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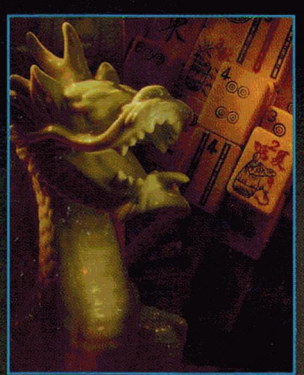

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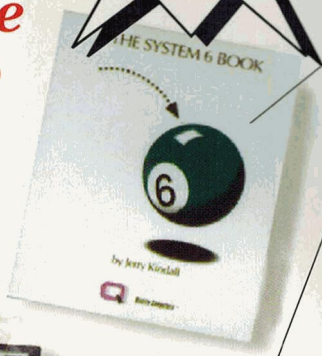

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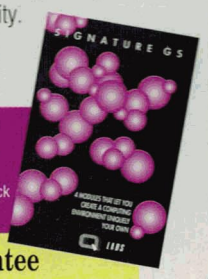

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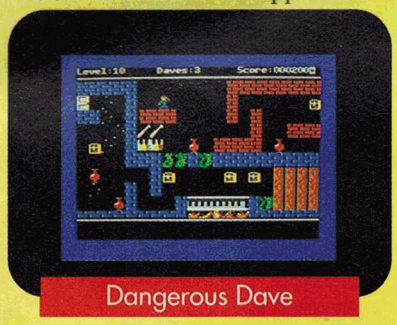

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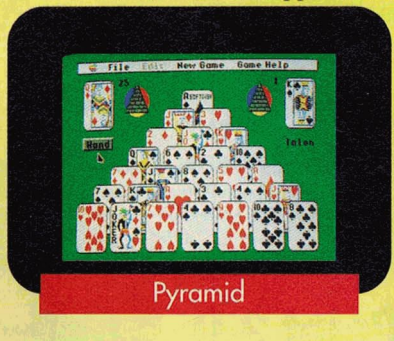

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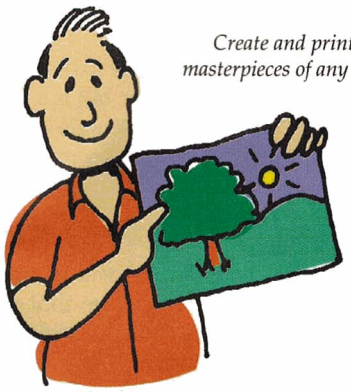

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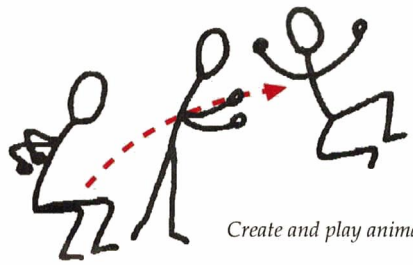

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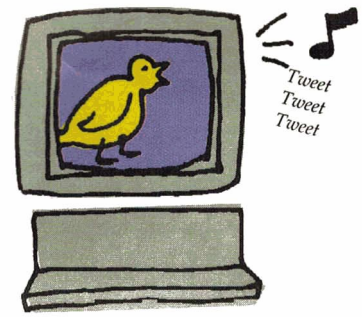

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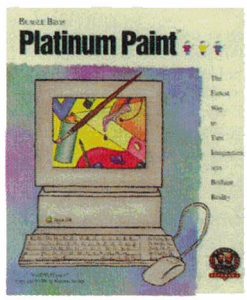

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THE VIEW FROM INSIDE

PLANTING APPLE SEEDS

What's the currently popular solution to the "crisis" in education? Computers in the schools. "Technology will save our kids!" The prevailing argument is that computers will not only ensure educational excellence (software is supposed to provide consistent, individualized instruction), but will also prepare our children for a competitive, technology-intensive future.

We temper our enthusiasm for computers in education with the knowledge that no technology can replace teachers. Yet we do know that computers can help ease teaching loads, motivate students, and improve academic performance. Although those eternally patient drill-and-practice programs are particularly helpful and effective for at-risk students, we also know that computers can have their greatest impact on learning when teachers weave the technology into their lesson plans, or when they use comprehensive programs like The National Geographic Kids Network, described in this issue (see "Real Science," p. 44).

We also know, however, that behind every successful computer-aided K-12 educational program is a very special teacher — one who is familiar with the technology and knows how to integrate it into his or her lessons. And, by our estimates, those special teachers are a rare breed.

This may come as a shock to you, but most teachers still don't use computers for even the simplest productivity tasks, such as word processing. Part of the reason is that there just aren't enough computers to go around. But another large part of the reason is training.

To solve the first problem, there has never been a better time to buy the most popular computer system for K-12 education — the Apple II — than right now: CPUs have never been less expensive (you can buy many good secondhand systems for nearly a song); there's a cornucopia of educational software titles, hardware upgrades, and peripherals, and sources from which to get them; and support remains strong, including assistance and advice from Apple Computer, from user groups, from hardware and software vendors, and from this and other Apple II-specific publications.

We argue, however, that simply adding Apple IIs to a shared pool of equipment in the school's A/V center isn't the best way to encourage teachers to use them. Training and support for beginners, particularly in software, are more important.

Unfortunately, because the machines require a fair amount of expertise to use, few schools have the resources needed to formally train many teachers to use computers. The time, let alone the financing, necessary for formal training is just too extensive.

Rather, we propose that schools "liberate" some Apple IIs. Give them to selected teachers on "extended" loan for their personal use. After all, Apple IIs are "personal" computers: They're easy to learn and easy to use.

Teachers with "loaner" Apple IIs are more apt to invest their personal time in learning the machine — time and effort that will be repaid when they discover how an Apple computer can help ease their teaching and administrative tasks.

In the bargain, also insist that the teachers bring those Apple IIs back into their classrooms and use them as teaching tools. We doubt many teachers will balk at that requirement: Once they find out how compelling a tool the Apple II is, we're sure they'll want to share that enthusiasm with their students.

Planting Apple seeds with teachers will greatly shorten a learning curve that is now much too long. And personal access to Apple computers will lead inevitably to better education for our children.

— William Kennedy, Ph.D.,
Editor in Chief

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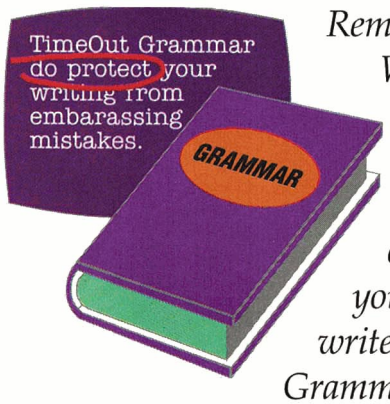

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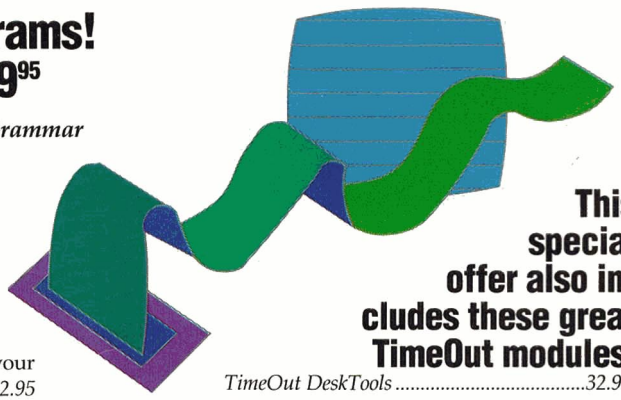

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APRIL

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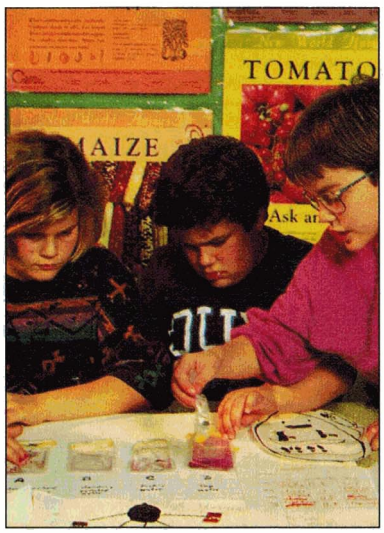
Real Science by Bonnie L. Bracey 44
Thanks to the National Geographic Kids Network, students all over the world are studying today's most-pressing environmental problems. Here's a progress report from one teacher who's been putting young scientists to work in her classroom since 1988.

II Essentials: Hardware by Tony Diaz and Paul Statt 50
Congratulations — you're the proud owner of a "new" Apple II. If you've got no idea just how it works or what to do with it, start here, as *inCider/A+* discusses the nuts and bolts of hardware operation that every II user should keep in mind.



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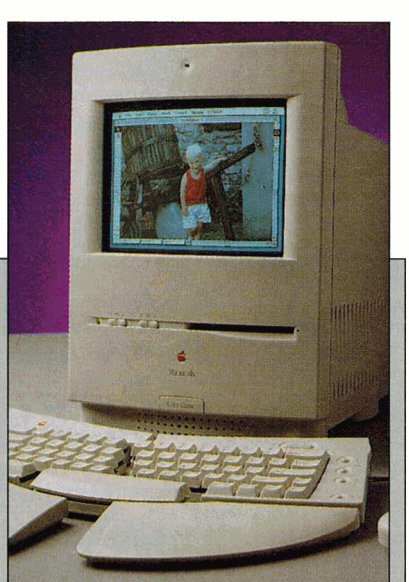

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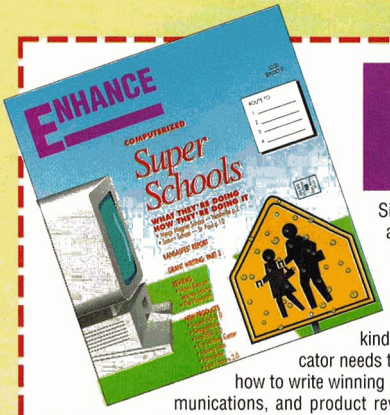

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4-Meg. Q-RAM comes with FlashBoot FREE!

Installation is simple. You can expand a Q-RAM GS by snapping in standard SIMMs—we even include the necessary diagnostic software for your peace of mind. And since the Q-RAM GS uses SIMMs, your memory investment won't go to waste.

Of course, since you're dealing with Quality Computers, you get an unconditional 30-day money-back guarantee and a five-year warranty. And the price is the best news of all—a 2 MEG Q-RAM GS costs about the same or even less than other IIgs memory cards in a 1 MEG configuration!

Plus, with the 4 MEG Q-RAM GS, you get FlashBoot FREE! FlashBoot lets you quickly save and load a super-fast, super-convenient RAM disk.

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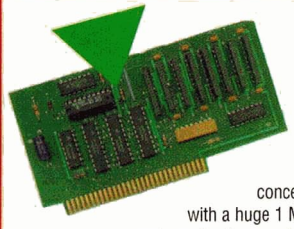

Snap the Q-RAM IIe into your Apple IIe, and you'll create a whole new computing experience. Programs load faster—and completely. A lot less disk swapping. A lot more productivity. All of AppleWorks, plus your TimeOut applications will completely load into RAM. That means you can concentrate on working—not waiting for disk drives. Plus with a huge 1 MEG. treasuer trove of RAM, you can create huge documents, and not encounter a single "Out of Memory" message.

The Q-RAM IIe fits snuggly into your IIe's auxilliary slot, and comes with diagnostic software, a 5-year warranty, a 30-day money back guarantee, and is 100% software compatible.

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1 Meg.	$99.95

The Q Drive eliminates disk swapping and helps you work twice as fast!

Thousands of drives later, experts still are praising the Q Drive for its performance and value. *inCider/A+* gave it a four-and-a-half-star rating. Our customers are using words like "amazing" and "fantastic" to describe the way the Q Drive has changed their computing.

The Q Drive features a fast, reliable Quantum mechanism using the latest technology, including auto-parking heads, a voice-coil actuator, and a track buffer. And since the Q Drive uses the industry-standard SCSI interface, you get complete compatibility with your current computer system—and your next, whether it's an Apple II, Macintosh, or IBM.

Comes with Switch Hitter and 15 MEG. of free software

The Q Drive's plain-English manual covers more than installation and setup. It even tells you how to manage your mass storage effectively. From GS/OS and ProDOS to backups and maintenance, it's all there, including a glossary of hard drive jargon. And no hard drive is easier to set up and use—install a card, connect two cables, and turn on the power. The Q Drive automatically configures itself to match your computer, and the latest system software is already installed.

Are you interested in upgrading to System 6 but afraid of compatibility problems? Switch Hitter is your solution, allowing you to keep System 5 on your hard drive when you add System 6! A simple keyboard command selects the desired System version at boot time. Additionally, Switch Hitter lets you change your IIGS's System Speed and Startup Slot at boot time and start up a 3.5" or 5.25" disk, all without having to wait for your hard drive to boot into the Finder.

FREE HOW-TO VIDEO

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LETTERS

LET'S DO LAUNCH

SUPER FEATURE ON "ENRICHing System 6" by Joe Kohn in your January 1993 issue (p. 34). I use George Wildes' **UtilityWorks**, which was mentioned in the article – it's a super program that does everything but wash the dishes.

I'm also using Wildes' **UtilityLaunch**, a shareware ($10) companion to UtilityWorks. I've tried many other programs of the type and find UtilityLaunch far and away the best. It runs under GS/OS System 5.0.4 or later. You can preselect up to 40 programs (16 if you use icons) from up to 50 menus for a total of up to 200 preselected launch programs.

With UtilityLaunch you can adjust many of the GS' Control Panel options, as well as adjust accelerator-card speeds. The utility's menu screens are very simple to configure and use. My favorite feature is that the program lets you switch temporarily to a new boot drive without having to reset the Control Panel or turn off your GS. I've found that feature most helpful with copy-protected programs you can't transfer to your hard-disk drive.

John Fredricks
Casper, WY

FTA EN ENGLAIS?

IN THE JANUARY 1992 ISSUE, JOE Kohn mentions in his Shareware Solutions column (p. 16) that the **FTA (Free Tools Association)** has published an 800-page book about programming the GS. Is this book available in English? If so, can you tell me the details – cost, where to order, and so on? If it isn't available yet in English, when will it be?

David Lee
Concord, GA

We have yet to see an English translation of this French original, and caution that owing to one author's improprieties, a translation will probably never appear. We suggest you contact The Byte Works (4700 Irving Boulevard NW, Suite 207, Albuquerque, NM 87114, 505-898-8183) for GS programming reference books. — eds.

GS VS. PC (CONT.)

I COULDN'T AGREE MORE WITH Richard Custer's letter in the February 1993 issue of *inCider/A+* (p. 8) regarding the merits of the "good ol' GS" versus so-called "high performance" Intel-based Windows machines.

I'm a computer professional who manages the systems and network for a large (Fortune 500) manufacturing plant. Although I'm responsible for all sorts of equipment, ranging from PLCs to PCs to minis, my home computer is a GS.

In my opinion, the GS is the finest computer ever built. It's a real shame that Apple didn't understand how to market it. Had Apple come out with a GS equipped with 1 megabyte of RAM, a fast (at least 8 megahertz) microprocessor, a hard-disk drive, and GS/OS in 1986, there surely would have been a large and permanent market for the computer, as well as an established base of developers and programmers to generate and support a continuous stream of new and innovative software. And in this configuration, the GS is the finest and most versatile low-cost multimedia machine. To top it all off, almost seven years after the GS' introduction, the little beastie can still run rings around many Windows-based 386 and 486 machines.

GS/OS is so intuitive and transparent that novice users feel comfortable with the computer in no time. I taught my 6-year-old daughter to use my GS in about a half hour. Try that with a Windows machine.

Thanks for your fine magazine and continuing support of the GS. As long as you keep going, you can count on my support.

Jim Jennis
Winchester, VA

FIVE-STAR RESOURCE

I THINK YOUR REVIEWER'S CRITicism of **Resource Central**'s publications in the November 1992 issue (p. 24) was totally unfounded. I've subscribed to A2-Central (on disk) and to Script-Central since their inception, and to Studio City now for a little more than a year. (I don't own TimeOut, so I don't subscribe to TimeOut-Central.) The value I've received from these publications for my money has been incredibly high. Personally, I'd give all of Resource Central's publications five stars.

Patt Ricketts
Redondo Beach, CA

LETTERS

CLEARING THE AIR

THANKS FOR CLEARING UP THE misunderstanding about your changes to *inCider/A+* ("Great Exaggerations," The View from Inside, February 1993, p. 3). Being a diehard Apple II person since 1978 and a charter subscriber to *inCider/A+*, I'm glad to see the magazine stay true.

I also think the Mac has a place in *inCider/A+*, not only because so many new Mac'ers are former Apple II people, but also because you can share so much between the GS and the Mac. I'd like to hear more about what works on both machines.

Joe Husosky
Miami, FL

IF YOU REVIEW YOUR RECORDS, you'll find that we've subscribed to your magazine for a number of years. You might want to read my reasons for not continuing our subscription; if you don't like criticism, stop here.

First, those of us who use Apple IIe computers can find few, if any, articles of interest in your current issues. You have abandoned the IIe user in favor of GS and Mac owners. GS users should also see the handwriting on the wall, for soon you'll abandon them, too.

Older issues of *A+* and *inCider* were informative, educational, and downright fun to read. What do you offer us now? All I see are GS and Mac articles, not IIe. And those aren't up to the standards of the old *A+* and *inCider*.

Your older magazines contained more than 100 pages; your current issues continue to get smaller. And you don't give us any incentive to continue subscribing, such as reducing the price as you reduce the magazine size. I hope I'm the exception to the majority of your readers, or you'll soon be wondering where all your subscribers have gone.

Jerry L. Williams
Fredericktown, MO

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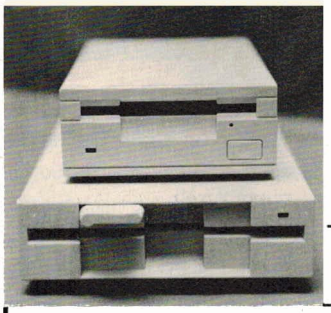

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THE APPLE II SPIRIT

Inventing the future of the Apple II should be easy for William D. Mensch, Jr., because he was responsible for creating so much of its past. Three of Mensch's microprocessors — the 6502, the 65C02, and the 65C816 — are the brains of the Apple II line. Among other achievements, Western Design Center (WDC), Mensch's 15-year-old company, lays claim to the core microprocessor technology used in Nintendo systems, camcorders, and microwave ovens.

Mensch was also fascinated with the concept of "palmtop" computing in the early 1970s — before miniature systems such as the Sharp Wizard even existed. A few months ago he put the finishing touches on the prototype of a new computer he's designed for hobbyists and students — a system he says heralds the rebirth of the Apple II spirit.

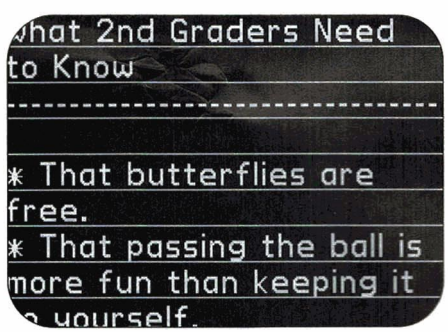
The desktop version of the **Mensch Computer** (a palmtop is the ultimate goal) is based on WDC's W65C265S — a 16-bit, 65C816-compatible chip. The system contains two PCMCIA (Personal Computer Memory Card International Association) interfaces, an audio amplifier and speaker, and four serial ports for external expansion, plus an internal 68-pin header (like a processor-direct slot in Mac lingo). Bottom line: The unit can play host to inexpensive PC peripherals. What's more, because he owns the microprocessor technology, Mensch estimates he can build the basic system, which he calls "the equivalent of the Apple IIGS CPU box," for between $50 and $100.

Mensch is seeking five "hardcore hobbyists" to help him plant the seed for the next generation of Apple II computing. Any takers? For more information, contact Western Design Center, 2166 East Brown Road, Mesa, AZ 85213, (602) 962-4545, (602) 835-6442 fax, or (215) 646-7247 BBS. **— C.F.**

SEE FOR YOURSELF

You don't have to hail from the Show Me state to enjoy a healthy sense of skepticism about new computer products. Many users prefer to test-drive Apple II products whenever possible — demonstration disks and videotapes can help fortify your purchasing decisions. Here's a sampling of free or low-cost offers we unearthed this month.

☛For just $5 County Line Technology will send you a demonstration copy of



Big Text Machine, from Balloons Software

GSTape v.2.0.7, a GS application that lets you back up (and later restore) the contents of a hard-disk drive onto a single $15 magnetic tape cartridge instead of a $50 avalanche of floppies.

County Line's Tim Grams says the actual working version of GSTape backs up a 40-megabyte hard disk completely in about nine minutes. By contrast, it can take more than an hour to back up a similar-size hard drive onto 3.5-inch disks. You won't need a tape drive to sample the demo, but you do need System 6.

Order the GSTape demo disk from County Line Technology, P.O. Box 462283, Garland, TX 75046, or call the company at (214) 495-7675 after 7 p.m. Central time. The full version of GSTape costs $35 (add $5 for shipping outside the U.S.); current GSTape users can upgrade to the latest version for $15 if they include the serial number.

☛Kitchen Sink Software recently uploaded to GEnie and America Online a set of files that update **AccuDraw 1.1** or **1.1a** to **1.1b**, the company's newest computer-aided-design program. Like previous versions, the update runs on a 64K Apple IIe, IIc, or IIc Plus, or on a GS operating in IIe mode. Registered owners lacking a modem or access to an on-line service can receive the upgrade if they send the company the original AccuDraw disk and $5 to cover shipping.

If you haven't already tried AccuDraw, now's your opportunity. You can order an interactive demo disk for $5 (specify 3.5- or 5.25-inch). Among other things, the demo lets you test-drive AccuDraw's drafting tools and experiment with the program's dimensional scales (but you can't create or save new files). The full version of the program costs $99.95. A school site license is only $10 per computer. Write to Kitchen Sink Software at 903 Knebworth Court, Westerville, OH 43081, or call (614) 891-2111 for more information. To place an order or request a catalogue, call (800) 235-5502.

☛Registered users of Balloons Software's **Big Text Machine** should contact the company at (202) 244-2223 to receive the latest program enhancement: a free preboot disk. Company founder Phil Shapiro says the preboot, programmed by Kitchen Sink's Eric Bush, loads BTM into RAM, eliminating program interruptions caused by disk access. Other interested Apple II users can obtain a BTM demo disk with sample screens, program information, and a copy of BTM's shareware precursor. To request the demo, send five first-class postage stamps (outside the U.S. send five 5.25-inch floppies instead of stamps) to Balloons Software, 5201 Chevy Chase Parkway NW, Washington, DC 20015-1747.

☛ Bright Software announces a trial version of **Eureka! Symbolix 1.7** (formerly GSymbolix), a powerful GS program thatdisplays mathematical expressions graphically. Bright's Henrik Gudat says the $3 demo lets you explore almost every program function, with some features limited or disabled. Order from Bright Software USA, c/o L. Schneider, P.O. Box 120, Exeter, ME 04435-0120. **— C.F.**

NEW SOFTWARE

WRITE AWAY

Apple II products are popping up in our offices like crocuses in early spring. This month's crop includes **Talking Fingers 1.1**, a self-paced keyboarding/phonics/writing program that supports whole-language instruction.

This unique software helps children in grades 1 to 6 acquire keyboarding skills.

Sight and sound together develop kids' language skills.

If your Apple II is equipped with an Echo speech synthesizer, children can also associate a specific sound with each key they press. Eventually, students learn how to write whole words and complete sentences.

Talking Fingers' 40 lessons (one for each speech sound) features colorful animated graphics and entertaining sound effects. Children turn the points they earn into toy surprises in the Trophy Room.

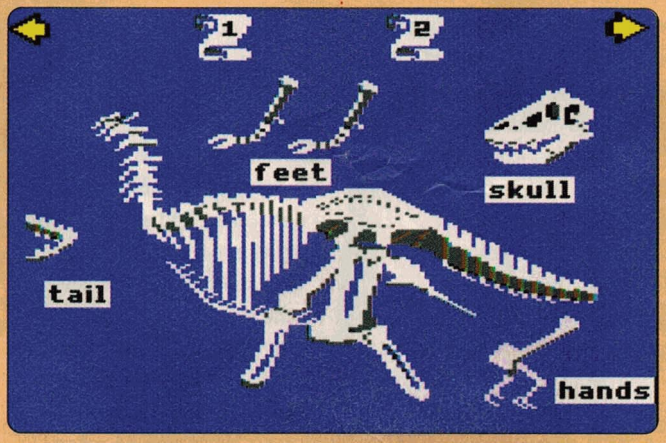
A single-user version of Talking Fingers costs $149. Lab packs and site licenses are also available. The program runs on any 128K Apple II; an Echo synthesizer is required for speech output.

For more information, or to borrow a demonstration videotape for 30 days, contact Media Learning Center, 50 Acacia Avenue, San Rafael, CA 94901-8008, (415) 456-4853. Circle number 350 on the Reader Service card.

BLAST FROM THE PAST

Transport your kindergarten through third-grade students back to the Cretaceous period with William K. Bradford Publishing Company's **Dinosaurs**, the newest release in the **Explore-a-Science** series. Colorful animated graphics and interactive lessons help kids learn about extinction, fossilization, and paleontology. Children can use the program's background scenes, clip art, and text labels to write stories, design stick puppets, or make flash cards.

The school price for Explore-a-Science: Dinosaurs is $75 for the single-computer version. Lab packs ($225) and network versions ($300) are also available. For more information, contact William K. Bradford Publishing Company, 310 School Street, Acton, MA 01720, (800) 421-2009, (508) 263-6996, or circle number 356 on the Reader Service card.



Kids travel back in time to play with Dinosaurs.

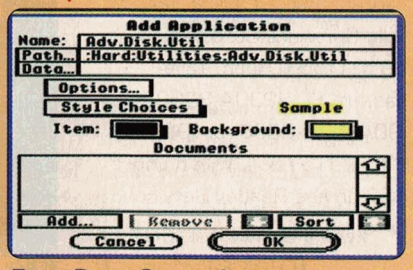
POWER PLAYERS

Apple IIGS enthusiasts who want to make their systems more productive should consider two new efficiency boosters: **Switch-It!** from Sequential Systems and **TransProg III 1.1** from Seven Hills Software.

Switch-It! is a System 6 program switcher that lets you change quickly from one Apple IIGS program to another without quitting the first application, reverting to the Finder, and launching the next program. Multiple programs are available simultaneously. While you work with one application, other open applications run in the background — just as their PC and Macintosh counterparts do under Windows 3.1 or MultiFinder. Switch-It! doesn't require a hard-disk drive, but demands at least 1 megabyte (4 megabytes recommended). Suggested retail price is $79.95. Educators can purchase a single-user version for $59.95.

To learn more, contact Sequential Systems, Inc., 1200 Diamond Circle, Lafayette, CO 80026, (303) 666-4549 or circle number 351 on the Reader Service card.

By contrast, TransProg III 1.1 is a program launcher. Instead of quitting to the Finder and tunneling through volumes and directories to start another application, you can single-click on the name of any program listed on the TransProg III pull-down menu, which appears on the menu bar of each GS program you run. Installing program names on the menu is an easy, one-time task. You can customize the menu's appearance and even add low-level security via startup password protection. TransProg III requires System 5.0.4 or later and costs $39.95.



TransProg: Customize your program list for maximum efficiency.

According to Seven Hills Software vice-president Dave Hecker, a new version of **Express**, the company's print spooler for the Apple IIGS, is also available now. Among other new features, Express 2.0 ($49.95) lets you specify the location of the spool folder — the area of your hard drive where documents are stored temporarily during background printing. You can even spool documents to a RAM disk, if you choose. A more streamlined method for feeding spooled information to serial printers makes printing significantly faster, particularly with high-quality models such as the Hewlett-Packard DeskJet,

NEW PRODUCT FOCUS • HARDWARE/SOFTWARE •

"Apple II" indicates an 8-bit product compatible with IIes, IIcs, IIc Pluses, and IIGses unless noted otherwise.

although the ImageWriter II benefits from the speed improvement, as well. The Express 2.0 update costs $12.50 plus $3.50 for shipping and handling.

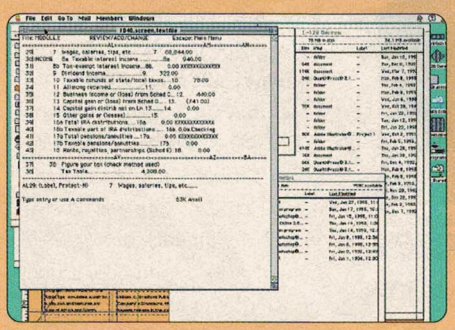
For additional information about TransProg III 1.1 or Express 2.0, contact Seven Hills Software Corporation, 2310 Oxford Road, Tallahassee, FL 32304-3930, (904) 575-0566, or (904) 575-2015 fax. Circle number 352 on the Reader Service card.

◆

UNCLE SAM WANTS YOU

The clock is ticking fast toward April 15th, but last-minute shoppers who use AppleWorks 2.0 (or a later version) may want to consider **1040Works 8.0** (128K required) or **1040Works-X 8.0** (256K required) to help them meet the government's deadline for filing 1992 personal income-tax returns.

If you've already filed your return, don't despair — there's always next year. Besides, **1040Works Tax Planner 2.0** can help you prepare now for '93 taxes. 1040Works and 1040Works-X cost $36.45 each. (Yearly updates are only $26.45 for registered users.) 1040Works Tax Planner is priced at $29.95, or $19.95 if ordered with one of the tax packages. All 1040Works programs are available from NAUG, National AppleWorks Users Group, Box 87453, Canton, MI 48187, (313) 454-1115. Circle 359 on the Reader Service card for more information.



The 1040Works series gets you organized for April 15.

◆

I THINK, THEREFORE . . .

Two new Apple II programs — **Ghosts in a Bottle** and **Magic Show** — help elementary-school children develop logical-thinking skills. In Ghosts in a Bottle (128K required), students use deductive reasoning and a dual-pan balance to find objects that are heavier (or lighter) than others. In Magic Show (64K required), children learn to infer knowledge about whole objects from visual cues. Priced at $65 each ($15 each additional disk), these products are available from Wings for Learning, 1600 Green Hills Road, P.O. Box 660002, Scotts Valley, CA 95067-0002, (800) 321-7511 or (408) 438-5502. For more information, circle 354 on the Reader Service card.

Your GS can take kids away on a fun Trip to the Zoo. Lots of digitized photos and sound effects help make it real.

■

WHAT A ZOO!

Marblesoft recently released **A Trip to the Zoo**, a series of HyperStudio-based stacks boasting digitized animal photographs and realistic sound effects. The program, which runs on the Apple IIGS, simulates a visit to a city zoo and features animals of Africa and North America, an aquarium, a snack bar, and a children's petting zoo.

Kids move from one exhibit to the next by clicking on hypermedia buttons or "hot spots" with the mouse, TouchWindow, or single-switch device. Clicking on an animal usually elicits a sound or simple animation.

If you already own HyperStudio 3.1, order the $35 version of A Trip to the Zoo. Otherwise, you'll need the $45 package, which includes a run-time version HyperStudio 3.1.

Contact Marblesoft at 12301 Central Avenue NE, Suite 205, Blaine, MN 55434, (612) 755-1402, or circle number 355 on the Reader Service card for more information.

■

MELTDOWN

Screen blankers do have practical value. Honest. (They can prevent phosphor-burn damage to your computer's monitor.) But DigiSoft Innovations' **Twilight II 1.0.1** proves something we already know: GS screen blankers can be fun, too. You can choose from more than 30 special-effects modules, including three-dimensional fractal mountains, wireframe animations, color fireworks displays, snow (which falls on the desktop), and cavernous, subterranean tunnels. Other modules appear to chop the display into puzzle pieces or thaw it. Sound effects accompany some modules, and one option lets you create your own screen blanker with a GS paint program.

Twilight II 1.0.1 requires an Apple IIGS and System 6 and costs $39.95. Competitive upgrades for registered owners of Desktop Enhancer and Signature GS are $24. For additional information, contact DigiSoft Innovations, P.O. Box 380, Trumbull, CT 06611, (203) 375-0837, or circle number 357 on the Reader Service card.

◆

CAI FOR THE '90S

There are lots of Apple IIs in the elementary schools, and those computers will be there for a long time," observes Dr. Leonard Hall,

vice president of Skills Bank Corporation. The company recently announced **Cornerstone**, its newest computer-aided instruction program. The **Cornerstone Language** series (128K required) is available now; the company is preparing a companion **Reading** series for release during the 1993 to 1994 school year. The **Cornerstone Mathematics** series is expected to follow.

Each of the 175 capitalization, punctuation, usage, and spelling lessons in the Language series follows a five-step sequence that begins with a warm-up, then a review and quiz, followed by a "take five" game-style interlude, and finally a worksheet that recaps the session. Each lesson incorporates engaging full-color graphics and spirited writing contributed by professional children's authors. A recordkeeping and reporting system lets teachers devote more time to teaching and less time to paperwork.

The Language series includes three levels: for grades 3 to 4, 5 to 6, and 7 to 8. Stand-alone and network versions cost $450 and $1350, respectively, for a single level; the full package (three levels) is $1245 stand-alone, $3735 network. To learn more, to receive a free demo disk (specify 3.5- or 5.25-inch), or to request a free 30-day trial, call (800) 84-SKILL or (410) 265-8855. You can also write to Skills Bank Corporation at 15 Governor's Court, Baltimore, MD 21244-2791, or circle number 353 on the Reader Service card.

NEW PRODUCT FOCUS • HARDWARE/SOFTWARE •

"Apple II" indicates an 8-bit product compatible with IIes, IIcs, IIc Pluses, and IIGses unless noted otherwise.

GO FOR THE PLATINUM

If you're looking for an Apple IIGS paint program to design custom Twilight II screen blankers (see "Meltdown" above) — or any other kind of artwork — look no further than **Platinum Paint 2.0**. This powerful update to a perennial favorite lets you create and print artwork of any size or design and play animations. You can even add sound effects. New hierarchical menus organize the program's dozens of features better to cut screen clutter. A kid-sized **Junior Version** makes the program easier for children.

Platinum Paint 2.0 costs $59.95; upgrade is $30. An **Alphabet Coloring Disk** is available for $19.95. For information, contact Quality Computers, 20200 Nine Mile Road, St. Clair Shores, MI 48080, (800) 777-3642, (313) 774-7200, or circle number 358 on the Reader Service card.

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SHAREWARE SOLUTIONS
BY JOE KOHN

FIRST PRIZE

In inCider/A+'s August 1992 issue (p. 10), Shareware Solutions and the French software-development group Free Tools Association (FTA) announced two contests — one for Apple IIGS programmers and one "for the rest of us." The rules were simple: Use the GS assembly-language source code supplied by the FTA to complete the arcade game Bouncin'Ferno, or use the screen editor supplied with Bouncin'Ferno to create new game levels. The criteria on which we'd judge entries were direct: "Make our eyes bug out, make our toes tap. Let the FTA guide you in spirit . . . . We care about game play, artistry, creativity, fun, sound, animation, documentation, [and] user friendliness."

The GS community rose to the challenge. Chris Thamm of Montreal translated all documentation and commented source code from French to English. Apple II software publishers donated prizes, and, of course, GS programmers and users went to work, creating new games and levels that far surpassed the expectations of our panel of judges.

With pride, respect, and admiration we announce the winners. The award for the most fun and artistically creative new level goes to **Brett Dunst** of Palos Verdes, California; the prize for best new game goes to **Dustin Mitchell** of Scarborough, Maine.

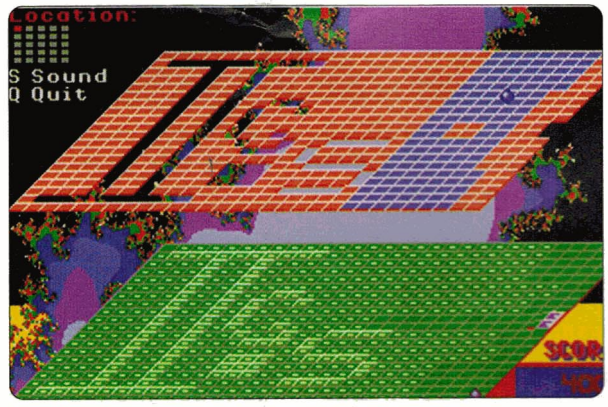
Each winner will receive a one-year subscription to inCider/A+, a three-month subscription to Softdisk G-S, InSync Software's ProTERM 3.0 telecommunications program and a ProTERM t-shirt, Digital Creations' Twilight II screen blanker, Econ Technology's AutoArk hard-disk compression utility, Glen Bredon's ProSel-16 GS program launcher and utility system (donated by Charlie's AppleSeeds), Roger Wagner's HyperStudio authoring-system software or any other Roger Wagner program of his choice, Resource Central's videotape and t-shirt commemorating the 1992 A2 Summer Conference (better known as KansasFest), WestCode Software's Pointless TrueType font utility, a game of his choice from Seven Hills Software, and free on-line connect time for GEnie's A2 and A2Pro areas.

The original FTA version of Bouncin'Ferno is a Marble Madness-style game, with lively animation, graphics, sound effects, and music. The goal is to try to roll over small objects (the more objects rolled over, the higher the score) and advance to the next level. Some objects are suspended high above the ground, while others are hidden under three-dimensional ramps. The FTA's original release defined three levels, with 25 different rooms each.

Bouncin'Ferno was a lot of fun, but it wasn't quite complete. It is now: Dustin Mitchell, a 14-year-old high-school freshman who has been programming the Apple II since he was 8 years old, studied the FTA's source code and decided to rewrite the game largely from scratch. According to Mitchell, "I kept some routines the same just because there was no reason to change them. I had to rewrite most of the routines completely, however, because writing for GS/OS is totally different from just taking over the computer, as the original did." Mitchell's version runs much faster and is now completely GS/OS compatible; you can even intall it on your hard drive. If you launch from the Finder, you return to the Finder when you quit the game. True to the spirit of the FTA, it doesn't use the GS Toolbox.

As Bouncin'Ferno II begins, the software displays a stunning scanned NASA photo of the earth, with accompanying music and a multicolored animated credit screen. You can choose to play the FTA's original levels, a new level supplied by Mitchell, or any other level located in the Levels folder. Game play is essentially the same as the original's; enhancements include a playing field superimposed on a dazzling fractal graphic and an optional soundtrack that plays continuous NoiseTracker music in the background. Your score is displayed on screen at all times, and as you gain or lose energy, the GS border changes color. Each level now includes its own high-score module.

Bouncin'Ferno II is Dustin Mitchell's first attempt at creating a GS game. He's a self-taught programmer and is currently learning the C language. He owns both an Apple IIGS and a Macintosh Performa 400. Mitchell aspires to be a professional programmer;Bouncin'Ferno II is an auspicious start indeed.



The new Bouncin'Ferno level created by 14-year-old Brett Dunst contains 25 additional rooms that are challenging yet fun to play. In many of the rooms, levels are stacked; an abundant number of springboards make the rolling marble bounce uncontrollably from one level to another. Sloping ramps, hidden scoring objects, and other three-dimensional special effects add to the fun. Some rooms contain so many springboards you can just sit back and watch as the ball bounces around, picking up points and eventually springing into the next room.

Just as the FTA dedicated many of its animated demos to fellow GS owners, Dunst has inscribed eight of his 25 rooms in honor of notable people, programs, and products of the GS community, including the FTA, Burger Bill Heineman, SAP (Kenrick Mock's Simple Animation Program), the Woz (Apple cofounder Steve Wozniak), the upcoming GS/OS version 6.0.1, and the Zip GSX accelerator board.

For more than two years, the FTA gave the GS community a number of beautiful and exciting animated demos, games, and music programs it could be proud of. Thanks to Brett Dunst, Dustin Mitchell, Chris Thamm, and the contests' sponsors, Bouncin'Ferno II and the new Bouncin'Ferno add-on will be keeping the spirit of the FTA alive for years to come, and its legacy will never be forgotten.

BOUNCIN'FERNO II AND BRETT DUNST'S NEW GAME LEVEL ARE AVAILABLE IN THE PUBLIC DOMAIN OR ON DISK FROM JOE KOHN. FOR MORE INFORMATION, SEND A SELF-ADDRESSED, STAMPED ENVELOPE TO 166 ALPINE STREET, SAN RAFAEL, CA 94901.

Just because you use an Apple II doesn't mean you should suffer.

Lately, it seems, owning an Apple II has become a pretty frustrating thing. Not too long ago you made an investment in a personal computer and now you're finding that suddenly you've become a "second class" user with many manufacturers and suppliers. Well not with Sequential Systems. **For almost 10 years,** we've been a leading manufacturer of quality peripheral devices for Apple II computers and we're still serious about Apple II. As a matter of fact, in 1993 Sequential Systems will introduce no less than 9 new hardware and software products for Apple II & IIGS. And not just more memory expansions and hard disk drives but useful and ingenious enhancements in **networking, multimedia, telecommunications, and more.** Products to help keep you computing with Apple II into the 21st Century!

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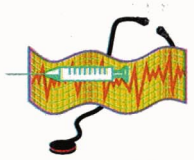

APPLE CLINIC

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BY CYNTHIA E. FIELD, Ph.D.

CP/M UPDATE

SPRING FEVER'S IN THE AIR, BUT at *inCider/A+* we'd rather spend some quality time indoors with our Apple IIs, as this month we answer your questions about rehabilitating corrupted AppleWorks files and running DOS 3.3 programs on the Apple IIGS. We'll take a swat at some other gnatty problems, too. But first an update.

In "Reconcilable Differences" (February 1993, p. 18) we couldn't pinpoint a utility that converts CP/M files (*Control Program for Microcomputers*) to ProDOS. Now we can.

During his seemingly ceaseless meandering on the nets (telecommunications networks), on-line guru Joe Kohn discovered the shareware program **Chameleon**, which converts an assortment of file types, including CP/M, ProDOS, Pascal, DOS 3.3, and SOS (*Sophisticated Operating System*, the Apple III standard).

We located the utility on **America Online**, but it's probably also available elsewhere. Try a local user group or contact one of the public-domain software libraries that advertise in *inCider/A+*. For do-it-yourselfers with an America Online subscription and a modem, download time is just a few minutes.

SHAREWARE SOURCE

America Online
8619 Westwood Center Drive
Suite 200
Vienna, VA 22182-2285
(800) 827-6364

GO AHEAD—MAKE MY DATA

I'VE SEARCHED BACK ISSUES OF *inCider/A+*, but I find no mention of a problem like mine. I have an AppleWorks database file containing 4000 records. My Apple II operates normally in every respect, except when I try to arrange the records in alphabetical order. The system appears to be sorting, but after about 44 seconds, garbage appears on screen. The system no longer responds to keyboard input. Is this a challenge or what?

William E. Pigott, Jr.
Knightdale, NC

Challenge, William? Not when you have a little black book containing the phone numbers of experts like Dr. Warren Williams and Randy Brandt. Dr. Williams, president of the **National AppleWorks Users Group** (NAUG), says his organization has, on one occasion or another, experienced a similar problem with its 12,000-member database. In both your case and NAUG's, the difficulty probably doesn't stem directly from the size of the database. Rather, a bad character — in the electronic sense, not the criminal-justice sense — may be responsible for gumming up the works. When you try to sort the database, this character stops AppleWorks dead in its tracks. After all, how do you alphabetize a glitch?

The defect isn't something you can see, and it's not something you entered from the keyboard. It's probably lurking in one or more records in that large (30-character-plus) category you describe elsewhere in your letter. Sorting on the category is particularly troublesome, you say. Because bad characters are invisible, they're virtually impossible to eradicate by editing an existing database file. It's much easier to run the bad guys out of town by first making an ASCII (American Standard Code for Information Interchange) text file. Later, when you use the ASCII text file to re-create your database in AppleWorks, the bad (non-ASCII) characters will have been purged.

Here's how to clean up your file. In AppleWorks 3.0, add your database file to the Desktop. The Review/Add/Change screen should appear. Press Open apple-P (OA-P). If you haven't done so previously, create a report format that incorporates all of the categories you want to include in the new database you'll be making. If you already have a comprehensive report format, select the first option — Get a report format — and choose that report. (Describing report formats is beyond the scope of this column, but your AppleWorks manuals explain the procedure for setting up reports in the database.)

When the report format appears on screen, press OA-P. Instead of printing the report on paper, however, you'll print it "to disk." Specifically, select the option that prints the report to A text (ASCII) file on disk. At the Print the Report screen, select the first option: Tabs between categories, Returns between records.

AppleWorks will prompt you for a pathname. Type the destination for the newly created data file by using the format volume/directory/filename or simply volume/filename. We usually append the suffix .TXT to text files we create. Be sure the filename doesn't exceed ProDOS' 15-character limit.

Press the escape key three times to return to AppleWorks' main menu. Choose Add files to the Desktop. At the Add Files screen, choose Make a new file for the Data Base. At the Data Base screen, choose the second option: From a text

MS-DOS APPLEWORKS*

*inCider A+ Magazine, August, 1991

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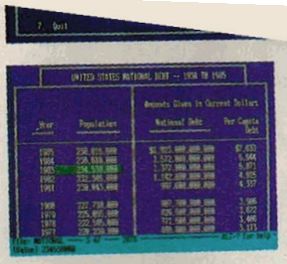

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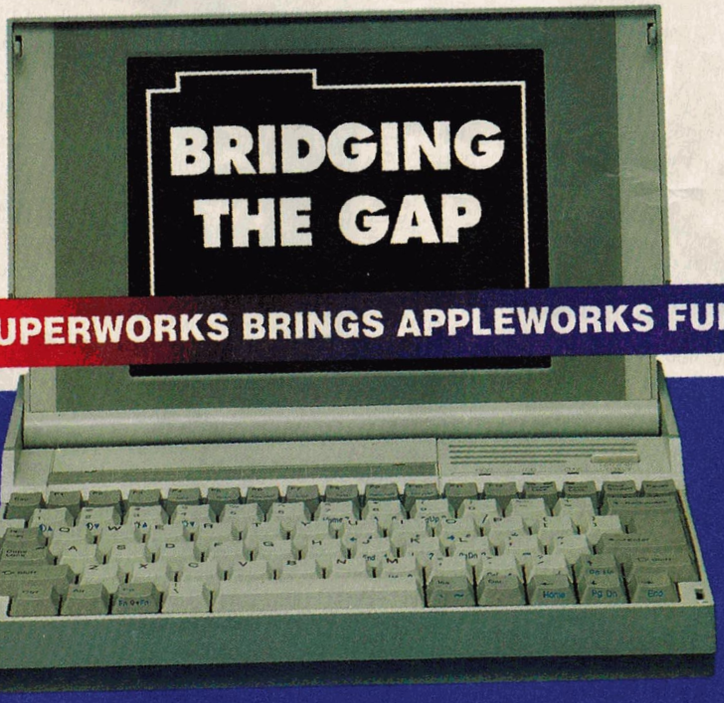
WHAT ARE THE EXPERTS SAYING?

"MS-DOS APPLEWORKS" "inCider/A+ 8/91"
What do you say to an "MS-DOS clone" of Appleworks 3.0? Remarkable Technologies' SUPERWORKS ($199), has caused more than one double-take around here. SUPERWORKS functions like Appleworks on any IBM PC except that it's faster. If you use Appleworks and can train your fingers to find their way around an MS-DOS keyboard, you can use SUPERWORKS. It even incorporates some features for which Appleworks users pay extra.
★★★★ inCider Magazine, November 1991

Miami Herald/Craig Crossman 8/12/91
"Known as SUPERWORKS, this Appleworks clone does almost everything Appleworks does and more. If you know how to use Appleworks, you can use SUPERWORKS without picking up a manual. SUPERWORKS brings the functionality of Appleworks to the MS-DOS world while leaving behind many of its limitations."



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(ASCII) file. Locate the text file on disk and select it. When AppleWorks asks for the type of delimiter (characters separating information in database fields), choose Tabs between categories, Returns between records. Type a name for the new file when AppleWorks prompts you. For best results, use a name that's slightly different from the name of the file with the suspected bad character(s).

When your newly cleansed database appears on screen, press OA-Z, if necessary, to zoom in on an individual record. You'll see that AppleWorks automatically created a category for each tab-delimited field in the ASCII file. That's why we cautioned you earlier to set up an all-inclusive report in the original database. If a category is missing from that report format, it will be missing when you re-create the database from the ASCII file.

After AppleWorks creates the new database, you can change nondescript category names (Category #1, Category #2, and so on) to more meaningful ones. Press OA-N, then Return. Use the up- and down-arrow keys to scroll through category names. Place the cursor on the name you want to change and press OA-Y to "yank out" the old name. Type the category name you'd like to use. Press the return key. You can change other category names the same way. Just press the escape key to return to the database's Review/Add/Change screen when you're done.

To avoid future "surprises," William, we suggest you keep at least one backup disk in a safe place, far removed from magnetic fields. As you may know, devices such as stereo speakers and electric motors can damage disks.

Like Dr. Williams, Randy Brandt — owner of **JEM Software** and arguably the world's premier AppleWorks expert — also suspects that bad characters caused the problem you describe. "All it takes is one or two characters to mess up a whole database," he observes. If rebuilding the database doesn't solve your problem, Brandt invites you to send him a copy of the corrupted file. There could be an obscure bug in AppleWorks that no one's discovered yet. Now that might be a challenge.

DATABASE HELP

Randy Brandt
JEM Software
7578 Lamar Court
Arvada, CO 80003
(303) 422-4766
(303) 422-4856 fax

National AppleWorks Users Group
NAUG
Box 87453
Canton, MI 48187
(313) 454-1115
(313) 454-1965 fax

INCREDIBLE SHRINKING DISK

BECAUSE I STILL LIKE AND USE my Apple IIc for business, I have lots of ProDOS documents on 5.25-inch disks. How do I transfer the files to my Mac IIsi, where I'm using ClarisWorks?

Robert H. Maske
Huntsville, ON
Canada

Although you don't say which program you use on the Apple IIc to generate those files, Robert, the gap you describe may be more like a crack than a chasm. First, use ProDOS' **System Utilities** to copy files from your 5.25-inch disk(s) to one or more formatted 3.5-inch ProDOS disks. If you plan to keep your Apple IIc, a **UniDisk 3.5** drive would be a wise investment. At press time, **Sun Remarketing** was offering these drives (used) for $199 each. If you have an especially old IIc, however, you may need a ROM upgrade before you can use the UniDisk 3.5. You should be able to acquire it free through Apple Computer's **Apple II Upgrade Programs**. Call the **Apple Customer Assistance Center** at (800) 776-2333 to learn more.

Meanwhile, try borrowing a UniDisk 3.5 drive from a friend, a local school, or a member of a nearby Apple II user group. That way, you can see whether the procedure we're about to describe works for you. Incidentally, the **Apple User Group Connection** (800-538-9696) can help you locate a club in your area.

On your Macintosh, start up **Apple File Exchange** (AFE), a utility that's supplied with every Mac sold. Among other capabilities, AFE handles ProDOS-to-Mac file conversions. When you insert a ProDOS disk into your Mac under AFE, the Mac won't eject the disk as it would otherwise. Select the file(s) you want to convert. Quit AFE, start up ClarisWorks, and try opening one of the newly converted documents. ASCII text files are perhaps the easiest to import into ClarisWorks, but the program can handle other types of files, as well. For more on using files from Apple II programs on your Mac, see "ASCII and Ye Shall Receive" (February 1993, p. 18) and "Works in Progress" (August 1992, p. 36).

BRIDGING THE GAP

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Logan, UT 84323-4059
(800) 821-3221
(801) 755-3311 fax

BASIC NEEDS

I PROGRAM IN APPLESOFT BASIC on my GS. I'd like to know how to use POKEs to change some Control Panel settings. For instance, I'd like to alter text, border, and background colors.

Jeremy LaCivita
Whitman, MA

There's no direct or easy way to effect changes in the GS Control Panel through Applesoft BASIC (Beginner's All-purpose Symbolic Instruction Code). Rather, you must access the Control Panel, as with many other of the GS' advanced features, through machine-language utilities you CALL from BASIC.

Rather than write your own machine-language utilities, why not step up to a more advanced BASIC programming application, such as **Micol Advanced BASIC GS 4.2**, from Micol Systems, which includes the very Toolbox CALL you need to access memory locations used by the Control Panel?

Steve Brunier at Micol describes Advanced BASIC as "a marriage between BASIC and Pascal" — a structured BASIC, if you will.

He adds that most of his customers are programmers like you, Jeremy, who find Applesoft BASIC too limited for what they want to accomplish.

SOLID STRUCTURE

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Willowdale, ON M2J 2V6
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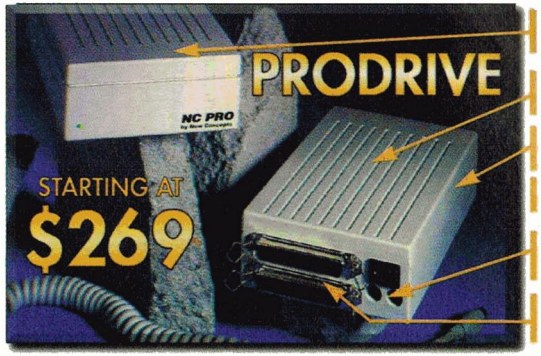

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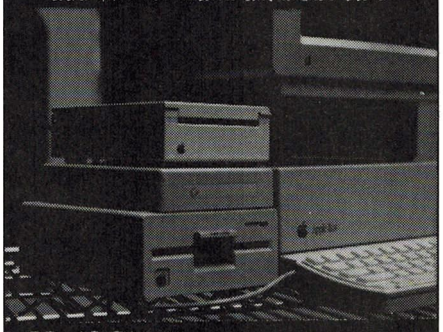

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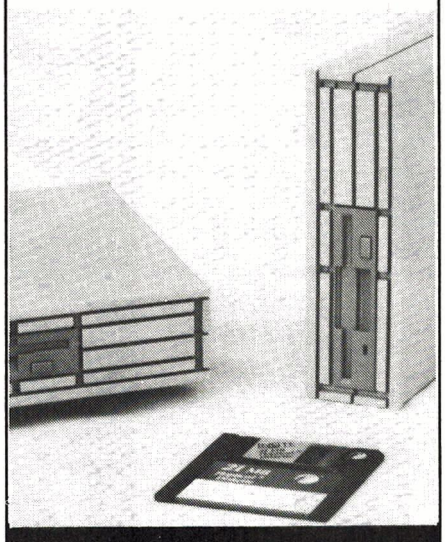

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Apple Clinic

UP AND RUNNING

I have a 4-megabyte Apple IIGS, a hard disk, and System 6. I thought I'd still be able to use my old programs with System 6, but I'm having trouble running Dazzle Draw and DOS 3.3 software.

Janice Anderson
Augusta, GA

Don't hit the panic button, Janice. You can continue to start up your computer with System 6 and use your favorite GS programs — and run those older programs, as well. As you know, launching authentic GS programs is a piece of cake: Just double-click on the appropriate application icon. But launching 8-bit programs from the desktop can sometimes be tricky.

ProDOS programs such as AppleWorks 3.0 and Publish It! 4 are relatively easy to launch. All you have to do is double-click on APLWORKS.SYSTEM or DTP.SYSTEM, the respective startup files for these programs. As you might have guessed, you can usually spot startup files by their SYSTEM suffix. In addition, these files display a distinctive icon: a hand sketching an 8 on a diamond.

When a program disk contains more than one startup file, though — or no apparent startup file — what should you do? The simplest way to launch a program like that is to change your GS' startup slot temporarily. Then you can insert any DOS 3.3 or ProDOS disk into a floppy-disk drive and "warm boot" from that location.

First, press Control-Open apple-Escape to access the classic Desk Accessories menu. Select Control Panel and press Return. Press the up-arrow key four times to choose Slots and press Return. Change the Startup Slot to 6 for a program on a 5.25-inch floppy disk; 5 for a program on a 3.5-inch disk. Press Escape and then Quit the Control Panel and the Desk Accessories menu. When the System 6 desktop reappears, press Control-Open apple-Reset to boot the floppy disk.

More likely than not, quitting the DOS 3.3 or ProDOS program will leave you with a blank screen and a blinking cursor (the system prompt). If so, the quickest way to start the next program you want to use is to type PR#5 (for 3.5-inch disks) or PR#6 (5.25-inch). Press Return. If this method fails, press Control-Open apple-Reset to boot the next program on a disk located in the GS' startup slot. If you need to change the startup slot, use the Control Panel again (Control-Open apple-Escape).

You can also start up your hard drive (and System 6) by typing PR#7 and pressing the return key when you see the system prompt, assuming your hard-drive interface is installed in slot 7. If no system prompt appears when you quit a DOS 3.3 or ProDOS program, change the Startup Slot in the Control Panel back to 7 and then press Control-Open apple-Reset to reboot your hard drive and System 6.

BACK TO THE FUTURE

I USE A HAYES SMARTMODEM Optima 9600 connected to my Apple IIGS' modem port. How can I get ProTERM 2.01 to initialize the modem? This version doesn't include my model in its list of supported hardware. I can get the modem to work at 2400 baud, but I want to send/receive at 9600 baud.

Brian Murphy
North Dartmouth, MA

Five years ago when ProTERM 2.01 was released, 9600-baud modems were virtually unavailable. That's why you don't find them listed in the earlier version. Greg Schaefer, author of ProTERM, says you can still use 2.01 to get your modem running at full speed if you select ProTERM's null-modem option (terminal mode) and set the baud rate to 9600, but you won't be able to enjoy the program's front-end features, including autodial.

ProTERM 3.0 supports the Hayes V9600 series, with which your Optima modem is compatible. Upgrading will make your on-line sessions more efficient because you won't have to key in special commands. To test-drive ProTERM 3.0, contact InSync for a free demo. If you'd like to upgrade right away, send in the original version 2.01 disk and $40, plus $5.50 for shipping and handling. ❑

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G R A P E V I N E

✔ AppleWorks users with high-speed modems will be pleased to learn that the **National AppleWorks Users Group** recently updated its BBS by installing v32.bis protocol modems, which offer a throughput speed of up to 14.4K baud. If you own a high-speed modem, dial (615) 359-8140 to connect to NAUG's BBS. If you're using a 300-, 1200-, or 2400-baud modem, you should continue to call (615) 359-8238 for access.

✔ Fans of the Grateful Dead can call **Captain Trips' Terrapin Station** in Darien, Connecticut (203-656-0134 by modem, up to 9600 baud, free), to get the latest news, information on tours, set lists, and concert reports, plus downloadable files containing reviews of recent concerts.

✔ If you have a Hayes-compatible external modem connected to your GS' modem port, you can use Mike Gooding's $1 shareware utility, **Time Master**, to set the time of your GS' built-in clock automatically. The program dials an atomic clock in Washington, D.C., and resets your system's timekeeper to the exact second. Each call to the atomic clock takes only 25 seconds. Download Time Master from GEnie's A2 area as file #19230, from America Online's IIGS Miscellaneous Utility library, or from CompuServe's Appuse Forum Library #7.

✔ Just as the Apple II world has embraced ShrinkIt, the MS-DOS universe has adopted ZIP as its standard telecommunications utility for compressing files before uploading. Now, thanks to Paul Parkhurst's $10 shareware utility **PMPUnzip**, GS users have a fast and easy way to get at those MS-DOS files. PMPUnzip is a desktop-based program with pull-down menus; it looks like, and works just like, ShrinkItGS. Just remember, even if you can unZIP MS-DOS application programs, you won't be able to run them on your Apple IIGS; instead, you'll have your greatest success with ASCII text files that have been compressed with ZIP. You can get PMPUnzip from America Online's IIGS Miscellaneous Utility library or by downloading file #18701 from GEnie's A2 library.

✔ Call Morgan Davis' **Pro-Sol BBS** (up to 14.4K baud) in San Diego, California, at (619) 670-5379 if you want to access the home of the **ProLine** bulletin-board program. The Apple II-based ProLine network currently includes nearly 100 active, linked and interconnected BBS sites across the United States. Many ProLine sites also offer access to Usenet's comp.sys.apple2 newsgroup, where Apple II users from around the world meet to discuss the latest information and share valuable hints and tips. Pro-Sol offers on-line conferences and games and access to Internet e-mail. While you're connected, be sure to check out the Information Desk area, where you'll find an up-to-date listing of all ProLine BBS sites.

— Joe Kohn, Contributing Editor

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SHANGHAI II: DRAGON'S EYE

Stunning graphics and sound mark the reincarnation of an ancient Chinese game of strategy.

Most sequels fall flat. Not Shanghai II: Dragon's Eye, a something-for-everyone-in-the-family strategy game for the Apple IIGS. If you've owned a GS for some time, you may have played (and played and played) the original Shanghai, which was programmed by Brodie Lockard in 1985. Folks, it's time to flex those mouse-clicking fingers again. Shanghai II: Dragon's Eye, like its predecessor, is based on the ancient Chinese tile game mah-jongg. The object of the game is to find matching pairs of tiles and remove them from a three-dimensional layout. You can play alone (*Solitaire* mode) or with a friend (*Challenge* mode). The game begins with 144 tiles stacked on a game board. As you remove tiles, the GS maintains a running count of those that remain.

★ ★ ★ ★ ½

Big Red Computer Club
423 Norfolk Avenue
Norfolk, NE 68701
(402) 379-4680

- strategy game
- 1.25MB Apple IIGS
- requires System 5.0.4 or 6.0
- requires one 3.5-inch drive
- hard-disk installable
- $49.95

The colorful, animated tile sets in Shanghai II: Dragon's Eye feature clever sound effects.

GOOD FORTUNES

You can save a partially completed game, reshuffle tiles during a game, or wimp out and ask for help. *Suggest Move* and *Peek* are two such crutches listed under the *Options* menu. Also, you can enable the program's *Look for Moves* feature. After all, why search for matches that don't exist when the program can warn you automatically of the futility of your efforts?

Losing a game won't damage your self-esteem in any way. Winning, on the other hand, earns you a "tasty" reward. Remember the last time you savored a mountain of fried rice or chop suey? Besides a possible MSG headache, what did you get? If you guessed fortune cookies, you're right. When you succeed in cleaning your Shanghai II plate, a fortune cookie emerges from a stunning, Chinese-red backdrop. The animated cookie cracks open to reveal a wise saying.

Shanghai II: Dragon's Eye features ten tilesets and more than a dozen layouts. Twelve of the layouts are based on the 12 animals chosen by the Buddha to represent the inner cycles of time in the Chinese zodiac. The *Snake* layout is serpentine, while the *Monkey* layout features long limbs and tail. Some layouts, including *Dog* and *Rooster*, resemble front or side views of the animals. Other layouts, such as *Tiger* and *Ox*, look like steamrolled versions of the animals they represent.

The program manual groups layouts into three categories: easy, advanced, and master. By contrast, the *Layout* menu lists them alphabetically. I would have preferred consistency here.

Of the three bonus layouts, one looks like a fish, another bears an uncanny resemblance to a human face, and a third stacks its tiles in a way that seems to defy the laws of gravity.

CHINESE TORTURE

Versions of Shanghai II that run on other computers offer a layout-construction capability; the GS edition doesn't. Granted, 15 layouts should keep most GS gamers out of circulation for a while, but I know plenty of creative types who would enjoy designing layouts of their own. I'm disappointed that Big Red Computer Club, for whatever reason, didn't remember this. After all, the GS motto isn't "the power to be second best." Give the publisher 40 lashes with a wet egg noodle for the omission.

That said, programmers John Wrenholt and Steve Luellman deserve kudos for their accomplishment in porting this winner to the GS. Among the most attractive features of Shanghai II: Dragon's Eye are the game's tile sets, all of which are clever, colorful, and beautifully animated. As if that weren't enough, they feature sound effects, too.

Each tile set boasts a theme: *Alphabet*, *Animals*, *Fantasy*, *Flags*, *Hanafuda*, *Hilo*, *Lohi*, *Mahjongg*, *Sports*, and *Shanghai* (the tile set upon which the original game was based). Among other illustrations, the *Fantasy* tile set includes members of the court (king, queen, princess, and jester) as well as mythical characters — unicorn, dragon, wizard, leprechaun, and troll, to name just a few. It even features magical items, including a cauldron, a gold cup, and a treasure chest. *Hilo* and *Lohi* tiles boast pictures of playing cards, while *Hanafuda* tiles represent Japanese symbols and Kabuki theatre players.

Sports tiles illustrate a wide variety of individual and team games. The referee's whistle, audience applause, splashing water, and the "thwup" you hear when a tennis racket hits home are just some of the sound effects you'll enjoy. Animations include people jumping for joy in the bleachers and the starter's gun firing at a track-and-field event.

The tiles in the *Alphabet* set look like children's play blocks and include letters and the numerals *0* through *9*. Each of the tiles in the *Animals* set features an illustration of a fish, bird, reptile, or mammal. When you match two parrot tiles, for instance, the parrot squawks. Match two bulldogs to hear a realistic "woof, woof."

Flags is another tile set that's both educational and entertaining. When you match two Canadian flags, you hear a voice quip, *"Merci beaucoup."* Match two German flags, and the voice says, *"Danke."* In Shanghai II: Dragon's Eye, "thank you" is a universal sentiment, but the animated United Nations flag is one of my favorites: It transforms itself into a spinning globe.

You can turn off sound effects if you prefer. For one thing, silence reduces the amount of disk swapping required when you play Shanghai II from a single 3.5-inch drive.

For greatest enjoyment, I recommend installing the program on a hard disk. Even then, tiles are sometimes slow to fade from screen. (I played the game on an unaccelerated GS.)

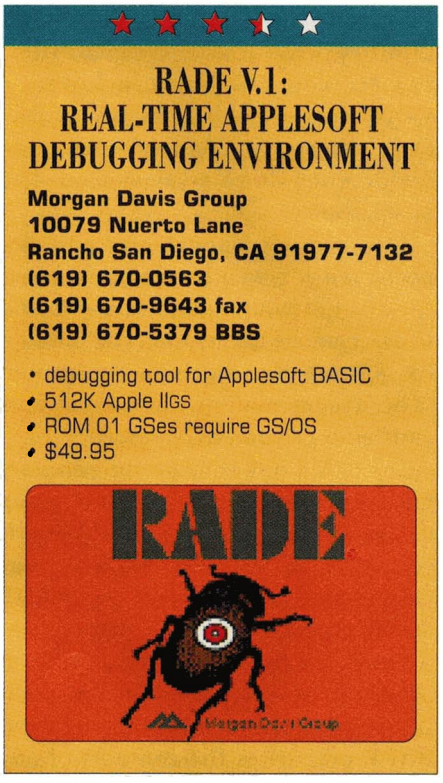
UNIVERSAL LANGUAGE

The ultimate challenge for any Shanghai II player is *Dragon's Eye*. In this game, you assume the role of either *Dragon Master* or *Dragon Slayer*. The *Master* places tiles strategically on the game board to build the dragon, while the *Slayer* matches tiles to dismantle the design. A Shanghai II tournament includes four rounds. Each begins with *Dragon's Eye* followed by easy-, advanced-, and master-level Shanghai games.

Shanghai is said to play on more types of computers worldwide than any other entertainment program. That record's not likely to be broken soon if my experience is any indication.

Take it from somebody born in the year of the Ox: If you've forgotten what the *GS* in *Apple IIGS* means, you need Shanghai II: Dragon's Eye.

Cynthia E. Field, Ph.D.
Consulting Editor, inCider/A+
Wakefield, RI



It's *RADE!* Not the guy with the bug bomb on his head, but Real-Time Applesoft Debugging Environment, written by Russell E. Gibson and published by Morgan Davis Group. Although some powerful software has been written in Applesoft — the BASIC programming language built into Apple IIs — it also has several shortcomings. Among them are lack of an integrated editor and poor debugging capabilities.

RADE is a professional Applesoft debugging solution; it lets you interrupt the execution of your program at any point and examine the contents of variables. You also can step through code one line at a time or trace the execution of lines to determine whether the program is proceeding as it should.

BUGS BEWARE

Although most Applesoft BASIC programs you'll test with RADE can run on any Apple II, RADE itself requires an Apple IIGS. You can run it from a floppy disk or a hard drive.

The 3.5-inch RADE disk contains only 118K of files, including the debugger, some documentation files, and a disabled demo version for free distribution to your friends. A test program called *FIX.ME* can help you become

familiar with RADE's capabilities. *FIX.ME* contains bugs, including a VTAB statement with an incorrect value. Once you eradicate this and other bugs, the program draws a kaleidoscope-like moiré display.

The 46-page manual isn't encyclopedic, but it contains enough information to get you acquainted with the RADE package and to walk you through the *FIX.ME* demo debugging session. (The documentation could be clearer and better organized, however.)

The RADE disk contains the necessary files for booting your system and starting up the debugger on a ROM 03 GS. If you own a ROM 01 GS, you must start GS/OS first and launch the RADE *Startup* program from the Finder.

RADE is a binary file launched from Applesoft using *BASIC.System*. Because it installs itself in auxiliary memory, RADE overwrites the contents of any RAM disk you use. It requires 768 bytes of main memory; you must install it before any BASIC programs or utilities that modify HIMEM (the pointer that sets the upper limit of available program memory).

Once you've installed RADE, you access its debugging screen by pressing Open apple-Control-Delete during the execution of an Applesoft program. If you want to activate RADE in immediate mode, press the ampersand (&) key followed by Return.

Either way, at the top of the RADE screen you see a status bar showing, among other things, the quantity of buffer memory available for the program's debugging history (see below), the number of break points and watch variables defined, the size of your program, and the line and statement you're working on. Pressing **R** returns you to the Applesoft screen; typing **&** and pressing the return key toggles you back to the RADE screen.

CHECK YOUR HISTORY

When you run a program and activate RADE, a scrollback function you control via the up- and down-arrow keys displays the contents of a 64K "debugging history buffer." If you've ever scrolled through an Applesoft program listing while using Control-S to pause and then resume, you'll appreciate this feature. The buffer contains the entire record of your debugging session; you can save it as a text file to print later if you like.

A *Save Environment* function creates a file of the entire contents of your debugging session, including all breakpoints and watch variables you've set. You can load the file and return to the debugging session at the point at which you left it, with all settings intact.

CATCH THE LITTLE BUGGER

If you suspect that a certain portion of your program contains bugs, you simply set a breakpoint just before that section; RADE activates automatically as soon as it hits that breakpoint. This feature lets you isolate "clean" portions of your program.

RADE also lets you watch variables by alerting you to strange values occurring at a particular point in a program. You can also change variables while a program is running to test your corrections on the fly.

Finally, RADE can step through a program line by line or trace a program through the execution of any number of lines. Using RADE to determine where problems lie beats the heck out of Applesoft's TRACE and NOTRACE commands.

TAKE COMMAND

Pressing Open apple-question mark (OA-?) while RADE is active brings up a display of commands and their respective functions. Most RADE commands are mnemonic; for example, OA-H (*Home*) clears the debugging screen. OA-U (*Unload*) removes RADE from memory and gives you the opportunity to end the debugging session, return to Applesoft BASIC, or resume RADE.

RADE is a professional programming tool for Applesoft; it's fast, powerful, full-featured, and easy to use. It's a breath of fresh air for anyone accustomed to cutting-edge programs that gobble RAM and disk space but run like a fly in molasses. RADE is a throwback to the days of tight, efficient programming.

Garry Howard
Calgary, Alberta, Canada

★ ★ ★ ★ ★

LEARN ABOUT: LIGHTS IN THE NIGHT SKY

Wings For Learning
1600 Green Hills Road
P.O. Box 660002
Scotts Valley, CA 95067-0002
(800) 321-7511
(408) 438-5502
(408) 438-4214 fax

- astronomy education program
- 128K enhanced Apple IIe/IIc/IIGS or Mac LC with IIe Card
- keyboard, joystick, Muppet Learning Keys, KoalaPad compatible
- printer, mouse recommended
- $75 single-user version
- $20 additional disk sets
- $300 AppleShare network version

For thousands of years poets, philosophers, and astronomers have been enchanted by the heavens. Because the wonderment often lasts a lifetime, elementary school seems to be the perfect setting to begin teaching kids about astronomy. It's unfortunate, though, that the single-hi-res graphics images in Learn About: Lights in the Night Sky won't get anyone really excited about the universe.

Designed for first- through third-graders, Learn About: Lights in the Night Sky includes six interactive modules. Through a series of guided activities, the program attempts to teach children about both natural and man-made celestial objects. The main menu displays graphics depicting the program's six modules: *Planets*, *Stars*, *Lights*, *Space Voyage*, *Create*, and *Worlds*. Children select the activity they want to explore with the keyboard, mouse, joystick, Muppet Learning Keys, or KoalaPad. On-line help is available by clicking on icons resembling paper documents.

The first three modules — *Planets*, *Stars*, and *Lights* — are similar. The

program displays three graphics windows; students click on a binoculars icon and drag it over the windows to uncover hidden objects, then drag a name label to the correct illustration.

When pictures of Earth, Jupiter, and Saturn appear in the *Planets* module, for example, the challenge might be to identify Jupiter. If the student guesses incorrectly and places the Jupiter label under the picture of Earth, there's no feedback. If the student places the label correctly (it has to be exact), the name flashes.

The *Stars* module features several constellations, including Cassiopeia, Draco, Leo, Orion, and Taurus. In one activity, children learn how constellations were named by dragging a picture of a dragon atop the Draco constellation, for example. Another activity teaches kids how to locate the North Star. The *Lights* module helps children discern differences among comets, meteors, and satellites.

Pop-up text boxes offer information about each respective planet, star, or light. Despite the fact that the spacecraft Voyagers 1 and 2 visited Jupiter and Saturn ten years before this program was written, some of the information in the *Planets* module is outdated and inaccurate. Particularly disturbing is the fact that the program cites an incorrect number of moons for several planets. A Wings for Learning spokesperson assured us that the company is preparing a free update correcting these errors; it should be available by early spring.

BLAST OFF

The *Space Voyage* module includes a simulated trip to the moon and outer planets and extends beyond the Milky Way. As they travel, students learn about craters and explore the moon by lunar rover. The program also explains Earth's day/night cycle. As students journey farther, their visual perspective changes until they view Earth as a tiny object within a solar system surrounded by billions of galaxies.

In the program's *Create* and *Worlds* modules, students build their own solar system or universe by arranging clip-art graphics on background scenes and writing stories about the celestial objects and space creatures they've selected. Children can print and color their stories by hand. In fact, students can print any *Create* or *Worlds* screen and paste it into a storybook or scrapbook.

Learn About: Lights in the Night Sky comes in either 5.25- or 3.5-inch format on non-copy-protected disks. A three-ring binder contains some 67 pages devoted to lesson plans offering detailed instructions for pre- and post-computer activities as well as computer-centered ones. Each module includes an appropriate bibliography.

In the last 30 years, our knowledge of the solar system has grown exponentially. Unmanned space probes have visited most of the planets in our solar system and have transmitted detailed digital photographs of newly discovered moons,

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asteroids, comets, volcanoes, and ring systems. NASA videos are inexpensive, and children's astronomy books are plentiful. Compared with these other media, Learn About: Lights doesn't stack up as a cost-effective way to instill in children a sense of wonder and fascination for the universe.

Joe Kohn
Contributing Editor, inCider/A+
San Rafael, CA

★ ★ ★ ★ ★

DECISIONS, DECISIONS: SUBSTANCE ABUSE

Tom Snyder Productions
80 Coolidge Hill Road
Watertown, MA 02172-2817
(800) 342-0236
(617) 926-6000
(617) 926-6222 fax

- role-playing drug-education program
- 64K Apple II (5.25" drive)
- $149.95
- $199.95 5-disk lab pack
- $349.95 network

The decisions we make every day affect our lives in serious ways, and when teachers decide to deal with a sensitive topic such as substance abuse, they need to answer some difficult questions: Can I handle my students' problems? Am I willing to commit myself to the extra time? Do I have the support of my peers?

If adapted appropriately to an existing curriculum, Decisions, Decisions: Substance Abuse is a good complement to classroom instruction. But a computer program is only one spoke in the wheel of substance-abuse prevention.

The Decisions, Decisions: Substance Abuse package includes a teacher's guide, two 5.25-inch disks (program and backup), 30 student workbooks, an excellent goal-setting poster, and several supporting documents. The software is substantive, but it's also easy to use, with plenty of explicit instructions.

The program comes on a double-sided floppy; you insert one side to load the ProDOS operating system and then turn the disk over to proceed with the simulation. You can start a "new game" or continue a game in progress. Depending on how extensively you use the program and its supporting materials, completing a unit on substance abuse could take several weeks. Working only with the simulation, which presents a story about a drug-using friend, can take anywhere from two class periods to two weeks.

Before the simulation begins, the teacher presses the right-arrow key to indicate the total number of students in the group. If you assign student identification numbers verbally within that range, you can activate the *Random Student Picker* (by pressing the P key) during the discussion following each part of the simulation. The beauty of this method stems from the fact that the computer — not the teacher — puts students on the spot.

Among other things, students are expected to set ethical priorities. Is it more important to help your friend stay out of trouble, keep the respect of other people, or maintain self-respect? Students also discuss and evaluate different courses of action. When you see your imaginary friend drop some drugs in the school hallway as a teacher approaches, the software asks you to choose the best course of action: leave the scene, stay put, or pick up the drugs.

The program also presents numbers on screen corresponding to the 106 *Smart Choices Voices* in the *Student Reference Book*. The goal of the handbook is to help students think critically. For example, in the scenario described in the preceding paragraph, a student wondering about the consequences of picking up the drugs might want to read *Smart Choices Voice #4: What would happen if the teacher sees the drugs?. What is the best thing that can happen if you pick up the drugs?. What is the worst thing?*

It's unfortunate, though, that the students with whom several teachers and I tested the program didn't like shifting back and forth from the book to the computer. They preferred instead to make decisions without using the guide. Teachers also wondered where they would find the time to incorporate the program into the curriculum. And despite the program's claim that it's suitable for students in grades 4 through 12, we felt the interest level was appropriate for grades 6 through 8. Some of the vocabulary could be a problem for younger children.

Additional audio feedback would help keep students motivated. Today if a program doesn't ring, whistle, or chime, it doesn't attract children's attention. Likewise, the program's story line would benefit from better graphics. The one drug scenario offered isn't very exciting. Some students considered it boring; teachers thought it was repetitious.

Despite drawbacks to the software itself, the abundant information provided in the teacher's guide and student workbooks builds a solid base for group discussion. The program gives teachers the opportunity to work cooperatively toward common goals with students of both genders and from varying cultural backgrounds. Decisions, Decisions: Substance Abuse is tailor-made to fit into real-life situations and flexible enough to accommodate endless debate.

In group settings, however, a delicate subject such as substance abuse evokes a bonding among the participants. When that occurs, it's essential that teachers have a safety valve to help them deal with the children's disclosures. A good working relationship with support systems and specialists, including local D.A.R.E. (*Drug Abuse Resistance Education*) officers, is crucial.

It's unfortunate that the program doesn't suggest ways for educators to handle the personal matters children may confide. In short, the success or failure of a program such as Decisions, Decisions: Substance Abuse often depends on a lot more than just software or documentation. ❑

Ben Nickleson
1991 National D.A.R.E. Officer
North Kingston, RI

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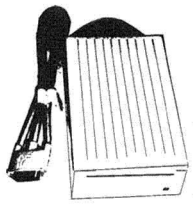

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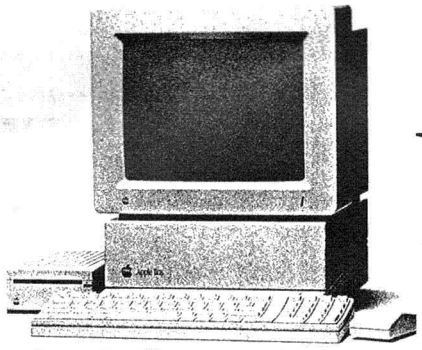

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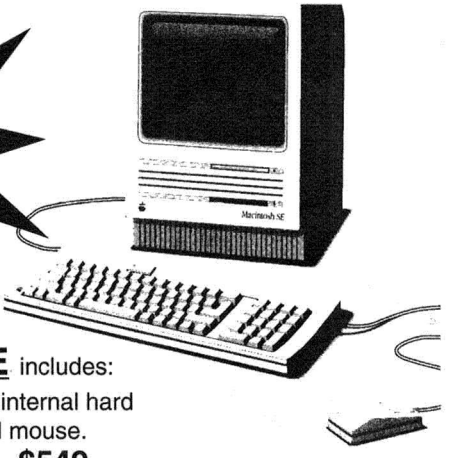

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POOR GOOD GREAT

Looking for the right Apple II software or hardware? Here's a quick sampling of the dozens of products we looked at in depth over the last year. In each category is the product name, the critical rating it received from the *inCider/A+* reviewer, which Apple II computer(s) it runs on, its retail price, the publisher or manufacturer you can contact to purchase the product, a nutshell summary of the review, and the review's issue date and page number. Although the product version, price, and ordering information are up to date, we've indicated those cases in which we reviewed an earlier version of the product.

APPLICATIONS

DreamGrafix 1.06 ★★★1/2
IIGS, $99.95 plus $5 shipping. DreamWorld Software, P.O. Box 830, Iowa City, IA 52244-0830, (319) 338-6491 or (212) 853-6785. 3200-color drawing program. Version 1.02: Proof that it's possible to push the envelope hard enough to stretch the seams. You *can* create and edit 3200-color pictures on your Apple IIGS — but just barely. (8/92, p. 22)

HyperStudio 3.1 ★★★★★
IIGS, $179.95; version update from 2.1 or earlier, $45 plus $5 shipping; update from version 3.0 free with returned disks. Roger Wagner Publishing, 1050 Pioneer Way, Suite P, El Cajon, CA 92020, orders: (800) 421-6526; tech. support: (619) 442-0522. Hypermedia authoring system. Version 3.0: Substantial update to already robust authoring system. Includes new menu-driven scripting language. (5/92, p. 22)

Your Money Matters ★★★
IIGS; $74 plus $5 shipping. Software Solutions, 5516 Merritt Circle, Edina, MN 55435, (612) 929-8947. Home/small-business finance. Prepare budgets, balance your checkbook, and track current versus last year's income and expenses. (1/93, p. 48)

EDUCATION

The Treehouse ★★★1/2
Apple II, $49.95. Broderbund Software Inc., 500 Redwood Blvd., P.O. Box 6121, Novato, CA 94948-6121, orders: (800) 521-6263; (415) 382-4400; fax: (425) 382-4582. Music, math, and science games. Entertaining and mildly educational. The premise is a treehouse filled with games and animal friends. (10/92, p. 52)

Where in America's Past Is Carmen Sandiego? ★★★★★
Apple II, $49.95. Broderbund Software Inc., 500 Redwood Boulevard, P.O. Box 6121, Novato, CA 94948-6121, orders: (800) 521-6263; (415) 382-4400; fax: (425) 382-4582. Educational adventure game, featuring detective motif and the infamous inscrutable villainess. This latest in the Carmen series is just as good as the previous ones — maybe better. (10/92, p. 26)

Weekly Reader Fractions and Decimals Math Word Problems ★★★
Apple II, $49.95. Optimum Resource Inc., 10 Station Place, Norfolk, CT 06058, (203) 542-5553. Drill-and-practice math program. Drill and kill from acknowledged leaders in the field. Weekly Reader manages to make an educational necessity bearable. (10/92, p. 30)

GAMES

Pick 'n' Pile ★★★
IIGS, $35. Procyon Inc., P.O. Box 620334, Littleton, CO 80162-0334, (303) 781-3273. Arcade/strategy game. Addictive stacking of like balls and icons to score. (2/93, p. 24)

Space Fox ★★★1/2
IIGS; $30. Seven Hills Software, 2310 Oxford Road, Tallahassee, FL 32304-3930, orders & info.: (904) 575-0566; tech. support: (904) 576-9415; fax: (904) 575-2015. Arcade shoot-'em-up in space. Updated Defender — fun for veteran and novice space cadet alike. (1/93, p. 24)

UTILITIES

Desktop Enhancer 2.01 ★★★1/2
IIGS, $24.95, $3 demo disk. Simplexity Software, 13045 Chapman Ave., Suite 302, Orange, CA 92668, (714) 283-3957. GS/OS and ProDOS 8 customization program. Version 2.0: Second-rate desktop jewelry might appeal to some. Take advantage of the demo-disk offer before you buy. (12/92, p. 28)

Kangaroo ★★★★
IIGS, $49.95. Seven Hills Software, 2310 Oxford Road, Tallahassee, FL 32304-3930, orders and info.: (904) 575-0566, tech suppport: (904) 576-9415, fax: (904) 575-2015. GS/OS file-management utility. Finder-like folders, files, and options from the GS/OS *File* menu. (2/93, p. 22)

TimeOut Grammar 1.03 ★★★
Apple II (128K) with AppleWorks, $79.95 or $5 upgrade. Quality Computers, 20200 East Nine Mile Road, St. Clair Shores, MI 48080, (800) 443-6697, (313) 774-7200. Grammar and style checker for AppleWorks. Helpful, for a computer program, that is. Better to pick up a copy of Strunk and White. (2/93, p. 25)

HARDWARE

A-Hive Jr. ★★★★
IIGS; $499 with Apple high-speed SCSI card; $559 with RamFast SCSI; includes cables, two 21MB disks, one 1.44MB disk, one 720K disk. Tulin Technology, 2156H O'Toole Avenue, San Jose, CA 95131, (408) 432-9057. Floptical SCSI drive for Macintosh or Apple IIGS. Unlimited high-density storage for data-intensive applications. Not the fastest, but one of the least expensive. (9/92, p. 22)

InFocus 1600LC PC Viewer ★★★★
IIGS, $2695 **1600LC** color; $1695 **1600GS** monochrome. InFocus Systems, 7770 Southwest Mohawk Street, Tualatin, OR 97062, (800) 327-7231; (503) 692-4968. 16-color LCD projection panel. Sometimes you just gotta see the big picture. The color and the monochrome displays are reasonably priced solutions to classroom or business presentations. (9/92, p. 52)

Tulin Optical Drive ★★★
IIGS; $1319 includes one cartridge, $49 each additional cartridge. Tulin Technology, 2156H O'Toole Avenue, San Jose, CA 95131, (408) 432-9057. Rewritable, removable optical storage. Although much slower than a hard-disk drive, 120MB 3.5-inch optical cartridges provide unlimited, virtually indestructable data storage for power users. (1/93, p. 49)

THE APPLE II REPORT

MUST BUY!
FORGET IT
WORTH A SECOND LOOK

CRITICAL READING

Hartley Courseware
133 Bridge St.
Dimondale, MI 48821
(800) 247-1380, (517) 646-6458

- new reading-skills builder
- 128K Apple II
- $695

It's a fact: Many high-school students have poorly developed reading skills. Critical Reading tries to remedy the situation by encouraging youngsters to read illustrated passages on a variety of topics, then answer questions to determine cause and effect, draw conclusions, place events in sequence, make inferences, or show an understanding of figurative language. The package includes 33 lesson disks, 22 mastery test disks, and one diagnostic disk, plus an instructor's manual and support materials. In addition, the software offers record keeping, modifiable lessons, on-line help, and a spoken glossary (when an appropriate sound card is installed). Students will find much of the reading content interesting, but some lessons are too wordy to hold kids' attention for extended periods of time.

ECOLOGY WITH SEUSS

Humanities Software
408 Columbia St.
Suite 222
P.O. Box 950
Hood River, OR 97031
(800) 245-6737

- new process-writing program
- 128K Apple II
- requires AppleWorks
- Mac version available
- $89

Dr. Seuss' lovable storybook characters have entertained American children for decades — and now these eccentric personalities can strengthen writing skills as well. Ecology with Seuss is based on the author's story The Lorax. It's an upper-elementary-level curriculum-based product that integrates children's literature with word processing and 15 process-writing activities. Projects range from poetry to essays. Youngsters use AppleWorks to practice prediction and vocabulary as they work with ecology themes. They learn to distinguish "need" from "want," write an advertisement, compose ten rules for maintaining a healthy ecosystem, and more. The package includes two handouts, plus instructions for completing activities with only one copy of The Lorax and one computer. An introductory file reviews basic word-processing functions. Ecology with Seuss is a well-designed product that sensitizes children to environmental issues as it teaches them the fundamentals of how to write.

ESL CONVERSATIONAL DEMONS SETS A, B, C

Merit Audio Visual
132 West 21st St.
New York, NY 10011
(800) 753-6488, (212) 675-8567

- new English-skills builder
- 512K Apple II
- requires 5.25" drive
- $99.95 per set

When grammar gremlins prevent ESL (English as a second language) students from minding their Ps and Qs, you can enlist the help of an Apple II to get them over the troublesome points of English grammar and spelling. ESL Conversational Demons provides three sets of self-paced instruction to supplement a conventional ESL curriculum. Set A is designed for students with a beginner's knowledge of standard written English; Set B is for students with enough experience to move on to second-level work; and Set C is for those at an intermediate level. Self-directing lessons present everyday speech patterns and idiomatic expressions of conversational English in written form; youngsters read dialogue consisting of two or three sentences to find inappropriate usage. They receive feedback for both correct and incorrect answers; the program provides record-keeping options for up to 42 students per disk. It's not a flashy product, but it serves its purpose well.

JEU DE PISTE

Gessler Publishing Co.
55 West 13th St., 5th Floor
New York, NY 10011
(212) 627-0099

- new French-language program
- 48K Apple II
- Spanish version available
- $39.95

Beginning and intermediate French-language students will appreciate this program's game-style approach to vocabulary building. Relying on both chance and skill, youngsters roll an electronic die, then move around an on-screen board. Along the way, they answer questions posed in French. Correct responses earn points. Incorrect answers send players back the number of spaces indicated on the die. High scorers earn a place in the game's hall of fame. Secret board squares with jokers and traps increase the program's entertainment value. This software strengthens comprehension and builds basic French vocabulary in an enjoyable way. If only it had a built-in editor to let teachers write their own game questions . . . .

TIM AND THE CAT AND GROG THE FROG

Hartley Courseware
133 Bridge St.
Dimondale, MI 48821
(800) 247-1380, (517) 646-6458

- new reading-skills builder
- 64K Apple II
- speech synthesis requires128K
- $59.95

Grog the Frog invites beginning readers to join Tim and his friend, Elmo the cat, in a series of reading adventures. The package includes 15 large-print stories designed to build vocabulary while developing literal and inferential reading-comprehension skills. Youngsters page through electronic stories as they read; animated graphics enhance each text screen. Multiple-choice questions ask readers to recall ideas, sequence events, and identify pronouns. Children receive positive reinforcement for correct answers; the software returns them to the appropriate spot in the text to reread a passage if they answer incorrectly. Students can listen to the computer read stories and questions aloud if your system is equipped with an Echo or Ufonic speech synthesizer. Grog the Frog builds reading skills, but the program's book-like quality may not be enough to motivate kids to stay with the task for extended periods of time.

— Carol S. Holzberg, Ph.D.
Contributing Editor

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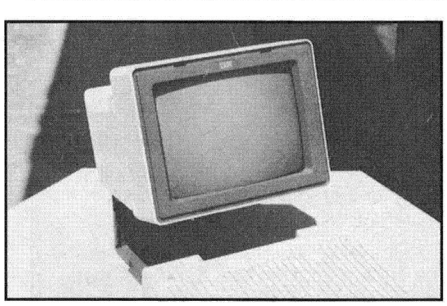

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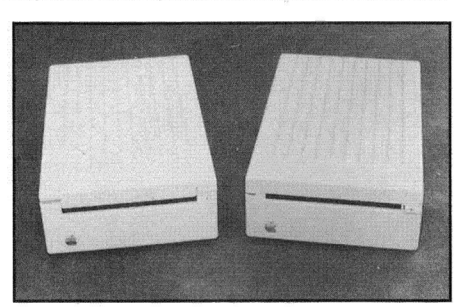

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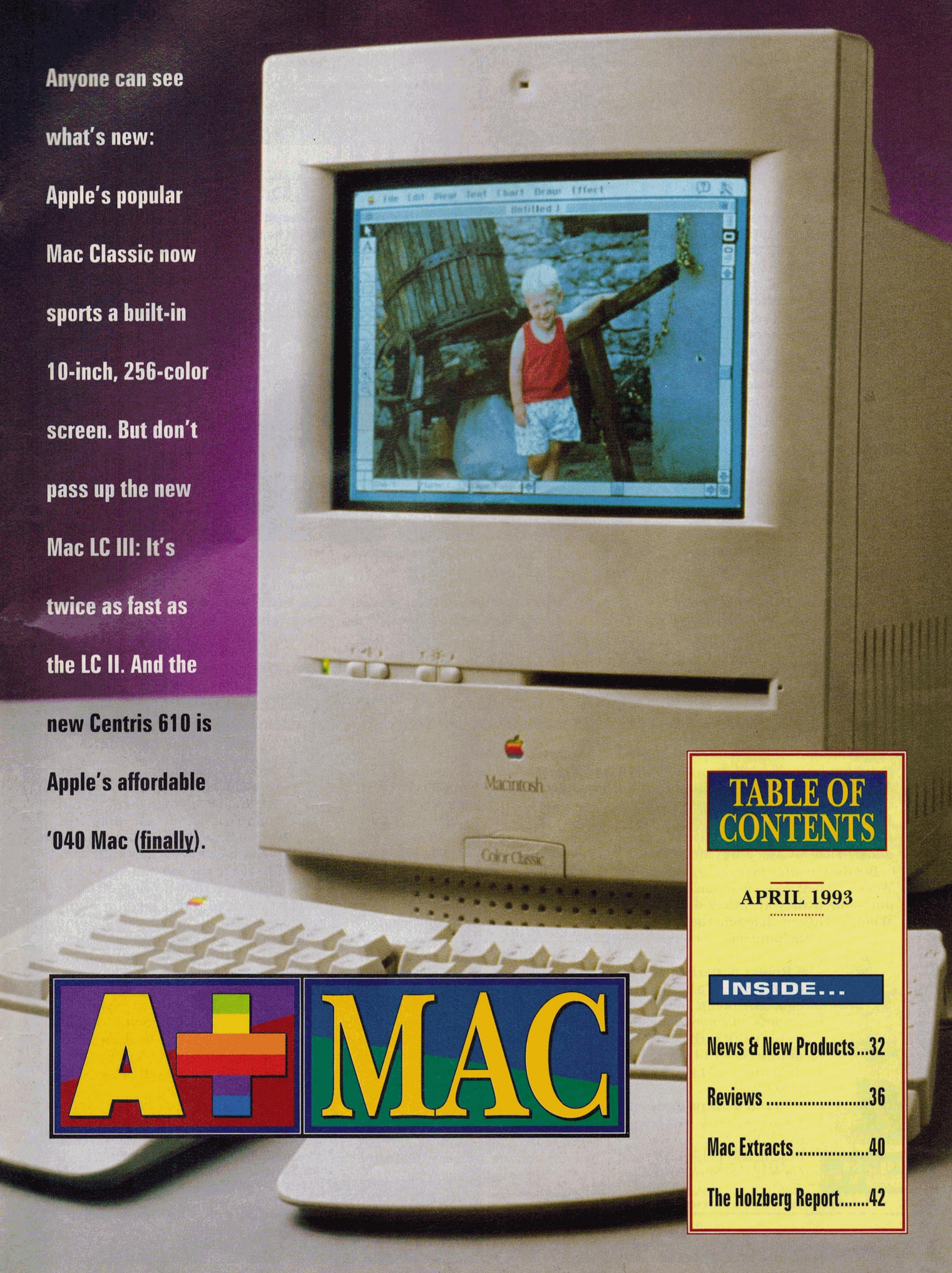
Circle 103 on Reader Service Card.

Anyone can see what's new: Apple's popular Mac Classic now sports a built-in 10-inch, 256-color screen. But don't pass up the new Mac LC III: It's twice as fast as the LC II. And the new Centris 610 is Apple's affordable '040 Mac (finally).



A+ MAC

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ONE STEP AT A TIME

A skeptic might be forgiven for scoffing at Apple's claim that it's "changing the world, one computer at a time." In 1992 Apple did become the leading manufacturer of home computers in the United States — lining Apple's pockets, though, not changing the world, as the skeptic might have seen it. Apple's been selling more Macintosh LCs and PowerBooks than it can deliver, and making bundles of money.

But Apple made no money at all on the ten PowerBooks awarded to the winners of an essay contest you may have seen promoted in the premier issue of *The Apple Catalog*. You surely recall the *Catalog*: Among the many t-shirts, PowerBooks, coffee mugs, and Claris programs offered for sale were inspiring stories of how much the world had changed for the citizens of "a little town called Jacksonville, Oregon." Of course, a skeptic might have emphasized the small print: "That's because Apple gave Macintosh computers to many of Jacksonville's small-business owners." Even a skeptic's world might be changed if Apple gave him or her a PowerBook.

The contest's rules were simple and vague: Type 750 words (double-spaced) "explaining how you and your Apple computer have changed the world." Did Apple expect stories like those in the *Catalog*? There were six success stories in Jacksonville, Oregon, and you wouldn't need to be a skeptic to file five of them under "How My Mac Saves Me Money."

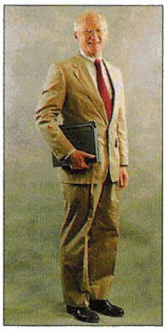
But the ten winners of the "Change the World" contest aren't in business, it turns out — or if they are, they don't brag about it. They're changing the world by helping other people:

ROBERT B. BARKER M.D.

■ **Robert B. Barker, M.D.**, of Bonita, California, couldn't keep medical records efficiently enough in his work with sexually molested children if he didn't have a Mac.

■ **James Boulden** of Weaverville, California, used his Mac to write, design, and publish *Saying Goodbye*, a book to help children understand death.

■ **Phil West** of Providence, Rhode Island, was frustrated by the paperwork and bureaucracy required when he wanted to do his civic duty, so he designed a better voter-registration form on his Macintosh. His document is now in use all across the state.

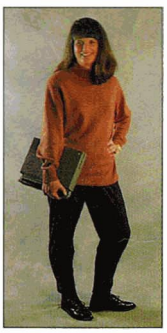


PHIL WEST

■ **Katherine Anderson** of Ithaca, New York, keeps the non-profit group Ithaca Neighborhood Housing services financially healthy: Because she uses a Mac and can "do it all herself," all the money donated to the organization can go to to help families find affordable places to live.

KATHERINE ANDERSON

■ **David B. Phillips** of Annapolis, Maryland, invented the FirstTemp clinical thermometer with his Apple II, and continues to create new medical instruments with his Mac.



SUSAN WOLFE

■ **Susan Wolfe**'s Mac keeps the Partnership for Organ Donation running smoothly. In her work, organization is a matter of life and death.

■ **Pieter Folken** uses his Mac to track the movements of humpback whales off the California coast near San Francisco — you can't save 'em if you can't find 'em.

■ If you use **System 7**, you may know the trick of selecting a disk on the desktop and then nudging the pointer ever so slightly to switch to the **I-beam insertion cursor** so that you can change the disk's name. But have you ever come up against a disk that resolutely refused to change the cursor to an I-beam? There's probably a simple reason: the disk is locked. To unlock it, move the plastic tab in the write-protect notch so that you can't see through the disk case. That's the **"write enable"** position.

■ **Joseph H. Mondello** uses a Mac in his job as head of the Tamarand Foundation, which brings joy and comfort to young people afflicted with AIDS in New York City.

■ **Barbara Cordell** of Nacogdoches, Texas, helps other people help others — she uses her Mac to write grant proposals for the East Texas AIDS Project. Her record: Twelve of 15 grants the AIDS Project applied for have been funded.

BARBARA CORDELL

■ **Jennifer Laurence** is pursuing a career as a teacher in Tempe, Arizona, with help from her Mac. Nothing world-changing about that, except that she was born with muscular dystrophy and has no use of her arms or legs. With her Mac and a mouse, she can display whatever lesson material she chooses on the wall of her classroom as she teaches. She says, "The computer is to the handicapped what the wheel has been to mankind."

You'd probably still get to work every morning even if the nobody ever heard of the wheel — but wouldn't it be difficult? Similarly, these folks didn't need computers to change the world — but they sure make the job easier. A cynic might say that no one of these winners changed a very big part of the world — but they represent some 2000 people who entered the contest, and behind those 2000 stand some 15,000,000 other people who have also bought Apple computers.

inCider/A+ salutes the ten winners of the "Change the World" contest and the thousands of other Apple II and Mac users who are helping people everywhere make their lives a little better. **— P.S.**

LOOK FOR THESE STORIES IN THE LATEST ISSUE OF *THE APPLE CATALOG*, 1 APPLE PLAZA, P.O. BOX 9001, CLEARWATER, FL 34618-9001. IT'S FREE — CALL (800) 795-1000 TO GET ON THE MAILING LIST.

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Classroom Computer was founded by Jeff Gold, a Silicon Valley computer entrepreneur who has been serving the Apple II education community since 1981. Our national distribution center supplies refurbished Apple IIe, IIc, and IIGS computers to schools across the country. **Classroom Computer also offers Macintosh Computers, Color TV's, VCR's, Fax Machines, Laser Disc Players, and other technology at the lowest prices! Call for details.**

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#3s Apple IIGS System Package **$775** **($725 prepaid)**
(1.25 mb CPU, keyboard, mouse, hi-res RGB color monitor, 3.5 drive, Cyberlearn software.)

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#4c	Disk Drive for IIe/c/GS or Mac LC (5.25 daisy chain)	$140
#4d	Duodisk Upgrade (available with purchase of IIe only)	$75
#5	**Extended 80-Column Card** (expands IIe to 128K)	**$24**
#6	Joystick for IIe or IIc	$10
#7a	Color Monitor IIe/IIc (non-Apple, 40-column text) (price for monitor alone/price with computer system)	$230/$160
#7b	Apple Color Monitor (hi-res 80-column text) (price for monitor alone/price with computer system)	$295/$225
#7c	Monochrome Monitor for IIe, IIc, or IIGS (80-column)	$70
#8	Dot Matrix Printer & Interface (Epson or similar for IIe)	$125
#9	**ImageWriter Printer** (includes free interface & cable when ordered with computer)	**$180**
#10	**ImageWriter II Color Printer** (includes free interface & cable when ordered with computer)	**$275**
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All sales are final. Choose carefully when ordering; orders may not be canceled, refunded or exchanged after we receive them, unless authorized in writing, and subject to a 20% restocking fee. Most Apple II equipment is refurbished and comes with a 14 month warranty. Customer is responsible for shipping charges to and from CCC for warranty service. Most equipment is manufactured by Apple; however, we may substitute monochrome monitors or disk drives by other manufacturers that are of equal or superior quality and performance. Thank you. Apple IIe, IIc, IIGS, Macintosh, and ImageWriter are registered trademarks of Apple Computer, Inc. 020793

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NEW SOFTWARE

CLEAR WORKS

ClarisWorks 2.0 adds two new modules to the popular integrated word processor, spreadsheet, database, graphics, and communications program. The package's complete outlining feature lets you organize your thoughts and documents in standard outline styles; a presentation module can create dynamic slide shows with borders and backgrounds, fades between slides, and even QuickTime movies.

Shortcuts are another new feature of ClarisWorks 2.0, offering push-button access to more than 150 commands, to let you check spelling, format cells, or recalculate in one step, among other functions.

ClarisWorks 2.0 also adds new abilities to the word processor, such as text wrap around graphics. Spreadsheet charts are now simpler, and data entry in the database is easier. The telecommunications utility includes Kermit file-transfer protocol and telephone books; the graphics module now sports a color paint program.

More than 300 new features have been added to ClarisWorks 2.0, which still carries a suggested retail price of $299. The upgrade is $99. You can trade in a competitive "Works" and get ClarisWorks 2.0 for $129. For more information, contact Claris Corporation, 5201 Patrick Henry Drive, Santa Clara, CA 95052, (408) 727-8227, or circle number 360 on the Reader Service card.

PERFECT WORKS

WordPerfect Works 1.2 is the newly improved successor to BeagleWorks, which WordPerfect Corporation acquired late last year. WordPerfect Works 1.2 integrates word processing, database management, drawing, painting, charting, and telecommunications, and features seamless import and export of all types of WordPerfect files. It's the only software that supports *publish and subscribe* (the ability to share information live between two or more documents) on Macs running System 6.0.5 — System 7 isn't required.

The retail price of WordPerfect Works 1.2 is $249; education prices start at $99. Owners of competitive Mac "Works" products can upgrade to WordPerfect Works 1.2 for $99; BeagleWorks owners can upgrade for $8. For more information, contact WordPerfect Corporation, 1555 North Technology Way, Orem, UT 84057, (800) 451-5151, or circle number 361 on the Reader Service card.

M4 TANK

Deadly Games, known to Mac wargame fans for Bomber and Battle of Britain, has taken to the ground with a new experimental title — **M4 Tank Simulators**.

The game puts you in command of five different models of the M4 Sherman tank as you fight your way across four European countries at the close of World War II. You'll battle everything from lightweapons squads to squadrons of King Tiger tanks.

All the action in M4 is driven by voice. Your two-way communications equipment keeps you in touch with other units in the field, your company commander, nearby reconnaissance patrols, air and artillery support units, and even headquarters in Paris. An on-board intercom system provides the means to monitor your four-man crew and get their advice in critical situations.

M4 — a full-color, full-screen, full-sound war gamer's dream — costs $44.95, from Deadly Games, 122 Penns Grant Drive, Morrisville, PA 19067, (215) 295-2284. For more information, circle number 362 on the Reader Service card.

LOOK OUT, WORLD

Out of This World, the acclaimed action, adventure, and arcade game, is finally available for the Macintosh, from the new MacPlay division of Inter-Play Productions.

As scientist Lester Knight Chaykin, you're tossed through time and space by a nuclear experiment gone awry. You'll need all your scientist's logic as well as good reflexes and the skills to survive as you dodge, outwit, and overcome a host of alien monsters and deadly earthquakes plaguing the strange land that was once your home.

Out of This World uses the newest animation techniques and scalable polygon graphics — that means the action is as realistic as cinema. You can run, jump, kick, and swing with fluid movements while enjoying 256-color graphics and excellent sound. Out of This World also supports the Advanced Gravis Mouse Stick.

Out of This World is available for $49.95, from MacPlay, 17922 Fitch Avenue, Irvine, CA 92714, (714) 553-3522. For more information, circle number 363 on the Reader Service card.

DOING DATA

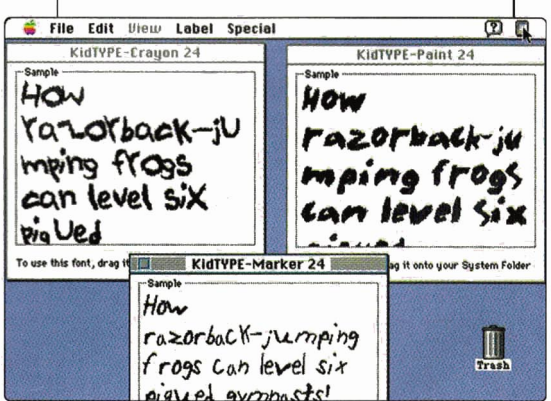
We live in the Age of Information, it's said, but do our schools teach us how to make sense of all that data? **Think for Yourself**, a Macintosh CD-ROM, provides essential numeric data — gathered from respected sources — on the environment and the economy, plus demographics and health, at the local, national, and world levels.

But data doesn't tell the whole story: Think for Yourself also includes a standalone analysis program anyone can use — no specialized mathematical training required.

If you can interpret a line graph, you can start getting real answers to such complicated questions as: Is AIDS spreading in your community? Is the world's climate warming? Is industrial production falling in the United States? You and your students will learn not to look to the mass media for answers, but to think for yourselves.

In addition to the analysis program and more than 30,000 pages of data from prestigious sources such as the World Health Organization, the U.S. Department of Commerce, and the United Nations, the Think for Yourself disc includes more than ten hours of instructional materials and lesson plans for teachers.

The package is priced at $249; substantial discounts are available to schools, teachers, and students. For more information, contact PEMD Education Group, P.O. Box 39, 35000 Highway 128, Cloverdale, CA 95425, (707) 894-3668, or circle number 364 on the Reader Service card.



IN THE BAG

KidBAG features authentic children's artwork you can use with any Mac (or IBM PC-compatible) desktop-publishing program. It's shipped in a whimsical child's paper lunch bag, and includes both **KidART** (clip art created by children) and **KidTYPE** (PostScript Type 1 fonts that mimic handwriting).

KidART is a collection of 130 children's drawings in crayon, paint and marker, in black-and-white and color images in EPS and TIFF formats, for use in desktop-publishing, painting, and drawing programs. Classic children's drawings show-

ing people, nature, sports, food, school, holidays, and fantasy will save time on desktop design and add an original touch to whatever you publish.

KidTYPE contains three handwriting fonts in crayon, paint, and marker. With KidTYPE, you can transform ordinary type into the scrawled penmanship of a child just learning to write.

The KidBAG package costs $129 for KidART and KidTYPE together. They're priced separately at $99 and $59, respectively, from DS Design, 6 Reina Court, P.O. Box 363, Valley Cottage, NY 100989-0363, (914) 268-8394. For more information, circle number 365 on the Reader Service card.

AT THE ZOO

ZooKeeper is a multimedia adventure game that encourages children to learn about the habits and habitats of animals. To win, you'll have to understand what foods animals eat and what climates they prefer; animated animal images and a fact-finding robot named Zoonie help you learn what you need to know.

Photos and sounds of 50 different animals — provided by *Zoo Life* magazine and the television show *Zoo Life with Jack Hanna* — offer true-to-life images of tigers, penguins, and all kinds of other wildlife.

In your role as temporary Zoo Keeper at Zoo World, you're charged with ensuring the health and happiness of all the animals in your care. As you complete ZooKeeper's challenges, you can release endangered animal back into the wild.

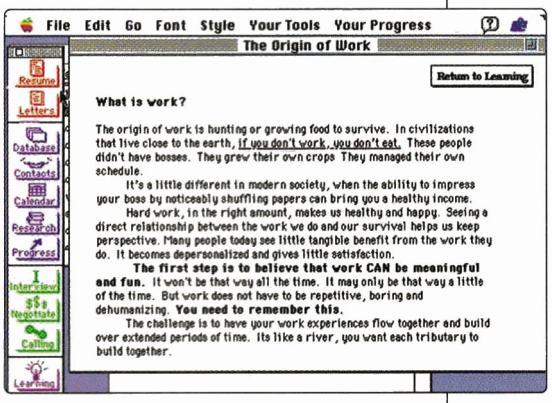
Jan Davidson, founder and president of Davidson & Associates, truly believes that "children should understand the importance of saving endangered species" of animals: To that end, she'll contribute $1 to the William Holden Wildlife Foundation for each copy of ZooKeeper sold.

ZooKeeper costs $59.95, from Davidson & Associates, P.O. Box 2961, Torrance, CA 90509, (800) 545-7677. For more information, circle number 366 on the Reader Service card.

STAR PERFORMANCE

Stellar 7, released originally for the Apple II way back in 1983, was one of the first 3-D action games and became a cult classic. Ten years later, Stellar 7 returns to the Mac, combining advanced 3-D graphics technology with hand-painted and digitized graphics for maximum impact.

In Stellar 7 you fight seven battles, each fiercer than the last. You're at the controls of the *Raven*, the earth's most sophisticated fighting machine, battling to save the earth from the attack of Gir Draxon, Supreme Overlord of the evil Arcturan Empire. Stellar 7 is available for color Macs only, at a price of $34.95, from Dynamix, 99 West 10th Street, Suite 224, Eugene, OR 97401, (503) 343-0772. For more information, circle number 367 on the Reader Service card.



NOT JUST A JOB

The average American will work at 5.2 jobs in his or her career, according to statistics. **Achieving Your Career** can't help make sense of the fractional two-tenths of a job you may have now, but it offers an integrated way to search for your next whole job with your whole person in mind.

Achieving Your Career challenges you to become informed about yourself, by providing a series of software tools to examine your past and plan your future.

You begin by creating a résumé and writing cover letters, then move on to organize and focus your job search with the help of the program's tools — a database, a calendar, and progress charts.

When your search finds its goal and you're actually interviewing and negotiating with prospective employers, Achieving Your Career continues to work for you in interactive role-playing simulations that'll help prepare you for the real thing.

Digitized speech, music, and a dash of humor humanize your computerized job seeking. Achieving Your Career requires an initial investment of $99, from Up Software, 722 Lombard Street, San Francisco, CA 94133, (415) 921-4691. For more information, circle number 368 on the Reader Service card.

MAKIN' BACON

Anatomy students who want to go beyond the traditional frog dissection offered on computer now have a second choice: **MacPig**.

Beginning before the actual operation with information about the structure, function, and location of the pig's five major body systems, students prepare to cut. Then in a colorful, fully interactive simulation of dissection, the purpose of each organ and a detailed physical description are provided as each organ is "removed."

Results are reviewed in a quiz after each of the main body systems is completed, and a comprehensive test reinforces all the major concepts after the whole pig has become a slab of pork.

Other activities available to students while they work on the pig include simulations of the effects of drugs on the pig's heart rate, peristalsis in the pig's stomach, the function of the kidneys, and the regulatory effects of hormones.

MacPig is a full-color Macintosh program, but is also available in a black-and-white version. The price for either edition is $59 for a single copy, $249 for a site license, from Intellimation, 130 Cremona Boulevard, P.O. Box 1922, Santa Barbara, CA 93116, (800) 346-1992, (805) 968-2291.

For more information, circle number 369 on the Reader Service card.

NEW IN TOWN?

Your Macintosh can be your personal tour guide with **Local Expert**, a low-cost ($99) software product from Strategic Mapping, the largest supplier of computerized maps to business and government.

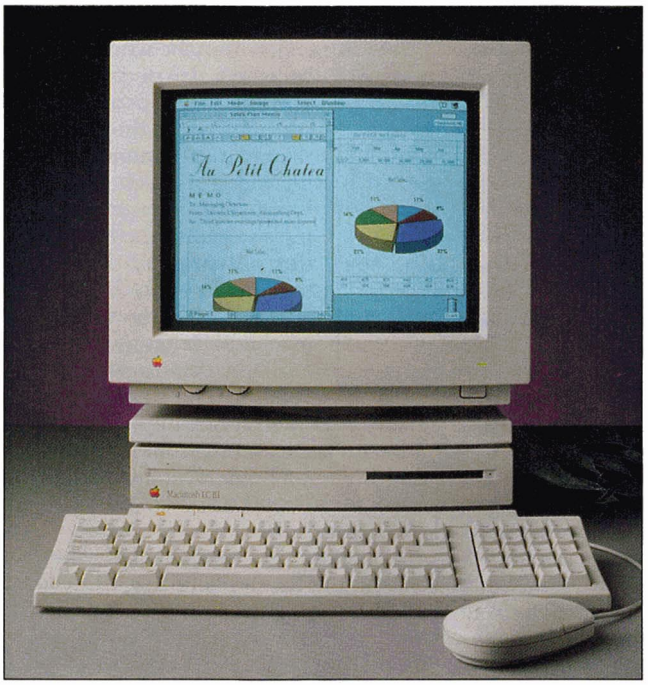
Local Expert combines detailed maps of more than 100 cities worldwide with information in more than 140 categories — ranging from the best restaurants to blues jams to health clubs to shopping centers.

You can use Local Expert to plan your trip before leaving home, or take it with you on your PowerBook to make on-the-spot decisions about where to go and what to see. It doesn't require a CD-ROM drive.

The Local Expert program also includes a core set of regional maps of the world, including major U.S. and European highways. Utilities to locate ZIP codes, area codes, and cities, as well as to measure distance between cities, round out the package. Upcoming versions will support routing between cities.

Strategic Mapping has put its extensive resources into its first consumer product, so you'll find the information up to date and reliable. Become a Local Expert for $99, which includes data for two cities. Additional cities cost $25 each; updates are $15, from Strategic Mapping, 3135 Kifer Road, Santa Clara, CA 95051, (408) 970-9600. For more information, circle number 370 on the Reader Service card.

POWER TO THE PEOPLE



The LC III may look like its predecessors, but it packs twice the horsepower plus bigger and better video options.

FIRST IMPRESSION: LC III AND COLOR CLASSIC

Apple introduced a slew of new products recently, including two Macs of particular interest to the home and education markets: the **Color Classic** and the **LC III**. The Color Classic is really a Mac LC II motherboard and Sony Trinitron monitor stuffed into the "Mac-in-a-box" case now officially known as the Classic design. Externally, the low-profile LC III case appears indistinguishable from that of its predecessors. Inside that case, however, is a computer featuring greatly improved performance and expandability. If you've been waiting for a powerful, low-cost, color Macintosh that also could run Apple II software (using the optional Apple IIe Card), Apple's now offering two excellent models from which to choose.

BETTER AND BETTER

According to Apple, the LC II has been by far the best-selling Mac in its entire product line. If history is any guide, the LC III may soon lay claim to that distinction, because it offers twice the speed and none of the limitations of the LC II. Like its forerunner, the LC III is powered by a 68030 processor, but this one races along at 25 megahertz, pumping data down a 32-bit path. The net effect of a faster processor and wider path is a computer with twice the horsepower. (For even more speed, add an optional FPU, or *floating-point unit*.) And to let those horses run free, Apple stocks the LC III motherboard with 4 megabytes of memory and a 72-pin SIMM socket for expanding RAM up to 36 megabytes — far more than the 10-megabyte limit of the rest of the LC line.

One thing to keep in mind, however, is that the LC III doesn't use the same 30-pin memory modules that have been standard issue for earlier models. The 72-pin SIMM is said to be a standard in the PC market, though, which should mean these SIMMs will be easy to find.

The LC III's built-in video lets you connect a wide range of monitors — now including 16-inch color screens and 15-inch gray-scale portrait displays — without additional hardware. The stock LC III supports 16-bit color on 12-inch monitors, 256 colors on monitors up to 16 inches diagonally, and 16 shades of gray on 15-inch portrait displays. If you add a single 256-kilobyte video memory module, you can get 16-bit color on 13- and 14-inch monitors, and up to 256 shades of gray on portrait displays.

With an aggressive retail price of $1349 for an LC III with 4 megabytes of memory and an 80-megabyte hard drive, there's little reason to buy an LC II anymore, even though Apple says it intends to keep it on the price list for the time being. If you already own an LC or LC II and are drooling over the LC III, you're in luck: Apple's offering a motherboard upgrade for $599.

One other option to consider is a similarly equipped **Centris 610** at just $1859. That extra $500 puts you in the driver's seat of a 20-megahertz 68040 computer that's twice as fast as a Mac IIci. Not only that, it has room inside for up to 68 megabytes of memory, one NuBus or processor-direct card, on-board Ethernet, and a 5.25-inch device such as a CD-ROM drive, tape drive, or additional hard-disk drive.

UPDATING A CLASSIC

Although Apple hadn't decided pricing and configurations by press time, a Color Classic with 4 megabytes of memory and an 80-megabyte internal hard drive will probably cost around $1400, making it a perfect consumer computer.

Just plug in the keyboard and power cord and you're ready to play — the Color Classic comes with all the standard features we've come to expect in a Mac. In addition to the high-density 1.44-megabyte floppy drive, there are two serial ports for modems, printers, and networks; two ADB (Apple Desktop Bus) ports for keyboard and mouse; a SCSI (*small-computer-systems interface*) port for connecting up to six external devices, such as hard-disk and CD-ROM drives, printers, and scanners; and a monaural sound output jack for headphones or speakers.

Other notable features include an 8-bit monaural microphone built in above the display; sound and contrast buttons on the front of the unit, which work in conjunction with related control panels; an on/off switch on the keyboard; and a screen that saves energy by turning itself off after a user-defined period of inactivity.

Without a doubt, the Color Classic's most exciting feature is its built-in monitor, which has the same 9-inch diagonal

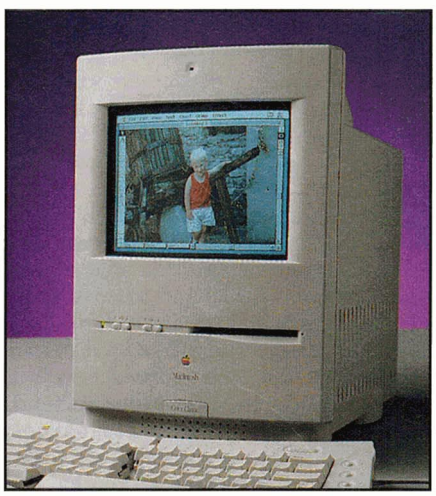
viewing area as the monochrome Classic II, but can show as much information as a 12-inch Apple RGB Display: 512 by 384 pixels. If you need more than the standard 256 colors or levels of gray, you can add a $99 video-memory module that can deliver up to 32,768 colors.

The display is vibrant. Even small text is crisp and clear because "hey, it's a Sony." One drawback: What you see isn't exactly what you get. A 72-point font is 1 inch tall on paper, but appears slightly smaller when displayed on the 76-dots-per-inch Color Classic. For a larger external monitor, you can purchase a video card that fits into the Color Classic's LC processor-direct slot.

Color Classic slot? Yes, Apple lets you expand this Classic, like the LC II — just pop off the back panel and out slides the logic board (though Apple still recommends you enlist the services of a dealer). To complement the standard 4 megabytes of on-board memory, insert a couple of SIMMs (*single in-line memory modules*) into the two 30-pin sockets. You can add 1-, 2-, or 4-megabyte SIMMs, but the Color Classic can't recognize more than 10 megabytes. That's a holdover LC II limitation, as is the 16-bit data path, which acts as a bottleneck for the 32-bit, 16-megahertz 68030 processor. Apple claims, and our initial tests bear this out, that the Color Classic performs the same as the LC II. For faster calculations in applications such as spreadsheets, purchase an optional math coprocessor.

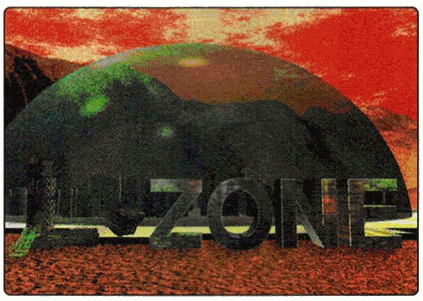
Apple's hit the ground running in 1993, with more color, more expandability, more options, more speed, more features — giving home, school, and small-business consumers the choices and the power they've been asking for.

Owen W. Linzmayer
San Francisco, CA



The Color Classic's 80-megabyte hard drive, color display, and $1400 price tag make it the perfect consumer computer.

L-ZONE



★ ★ ★ ★ ★

East/West Communications
1631 Woods Drive
Los Angeles, CA 90069
(213) 848-8436

- discovery entertainment on CD-ROM
- 4MB Macintosh LC and up
- requires System 6.07 or later
- System 7 compatible
- requires CD-ROM drive
- requires QuickTime
- $99

A small ship sails through space, past moons and down into the thick atmosphere of a strange planet. As the ship comes in for a landing, the clouds part to reveal a large, domed city. You're standing outside the dome with no clue as to where you are, what you're supposed to do, or how to do it. You've entered L-Zone.

With little documentation to peruse beyond a listing of system requirements, a typical first reaction to L-Zone is that it's another adventure game with better-than-average graphics. But as you investigate the many rooms and machines in this elaborate technology facility, you discover that L-Zone is pure fantasy and fun. It isn't really a game — there's no scoring, no lives to save, no fiends to outwit.

DISCOVERING A NEW WORLD

You move through L-Zone's halls and rooms and activate items by pointing and clicking the mouse on various areas of the screen in a trial-and-error fashion. As you move from one location to another or activate L-Zone's machines, the software loads the graphics, sometimes endlessly it seems, from the CD-ROM disc. It makes for slow play, but the quality of the graphics images and a sense of discovery help you overlook the technology barrier.

Starting off on your trek through L-Zone isn't hard — there isn't anywhere to go but inside the dome, where you find a rich and quirky world filled with machines. At first you move cautiously, thinking that something's going to blast you or explode in your face. Even after it becomes apparent that everything you touch is harmless, there's still the nagging feeling that there must be some goal: that if you don't get somewhere and do something in time the whole dome is going to self-destruct. But as far as we can determine, that's not the case.

L-Zone is an artificial environment fabricated for entertainment and exploration: a CD-ROM-based, animated graphics playground with puzzles and toys of all shapes, sizes, and descriptions. At the most basic level you simply wander about turning things on and off just to see what they do. Some machines play short QuickTime movies of a nearly alien mentality. Some machines make noises; some help you move around the factory-like city; some are amusing.

And some machines . . . well, it's hard to tell sometimes just what they do. Take one of L-Zone's more peculiar tables, for example. When you click on the appropriate buttons, the top vanishes and a machine with two new buttons appears. A horizontal cylinder starts to spin, and two metal fingers extend behind it. Press one button, and one finger touches the cylinder and travels sideways as a tune plays. Press the other button, and the finger lifts, the cylinder reverses direction, the second finger descends, and the tune plays backwards.

Almost everything in the L-Zone dome does something, so activating each machine is like a little puzzle. Most are easy to turn on and off, but some require more trial-and-error. Everything is beautifully illustrated, though. The graphics images in L-Zone are exceptional, which makes wandering all the more fun. The music, on the other hand, is less than spectacular — mostly beeps, boops, hisses, pops, and the occasional simple melody.

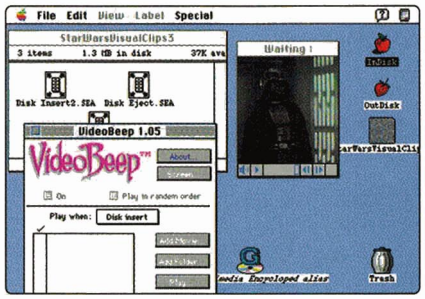
NO LUDDITES NEED APPLY

While it's tempting to say that L-Zone is an adult version of popular discovery games such as Manhole and Cosmic Osmo, comparisons are limited. It's true that games in this genre are all interesting, nonviolent exploration environments — but to really get into L-Zone, you have to love technology and gadgetry. The product is suitable for kids of any age, although some machines may be too complicated for kids under 6 years old.

Overall, while L-Zone is seemingly pointless, it does have great graphics, animation, imagination, and charm. Plus it has that "just one more" quality that will keep you intrigued for hours.

Guy Wright
Editor in Chief, *Laser Event*
Peterborough, NH

STAR WARS VISUALCLIPS



★ ★ ★ ★

Sound Source Unlimited
2985 East Hillcrest Drive
Suite A
Westlake Village, CA 91362
(805) 494-9996

- system enhancement
- 4MB 68020 Macintosh
- requires System 6.07 or later
- System 7 compatible
- requires 256-color monitor (minimum)
- requires hard-disk drive
- requires QuickTime (v1.5 included)
- $89.95

Looking to wake up your Mac desktop — and maybe the rest of the office? Try the sound of yelling wookies, babbling droids, and planets being blown to smithereens. Star Wars VisualClips is an amusing and innovative collection of QuickTime movies, which, when combined with the supplied **VideoBeep** utility, lets you replace one or all your Macintosh "system events" with motion-video sequences. These QuickTime files are digitized sequences from the original *Star Wars* movie — including each of the main characters, as well as space battles, lots of aliens, the famous bar scene, the Death Star, and, of course, the Really Bad Guy in the dark mask.

THE BASICS

VisualClips comes on a dozen high-density disks, with each clip compressed on floppy — in all more than 16 megabytes of data, which represents a large amount of storage space for the average hard-disk user. Luckily, if you don't have that much room available, you can always opt to install only the clips that interest you.

The movies themselves come in a wide variety of sizes. Some are regular postage-stamp, garden-variety QuickTime sequences, while others are quite a bit bigger and formatted in the letterbox aspect ratio of the original movie. Playback speed is satisfactory on a Quadra, but the manual states that all clips are designed to work well on all Macs from the LC up. The clips' graphics quality is good, but you need to have at least a 256-color display to use them.

Installation isn't difficult, but it's tedious. It basically amounts to dragging one folder to your hard disk from the main floppy disk, then clicking on each self-extracting file one by one (from the floppies) and installing it on your hard disk. It takes some time (about 20 minutes on my Quadra). This may not be a high-priced application like Microsoft Word or Premiere 2.0, but I expected a standard (read *easy*) installation procedure.

THIS IS WHERE THE FUN STARTS

Once you've installed VisualClips, you can apply the default settings or use VideoBeep to customize the program. With this control-panel utility you can select any of the supplied QuickTime movies (there are more than 60) to associate with any system event. And you're not limited to a single QuickTime movie for each event, either. You can use none, one, two, ten, or even all the clips with each event — the choice is yours. You can play them in the sequence in which they appear in the VideoBeep list, or in random order. Positioning is fully controllable as well — you can select the screen location explicitly or opt for a random location. You also can control the volume, an important consideration for office workers.

If you select the proper clips for each event, they even make sense. For example, one of my favorites is to replace the normal shutdown message with 3CPO saying, *"If you don't need me right now I'll shut down."* Another appropriate replacement is to use R2D2's disk-insertion clip instead of the standard Macintosh event.

If you get carried away, though, and just stick a bunch of movies onto each event, there really won't be any rhyme or reason to the association. Do yourself a favor and select them judiciously.

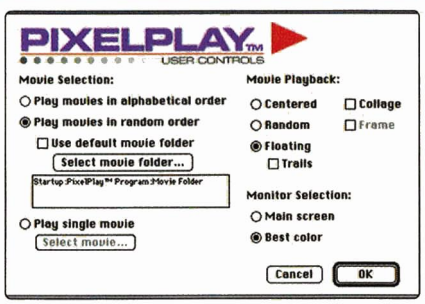
THE OUTER LIMITS

The only problem I encountered occurred when I installed Berkeley Systems' After Dark Star Trek screen blanker: The QuickTime movie that appears on the hour and the half hour sometimes left an image on the After Dark screen. The solution was simple: I just used VideoBeep to disable the movie for those events. (My guess is that the blanker and the video clips are from parallel universes.)

All in all, VisualClips is a neat package — for now anyway. Say you're working with a word processor, trying to type past the end of your document, and you get a movie instead of a beep — it's cute the first 25 times, but it starts to get old after that. I suppose I'll end up disabling it eventually, but then I wouldn't get the satisfaction of watching people's expressions when Obi-Wan pops up and says, "*Hello there!*"

Lou Wallace
Editor in Chief, *Desktop Video World*
Peterborough, NH

PIXELPLAY



★ ★ ★

Silicon Sports, Inc.
324 High Street
Palo Alto, CA 94301-1042
(800) 243-2972
(415) 327-7900
(415) 327-7962 fax

- system utility
- QuickTime-compatible Macintosh
- requires 2MB under System 6.0.7
- requires 4MB under System 7
- screen saving requires Berkeley Systems' After Dark 2.0
- $49.95

Silicon Sports, a firm most widely known for funky mouse pads and wrist rests, released recently its first software product, PixelPlay — a QuickTime-based "Digital Movie Playground" application and After Dark screen-saver module, complete with movie clips from the sports-action film archives of Warren Miller Entertainment.

Setting up the software is a bit tedious, because although it comes on six disks, there's no *Installer* utility, so you have to copy everything manually — the PixelPlay application, After Dark module, *MovieTyper* utility, and ten QuickTime movies — to your hard disk. All told, the full complement of files requires a little over

6 megabytes of disk space, but you can pare this down to a few hundred kilobytes if all you want are the PixelPlay programs, not the QuickTime movies.

QUICK CLIPS

The stand-alone PixelPlay application is basically a glorified QuickTime player with a handful of special effects. With the *User Controls* dialog box, you can view a single movie or cycle through an entire folder of movies either alphabetically or in random order. Users with multiple monitors will appreciate the option of playing movies on the main screen or the one with the best color capabilities. There are options for playing movies in frames and creating collages by leaving the last frame of each movie briefly on screen. You even can specify the location of the movies: *centered*, *random*, or *floating*. This last feature is a nice touch — the current QuickTime clip glides gently around the screen at a speed you determine. It's unfortunate, though, that anything but the most simplistic clips begin skipping frames as the Mac tries desperately to process the QuickTime animation and floating motion. It's a problem even on a machine as powerful as the Mac IIci.

Despite the impression you may get reading the package and advertisements, the PixelPlay application isn't a screen saver. If you want to play movies after a user-specified period of inactivity, you have to use PixelPlay's *4AD* module in conjunction with Berkeley Systems' **After Dark** control panel ($49.95) or its derivative, the recently released **Star Trek Screen Saver** ($59.95). PixelPlay's *4AD* module includes all the same features as the stand-alone application, but you access it via the After Dark control panel.

If it's a QuickTime screen saver you want, a cheaper alternative is **Movies 'til Dawn**, a new After Dark module from Berkeley Systems. (It currently works with QuickTime 1.0 only, although an updated module that works with version 1.5 should be available by press time.)

Movies 'til Dawn doesn't offer PixelPlay's floating, collage, or frame features, but then again, it's a good bargain as one of ten modules included in Erfert Fenton's book/disk combo, ***Art of Darkness*** ($19.95 from Berkeley Systems, 2095 Rose Street, Berkeley, CA 94709-1963, 800-877-5535, 510-540-5535, or Peachpit Press, 2414 6th Street, Berkeley, CA 94710-2414, 800-283-9444, 510-548-4393).

NOT A WINNER

Given that the PixelPlay application is little more than a beefed-up QuickTime player and the After Dark module has a less-expensive alternative, the most compelling reasons for buying PixelPlay are the ten Warren Miller film clips. The skiing, snowboarding, and windsurfing scenes are exciting and are nicely digitized in 24-bit color, so they look best when the *Monitors* control panel is set to display millions of colors. The clips also look fine in 8-bit video mode, thanks to QuickTime's automatic dithering routines, but the animations are unacceptably jumpy at lower resolutions.

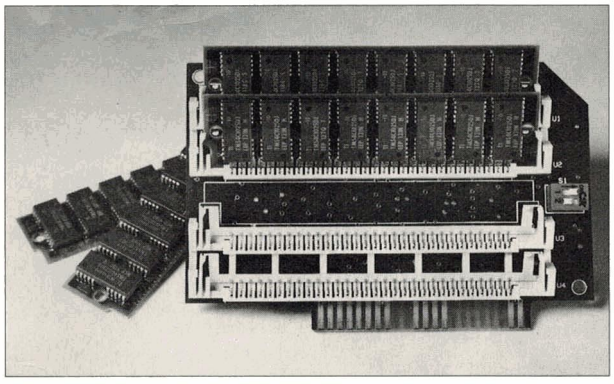
The ten clips provided comprise only 100 seconds of action, so it's easy to grow tired of them after just a few viewings. Silicon Sports plans to release a variety of QuickTime movie disk sets for use with PixelPlay, ranging from nature and sports to humor and cartoons. A CD-ROM collection of movies is also in the works, as is a Windows version of PixelPlay. You can cut clips from other QuickTime movies for use with PixelPlay, but the documentation doesn't explain how.

Unless you're desperate for the ten Warren Miller clips included with PixelPlay, I recommend picking up a copy of Art of Darkness/Movies 'til Dawn instead and using your leftover funds to buy a collection of QuickTime animations you really want.

Owen W. Linzmayer
San Francisco, CA

IIgs Super Ram

4 Meg Memory Card for the Apple IIgs Computer



The *IIgs Super Ram* uses today's popular SIMM modules. Easy to upgrade at any time!

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Looking for the right Macintosh software or hardware? Here's a quick summary of some of the 22-plus Mac products we looked at in depth over the last year. Although the product version, price, and ordering information are up to date, we've indicated those cases in which we reviewed an earlier version of the product.

Applications

Bank Street Writer ★★★

$162.45; school, $129.95. Scholastic Software Inc., 2931 East McCarty Street, Jefferson City, MO 65102, orders: (800) 541-5513; (314) 636-5271. Combination word processor/desktop publisher. Good for teaching youngsters, but too limited to be a serious WP solution. (7/92, p. 54)

Microsoft Works 3.0 ★★★★

$249; $79 upgrade. Microsoft Corp., 1 Microsoft Way, Redmond, WA 98052-6399, (800) 426-9400, (206) 882-8080, fax: (206) 882-8101. Integrated word processor, spreadsheet, database manager, telecommunications software, and drawing module. It's not state of the art, but it's just right for most day-to-day computing needs. (2/93, p. 26)

The Miracle Piano Teaching System ★★★★1/2

$419.95. The Software Toolworks, 60 Leveroni Court, Novato, CA 94949, (415) 883-3000. Piano-instruction program with MIDI keyboard. Revolutionary, but the miracle happens only if you can stick with the practice schedule. (12/92, p. 24)

Education

Gold of the Americas ★★★★

$49.95. Strategic Studies Group, 8348 Monticello Drive, Pensacola, FL 32514, (904) 494-9373; fax: (904) 494-9374. Historical simulation of New World colonial expansion. Not particularly accurate, but plenty of fun nonetheless. (6/92, p. 30)

Headline Harry ★★★

$59.95. Davidson & Associates Inc., P.O. Box 2961, Torrance, CA 90509, (800) 556-6141. U.S. history (1950 to 1990) and geography game. Good idea, but flawed execution. Features a few QuickTime movies — but too few. (11/92, p. 54)

Just Grandma and Me ★★★1/2

$49.95. Broderbund Software, 500 Redwood Boulevard, Novato, CA 94948-6121, (415) 382-4400. Interactive story on CD-ROM. Top-shelf electronic storybook for kids. Great graphics, great sound, engaging characters. (8/92, p. 53)

MacFrog 1.4 ★★★

$35 b/w; $39 color; site license $129 b/w; $159 color. Intellimation, P.O. Box 1530, Santa Barbara, CA 9316-1530, (800) 3-INTELL, (805) 685-2100. Dissection sim. Won't replace the formaldehyde frog, but could be useful as introduction or post-operative refresher. (5/92, p. 52)

Spelunx and the Caves of Mr. Seudo ★★★★

$49.95. Broderbund Software, 500 Redwood Boulevard, Novato, CA, 94948-6121, (415) 382-4400. Non-competitive fantasy exploration for the young at heart. HyperCard based. (8/92, p. 26)

Stickybear's Reading Room ★★★★1/2

$79.95. Optimum Resource Inc., 10 Station Place, Norfolk, CT 06058, (800) 327-1473. Bilingual reading-skills builder. Ever-lovable Stickybear helps children and adults find words, match words with pictures, and build sentences in English or Spanish.(1/93, p. 20)

Super Solvers Outnumbered ★★★1/2

$59.95 consumer; $79.95 school (includes binder of classroom activities); lab $169.95. The Learning Company, 6493 Kaiser Drive, Fremont, CA 94555, (800) 852-2255. Math and problem-solving skill builder. Colorful and fun instruction for grade-school mathematicians. (4/92, p. 54)

Time Treks ★★

$59.95 consumer; $89.95 school. Davidson & Associates Inc., P.O. Box 2961, Torrance, CA 90509, (800) 556-6141. History game. HyperCard-based attempt at open-ended, discovery-based learning. Falls short in several categories, including historical accuracy. (10/92, p. 28)

Wordtris ★★★

$49.95. Spectrum HoloByte, 2490 Mariner Square Loop, Alameda, CA 94501, orders: (800) 695-GAME; (510) 522-3584. Arcade game: word spelling with falling letters. Not as addictive as the original. Success often depends more on luck than word acumen. (6/92, p. 54)

Games

Lemmings 1.4.2 ★★★★

$59.99. Psygnosis Ltd., St Mary's Court, Brookline, MA 02146, (800) 438-7794, (617) 731-3553, fax: (617) 731-8379. Arcade/strategy game — you save those mindless critters from dying like their namesakes. (2/93, p. 23)

PGA Tour Golf ★★★★

$59.95. Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404, (415) 571-7171. Golf simulation. Fun and playable, lets you feel like a pro. (4/92, p. 26)

Spectre ★★★★

$59.95 single-user edition, $99.95 three-user LAN pack. Velocity Development Corporation, 2161 Union Street, San Francisco, CA 94123, (415) 776-8000. 3D arcade battle game. Fast-paced action in an electronic world. Blast your buddies into cyberspace. (5/92, p. 54)

Utilities

MacPalette II 2.2 ★★★★

$69; $249 AppleTalk version. Microspot, 20421 Stevens Creek Boulevard, Cupertino, CA 95014, (800) 622-7568; (408) 253-2000. Color printer driver. Essential for color printing on ImageWriter II from your color Mac. (1/93, p. 22)

Collections

MacGlobe ★★★★

$49.95. Broderbund Software, 500 Redwood Blvd., Novato, CA 94948-6121, (415) 382-4400. Electronic atlas with maps and national data. You'll have the whole world in your hands with this product, even though the world keeps changing. (3/92, p. 24)

MacUSA ★★★★

$49.95. Broderbund Software, 500 Redwood Blvd., Novato, CA 94948-6121, (415) 382-4400. U.S. geography maps, charts, and information database. High information content and an easy interface make MacUSA both useful and just plain fun. (11/92, p. 58)

USA Geograph ★★★★

$69. MECC, 6160 Summit Drive North, Minneapolis, MN 55430-4003, (800) 685-6322; (612) 569-1549. U.S. geography maps, charts, and information database. Just a shade below its competition, this product isn't quite as flexible, but holds its own in terms of depth and breadth of information. (11/92, p. 58)

Hardware

DeskWriter 550C ★★★★

$1099. Hewlett-Packard, 19310 Pruneridge Avenue, Cupertino, CA 95014, (800) 752-0900. Color ink-jet printer for Macintosh. Affordable, quality color output from an established name in printer technology. (3/92, p. 25)

InFocus 1600LC PC Viewer ★★★★

$2695 1600LC color; $1695 1600GS monochrome. InFocus Systems, 7770 Southwest Mohawk Street, Tualatin, OR 97062, (800) 327-7231; (503) 692-4968. 16-color LCD projection panel. Sometimes you just gotta see the big picture. These color and monochrome displays are reasonably priced solutions to classroom or business presentations. (9/92, p. 52)

Tulin Optical Drive ★★★

$1319 includes one cartridge, $49 each additional cartridge. Tulin Technology, 2156H O'Toole Avenue, San Jose, CA 95131, (408) 432-9057. Rewritable, removable optical storage. Although much slower than a hard-disk drive, 120MB 3.5-inch optical cartridges provide unlimited, virtually indestructable data storage for power users. (1/93, p. 49)

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● WORTH A SECOND LOOK

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Lewisville, NC 27023
(800) 572-4362, (919) 945-9000

- new science-education package on CD-ROM
- 2MB Macintosh
- requires System 6.0.7 or higher
- System 7 requires 4MB for color
- requires 12-inch color or gray-scale monitor
- requires hard-disk drive
- requires Mac-compatible CD-ROM drive
- $289 teacher's edition
- $95 consumer version

"Cell"ebration is a multimedia science package in five lessons on CD-ROM for children aged 5 to 10. It focuses primarily on the structure and functions of the cell, but covers several other concepts, as well.

The software integrates music, natural sounds, high-quality color photographs, video sequences, and digitized children's voices. Students can choose English or Spanish presentation.

While disc activities invite interaction, older children may find the still graphics and limited animation not quite up to today's multimedia standards.

Off-line support materials include a microscope, slides, and a magnifying glass for hands-on experiments, plus a colorful *Student Science Journal* and a teacher's manual.

"Cell"ebration introduces elementary-aged kids to difficult science concepts in a non-intimidating way, but the quality of its presentation is too uneven to merit serious recommendation.

Easy Street

●

Mindplay/Methods & Solutions
3130 North Dodge Blvd.
Tucson, AZ 85716
(800) 221-7911, (602) 322-6365

- new preschool skills package
- 1MB monochrome Macintosh Plus or higher
- 256-color Macintosh requires 2MB
- requires System 6.0.5 or later
- System 7 requires 4MB for color
- hard disk installable but copy protected
- $69.99

This adventure game (a real hit on the Apple II) sends preschoolers on a shopping trip down Easy Street. Children visit several stores to purchase items on a shopping list, while a friendly-but-pesky gorilla named Knuckles runs amicable interference. Kids "win" the game when they return home after rounding up all items on the list.

Easy Street uses colorful click-on graphics icons and high-quality digitized speech to simplify game play. It strengthens early reading, counting, and problem-solving skills, while encouraging kids to match shapes, recognize letters, classify items, and understand money concepts. A *Challenge Upgrade* option lets adults tailor the game's difficulty level to the needs of individual players. This program offers strong educational content disguised as entertainment.

Easy Color Paint

●

MECC
6160 Summit Drive North
Minneapolis, MN 55430-4003
(800) 685-6322, (612) 569-1500

- paint-program upgrade
- 1MB Mac Plus or higher for monochrome
- monochrome requires System 6.0.2 or later
- color requires 2MB
- color requires System 6.0.5 or later
- System 7 requires 4MB for color
- $59.95

Short on price, but tall on features, this paint application is equally at home on black-and-white Macs (Mac Plus, SE, or Classic) and Macs in 256-color mode. You'll find several creativity tools, including gradient fills, "wacky colors" (the brush paints a series of colors in one sweep), a smoothing command to remove the "jaggies" from the edges of your brush stroke, plus a "fat bits" editor for pixel-by-pixel changes. In addition, the software also includes horizontal and vertical flip options for selected portions of the canvas, multiple brush shapes and erasers, and text options that let you mix fonts, styles, and sizes in a single block.

True, the application offers only one level of *Undo* and permits only one open document on the desktop. Nevertheless, if you need a paint package simple enough for your little ones yet versatile enough to satisfy that budding Picasso, this one can't be beat.

Expert Astronomer

●

Expert Software, Inc.
800 Douglas Entrance
North Tower #355
Coral Gables, FL 33134-3128
(800) 759-2562, (305) 567-9990

- new astronomy primer
- 2MB Macintosh Plus or higher
- requires System 6.0.4 or later
- System 7 requires 4MB
- System 6.0.8 or earlier requires 2-bit QuickDraw for color
- $49.95

If star gazing is your hobby, let Expert Astronomer be your sky-watching guide. This inexpensive package is designed for both beginners and more-experienced hobbyists (but not professionals). It lets you view stars, planets, and constellations as they appear from any location (your choice of city or planet). Several "ready-made" views let you track significant events through time — so that you can watch the 1991 solar eclipse over Hawaii, for example, or comets moving through the solar system.

Be prepared for slow screen redraws (even on 68030 machines) and only one open file on the desktop at a time. Nevertheless, if you want to boldly go where few have gone before, Expert Astronomy is your ticket to the stars — and you won't even have to pack a toothbrush or stand in line at the reservation desk.

Hagar the Polyglot

●

Gessler Publishing Co.
55 West 13th St.
5th Floor
New York, NY 10011
(212) 627-0099

- new French instructional software
- 1MB Mac Plus or higher
- System 7 requires 2MB
- requires HyperCard 1.2.2 or later
- Spanish version available
- $69.95

Hagar the Terrible — the pompous Viking of European comic-book fame — is now the star of Gessler Publishing Company's series of cartoon-based HyperCard stacks that turn your Macintosh into a French-language tutor. The program teaches reading and conversational French to intermediate-level students and is divided into four *assauts*, which are groups of stacks ranked by difficulty.

Simple button controls let kids navigate through stacks and read the humorous cartoons. An English option provides colloquial translations of all comic strips. While Hagar isn't intended as comprehensive French instruction, it does make learning and reviewing vocabulary an enjoyable experience. One improvement, however, would be a built-in dictionary or glossary.

Learning Styles Inventory for Macintosh HyperCard

Educational Activities
P.O. Box 392
Freeport, NY 11520
(800) 645-3739, (516) 223-4666

- new version of diagnostics package
- 1MB Mac Plus or higher
- System 7 requires 2MB
- requires HyperCard 1.2.2 or later
- $98

"Different strokes for different folks" rings just as true in the classroom as it does outside academia. That's why a product such as Learning Styles Inventory is so important. Geared to students in junior- and senior-high school, this Mac HyperCard stack is designed to assess a child's preferred learning style.

The student begins by reading and commenting on 45 statements; the program then analyzes responses to determine a student's optimum learning mode. It's unfortunate, though, that statements don't change from grade level to grade level. Moreover, if children have difficulty reading, they may have difficulty answering the questions.

A teacher's menu lets educators print student data, compare one student with the rest of the class, and view a class composite graph. The accompanying manual provides a list of suggested techniques to accommodate various learning styles. Learning Styles Inventory can serve as a useful diagnostic tool if teachers use it in combination with other evaluation methods.

The Mark Twain Sampler

Humanities Software
408 Columbia St.
Suite 222
P.O. Box 950
Hood River, OR 97031
(800) 245-6737

- new process-writing program
- 1MB Mac Plus or higher
- System 7 requires 4MB
- requires text-based word processor
- $89

The Mark Twain Sampler is an activity-based program that draws on several of the author's published works to develop writing skills in high-school students. The package includes ten disk-based activities, which students complete using a conventional Macintosh word processor such as MacWrite, Microsoft Word, Microsoft Works, WordPerfect, Word Weaver, or WriteNow.

The software comes with several handouts, worksheets, and a printed copy of *The World of Mark Twain* (Cobblestone, May 1984). Youngsters analyze Twain's writing techniques, then apply these methods to their own work as they compose tall tales, study the meaning and purpose of anecdotes, and examine Twain's use of exaggeration for comic effect.

The Mark Twain Sampler is a wonderful way to introduce students to one of America's most-popular humorists while simultaneously teaching them the power of the written word.

MyLabelDesigner

MySoftware Co.
1259 El Camino Real
Suite 167
Menlo Park, CA 94025-4298
(415) 325-9372

- new label utility
- 512K Mac Plus or higher
- requires System 4.1 or later
- System 7 requires 2MB
- $24.95

Banish those label-making blues. With MyLabelDesigner, you can quickly create one or more copies of perfect single-label designs.

This product supports more than 100 standard-sized printouts (including all Avery labels), plus any custom design size of your own choosing. It's an inexpensive utility, ideal for a whole variety of labels — return-address, file-folder, videotape, and disk labels alike.

MyLabelDesigner also handles four types of cards (including Rolodex), five envelope sizes, and four name-tag sizes.

You even can generate raffle tickets — the software lets you print labels with consecutive numbers. In addition, any label can include an EPS, PICT, or PICT2 graphics image.

And because MyLabelDesigner makes it easy to print a small list of unique same-size labels at one time, you can use an entire sheet without waste. Who says good software has to be expensive?

Safari Search

Wings for Learning/
Sunburst Communications
1600 Green Hills Road
Scotts Valley, CA 95067-0002
(800) 321-7511

- higher-order thinking games
- 1MB Macintosh
- requires System 6.0.7 or later
- System 7 requires 2MB
- hard disk recommended
- $79

Safari Search consists of 12 "hunt and peek" games — all with colorful graphics images, music, and sound effects.

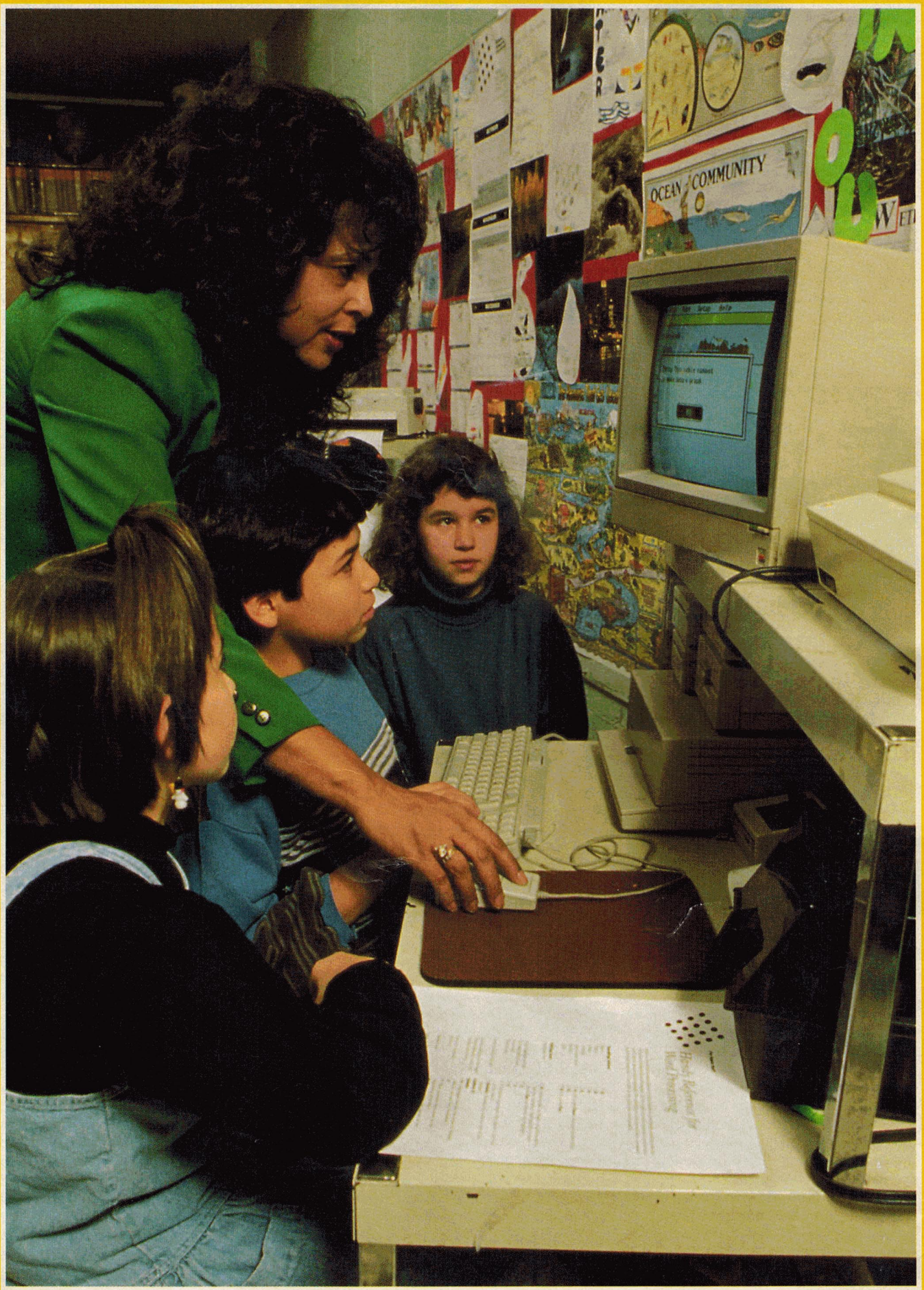
Missions send kids through a 5-by-5 grid of 25 boxes in search of hidden animals. The first six activities require players to find one animal; the second six involve finding two.

Kids will have to tap their creative-thinking skills in this puzzle game — challengers receive clues to help them zoom in on a hidden target, but they must devise their own search strategies.

The goal is to complete a search successfully in the fewest number of moves possible. Game play ranges from simple guessing to complex tactical planning based on inference (hunch) and feedback.

Adults will appreciate the program's emphasis on treating knowledge as a web of connected bits of information, not a collection of discrete facts — but kids will play again and again simply because the activities are so much fun.

— Carol S. Holzberg, Ph.D.
Contributing Editor


OCEAN COMMUNITY

Real Science

THE NATIONAL GEOGRAPHIC KIDS NETWORK AT WORK

Since 1988, students all over the world have been studying today's most-pressing environmental problems.

By BONNIE L. BRACEY

During each Kids Network unit, students collect data, which they send to their teammates in the form of charts and letters. They use the computer and a modem to telecommunicate with other students across the country and around the world.

Photo by Richard Nowitz, National Geographic Society.

Say the word *scientist*, and most people picture Einstein — or maybe Mr. Wizard — in a long white lab coat. But say the word to educators, parents, and children participating in the National Geographic Kids Network, and they'll think of an average elementary-school student clad in jeans and sneakers.

Everybody knows children are curious. And what better foundation for scientific thought than an inquisitive mind? Children are passionately eager to make as much sense as they can of the world around them — and they're good at it. They do naturally in their playtime what scientists work at for years: create knowledge out of experience. Thanks to the National Geographic Kids Network — a telecommunications-based science and geography program offering exciting hands-on experiences and classroom lessons — educators can now tap into and guide students' curiosity.

HANDS-ON

In any number of elementary schools, science is a forgotten subject. Many educators won't teach hands-on science because they lack the planning time or the training — and because supplies are hard to find, and experiments messy and expensive. The feeling is that it's just too much additional work — too much trouble to try to introduce a subject that in the past hasn't been tested much in elementary schools anyway. Science simply isn't taught with the same enthusiasm as reading, writing, and arithmetic, if at all.

Students measure and compare chlorine levels in various solutions for the Kids Network "What's in Our Water?" unit. Photo by Richard Nowitz, National Geographic Society.

TIPS FOR TEACHING KIDS NETWORK

• **BE PREPARED.** The Teacher's Guide includes lesson plans and background info on each unit's topic, but you'll need to have some science experience for all Kids Network kits above the Hello! level. In addition, if you're intimidated by computers, you'll be intimidated by this program. Schools often give teachers the right materials and equipment, but not the training and the time to practice using them. Kids Network takes time to learn and some degree of dedication to use, and with the interruptions that occur in many classrooms, the commitment it takes to complete these projects might be an excuse not to do the program. Encourage your school to provide workshops or instruction for teachers who have little previous training in hands-on science, and to set aside time for teachers to get acquainted with the software and the lab materials.

• **READ THE KIDS NETWORK BROCHURE AND TALK TO A REPRESENTATIVE TO MAKE SURE YOUR EQUIPMENT IS COMPATIBLE.** For example, you'll need an outside phone line with modular jack, no call waiting, no voice operator. A dedicated line provides maximum effectiveness.

• **READ THE TELECOMMUNICATIONS DOCUMENTATION.** If you've haven't worked with computers much before, logging on to the Kids Network may seem a little tricky at first. The program's instructions are pretty clear, though — just take it slowly. Logging on is like magic for people who have never telecommunicated before, because there are no endless strings of codes and prompts.

• **USE THE HOT LINE.** A software manual takes you through the telecomm process, but your tuition fee also entitles you to phone support from the Kids Network staff. They'll talk you step by step through any trouble. (Move the phone next to your computer so that you can see the screen as you talk to them.) The hot line is open from 8 a.m. to 6 p.m. Eastern time (before and after school in most time zones). In addition, the staff has developed an excellent training tape for teachers that'll relieve those first-time jitters.

• **INVOLVE YOUR STUDENTS' PARENTS.** Think about hosting a parent-education night to introduce families to this new type of education. I also send a sample lesson home in a parent newsletter so they'll feel included in their kids' activities. I ask their advice; I suggest field trips and outside reading and ask them to look out for periodicals, maps, or anything other outside material of interest to the program. Telecommunications technology brings the classroom into the modern world; I've found that parents see it as a meaningful and special learning activity and may be motivated to provide additional resources.

• **TALK TO YOUR COMMUNITY.** It's easy for kids and teachers to produce a newspaper article or local-television broadcast to show the public what the students have learned through Kids Network. In addition, local businesses such as power companies offer free reading material and tours of facilities. They may be able to provide extra programs, such as energy projects, furnished free, after your Kids Network unit is over.

• **STAY ON LINE.** After you complete the Kids Network program, students can continue working with telecommunications if you subscribe to America Online, an inexpensive and easy-to-use information service offering resources, public-domain software, e-mail, and topical forums.

I love science and have participated in a number of summer research projects, including programs at the Virginia Science Museum in Richmond and Earthwatch's Prehistoric Man of Mallorca in Spain. But as a teacher, even I found it hard to convey that enthusiasm to my students. Then in the summer of 1988 I learned about a new way to teach elementary-school science. The National Geographic Society was starting a project called Kids Network, and our school was going to be a part of the pilot program.

Using the Kids Network software and supplies (Apple IIGS, Macintosh, and IBM PC versions are now available), students in grades 4 through 6 conduct research in areas of critical scientific and social concern, such as nutrition and acid rain. They record and organize their results on computer and share them via modem with "research teammates" in schools across the United States and Canada, and in other countries around the world. As part of a true research team, students participate in ongoing projects and learn the scientific method firsthand: identifying a problem, gathering data, formulating a hypothesis, performing experiments, interpreting results, and finally drawing a conclusion. In short, Kids Network gets students excited about science.

EXPLORING THE WORLD AROUND US

National Geographic Kids Network is the most flexible curriculum I've ever used. It brings "real science" to classrooms and gives students a taste of the future. Topics are realistic and have been selected carefully to fit students' interests and current concerns — the space program and the environmental movement, to give just two examples.

An easy-to-use interface lets kids and teachers alike get down to work with a minimum of fuss. Five basic icons on the main screen serve as a gateway to the software tools contained in each unit: Select the globe icon to locate teammates' communities and to display map data; the letters icon to write to teammates; the graph icon to create charts; the notebook to record findings; and the telephone icon to send or receive letters and data via modem.

Real Science

National Geographic Kids Network currently offers seven units:

• **Hello!** serves as a gentle introduction to research methods, telecommunications, and computer tools, including word processing, graphing, mapping, and data entry. Kids learn to use maps and special Network software to locate their research teammates in communities across the U.S. and around the world, then compose a letter describing their own community and send it via modem to their new network friends. They also collect class data on their pets and learn how to display that information in a graph and to share it with teammates as they practice the art of investigation, cooperative learning, and critical thinking. Whether you use *Hello!* with gifted students, in a regular class, or with ESL (English as a second language) students, this program is always a favorite — even with kids who haven't used a computer before. As students dive into the subject at hand, they simultaneously become comfortable with computers. *Hello!* isn't an add on or a curriculum enrichment — it *is* the curriculum.

• **Acid Rain** teaches kids how to read the pH scale and how to use pH paper (included in the kit) to measure acidity. Students design and build their own rain collectors and measure the acidity of local rainwater. Classes compare their data with measurements collected by their research teammates in different parts of the world and, with the help of the project's scientist, look for geographic patterns.

• **Too Much Trash?** examines the environmental impact of refuse and teaches data analysis and math skills. Students design a class trash-collection project and sort and weigh the material over a period of days, calculating the average weight thrown away per student. Kids graph their findings, share the data with their research teammates, and analyze the information with the help of the unit scientist. Students then develop a plan to reduce, reuse, and recycle the trash, and evaluate its effectiveness. Kids also study the environmental effects of various waste-disposal methods used around the world.

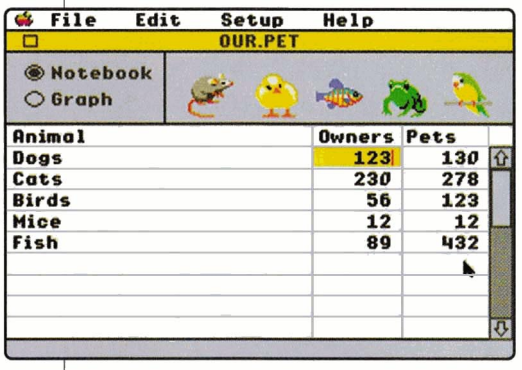
• **What's in Our Water?** teaches kids about watersheds and shows them how to find out the source of their school's tap water. They explore how substances get into water and determine which ones may be considered pollutants. Using household supplies plus material provided in the unit kit, students explore the way chlorine retards the growth of microorganisms in water. They also learn how to test tap water for nitrate level and communicate their data to their research teammates. With the assistance of the unit scientist, students analyze teammates' data, develop a hypothetical water policy for two countries, and analyze the international implications of water pollution.

• **Weather in Action** lets kids explore local events such as storms and floods from a new perspective. They learn that weather is made up of a variety of elements: temperature, wind, air pressure, humidity (including precipitation and cloud formations). The class sets up a weather-observation station, gathers daily temperature readings (thermometers are included in the kit), and observes sky conditions. Sharing their data with their research teammates, kids learn how weather varies and how people's lives are affected by weather conditions.

• **What Are We Eating?** shows kids how to test a variety of foods (including their own lunches) for nutrient content. (Materials are included in the kit.) With the help of the unit scientist, they share their data with their research teammates and analyze their findings. Students learn how diet varies around the world, that the same nutrients are present in many different foods, and the way diet and culture are interrelated.

• **Solar Energy** shows students how to build solar collectors and measure solar-radiation levels. (A radiometer and thermometers are included in the kit.) With the assistance of the unit scientist, they share data with their teammates on the network and examine geographic differences in solar-radiation levels. The class also designs and builds a solar oven or other device.

Each Kids Network unit is on line three times year, for eight weeks at a time (see the accompanying sidebar for the 1993-94 schedule), with the first two weeks reserved for teacher prepartion. Kits include unit software and sample files (word processing, charting, and so on, depending on the unit goals), 30 full-color student booklets with lessons, telecommunications documentation, a teacher's guide, wall maps, activity sheets, and appropriate lab supplies. A separate "tuition and telecommunications" fee includes access to the network (toll-free within the United States), 120 minutes of on-line time for the duration of the unit, assignment to a research team, and a building-level site license. (The first time you participate, you'll need to order the unit kit plus tuition/telecommunications; if you teach that particular unit again, you'll pay only the tuition/telecommunications fee again, and reorder any supplies as needed.) A special Kids Network unit calendar serves as a road map for your class' telecommunications activities — post it near your computer, so that everyone can see at a glance when project data and other documents are due.



National Geographic Kids Network brings "real science" into the classroom. Topics are selected carefully to fit students' interests and current social concerns.

If computers are scarce in your classroom, students can use this program in cooperative learning groups. With the Mac and GS versions, kids communicate strictly with other schools; only in the IBM version of the program are kids' computers linked in a local-area network.

The neat thing about Kids Network is that youngsters get to communicate *directly* with students in other schools. (All

communication is in English, and the schools themselves set up a compatible schedule.) It's quite a commitment, though — each school is responsible for sending data to all the others in its group.

The National Geographic Society keeps a central file of all results, but that's not what the students use — the kids use the findings they collect themselves and the data received from other schools. Participating researchers, such as Gail S. Ludwig, associate professor of geography at the University of Missouri, check the NGS database regularly for scientific accuracy and any unusual or surprising results.

ACROSS THE SPECTRUM

Many educators today are trying to implement the "whole language" philosophy of teaching and learning. They believe that classroom curricula can utilize the natural ways children learn outside school. The prevailing assortment of workbooks, basal readers, and spelling and language texts are replaced by more-interactive materials that prompt students to think, observe, and question. Classroom teaching revolves around reading and writing, and taking risks to try to use that reading and writing, focusing on meaning.

National Geographic Kids Network is something like a whole-language approach to science. It encourages children to do research, ask questions, and communicate with other students around the world. By combining science, geography, math, statistics, writing, reading, mapping, and graphing, Kids Network takes elementary-school science to a higher, more integrated level. These links smoothly blend traditional teaching methods and information sources into an inventive, student-centered curriculum. The teacher takes on a new, and maybe unfamiliar, role. As children dive into each unit, the teacher becomes not a lecturer, but a facilitator of knowledge — assisting only when necessary, managing materials, observing student learning.

Take the *Hello!* module, for example. One activity in this introductory unit teaches students to use a word processor and to compose various types of letters — to businesses, to other kids, to teammates around the world. Some kids may be intimidated at first. But many have access to computers at home and welcome a chance to share what they know. In my classes, students gather in groups to try their ideas on paper, then we complete the final letter together — all eyes peeled for mistakes — and transmit it via modem. Kids learn the importance of compiling information, analyzing it, and correcting it for a final draft.

One lesson involves writing a letter to the class' network teammates describing the history and culture of the students' community — truly a cross-disciplinary assignment. For this one, I enlist the aid of the school librarian to help teach students research skills. Kids also travel to various neighborhoods on foot or on the bus; they learn to use county and city maps; and they pore over information gleaned from the Chamber of Commerce and local real-estate agents.

Your community's historical society and local museums may be able to send reprsentatives to speak to the class and to share artifacts illustrating the history of the area. I've found that students new to the community learn a lot from this activity, but also that even students who have lived in the area a long time may never have had to think about what their community means to them before.

Another *Hello!* lesson asks kids to describe their pets. Children learn that an unusual pet for one student is ordinary for another — my students were excited to discover that some children keep peacocks and iguanas. The program even lets students graph the results of their pet search. It's an exciting activity that can really tap into kids' imaginations, as "The Case of the 9999 Monkeys" proves. We couldn't figure how any class could have such a large collection of pets, but before we found out it was a typing error, we concocted all kinds of explanations. It turned out that the monkeys were really *sea monkeys* (brine shrimp), and the class inserting the data had omitted part of the animal's name accidentally. But we had just been on line with a class in Africa — we were absolutely sure those kids meant monkeys, because their school was situated at the edge of a huge game reserve. We wrote stories about it and gave "The Case of the 9999 Monkeys" a lot of thought before it was finally solved.

The *Hello!* unit also includes a geography lesson, an exercise in which the students discover their "global address" — learn to locate longitude and latitude — and use it to define where in the world they live and to locate their network teammates' communities.

Students can use print atlases and National Geographic maps in addition to the Kids Network software's on-screen maps. The program's globe icon is animated: When it starts to spin, a world map comes up. You can enlarge it to look at your state, you can shrink it to look at the rest of the world, or you can focus in on one special area. You can add rivers or show just the political divisions. You can print the map — in color if you have the right equipment — post it, and then highlight your teammates' communities. You might also hook the computer up to

KIDS NETWORK SCHEDULE

SEPTEMBER 20 – NOVEMBER 12, 1993
Order before July 16, 1993
- **Hello!**
- **Too Much Trash?**
- **Solar Energy**
- **What's In Our Water?**

OCTOBER 11 – DECEMBER 3, 1993
Order before August 6, 1993
- **Acid Rain**
- **Hello!**
- **What Are We Eating?**
- **Weather in Action**

JANUARY 3 – FEBRUARY 25, 1994
Order before October 29, 1993
- **What Are We Eating?**
- **What's In Our Water?**
- **Hello!**
- **Acid Rain**

FEBRUARY 14 – APRIL 8, 1994
Order before December 10, 1993
- **What's In Our Water?**
- **Solar Energy**
- **Too Much Trash?**
- **Weather in Action**
- **Hello!**

APRIL 4 – MAY 27, 1994
Order before January 28, 1994
- **Too Much Trash?**
- **Acid Rain**
- **Weather in Action**
- **Solar Energy**
- **What Are We Eating?**

a large-screen television monitor and show the entire class the completed map. The more material you have on hand, the more exciting the lesson becomes — and kids will beg you to let them borrow your print atlases and geography books for a night or two.

This geography lesson is indeed unique: It's a hands-on activity that takes advantage of several learning styles and lets students discover their own hidden talents. One of my students who had a lot of difficulty reading found every school on the software maps and in our print atlases, with and without the "global address." He was also good at placing icons (representing teammates' communities) on the software map. His confidence got a real boost when I looked into his eyes and told him, "If you can do this, you can read — show me more!"

EDUCATING FOR TOMORROW

Using the computer empowers students — they get to participate actively and directly in their education. One child explained the force of telecommunications simply to me: "You use your little computer to call up this big computer, which takes all your messages and gives them to your teammates and your unit scientist. It's like the brains of the operation. You actually do it; the teacher is a helper. It makes me feel powerful!"

PRODUCT INFORMATION

Acid Rain, $375
Hello! $325
Spanish-language version available
Solar Energy, $375
Too Much Trash? $325
Weather in Action, $375
What Are We Eating? $375
What's in Our Water? $375
plus $97.50/unit tuition
and telecommunications

The National Geographic Kids Network
The National Geographic Society Educational Services
P.O. Box 96892
Washington, DC 20090
(800) 368-2728
(301) 921-1575 fax
(800) 268-2948 Canada

Another student added, "You can write to people on line and get mail, just like that [snaps his fingers]. It's the first time in my life I got important mail." One of my Hispanic students said, "I get to learn about this country and talk to people everywhere. We work with a real scientist. They use our data and give it back to us so we can share and compare."

Once the students have mastered the art of communicating on line, they can share a myriad of information, including stories, letters, maps, and even graphs, with other schools around the world. Not only do children learn about one another's lifestyles, but it's just plain fun.

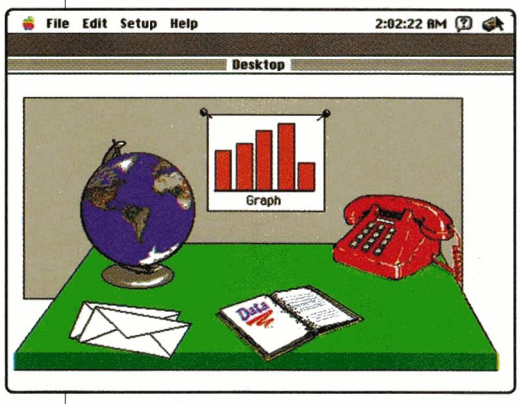
As we were completing one of the *What's in Our Water?* activities one day, for example, a scream sounded from the back of the room. I rushed to the collection of little bodies clustered around the computer to find that we had received a special letter from Moscow, and the kids were eagerly trying to read the words as they scrolled on screen. As the letter rolled off the printer, the mail student for the day whisked it up to the photocopier — "to show our mothers," she said with a big smile. None of us had ever communicated with a Russian before. It was a marvelous learning experience for all of us.

And the learning continues even after the school day has ended, because kids are motivated to read more about the subjects their network peers mention on line. A "learning disabled" boy, who for a long time had been battling the rigidity of the way people thought he should learn, was placed in my class. He did have a lot to learn, but I gradually found that he was well read and conversant in many areas, such as Mayan culture and the environment. He just couldn't write.

I let him use the word processor when we started the *Acid Rain* unit, and he never stopped. When we turned off the computer, he still wanted to change the world — and he did: He won a computer for our classroom in a writing contest sponsored by the on-line service Prodigy.

This boy is identified as gifted with a learning disability. He never had a thinking disability. Kids Network was the tool that let me "discover" his abilities — and his desire to make the learning real.

Real Science



Kids Network students communicate directly with participating classes in other schools across the country and around the world — sharing stories, letters, maps, and graphs, learning firsthand about other people's cultures and lifestyles.

If you're having a difficult time getting your class excited about science — or excited about learning in general — try Kids Network. Working with other children from around the globe, my students not only completed their classwork, but began to read newspapers and to keep up with current events — they wanted to know what was happening to their network friends.

When classroom walls and geographical boundaries dissolve, kids can touch the world. The future begins here, with National Geographic Kids Network, where learning is an adventure. ❑

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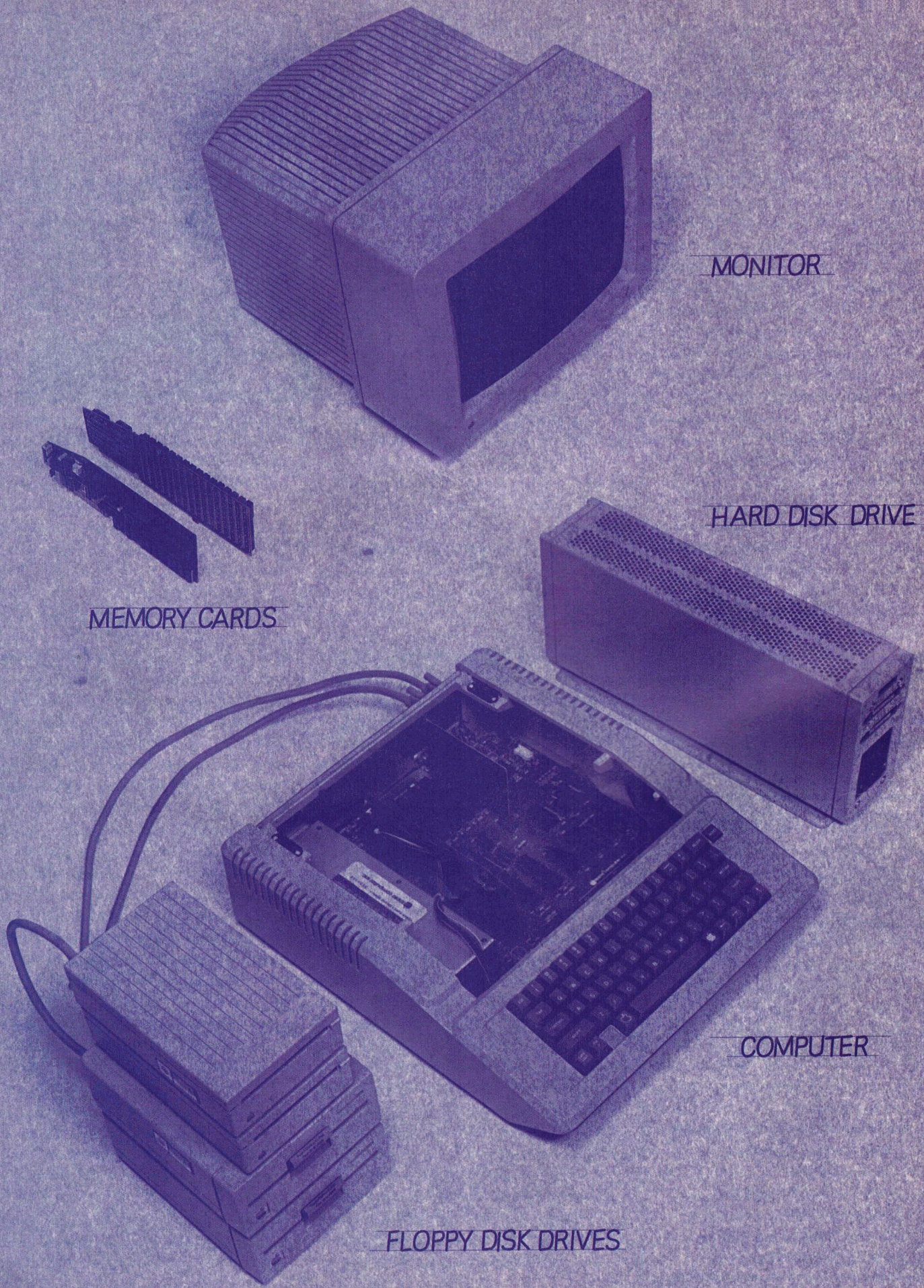

MONITOR
HARD DISK DRIVE
MEMORY CARDS
COMPUTER
FLOPPY DISK DRIVES

II ESSENTIALS: HARDWARE

By TONY DIAZ and PAUL STATT

CONGRATULATIONS

— you're the proud owner of a "new" Apple II. If you've got no idea just how it works or what to do with it, start here, as Tony Diaz, founder of one of the leading Apple II mail-order distributorships in the country, and Senior Editor Paul Statt discuss the nuts and bolts of hardware operation that every II user should keep in mind.

INCIDER/A+: *Tony, imagine my brother-in-law just gave me his old computer. He bought it a yard sale and never used it much, and neither of us has any books or manuals. We've got no idea what model it is, except that we're sure it's an Apple II. How can I tell what I've got?*

TONY DIAZ: You can identify most Apple II models by the markings on the case. Otherwise, determining which Apple II you have is often as simple as plugging it in and turning it on. The only really hard thing is determining whether you have an *enhanced* IIe or not. For that, all you need to do is turn on the computer and at the top of the screen it'll say either *APPLE][* or *Apple //e*. If you see the lowercase *//e* you have an *enhanced* model — or an Apple IIc. The IIc and the enhanced IIe both use the same microprocessor and are designed to use all the newer software. Otherwise the model will be marked plainly on the case, with one exception: a IIGS in a IIe case.

If you've been given a IIGS, you'll need to know a few more things before you use your system. The IIGS includes a mode called the *Control Panel*, which sets various operations, such as color of the screen, the speed

of the microprocessor, and the serial-port configurations. You also control the IIGS' expansion slot functions through the Control Panel — more about that later. You access the Control Panel by holding down the Apple key while pressing and holding down the control key and finally the escape key.

Once you know which machine you have, call **The Apple Catalog** (800-795-1000) to order a user's manual and maybe even the technical docs.

A+: *Is there anything I need to check before I turn the system on? Is the thing likely to blow up in my face?*

TD: Before turning on your Apple II Plus, IIe, or IIGS, you should open the top to check the interior components. But before you handle anything inside the computer, first touch the *power-supply case* — the long metal box inside the computer and to the left — to dissipate any static electricity, which can damage the system.

Now look for loose wires and chips. Press firmly but gently on each of the chips; they've probably become slightly unseated over the years and may have loose connections. Remove any dangling wires if you can, or, if they're connected to something else, at least bend them out of the way of contact with any of the metal parts inside the computer.

Before turning on your Apple II Plus, IIe, or IIGS, you should open the top to check the interior components. But before you handle anything inside the computer, first touch the power-supply case — the long metal box inside the computer and to the left — to dissipate any static electricity, which can damage the system.

And clean the dust out of the machine's innards. Any ordinary household vacuum cleaner with a hose and a light brush attachment will do the job — the insides are a lot sturdier than they look.

Since you have no access to the inside of a IIc, it's like Las Vegas: If it's not making any rattling noises, just turn it on and see what happens.

MONITORING THE SITUATION

A+: *I want to be able to see what I'm doing. Do I need a special computer monitor? If so, what kind? Is there any way I can use a TV or an inexpensive monitor while waiting to see whether the machine works?*

TD: A separate monitor for your Apple II is best, especially a color one. Except for the GS, Apple II monitors are the simple and relatively inexpensive variety known as *NTSC (National Television Standards Committee) compatible*. Even the IIGS has an NTSC port if you can't afford its special *RGB* (red/green/blue) monitor.

With the keyboard facing you, the II Plus' or IIe's NTSC monitor connector is a small round hole (called an *RCA connector*) to the right on the back panel. On the IIc it's in the middle of the back panel; on a IIGS it's to on the left on the back panel. Just run an RCA jumper cable, available from any Radio Shack, from the computer to your NTSC monitor. The IIGS' RGB monitor has a special cable that plugs into its compatible socket on the back panel of the machine.

If you don't have a separate monitor, you can use your television set as one. There are three ways to do it. The first way is to run the RCA cable from your Apple II's NTSC video port directly to the NTSC "video in" connector on your TV. Consult your TV manual for location and use of the NTSC "video in" connector — assuming, of course, that your TV has one.

If your TV doesn't have an external video mode and connector, most VCRs do: That's where you connect a camera, and that's where you can also connect your II. Simply plug the computer into the VCR port marked *video in* or *camera video in*. Then set the VCR's *video source* to *external* (versus *tuner*), and tune the TV to the VCR's channel (usually 3 or 4). When everything's connected and turned on, you'll be watching your favorite Apple II programs instead of a tape or broadcast-TV program.

It's important that your TV's or VCR's video-in connector look exactly like the monitor RCA connector on your Apple II. If it doesn't, your TV or VCR may not be compatible with the II, and you could damage it.

Another way to use a TV as your II's monitor is through a device known as an *RF modulator*, which you can also buy at any local Radio Shack. This little box lets you connect the NTSC video signal from your II into the antenna connectors on your TV. (You tune in usually via channel 3 or 4, although some modulators use UHF channels.)

The problem with using a TV as a monitor is that most sets can't display 80-column text well — it's blurry and hard to read. Most of today's productivity soft-

ware uses 80-character-wide pages, so a TV monitor may not be the best solution, even though it's the least expensive.

A+: *What should happen when I turn the machine on? What should I see on screen?*

TD: When you turn the computer on, you should hear a beep, then see the name of the Apple model displayed at the top center of the monitor. If you don't have a disk drive attached to your Apple II, the computer will simply beep and a flashing prompt will appear on your monitor.

If there's some type of floppy disk drive attached (one's built into the IIc and IIc Plus), it'll make a grinding noise and spin. If there's a disk in the drive, your II should read some operating-system software from it (if present), in a process known as "booting the system," and possibly run a startup program, too. Similarly, an attached hard-disk drive should boot the system and run a startup program.

If you have a IIc or IIGS and didn't hear a beep, but the other responses occurred, the volume control may be turned down. The IIc's volume control is under the keyboard to the left; you can set the IIGS' volume with the Control Panel.

DISKS DRIVE ME CRAZY

A+: *How can I get software running on my Apple II?*

TD: You can type in a program each time you turn on your Apple II — but that's like assembling an engine in your car every time you want to drive it around the block, so we won't even discuss it. Get a disk drive. Your Apple II programs ("applications" as they're often called — word processors, games, and such) and the data you create with those programs are saved permanently on disk.

When you turn off your Apple II, all your work and programs disappear. You need to reboot the computer and reload your programs when you turn the computer back on again.

A+: *Okay, I need a disk drive for my programs and data. How do I add one to my II?*

TD: Adding drives to a IIc or IIGS is as simple as plugging them in. With a IIe or II Plus you also need a special disk-drive "controller card" that plugs into one of your II's expansion slots, usually slot #6. Several types of drive controllers are available. For 3.5-inch drives you need a 3.5-inch controller; 5.25-inch drives use a 5.25-inch controller. Laser Computer once made a universal disk-drive controller (UDC) card that could handle both size drives, but it's no longer available.

A+: *So I must have a controller card for my disk drives?*

TD: No, not if you have a IIc or a IIGS. These machines have *drive ports*, which are built-in controllers. You attach the disk-drive cable directly to the port. The exception is high-density drives for the IIGS — drives that hold nearly twice as much information as their 3.5-inch predecessors — in which case you need a special controller card.

The IIGS' built-in drive port supports up to four drives — two 5.25-inch and two 3.5-inch drives. There's only one connector on the back of the GS, so you "daisychain" the drives to make them all work: Plug one of the 3.5-inch drives into the drive connector on the back panel of the GS, and then successively plug each of the remaining drives into the back of the previous one. The only thing to be careful about is that the 3.5-inch drives must be first in the chain.

You also need to set up your IIGS' Control Panel: Choose the *Slots* option and make sure that slot 5 is assigned to your 3.5-inch drives, and slot 6 is assigned to the 5.25-inch drives.

A+: *Can I add 5.25-inch or 3.5-inch drives, or both? Why would I want to add one kind rather than another?*

TD: You can add both types of drives to any Apple II, but the standard drive for the II Plus, IIe, and IIc is the 5.25-inch drive. The GS uses the 3.5-inch drive.

A+: *What about hard-disk drives? Aren't they RAM?*

TD: A hard disk, or any disk for that matter, isn't RAM (*random-access memory*): Disks store your programs and data permanently so that they don't disappear when you turn off your Apple II. RAM is where your Apple II stores your programs and data *temporarily*. In fact, RAM is the only place where your Apple II's "brain," the microprocessor, can work with programs and data.

RAM, however, is *volatile*: Your programs and data disappear when you turn off the computer. So your Apple II must read programs and information from

When you turn the computer on, you should hear a beep, then see the name of the Apple model displayed at the top center of the monitor. If you don't have a disk drive attached to your Apple II, the computer will simply beep, and a flashing prompt will appear on your monitor.

disk into RAM, where it uses that information to run programs, and then must save any changes back to disk before you turn off your II or switch to another program. RAM is your workbench; your drive is the tool shed.

Perhaps the confusion between hard disks and RAM is because hard disks seem to work as fast as RAM, and so much faster than floppies. But hard disks function basically the same as floppies to store data — they're just faster and hold much more information so you don't have to "do the floppy shuffle" — swap disks in and out of the drives.

You can type in a program each time you turn on your Apple II — but that's like assembling an engine in your car every time you want to drive it around the block, so we won't even discuss it. Get a disk drive.

To understand what a hard drive can do for you, note that a 5.25-inch disk can store up to 143K of data or programs. A 3.5-inch disk can store either 800K or 1440K of data or programs, and a common 40-megabyte hard disk can store the equivalent of more than 270 5.25-inch disks.

A+: *What's a K, anyway?*

TD: *K* stands for *kilobyte* — 1024 bytes (loosely, a thousand bytes). A megabyte is 1024K or 1024 x 1024 bytes. One byte is equal to one character (letter, digit, symbol, or punctuation mark) on your screen or saved on disk. A typical printed page is about 4096 kilobytes, so a standard 5.25-inch disk can hold about 143,432 characters (bytes), or about 36 pages of information. That may seem like a lot, but you'll fill those disks pretty quickly.

A+: *Getting back to the hard parts, where does a hard-disk drive plug into an Apple II?*

TD: Apple II-compatible hard disks can go inside or outside your computer, except the IIc — currently only external hard disks are available for it. Internal hard-disk drives for the IIe or IIGS usually replace the power-supply unit. An external drive looks like a box with a light on the front to indicate when your computer is accessing the disk. Except for ones that plug directly into your II's expansion slot, all other hard-disk drives, including those for the GS, need a special controller card, usually a SCSI (*small-computer-systems interface*).

A+: *What's "scuzzy"? And which kind of hard-disk drive should I have?*

TD: Although there a couple of hard-disk-drive brands that work only with an Apple II, most of today's hard-disk drives will work with your Apple II because they use a standard interface. That interchangeable way of connecting peripherals with your Apple II and other computers is *SCSI*, pronounced "scuzzy." Apple chose this technology originally for Macintosh-compatible drives in 1986.

It's not easy to get a hard disk for the II Plus, though, because the two main SCSI cards available for Apple computers — Apple's own **High-Speed SCSI Card** and CV Technologies' **RAMFast** — both require an enhanced IIe or later model. For the II Plus you need either an **Apple Revision C SCSI Card**, the **CMS SCSI Card**, the **Cirtech SCSI Card**, or the **AEC** (formerly AMR) **SCSI Card**. The Apple, CMS, and Cirtech cards are available only on the used-equipment market. (Check notices posted on the on-line services or people who deal in refurbished computers.) The AEC card is available from Alltech Electronics. The CMS and AEC cards support a maximum of two 32-megabyte partitions for a total of 64 megabytes. The Apple Revision C Card supports up to 4 partitions on a II Plus.

A+: *How big a drive do I need?*

TD: For the average IIe user, a 40- or 60-megabyte drive should be more than enough. The IIe's operating system takes up a maximum of only 100K of disk space, and most programs are no larger than 200K. For a IIGS, however, system software and available add-ons can take up as much as 3 megabytes; IIGS applications tend to be 300K to 700K each. Typically a 40-megabyte drive on a IIGS will be tight if you want to avoid using any floppy disks.

RAM — OUT OF THE THICKET

A+: *Tell me more about RAM.*

TD: Think of RAM as a tabletop: the more RAM, the larger the place to spread things out. With AppleWorks, the amount of RAM you have installed is referred to as the *size of your desktop* — the amount of space you have in which to type information into the computer.

Your Apple disks don't make that desktop any bigger, no matter their size. A 5.25-inch disk drive holds 143K, but a standard 64K Apple IIe can actually take just 55K of information before it's full. You use disks to

save information and free up RAM for new programs and information.

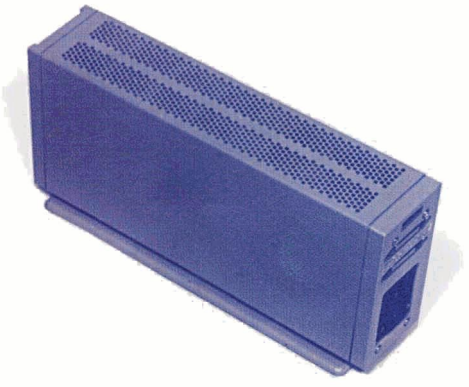
You can add RAM to your Apple II to make a bigger desktop. And with more memory installed, you can work with larger files faster.

A+: *How much RAM do I need?*

TD: A II Plus will typically have 64K, and that's where it ends. and can buy memory cards for a II Plus, but no mainstream software will know what to do with them, with the exception of **AppleWorks** and a utility called **PlusWorks III**, which adapts the AppleWorks program for the II Plus.

For the IIe and IIc, 128K is the standard. The IIc has 128K built in at the factory, but a IIe may have only 64K and, by the way, won't display 80 columns of text. To bring a IIe up to 128K with 80-column text, you need to add what's called an *extended 80-column card*. Software that ships today will usually require an enhanced 128K IIe or later model.

Apple II-compatible hard disks can go inside or outside your computer. Internal hard-disk drives for the IIe or IIGS usually replace the power-supply unit. An external drive looks like box with a light on the front to indicate when your computer is accessing the disk.



A+: *What about the Apple IIGS? You said earlier that it needed more memory.*

TD: One megabyte is the standard for the Apple IIGS, although a better system contains a minimum of 2 megabytes. Apple IIGSes shipped before September 1989 came from Apple with 512K. After that date they came from the factory with 1 megabyte. When you turn on the GS, look at the bottom of the screen. If it says *ROM Version 01*, you have an older Apple IIGS; if it says *ROM Version 3*, it's the newer one. That doesn't mean you have only the corresponding amount of memory, but you'll know how much the computer came with originally.

A+: *That's what I started with — how much can I add?*

TD: In a IIe, with various cards available, you can add up to 5 megabytes of RAM, although the theoretical limit is 16 megabytes. One megabyte in a IIe is the standard for computers with memory added beyond 128K. For the IIc, the only memory-expansion boards available carry a maximum of 1 megabyte.

In a IIGS, you can ad up to 8 megabytes of RAM, although the computer can access 16 megabytes directly, thanks to the design of the system. The other 8 megabytes are reserved for ROM (*read-only memory*), the information that's in the computer when you turn it on — its identity, so to speak. Memory cards are available in 1- to 4-megabyte configurations; the increments are usually 1, 2, or 4 megabytes.

A+: *What kinds of memory-expansion cards can I use?*

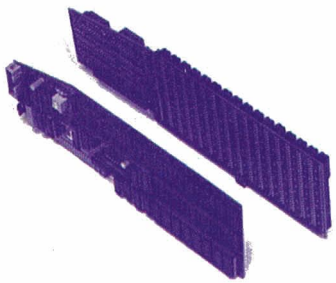
TD: IIe expansion memory is normally installed in the *auxiliary slot*, and not in the standard slots near the back of the computer. The IIGS also has a special memory-expansion slot. It's the large slot on the motherboard near the front of the computer. You can't use a IIe auxiliary-memory (80-column) card in a IIGS or *vice versa*, but you can use standard Apple II expansion-memory cards that fit into one of the expansion slots interchangeably. When buying a memory card for the IIe, make sure you can install it in the auxiliary slot only, and not in slots 1 through 7. Cards compatible with slots 1 through 7 are used as RAM disks or for the II Plus only. A *RAM disk* is an area of memory you can set aside for temporary storage of data — as a sort of fast disk drive. (To set it up, you need special software, available from on-line services or with the RAM card you buy.) The information you store there disappears when you turn off the computer, though, unlike the permanent storage regular disks offer. When buying memory for a IIGS, the same holds true: Get a GS-specific card.

BIGGER AND BETTER

A+: *Besides buying more RAM, is there anything else I can do to upgrade my II?*

TD: The greatest thing about Apple IIs is expandability. We've covered most of the fundamental hardware items you need to get started. Beyond that is a lot of territory — printers, modems, accelerators, multimedia interfaces . . . . The list goes on and on.

Every Apple II computer is upgradable, to varying degrees, with the IIe and IIGS at the top of the list. The II Plus is the least flexible. (That doesn't mean it's not usable, though.) The key is the series of slots inside the IIe and IIGS. They each have eight slots, one of which is reserved for a memory card; the other seven are located at the back of the machine, parallel to each other. In the II Plus, all eight slots are located toward the back of the computer. The IIGS also has seven additional ports on the outside, at the rear of the computer unit. These take the place of most of the common items you'd need to buy if you had a IIe, such as serial ports and a drive controller.



Each slot is really a connector to the outside world. Hundreds of common-application cards, such as serial and parallel interfaces for printers and modems, as well as novelty controllers, such as laboratory equipment analog-to-digital converters, are available commercially for the II. Just look in any Apple II catalog.

The IIc also has interface ports on the back, but no slots inside. That didn't stop people from trying to add components, though, and late in the game Apple gave in and included a memory-expansion connector on its more-recent IIc units.

You can identify a late-model IIc by its part number, located on the bottom of the computer's case: It'll be greater than A2M4000. Newer IIcs also have "platinum"-colored keyboards, as opposed to the beige color of older Apple equipment.

You don't need to have the latest IIc to get more memory, though. Some boards plug directly into the motherboard via a method called "piggybacking." You install the memory board by removing two chips — the microprocessor and the memory-management unit — from the IIc motherboard and plugging them into the memory card, then inserting the card into the sockets the chips came from.

You install the memory board by removing two chips — the microprocessor and the memory-management unit — from the IIc motherboard and plugging them into the memory card, then inserting the memory card into the sockets the chips came from.

A+: *Which Apple II models are the easiest and also the cheapest to upgrade?*

TD: On a scale of expense, the Apple IIe is the least expensive, with the IIGS averaging a little more. Accelerators and memory are available at decent prices for any slotted Apple II. The IIc and IIc Plus are the exceptions because of lack of slots, but they're still expandable.

SOFTWARE ESSENTIALS

A+: *I've heard AppleWorks is about as much as I can expect an Apple II Plus to handle. How can I do that — what does AppleWorks require?*

TD: To run AppleWorks — the most popular "integrated" productivity application for Apple IIs — on an Apple II Plus, you need some additional hardware. You'll also need a program called **PlusWorks III**, which lets your system take advantage of third-party hardware components that take the place of functions built into or standard with the IIe, IIc, and IIGS.

Primarily, you should have at least 128K of memory (although on a IIe, AppleWorks 2.0 and below will function with only 64K of memory) and an 80-column card. When you turn on an Apple II, it starts up in 40-column mode, so called because of the number of letters each screen line can accommodate. Because a standard typed page is approximately 80 letters across and AppleWorks is, after all, a replacement for your typewriter, it makes sense to have 80 columns.

With these two items installed, AppleWorks will run on a II Plus. It won't be quite the same as a newer Apple II, mainly because the II Plus keyboard has fewer keys. It lacks the "apple" keys on either side of the spacebar, but you can work around it. PlusWorks includes complete instructions.

A+: *Tell me more about other software for my Apple II. What's essential?*

TD: Now you're really moving into the next volume and chapter. We'll go into more detail about basic applications and system-software essentials for your Apple II in next month's issue of *inCider/A+*.

A+: *If you're looking for somebody to talk to about your new Apple II, join a local user group or a national organization such as the* ***National AppleWorks Users Group*** *(P.O. Box 87453, Canton, MI 48187, 313-454-1115). Read this magazine and as many other Apple II publications as you can. Save 'em, because what doesn't make any sense now may make sense next year. Talk to the companies that advertise, too. You'll find that the Apple II community is very open, unlike any other computer platform's. Apple II people are friendly and willing to help.* ❑

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HINTS

MAIL CALL

A definition here, a shortcut there — our information swap can help you stay one step ahead of frustration.

By RICHARD F. BINDER

YOUR IMAGEWRITER IS A LEMON when it comes to printing envelopes — so make lemonade: Use **AppleWorks GS**' mail-merge feature and your printer to create your own envelopes from plain tractor-feed paper.

What's more, you can also print the U.S. Postal Service's *PostNet* bar code, which represents your recipient's ZIP code. Bar-coding your mail speeds delivery and reduces the chances of misdirecting a letter. It also saves the government money, and that means a longer time before the next rate hike.

THE RIGHT WAY

Still not convinced? Maybe you've tried mailing labels and ended up printing everywhere but on the address area. And even when you finally get the line spacing right and finish tinkering around with the platen and the paper feed, you still have to stick them all on envelopes. This project's a lot easier. If you don't need high-grade stationery, why not skip a step and have your printer do it all?

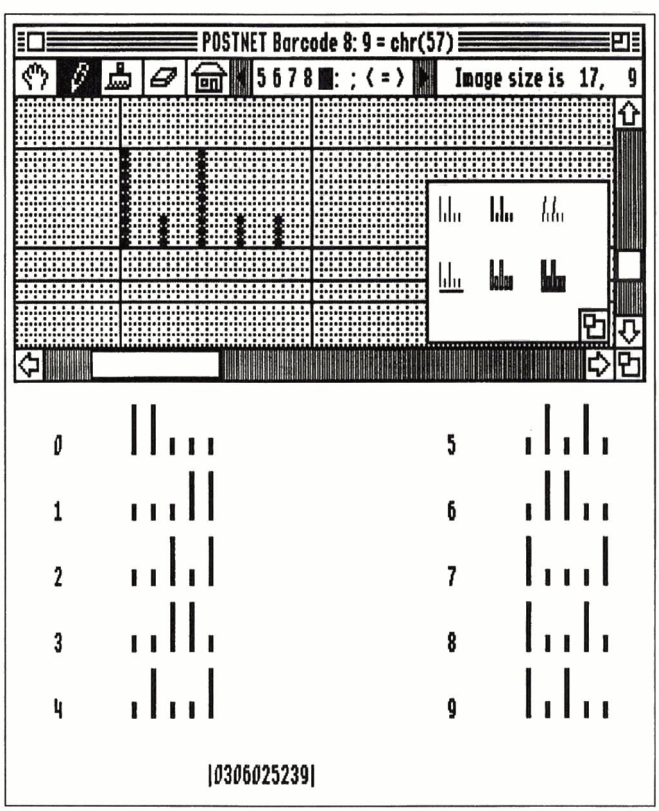


Figure 1. PostNet bar-code font.

There are three basic signposts on the road to building your own envelope factory:

- First, use your favorite Apple IIGS font editor to create a special font for printing the PostNet bar-code characters.
- Then set up an AppleWorks GS database to contain mailing addresses.
- Third, using the AppleWorks GS word processor, create an envelope file with database field names where the recipient's address information goes.

If you don't have a font editor, a freeware disk containing all the AppleWorks GS files you need for this project is available by mail; see the note at the end of this article.

CRACKING THE CODE

Creating the font for the PostNet bar code is quick and easy. I use **Font Factory GS**, from Seven Hills Software, but Beagle Bros' **GS Font Editor**, from Quality Computers, should perform just as well.

Launch your font editor, pull down the *File* menu, and choose *New Font*. In the *Font Info* dialog box, fill in the name (**POSTNET Barcode**), family (**9000**), and size (**8**). Don't check any of the style boxes. Then click on *OK*.

The only characters you need for printing are the digits 0 through 9 and the vertical bar. To edit a character, click inside its font display window, pull down the *Edit* menu, and choose *Edit Character*. (Or double-click on the character's box in the font display window.)

Select each of the digits in turn (characters 48 through 57) and position its dots according to **Figure 1**. Each digit is made up of two long bars and three short ones. The long bars are nine dots high, the short bars are three dots high, and the space between bars is three dots. Move the width line to the right so that it leaves three dots after the fifth bar. (Each digit character is 20 dots wide altogether.)

When you've defined a character, close its window. The font editor asks whether you want to integrate these changes into the font; answer *yes*.

Next, define the vertical bar (character 124). It's just a single long bar, four dots wide.

To allow for printing an envelope with a blank ZIP code, you must also define the space character: Select its box (character 32), add a dot or two, delete them, and save the character. AppleWorks GS can't merge-print a completely empty calculated field — if you try, you'll lock

up your system and have to restart. The formulas in the address database put a single space character in any calculated field that would be empty otherwise.

Note that the size of the PostNet bar-code characters is critical. The Postal Service's bar-code specifications are stringent — 22 ± 2 bars per inch — and we're barely squeaking by, printing exactly 20.

SINGLE FILE, PLEASE

Now open a new database document to connect your letters to your envelopes. The database contains fields that hold the names and addresses of the people or companies to whom you write. It also includes several calculated fields, whose contents AppleWorks GS computes from the information you enter in the address fields. (See **Table 1** for descriptions of all database fields.)

Note that the digits making up the two pieces of the recipient's ZIP code are added separately in Z1 and Z2; that's because AppleWorks GS won't accept a formula long enough to add them together. In these two fields, AppleWorks GS converts the string value of each individual digit to a number and adds those numbers. The *check digit* is the value needed to bring the sum of all digits in the ZIP code to an even multiple of 10. If the sum of Z1 and Z2 is already a multiple of 10, *CK* is filled with a *0* (zero).

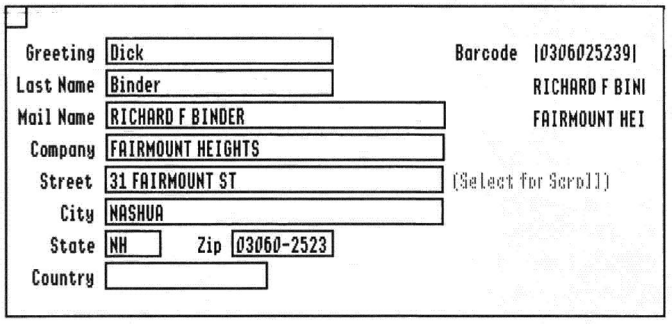


Figure 2. Sample database record.

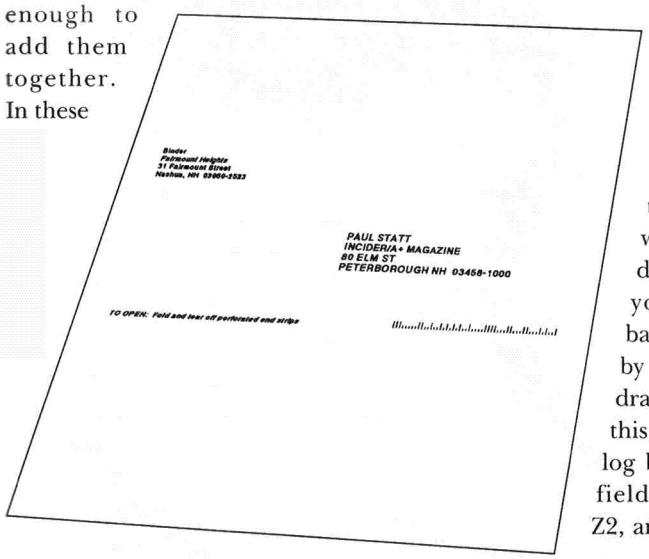
The bar code itself is a string consisting of all digits in the recipient's ZIP code together with the check digit. The two vertical bars enclosing this string are the bar-code reader's start and stop marks.

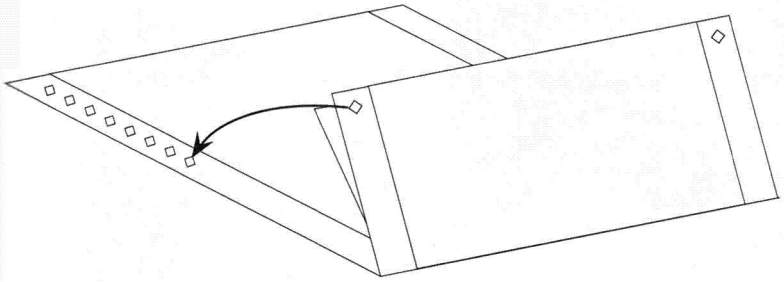
For example, the ZIP+4 code for my house is 03060-2523. Adding up the first five digits yields *9* for Z1; adding up the last four gives you *12* for Z2. The sum of these numbers is *21*, so the check digit is a *9*, to bring the total to *30*. Add the two bars, and my BARCODE field then contains *|0306025239|*.

Create each of the database fields by making a box for it in the *Definition* display window. (That's the default screen whenever you create a new database file; you make a field by dragging the mouse to draw a box.) When you do this, the *Field Definition* dialog box appears. Enter the field name. For fields Z1, Z2, and CK, click on *Numeric* and then *OK*. For all other fields, just click on *OK* to accept the default *Text* definition. For each of the calculated fields, pull down the *Edit* menu and choose *Field Formula*. Enter the formula as shown in **Table 1** and then click once more on *OK*.

Once you've created the database, type in your name-and-address list. To avoid confusing the Postal Service's optical character-recognition (OCR) machines, use all capital letters and no punctuation marks for the mail-name and address fields (**Figure 2**). Use the government's standard two-letter state-name abbreviations. Note that the *STREET* database field should contain the actual delivery address. For example, if delivery is to a post-office box, that goes in the *STREET* field, while the street address (if any) belongs in the *COMPANY* field.

ZIP+4 codes are more useful than ordinary five-digit ZIP codes, so use them whenever you can. If you don't know the right ZIP or ZIP+4 codes for the people in your database, call your local Postal Business Service Center; the people there can give you ZIP+4 codes for your addresses. In fact, you can print your entire database, up to 300 names, and ask the Center to standardize the





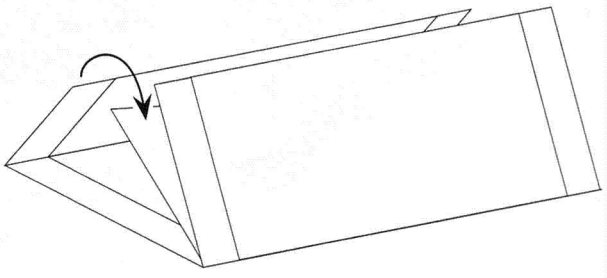


Figure 3. Top, envelope printing on plain paper. Figure 4. Left, folding letter/envelope, step 1. Figure 5. Right, folding, step 2.

addresses and send you back a printout with ZIP+4 codes supplied. (For a fee of 15 cents per name, you can submit larger databases on MS-DOS floppy disks; use your nearest Macintosh's Apple File Exchange utility to transfer your database.)

See **Figure 2** for an illustration of a typical database entry — in this case, my own address. BARCODE, A1, and A2 fields are toward the upper right; Z1, Z2, and CK are "marked," so they aren't displayed. (To hide an item, select *Mark field* under the *Organize* menu.) The label field *Select for Scroll* is a reminder that when you highlight the *STREET* field you can use the arrow keys to move up or down a span of exactly one record.

WRAPPING PAPER

The envelope file is easy to create, but calls for some care in counting lines so that the recipient's name and address information end up in the center of the page, just right for folding. Start by opening a new word-processor document and entering the lines described in **Table 2**. You can simplify the task of counting lines by entering each number on its corresponding line and then deleting the numbers (but not the lines) when you're finished.

I've specified the GS font Helvetica bold for all envelope text because the Postal Service's OCR sorting machines can read it easily. Using an OCR-readable font helps the Postal Service in cases when you have an invalid ZIP code or no ZIP code at all. Without that bar code, the reader kicks the piece of mail out for OCR sorting. If OCR fails, the piece is sorted by hand, and that's where the cost is highest and there's the greatest chance of error.

For a comprehensive discussion of mail-addressing guidelines, refer to the Postal Service's ***Publication 28: Postal Addressing Standards***. It's free from your local Postal Business Service Center.

LAST NAME	Not used in actual envelope address; use to sort database or in body of form letter. Plain text field.
GREETING	Use in body of form letter, perhaps on greeting line. Plain text field.
MAIL NAME	First line of envelope address. Plain text field. See A1 and A2.
COMPANY	Extra line of address information. May be name of company or street name for P.O. box addresses. Plain text field.
STREET	Third line of envelope address. Plain text field.
CITY **STATE** **ZIP**	Fourth line of envelope address. Plain text fields.
COUNTRY	Fifth line of address, for international mail. Plain text field.
A1	First address field actually printed on envelope. Calculated text field. If COMPANY is empty, A1 is filled with single space. Formula: **=If([COMPANY]="","[MAIL NAME])**
A2	Second line of actual printed address. Calculated text field. If COMPANY is empty, A2 is filled with contents of MAIL NAME. If COMPANY isn't empty, A2 is filled with contents of COMPANY. Avoids blank lines in printed address. Formula: **=If ([COMPANY]="", [MAIL NAME],[COMPANY])**
Z1, Z2, CK	Calculated numeric fields. Compute values that generate bar code. Z1 contains sum of first five digits of ZIP code; Z2 contains sum of last four digits; CK calculates check digit. Formulas: **=[Z1] = Val(Substr([ZIP],1,1))+Val(Substr([ZIP],2,1))+ Val (Substr([ZIP],3,1))+Val(Substr([ZIP],4,1))+Val(Substr[ZIP],5,1))** **=[Z2] = Val(Substr([ZIP],7,1))+Val(Substr([ZIP],8,1))+ Val(Substr ([ZIP],9,1))+Val(Substr([ZIP],10,1))** **=[CK] = Mod(10-Mod([Z1]+[Z2],10),10)**
BARCODE	Actual printed bar code. Calculated text field. If ZIP isn't empty, AWGS assembles digits of ZIP code and check digit as string and surrounds results with vertical bars. If ZIP is empty, BARCODE is filled with single space. Formula: **=If([ZIP]≠ "",Concat("|",Substr([ZIP],1,5), Substr([ZIP],7,4), String([CK]),"|")," ")**

Table 1. Database field names and descriptions.

PUTTING IT ALL TOGETHER

With the bar-code font, the database, and the envelope file in place, it's time to write a letter. You can print it as is, or you can type in database field names and take advantage of mail-merge. (Select *Print Merge* from the *File* menu.) For a business letter, for example, you can use **<A1>**, **<A2>**, **<STREET>**, **<CITY>**, **<STATE>**, **<ZIP>**, and **<COUNTRY>** for the inside address and **<GREETING>** for the salutation line. (My own database includes a couple of additional fields in which I record the shareware fee and the program name, and I use these fields in my letter, too.) For a form letter you intend to mail to several people at once, end your letter with a page break and import the envelope file as part of the letter file.

Paper alignment is critical. If you're using an ImageWriter II, remove the back cover and locate the left tractor so that the edge of the paper is exactly on the notch above the pin-feed icon on the back of the printer. Set the right tractor as needed. Tear off any partial sheet of paper so that you'll start with a whole sheet. Feed the paper into the printer just far enough so that its leading edge disappears under the platen.

1–22	**Blank lines, 9-pt Helvetica.**
23–26	**Four lines of return address, 9-pt Helvetica bold, left margin 9/16 inch (as far left as AWGS lets you put it). If return address contains only three lines, leave line 26 blank, but be sure it's 9-pt.**
27–32	**Blank lines, 9-pt Helvetica bold.**
33–37	**Recipient's address, 12-pt Helvetica bold, left margin 4 inches. Contents:** **<A1>** **<A2>** **<STREET>** **<CITY> <STATE> <ZIP>** **<COUNTRY>** **Note: one space, no comma between<CITY> and <STATE>, two spaces between <STATE> and <ZIP>.**
38–39	**Blank lines, 12-pt Helvetica bold.**
4041	**Blank lines, 9-pt Helvetica bold.**
42 1st part	**9-pt Helvetica bold italic, left margin 9/16 inch:** **TO OPEN: Fold and tear off perforated end strips**
42 2nd part	**8-pt PostNet Barcode plain, tab at 5 1/8 inches. Enter characters <BARCODE> before setting font. Then set font, style, size. Be sure to include entire space between italic text and bar-code field; otherwise bar code will be Helvetica bold italic. When you set font, this part of line appears as nine missing character boxes.**

Table 2. Lines in envelope file.

Put the cover back in place and turn the printer on. The *select* light will remain off, and the *error* light will be on. Press the form-feed button once. The printer will advance the paper until its leading edge is at the top of the hole in the clear shield to the left of the printhead. Press the *select* button and you're ready to roll. (If you don't usually align your paper this way, you might need to add a few lines in the header for a top margin.)

If you're using some other printer model, align the paper so that the head can print on the very first line. Print a test envelope and fold it as described below. Measure from the beginning of the bar code to the right edge of the paper; the distance should be 3 and seven-eighths inches.

With the paper aligned, print your letter. Don't eject the page; the envelope is going to be the next sheet.

Open the address database. Select the record you want by clicking in the box to the left of the line in the list display or in the upper-left corner in the form display. If you're printing a form letter, you can select several records by holding down the command (open apple) key as you click on each record's selection box. Now press Command-] to make AppleWorks GS display only the selected records.

Open the envelope file. Pull down the *File* menu and choose *Page Setup*. Be sure you're printing with *Vertical Condense* on. Pull down the *File* menu again and choose *Print Merge*. AppleWorks GS will ask you which database to merge from; you have only one database open, so just click on *OK*. When the *Print* dialog box appears, be sure *Best* print quality is set; otherwise, the address and bar code won't meet Postal Service standards. The result should look like **Figure 3**.

MATCHMAKING

When you've finished printing, eject a sheet and tear off the letter and envelope in one piece. Fold the sheets back together. If the address comes out on the inside, just fold the perforations the other way and smooth them down flat.

Lay the sheets down on a table with the envelope page face down. Lift the end nearest the bar code (the bottom edge of the envelope sheet) and bring that edge up toward the other end (**Figure 4**). Match the pin-feed holes in the lifted edge with the eighth pair of holes from the opposite end and crease the paper carefully. If you did it right, the fold will run right through the middle of a pair of holes, and there will be seven pairs of holes visible on the bottom (unfolded) part. You can check the accuracy of the fold by measuring the distance from the bar code to the fold — it should be a quarter of an inch.

Now fold the remaining end over the first end (roughly thirds, **Figure 5**). Make the second crease as close to the first edge as you can, to produce a tightly folded flap. Unfold partway. Lift up just the envelope sheet of the first flap, and tuck the second flap under this sheet to protect your letter from prying eyes. Smooth the packet down flat.

To seal the letter, tape the two ends (but not across the perforations, or the recipient won't be able to tear off the end strips). Stamp it, and your letter's on its way. ❑

EnvelopeAWGS, a set of files containing the Apple IIgs templates described in this article, is available from the author as ProDOS freeware. Send a check for $5 to Richard F. Binder, Fairmount Heights, 31 Fairmount Street, Nashua, NH 03060-2523. Specify 5.25- or 3.5-inch format.

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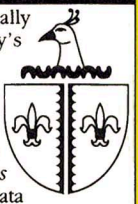

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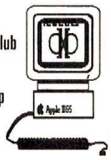

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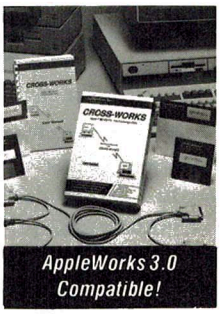

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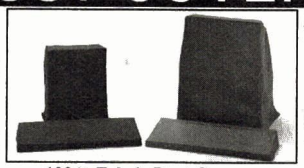

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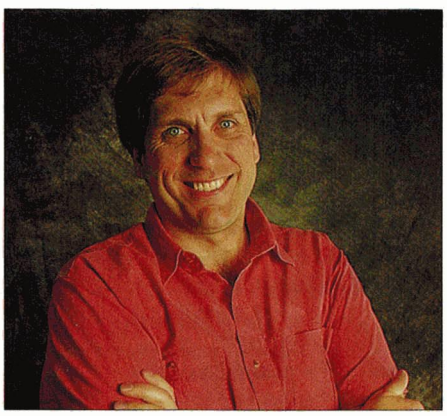
QUICK AND DIRTY

If it wasn't the first multimedia publisher who realized the public wanted sex, it was surely the second.

Being a journalist at MACWORLD Expo isn't all free booze and rock 'n' roll. There's also sex. In pursuit of my profession, I fought my way through a pack of randy, sweating nerds at last January's Expo in San Francisco, just to have a look at the sexiest thing in multimedia: QuickTime pornography. In a teenager, a healthy interest in the mystery and grandeur of human reproduction might signal the onset of the process we hopefully call "growing up." But I doubt the maturity of the snickering horde I watched at the BodyCello booth (San Diego, CA, 619-578-6969). Most looked more like the sheepish, lonely guys you see at the local peep show (except, of course, for the working press).



By PAUL STATT ✣ SENIOR EDITOR

William S. Burroughs, who made a career as a reporter on the vice beat, once said that sex is like a virus that infects all new technology. Only moments after discovering that cave walls were a good medium for drawing bison, the first artist realized a bosom would be just as easy and more fun for the tribesmen. And so on through history: If it wasn't the first painter, the first photographer, or the first television talk-show host who realized the public wanted sex, it was surely the second.

So I wasn't witnessing anything new — Mac pornography just isn't Virtual Valerie anymore. (Her static pixels were a hit at MACWORLD Expo in Boston in 1987.) In fact, perhaps I was witnessing a technology come of age.

According to John Barlow of the Electronic Frontier Foundation, a group that advocates free computer speech, the first question people ask about any new creative technology is always "What the hell is it?" Barlow has noticed how people react when he explains "virtual reality" — the catchall name for the technology supporting an interactive 3-D computer interface, sometimes with electronic mittens, outsized goggles, and latex bodysuits: "The second question is always sex."

If virtual reality fascinates you more than teledildonics (virtual sex) titillates you, read more about it in *Silicon Mirage: The Art and Science of Virtual Reality* (Peachpit Press, 1992).

Folk wisdom has it that American consumers first bought videotape players to watch dirty movies in the privacy of their own clean, well-lighted homes. It's been suggested that videodiscs failed to become as popular as videotapes because the folks who made them refused to stoop as low as dirty movies. If pornography could sell video, imagine what it could do for multimedia: With QuickTime and a good video editor, "every man's a pornographer."

I should welcome anything that makes the new technology more "popular." But can't we do better than porn? Look at The Voyager Company's catalogue (310-541-1383). Voyager sells "expanded books" to read on PowerBooks, CD-ROMs of music and art, and videodiscs of great films and art. Why isn't everybody buying this stuff? I used to think it was because not enough Mac owners had the right hardware.

But maybe the trouble with Voyager is poets such as Amiri Bakara and Charles Bukowski (on *Poetry in Motion*, CD-ROM, $29.95); photographers such as Pedro Meyer (*I Photograph to Remember*, CD-ROM, $39.95); books such as *The Autobiography of Malcom X* (Expanded Books, $19.95); social histories of the neglected, such as *Who Built America?* (CD-ROM, $99.95); or "difficult" music such as Stravinsky's *Rite of Spring* (CD Companion, $99.95). Consumers just want to have fun. Maybe if Voyager had done the QuickTime CD-ROM version of Madonna's *Sex* . . . . Oops, Madonna records for Warner Brothers, and Warner New Media is Voyager's competition.

If you buy only one Expanded Book from Voyager in your lifetime, make it Neil Postman's *Amusing Ourselves to Death* (1984). It's only $19.95, and you also get Aldous Huxley's *Brave New World* on disk. Postman thinks we're living now in Huxley's brave new world, where people are so fascinated with TV they expect school, work, and politics to all entertain. We no longer ask for intellectual challenge. Sex sells, and culture doesn't. ❑

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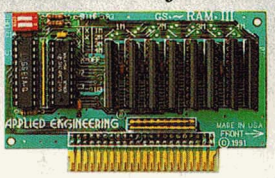

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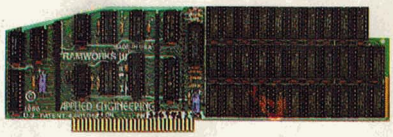

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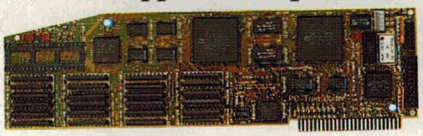

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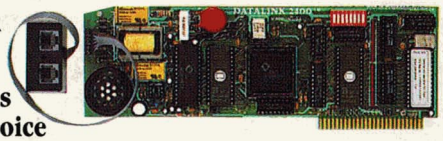

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