### THE COMPUTER COOKBOOK 1984/1985 EDITION
*By William Bates; Quantum Press/Doubleday, $14.95*

If you've ever wondered how computer memory evolved, how parallel ports work, or even why 3-D graphics seem 3-D, you will find the answers here. *The Computer Cookbook* is the best general book about computers I've seen.

Without being technical, *The Cookbook* reads very much like an encyclopedia. It includes definitions, pictures, lists and charts throughout. The

information is objective, neatly presented, and easy to understand. The 126 articles include a lot of information. And the book is up-to-date; it has been revised every year since 1973.

The *Cookbook* doesn't just tell you *what* you want to know; it also offers many sources for additional information. There are lists of magazines, publishers, books, software companies, bulletin boards, and many others. I found something interesting on almost every page.

### WORKING ROBOTS
*By Fred D'Ignazio; Hayden Book Co., $7.95/$14.95 hardcover*

This book is for anyone who likes robots. It tells you everything you'd want to know about these mechanical creatures—with one exception. *Working Robots* won't teach you how to build one. But in his introduction, author Fred D'Ignazio (an ENTER contributing editor) says that *Working Robots* is the book you should buy *before* you buy a how-to book.

D'Ignazio begins by defining exactly what a robot is. He then goes on to discuss types of robots—how they differ, and how they are alike. Chapters also examine uses of robots in the home.

While some history is included in *Working Robots*, the book deals mostly with how robots are being used now. They are becoming, this book makes clear, increasingly important. After reading *Working Robots*, you'll understand how and why. ▣

*ERIC BABINET was the subject of an ENTER article, "Diary of a Game Designer" (May, 1984). He does his computing on an Atari 800.*
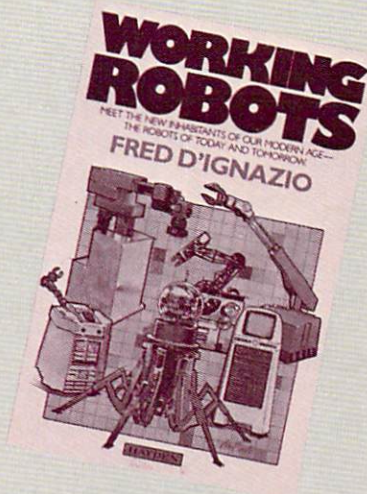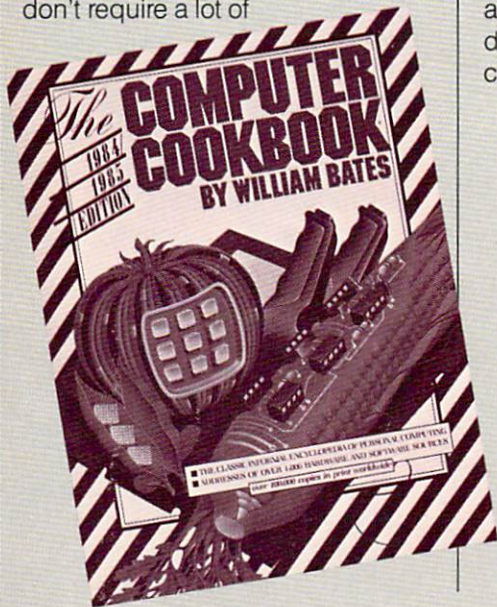
# NEWS BEAT

## NEW : THE MAC KNOCKOFF



Coming soon—clockwise from top left: Atari's 130ST, Nintendo's video game system, Commodore's new portable and Wico's MouseTrac.

**M**acKnockoffs and Jackintoshes were the big news at January's Winter Consumer Electronics Show.

Nearly 100,000 people crowded into Las Vegas's Convention Center to see the newest products in the computer, audio and video industries. *Apple* didn't even have a booth at the show. But it was imitations of their *Macintosh* computer—and peripherals and software to use with the Mac—that had everyone talking.

Knockoffs weren't the only story, however. Also unveiled were new Commodore computers, a new home video game machine, lots of new software, some intriguing peripherals and an appearance by Japanese hardware companies.

**THE NEW ATARI:** For months, Atari computer owners and the whole industry have been waiting to see what new owner *Jack Tramiel* had up his sleeve. At Las Vegas, the suspense was broken when Atari showed prototypes of five new computers.

The new *Ataris* come in two flavors. The *65XE, 65XEP* and *130 XE* are souped-up versions of the old *800XL*. These new computers will run all XL and most 800 software. The XEP is a portable

version of the XE. You can probably figure out that the 65 and 130 stand for the thousands of bytes in each machine's RAM.

However, it was two other models—the *130ST* and *520ST*—that created the biggest stir. They are Atari's answer to Apple's Mac. Both computers use the same high speed 32-bit processor as the Mac. They also have similar features such as a mouse and "windows" (which means separate areas of the screen can be used to display different documents).

Unlike the Mac, the ST series will allow low- and medium-resolution color displays. You can even hook them up to your TV set. (Macintosh comes with a built-in black and white high-res monitor.)

There was no software available for the ST's at the show. (They are *not* compatible with the Macintosh.) But Atari says it will begin shipping the new computers early this spring, and that software will be available by then. It also says it will be able to sell an ST system for less than half the price of a Mac.

**COMMODORE AND MORE:** Down the aisle from Atari, Commodore was showing off the new expanded version of the C-64, naturally called the *Commodore 128*. (ENTER reported on the 128 in last month's "Newsbeat.") Commodore also displayed a new portable computer with a tilt-up screen, as well as a new disk drive and other peripherals.

*Nintendo*, the company that brought you arcade hits like

*Donkey Kong,* is going to start selling a improved home video-game system. The compact box will play game cartridges based on many of the arcade hits. It will also have a feature that allows you to edit and redesign games.

There were also Japanese computers at the show, and they had very familiar names—like *Sony, Panasonic* and *Sanyo.* All Japanese computers use the same operating system, called *MSX.* This means they are all compatible with each other—they can use the same software, and even the same peripherals. In Japan, MSX computers sell for under $200, but there are no definite plans to sell them in the U.S.

**PRINTERS, PICTURES AND PERIPHERALS:** Computers weren't the only new hardware on display. Star Micronics introduced two new dot-matrix printers called the SG-10 and SG-15. In regular mode, they produce good quality text at a fast 120 cps (characters per second). But in a slower 30 cps mode, they produce documents that are near letter-quality. The SG-10 will sell for about $299.

Video products are a large part of every Electronics Show. This year, some companies brought home computers and video together. For example, *Koala,* makers of *Koala pads* and the *Gibson Light Pen,* will soon be selling something called *Mac-Vision.* This allows you to hook up any home video camera to a Macintosh. You can then display video images on the monitor and store, print or change them like a regular graphics document.

The mouse continued to be the "hot" input device. Everyone had software designed to use the little critters. Now *Wico,* a large man-


**With MacVision, you get the picture.**

ufacturer of joysticks, has come up with something called the *Smartline MouseTrac Combo.* Used one way it's a mouse. Flip open the lid, and it's a trackball. It's for use with Apple II and Macintosh computers. MouseTrac will sell for $125.95.

As for *Commodore* owners who feel left out of all this new Mousiness—relax. There's a new product just for you. Called the *Spartan Apple Emulator,* the $599 box acts like an *Apple II+* that has been grafted onto your Commodore. With it, you can use your C-64 keyboard and disk drive to run all Apple II+ software and programs. You can also use Apple peripherals, and use the

Spartan's extra slots to add more memory, parallel interfaces, etc. Spartan is made by *Mimic Systems* of Victoria, British Columbia.

**SOFTWARE DEBUTS:** Here's a safe bet: the new software introduced at the CES show in Las Vegas will change the way you use your computer. Programs that premiered will let you create a newspaper, publish a book, journey through space and, oh yes, even play games.

If you've ever wanted to print all the news that fits, check out *The Newsroom* from *Springboard Software.* This program (for the IBM PC, PCjr, Commodore 64 and Apple II computers) lets you write, illustrate, design and print an actual newspaper. *The Newsroom* features a built-in word processor, plus more than 600 pieces of art and layout options, says John Paulson of Springboard. Stop the presses!

If you want to see your name in print, but in something more permanent than a newspaper, there's *Build-A-Book* from *Scarborough*

**THE END OF ADAM:** Coleco became the most recent company to pull out of the home computer business. In January, the company announced it was ending production of its Adam computer.

The withdrawal of Adam was not a complete shock, because Coleco's "home computer system" never sold as well as the company expected. But last October, Coleco introduced a series of new products for the Adam, including a long-awaited disk drive. They also began offering

$500 college scholarships to children of families that bought the Adam. New owners were added to the 200,000 families that already owned the Adam.

Coleco says it will honor all scholarships, warranties and rebates. If you have any questions, call Coleco's toll-free customer service number (1-800-842-1225). Honeywell Inc. will continue to service Adam units. Coleco will send you a list of service numbers if you call the hotline number.

*(Continued from previous page)*

*Systems.* This software (also for the IBM PC, PC*jr,* Commodore 64 and Apple II computers) lets you include the name of friends, family and pets into four already-written stories. Once you've entered the information, you can print out the personalized stories and bind them between illustrated covers that come with the software. Scarborough intends to expand the list of stories in the future. The company also introduced *Mastertype's Writing Wizard,* an integrated word processing and database software package, and *Make Millions,* a business simulation game.

*CBS Software* unveiled a new murder mystery—*Felony!* This mystery adventure sequel to CBS's hit *Murder By The Dozen* unleashes a full-scale crime wave that you have to solve. It's no mystery that this software will be available for the Commodore 64, IBM PC and PCjr and Apple II computers.

Epyx debuted several new software titles. You'll be seeing *Summer Games II,* a sequel to last year's Olympic software hit, featuring eight new events; *Two-On-Two Sports,* sporting action software that lets two players team up at volleyball, baseball, soccer and baseball; *FBI,* an obstacle-filled action game that challenges you to be a junior G-Man, and *The Right Stuff,* a flight simulation game that turns you into a World War II flying ace.

In *Activision's* new *Rock N' Bolt,* you're atop a 100-story high-rise building. You're Louie, a dancing construction foreman who spins, jumps and bounces to a shifting beat as he tries to keep his building in balance. The beat's

good, and you can build to it.

**EPYX KIDS:** What's it like for a 12- or 14-year-old to walk around the Consumer Electronic Show and see the very latest high-tech developments? It's hard to answer that question, because the show
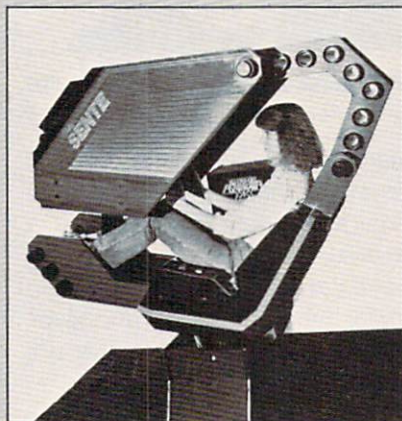


**Shrike Avenger: Half video game, half amusement park ride.**

is closed to everyone except the people who build, sell or report about new technology.

But we found two teenagers who had a rare insider's look at this state-of-the-art event. *Michelle Johnson,* 12, and *Lance Emerick,* 14, both from Las Vegas, wore T-shirts with the phrase "You Can't Kid A Kid" emblazoned across the back. They were working at the *Epyx* booth,

"It's like this place is filled with spaceships," said Lance, describing the hundreds of high-tech booths.

Lance and Michelle were demonstrating new software most of the time, so they didn't get to see everything at the show. But, says Michelle, "I think I liked the robots best....Whenever I saw a robot, I went over to take a quick look. They're funny to watch." Lance also got a kick out of the robots, but he most enjoyed getting an

early look at new computers introduced by Atari and Commodore. "They're machines nobody else has seen before."

What was the best part about demonstrating new software at the Epyx booth?

"Well," says Michelle, "after demonstrating how to play *Summer Games II* for a few hours, I got real good at it...Then I could show off."
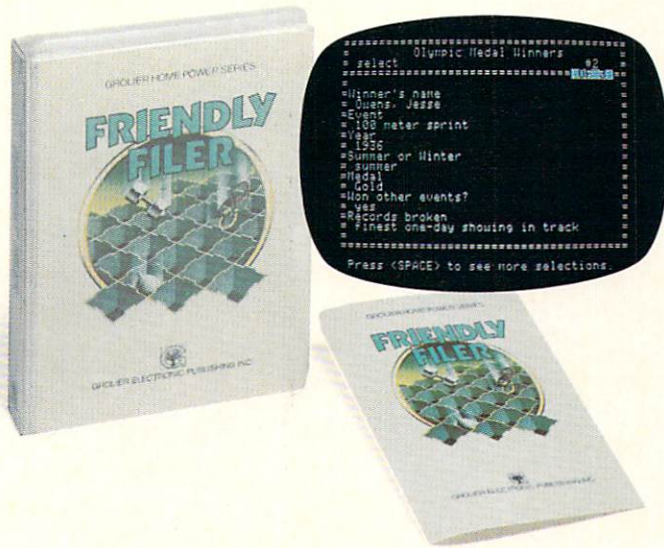
**ARCADE GAMES '85:** ENTER asked Michael Hart, 14, to attend the recent AMOA arcade game show in Chicago. His report:

Arcade gamemakers showed off their newest laser disc games and some new high-res non-disc games. Of all the games introduced, Bally Sente's *Shrike Avenger* is the one that really takes you for a spin. This cockpit-style adventure, like other space games, sends you flying through the galaxy. But when you move the joystick in *this* game, the whole cockpit tilts. You swing up and down and back and forth, with help from hydraulic lifts mounted around the cockpit. All the action is controlled by joystick. It's the first combination arcade game/amusement park ride I've ever seen.

Among the best non-disk games is *Marble Madness* from Atari. It has great graphics, and really keeps you on your toes. You use a trackball controller to guide a marble down chutes in a race against time *and* your arch-enemies—green slimy slinkies and bowling balls. A similarly silly game, which also has excellent graphics, is *Snacks N' Jaxson* from Bally Sente. Bet you've never tried to get a clown head to eat flying food while preventing its nose from flying out the window. Now *that's* a new idea. ▣