

More Than 650 Product Listings And Descriptions

The 1 Apple II GS

Buyer's Guide

A Redgate Publication
Winter 1990 Vol. 3, No. 2
U.S. \$4.00, Canada \$5.00

Special
Holiday
Issue

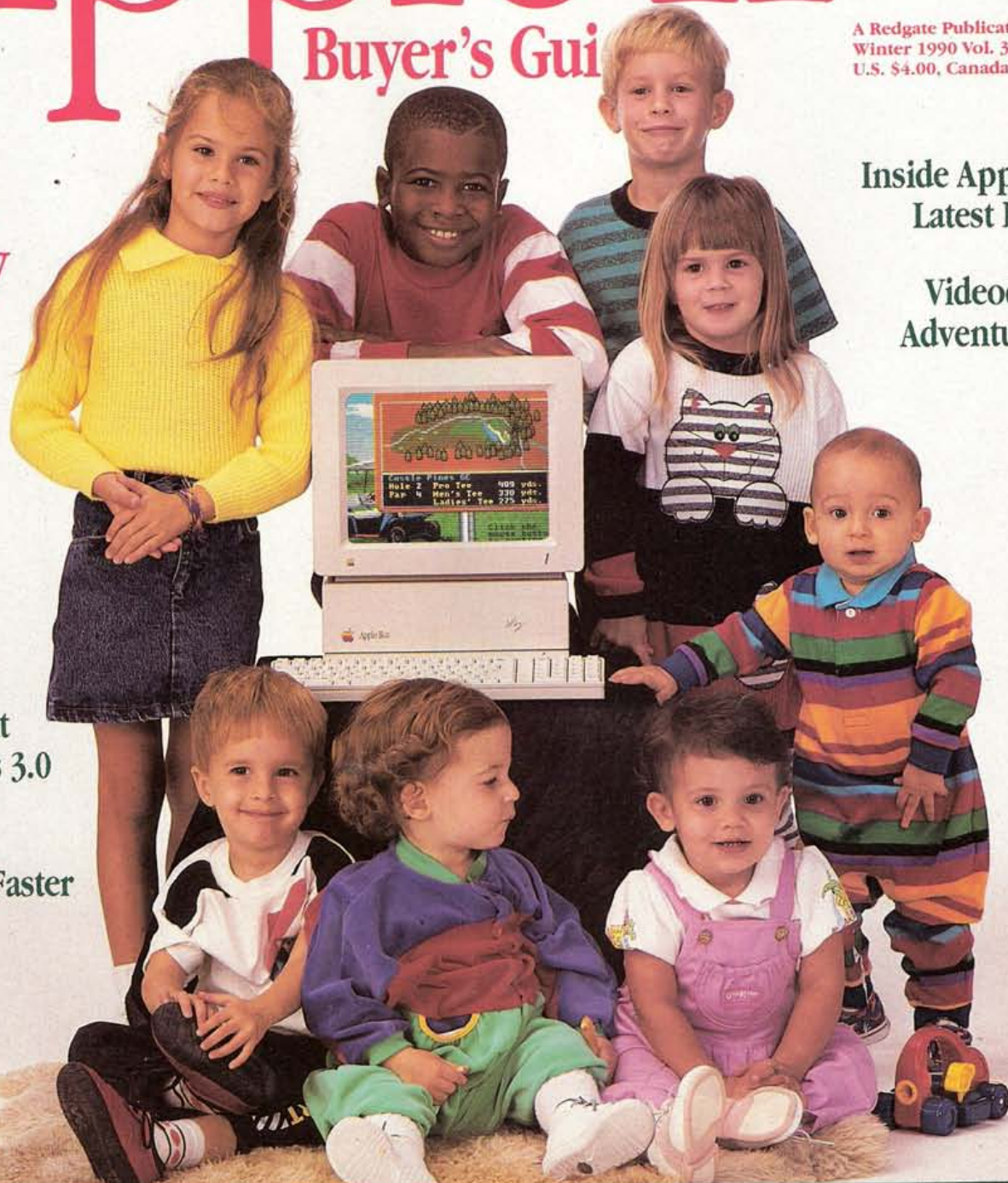
Inside Apple's
Latest IIGS

Videodisc
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High-Class,
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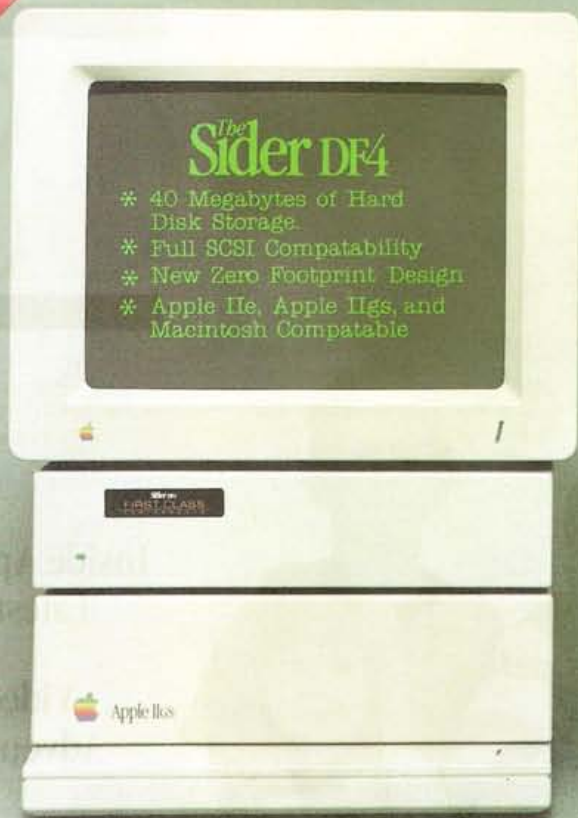
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Upgradeable Flexibility

Choose a Vulcan from 20, 40, 100 — all the way to a staggering 200 MEGs. Vulcan is upgradeable, so it grows as your needs grow. And we don't mean by daisy-chaining additional hard drives. When you upgrade Vulcan, you pop one out and *replace* it with another.

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The Apple II GS

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Subscription Information
The Apple IIGS Buyer's Guide,
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Chip Shots



In the Apple II world, there is only one computer show that counts — AppleFest. Held every six months by alternating between Boston and San Francisco, AppleFest is the place to take the industry's temperature, meet readers and contributing writers face to face, exchange notes with Apple II vendors, and party like gangbusters for three days before going back to work.

The latest AppleFest was held in San Francisco in September just a few weeks before the big earthquake. Although I personally was unable to attend due to tight deadlines, those who were at the show tell me that the closest approximation to a 7.0 on the Richter scale involved a heated verbal exchange between keynoter Jean-Louis Gasse, president, Apple Computer, Inc. products, and William Mensch, the designer of the 65816 chip residing inside every Apple IIGS. Apparently, Gasse was trying to wrap up his speech when he said something about how Apple was unable to speed up the IIGS hardware because it couldn't find enough high-speed 65816 chips.

At this point, Bill Mensch pounced on one of the open microphones, held up some little packages and said something to the effect that, "I'm the designer of the 65816 and I have here three 12 MHz 65816s. If you order them we can ship." Mensch claimed that he had been trying to tell Apple, without success, that the high-speed chips were available. Meanwhile, Gasse said he hadn't heard from Mensch since the IIGS was first introduced.

Chips being as they are, the existence of three ultrafast renditions in Bill Mensch's

pocket doesn't necessarily mean that his company, Western Design Center, can manufacture the silicon in sufficient quantity to meet Apple's needs. Even if it could, Apple may have other reasons for not using the faster chip, including reliability issues and price.

Whatever the reason, the IIGS user's dream of a faster machine will have to be satisfied for now with accelerator boards from third-party suppliers and the impressive software speed injection afforded by GS/OS Version 5.0, reviewed in this issue.

On a more positive note, this AppleFest continued to demonstrate the versatility of the Apple IIGS when placed in the hands of creative individuals. For example, a IIGS set up in a central location drew crowds throughout the show during a demonstration of a HyperStudio stack describing the location and contents of each show exhibit.

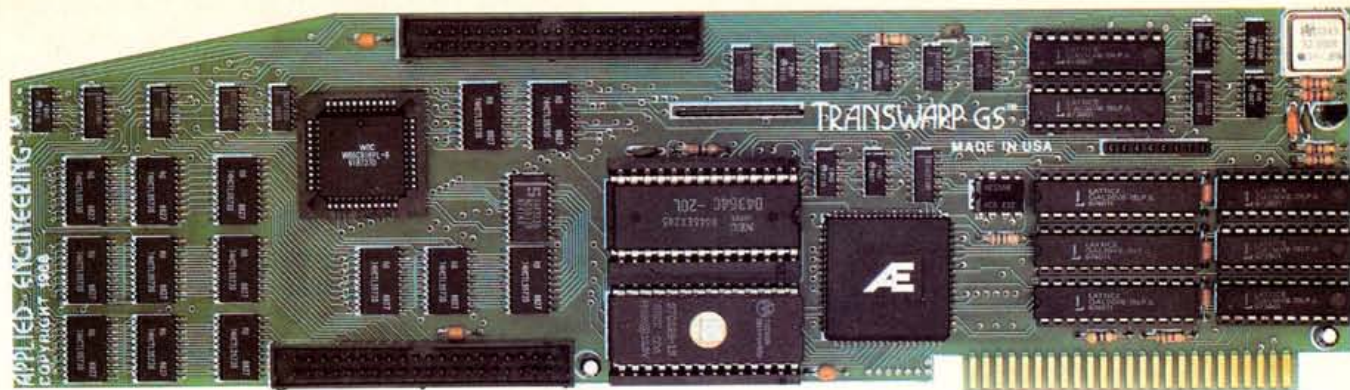
Softdisk Publishing announced a new IIGS "magazine on a disk," reviewed in this issue. Unlimited Software unveiled some great new IIGS clip art, reportedly every bit as good as its earlier Macintosh offerings. And the Apple Video Overlay Card and a host of new IIGS games reasserted the IIGS' superiority as a premiere game and graphics machine.

Speaking of games, our consummate gamesmith, Peter Chin, takes a look in this issue at some of the best armchair entertainment this side of the Super Bowl. And if your budget gets in the way this Christmas, Joe Kohn's "Shareware Solutions" describes a number of wonderful IIGS games available for little or no cost.

Also in this issue we provide a first peek at the new AppleWorks 3.0 (it isn't IIGS specific, but you'll probably want to use it anyway), take apart the "new" IIGS to see what's changed (and what hasn't) and examine the potential of the IIGS and videodisc connection in Carol Holzberg's "Class Action."

So there you have it. Whether the games are being played at the corporate level or under the control of your joystick, the IIGS market remains as interesting as ever. ■

— Paul Pinella, Editor-in-Chief



Fan mail GS

"TransWarp GS has performed flawlessly ... I've become addicted to computing at warp speed ... once you get a taste, you'll wonder how you ever got anything accomplished with your IIGS lumbering along at an unaccelerated pace ... it's an improvement you're going to appreciate every time you place your fingers on the keyboard."

— Owen Linzmayer, Technical Editor, A+

"I'm stunned ... bordering on speechless. I used to dread waiting and waiting to run GS/OS. I don't anymore. TransWarp GS breathes new life into my computer. Thanks AE, you guys are in a class by yourselves."

— Joe Kohn, *The Source*

"Once I started using the original TransWarp in my old IIe, I found I couldn't do without it, TransWarp GS promises to be equally indispensable."

— Lafe Low, Review Editor, *Incider*

"This is the card you want. Sell whatever secondary peripherals you must in order to get a TransWarp GS plugged in."

— Joe Abernathy, Houston, TX

"Together with my RamKeeper, you have given me a color Mac at one-third the price. Thanks."

— Richard Artz, Ft. Collins, CO

"I have conducted some recent tests which indicate that the 'little' IIGS (with TransWarp GS) outperforms the MacSE. Your engineering department should take a bow."

— George Dombrowski, Jr., Chicago, IL

"TransWarp GS will be the best \$400 you ever spent."

— Dan Muse, Editor in Chief, *Incider*

"WOW WOW WOW! I am completely blown away with how fast it goes. Unbelievable."

— Dean Esmay, *A2-Central*

"TransWarp GS is by far the best money I've spent on my GS since purchasing my DataLink. Hats off to everyone at AE for another great product!"

— Greg Dacosta, *GENie*

TransWarp GS is rapidly changing the way people use the Apple IIGS. Join the thousands of TransWarp GS owners who've discovered computing at Warp Speed. For more than nine years, Applied Engineering has led the way with proven, reliable products for the Apple II line. We plan to keep it that way. Thanks for the vote of confidence, folks.

TransWarp GS Accelerator \$399

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IIGS Address

The editors of *The Apple IIGS Buyer's Guide* and Contributing Editor Larry Miller answer letters and questions from readers.

Address all inquiries to IIGS Address, c/o The Apple IIGS Buyer's Guide, Redgate Communications Corp., 24 New England Executive Park, Burlington, MA 01803. Questions may also be sent via electronic mail on CompuServe (71625,567) or MCI Mail (352-9601). Individual responses cannot be guaranteed.

Hexed By A Printer

First, I use an ImageWriter II with my IIGS. When using AppleWorks with one of the proportional fonts, if I try to print an address or date on the right side of a page, it ends up printing in the middle. Is there a way to fix this? I got my address on this letter to print on the right by setting the left margin to 6.2 inches.

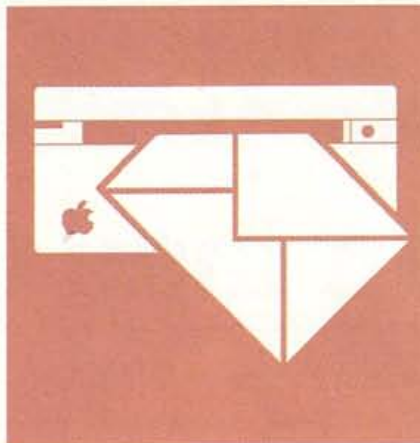
Second, sometimes when I print, I get a bunch of what looks like hex numbers. The only way to stop this is to turn off the printer. When I turn it back on, it works fine. What's going on?

*Greg Anderson
Minneapolis, MN*

You've already discovered the best solution, but let's see what causes the problems you report. The second problem is straightforward, so we'll look at it first.

What you occasionally see when you print are hexadecimal numbers. They look like pairs of characters consisting of numbers from 0 to 9 and the letters A to F. Apple included the capability to print data received in this format in the ImageWriter II as an aid to programmers. A programmer having a problem printing can turn on the hexadecimal data dump and compare what the printer is receiving with what it should be receiving.

You and other users (including those of us at *The Apple IIGS Buyer's Guide*) have been perplexed by a small design flaw in the printer. The Hex Dump mode is activated by turning on the printer while holding down the Select button. Unfortunately, the buttons



on the ImageWriter II are narrow and close together, and the Select button is next to the Power button. It's easy to hit the Select button accidentally when turning the printer on. Once you've activated the Hex Dump mode, the only way to return to normal operation is to turn the printer off and on.

Proportional fonts print the way they do in AppleWorks because they are different from normal fonts. Type a few words with a proportional font and then change to a monospaced font. Twelve characters per inch is a good choice. That's because it's the closest match for the character size of the proportional fonts. Now print out your sample.

Note how much wider the spaces between words are in the 12-characters-per-inch sample than in the proportional fonts. The text screen of an Apple II is strictly monospaced, so AppleWorks can't accurately show the effect of using a proportional font. Furthermore, Version 2.1 or earlier of AppleWorks handles tabs by inserting enough spaces into a document to reach the next tab stop. If you try to get around the space problem with tabs, you end up back where you started.

With an earlier version of AppleWorks, the only tool you have to place text where you want it — no matter what font you're using — is the margin settings. The recently released AppleWorks Version 3.0 has true tabs that do a much better job of placing text.

AppleWorks 3.0 can center or align text to the left or right of a tab stop. It also has decimal tabs for aligning numbers and it can do space tabs — like the older versions of AppleWorks.

Our early experience with AppleWorks 3.0 indicates that the default tab stops do not do a good job of putting text on the right side of a page. To get the desired results, you'll probably have to make a new tab ruler. It's easy to do, but it is an extra step.

There's an easy way to avoid fussing with margins and tab stops when you want to write a letter. Many of the documents you write have the same format every time. Other items will have some text, such as your name and address, that's always the same.

Make a starter document, or template, with the margins and tab stops set the way you want and save that document. When you want to write a letter, load the template and work from that. Use Open Apple-N (key combination) to change the document's name before you save it to disk.

If you're as forgetful as we are, it helps to lock the template file. AppleWorks can't save to a locked file. If you forget to change its name before you try to save a document created from a locked file, you'll get an error message informing you that the computer couldn't delete the original file and the save isn't complete. You then change the document's name before attempting to save it again.

Many utility programs can lock a file; you can also do the same from BASIC by using the Lock command. An easier way to lock a file on a IIGS is through the Finder. To lock a file this way, simply click on its icon to highlight it. Then type Open Apple-I or select the Info command from the pull-down menu.

The dialog box that opens with information on the file will have a check box labeled Locked. Click in this box and an X will appear indicating the file is locked. (With the latest system software, a padlock symbol appears before a file's name to indicate it is locked; older versions provide no such indication).

Parlais Vous Mainframe?

Not long ago, the computer system where I work was modified to receive access from outside terminals. So I bought my own 2400-baud modem to save time running back and forth to work to use their terminals. After having difficulty trying to emulate the proper terminal type, I talked to my dealer.



Break the IIGs sound barrier

Audio Animator™. All of the Sonic Blaster's features plus MIDI and external mixer

Our new Audio Animator transforms your IIGs from a beep box to a boom box! We've combined a true MIDI interface with a stereo digitizer, a stereo playback machine, an external mixer, and enough powerful, feature-laden software to unleash the sound potential your IIGs was born with. Take full control over MIDI compatible instruments, or record and play back digitized sounds with unsurpassed accuracy and quality.

Digitizing

Record sounds from your own stereo, CD player, television, or VCR, even a microphone. Audio Animator's built in oscilloscope lets you control recording levels visually and analyze inputted data. The zoom function permits you to "see" what your recording looks like in a graphical format. You determine the optimal balance between desired fidelity and available memory.

Audio Animator even has an on-board Analog to Digital converter to sample at an extremely fast rate (37,000 times a second), and with sound quality near that of a compact disk. With it, you'll obtain far higher levels of fidelity than with the GS's Ensoniq chip alone.

Play back on your own speakers

The Audio Animator includes *input/output and thru* for MIDI (Musical Instrument Digital Interface) devices. Play and record melodies on a MIDI instrument, edit them and play them back through any MIDI compatible instrument. In fact, Audio Animator lets you daisy-chain up to sixteen MIDI devices.

Audio Animator comes complete with an

external mixer to allow easy access to volume and record levels and microphone controls. Connect a drum machine, keyboard, stereo, CD player, even another computer... all without disturbing the GS.

Software, Too.

The powerful, mouse driven software we include presents you with easy to use pull-

- Editing functions such as fade-in, fade-out, backwards, echo, silence, and amplify
- Compatible with standard MIDI file formats including AIFF (Apple Information File Format)
- Sequencer supports 2:1 and 2.67:1 file compression
- MIDI quantization to 1/32 resolution and transposition



Compare Audio Animator with any other MIDI device or sound digitizer on the market. For completeness of the package, ease of use, quality, and an unmatched list of features... you'll choose Audio Animator.

Audio Animator \$239

down menus and SUPER HI-RES graphics that make the Audio Animator almost as much fun to see as it is to hear.

The MIDI portion of the software is an 8-track, 16 channel MIDI sequencer with separate channel record and playback filters and a number of editing functions like cut, copy, paste, punch in, punch out, and many more.

Features:

- Stereo input and output adjustable from external mixer
- Mixer has DIN connectors for MIDI in, MIDI out, and MIDI thru
- Compatible with all software utilizing the Ensoniq output
- On-screen oscilloscope to monitor inputs and VU meter

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Memory requirement - 512K (1 MEG recommended)
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Circle Reader Service Number 3

I've been told that it is not possible for my IIGS and Apple-compatible software to access an IBM 3278-type terminal. Would it be possible to use Applied Engineering's PC Transporter card with MS-DOS communications software to emulate the 3278 terminal (VT52 or VT100) from my modem at home?

*Craig Brubaker
Germantown, TN*

A 3278 (or other model with a similar number) is a block-oriented device, but personal computers are byte-oriented. While there are plug-in cards for Macintosh and MS-DOS computers that allow them to connect directly to a 3270 device, remote access is almost always done via a protocol converter.

The protocol converter changes data from the IBM's SNA EBCDIC format to that of an ASCII terminal. Any personal computer — including your Apple IIGS, when equipped with a modem — can communicate through the protocol converter if it is using software that emulates a terminal such as a VT52 or VT100.

Most of the telecommunications software listed in the "Desktop Communications" section of this magazine's "Apple IIGS Hardware And Software Directory" should do the job. Of the programs listed, we know of people successfully using both MouseTalk and ProTerm to access mainframe computers. The newer versions of Point-To-Point distributed by Beagle Bros. should also work satisfactorily. Ready Link — a new communications software package from Applied Engineering — also has good VT52 and VT100 emulation.

Some shareware programs may also work well for you. Kermit, which emulates a VT100 terminal, is widely available for the Apple II. There's also a terminal program that's just for the IIGS. Simply called GSVT, it also emulates a VT100 terminal.

We're used to the IIGS not being taken seriously by elitists who use other computers. And we're used to hearing that the Apple II can't do things we know it's already doing. Still, it's disturbing to think there are dealers who believe the IIGS can't emulate a VT100 terminal. The Apple Access II terminal program that many dealers sell does an acceptable VT100 terminal emulation. The other terminal programs are so much better than Access II, however, that we suggest trying them first.

Perhaps the person who said your IIGS couldn't access an IBM mainframe thought you wanted to tie directly into the system and bypass the protocol converter. As far as we know, there are no hardware cards that enable any Apple II to perform this feat.

Hidden Fonts

I own a IIGS and use MultiScribe GS. I would like to write in French. I have seen a display of the standard IIGS character set that includes characters I would like to use, if only I could access them with my word processor. I have tried the French font built into my ImageWriter II and found it incomplete.

*J.P. Guggenheim
Bryn Mawr, PA*

A character is represented in a computer by a byte that can range in value from 0 to 255, for a total of 256 different values. The normal ASCII character set uses up half the possible values a byte can have. Macintosh and IIGS fonts use the standard ASCII characters and also have standard characters for most of the other 128 values available.

Macintosh users can access the extra characters by using the Option key as a sort of super Shift key. Pressing a key while holding down the Option key generates one of the extra characters. The Shift and Control keys also work together with the Option key to generate some of the extra characters. In addition to diacritics and foreign characters, the extra characters contain many useful symbols, such as the cent sign, degree symbol, checkmark, typographer-style curly quotation marks and several math symbols.

With System 5.0, IIGS users have the same method available for accessing the extra characters. This method works with desktop applications such as AppleWorks GS, MultiScribe GS and MultiScribe's update — now called BeagleWrite GS and available from Beagle Bros.

Ironically, there seems to be some interaction between System 5.0 and Activision programs such as Writer's Choice Elite, which could access the extra characters before System 5.0. Using the Option key no longer works well to generate the extra characters in these applications.

Because not all IIGS fonts use all of the extra characters available (in fact, some fonts

don't use the entire ASCII character set), it's a good idea to make a guide of the fonts you use often. A printed guide can help you avoid hunting for the keystroke needed to produce the characters you want.

Cold And Warm Boots

I recently tried to warm-boot my IIGS by holding down the Apple, Control and Reset keys. I also pressed the Option key in an attempt to reach the Control Panel. I released the Reset key and held the other three keys down as you must do to reboot.

Instead of displaying the Control Panel, the computer began a slide show of colored graphics patterns. After several seconds, memory bank numbers were displayed sequentially at the bottom of the screen and the computer changed border colors repeatedly. Finally, a tune of ascending notes was played, and I saw the message "System Good". Is this an internal memory-testing routine?

*Ty Harris
Atlanta, GA*

You're very close to the answer. The display you saw is generated by internal diagnostic routines, but they test much more than memory. The test will run through the same series of numbers no matter how much memory is installed. Although the numbers look like they might be memory bank numbers, they refer to various systems in the IIGS. If a system should happen to test bad, the report will include the number of the system that failed.

This information can help a repair technician diagnose a problem. For example, a problem with the ADB controller (the keyboard and mouse attach through the ADB) will be reported in the 09000000 range. The test is mentioned in the *IIGS Owner's Guide*, but only in a small paragraph in a rather obscure section.

The self-test has some use other than its primary function of diagnosing problems. Once the test has been initiated, all of the indicators the IIGS stores — to tell whether it has been on previously and is warm-booting or cold-booting from a no-power situation — are destroyed. This means you can get the computer to do a cold-boot without turning the power off, saving wear and tear on many components.

As soon as the test begins, press Control-Reset to reboot the computer. A cold-boot

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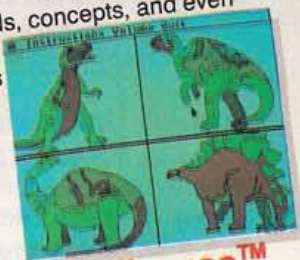


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like this can be handy for changing Control Panel settings that won't normally change unless you turn the power off. Incidentally, the normal reset procedure is sometimes referred to as the "three-finger salute"; the key combination necessary to enter the self-test has been dubbed the "four-finger salute."

The proper key combination to enter the Control Panel as part of a reboot is to press only the Option, Control and Reset keys together.

We have both a simple IIGS system with few accessories and an industrial-strength system with many options on it. The simple system almost always reboots with one key pressed, though it sometimes requires a second reset to get the computer to restart. The other system sometimes requires several reset tries before an attempt actually works. So if you ever have trouble getting a reset to work, keep trying.

As useful as reset is on a computer, it should be used with care on a IIGS. Resetting at the wrong time can have disastrous effects on your disks. If a program crashes or freezes, reset is the best way to restart the computer. But never use the Reset key while a GS/OS application, including the Finder, is running. Important information about some files may not have been stored to disk.

Using reset rather than the quit routines guarantees that this information never gets written to the disk, resulting in corrupted disk files. If you forget and use reset by accident, don't panic. Everything is probably fine. But if you make the use of reset a habit, a problem will probably surface sooner or later under GS/OS.

The Finder and replacements such as ProSel 16 have provisions for doing the equivalent of a cold-boot as part of their quit routines. So even the side trip through the self-test isn't always needed.

Loading Up On Hardware

I have a IIGS with 512K memory, an Applied Engineering internal 2400-baud modem, one 3.5-inch drive and one 5.25-inch drive. I wish to upgrade by adding Applied Engineering's TransWarp GS, RamKeeper board, the GS-RAM board with 1 MB and a second 3.5-inch drive. My goal is to increase system memory to run AppleWorks GS, decrease the loading and operating time, and to retain memory when the power is off.

Will there be enough room for this ad-

ditional hardware? Is there sufficient power in the IIGS to run all this equipment?

*David Loring
Grand Ledge, MI*

We can provide an affirmative answer to each of your questions. The hardware you wish to add to your IIGS should all fit with no problem. Assuming the modem is in its standard slot (slot 2), that leaves slots 3 or 4 free for the TransWarp GS. Any memory cards attached to the RamKeeper could block slot 7 or slot 4 if a card is attached with a slot extender, but never both.

Internal modems tend to use a lot of power, and the TransWarp GS definitely does. Still, if you have no other cards with a heavy power draw, you should be fine. Memory uses relatively little power. The RamKeeper is externally powered, so it should provide little drain on the GS power supply.

All those accessories produce a lot of heat. You should add a fan to your IIGS when you add the next accessory. External fans, such as those supplied by Applied Engineering or Kensington Microware Ltd., do a much better job than the Apple fan.

The system you've outlined is a good one, but we see other ways to achieve your goals. Granted, some of them are more expensive.

First, know exactly what a RamKeeper does. It doesn't save the system memory when the computer is turned off. It only retains the memory in a RAM disk you've set up (which the system identifies as a ROM disk). You can keep your System files on a ROM disk and start up the computer very quickly.

But you also want to run AppleWorks GS, which is a very memory-hungry program. If you can avoid it, don't run the program with the minimum amount of memory it requires. Even the 1.5 MB of memory a GS-RAM card can hold isn't enough to prevent running out of memory occasionally when running AppleWorks GS.

If you fill your Apple memory card to its limit, and fill the GS-RAM card you are thinking about buying, you'd have plenty of memory for AppleWorks GS, but not enough to have a useful ROM disk.

The cheapest memory available for the IIGS uses 1-megabit memory chips. A memory card like the GS-RAM Plus, which uses 1-meg chips with 2 megs of RAM included, would probably be competitively priced

against a GS-RAM with a meg of memory, plus enough memory to fill the Apple card to capacity. That would give you the same memory and room for future expansion.

If you want your System files to be on a bootable ROM disk, you will definitely want more than 2 megs of RAM in your IIGS. If you want to use the latest system software, along with a good variety of fonts and a few desk accessories, you'll probably need almost another 2 megs of memory for the ROM disk. That's before you put any applications on it. If you want to use ProDOS 8 applications, then the 2 megs of memory on the card will be enough for quite a few applications.

Offsetting the cost of the extra RAM is the possibility that, with a large ROM disk, you may not need an extra 3.5-inch disk drive. With the operating system on the ROM disk, most of the time you can simply insert a disk with both program and data in the 3.5-inch drive and not swap diskettes around.

If you needed a separate program disk, you'd find that once a program is loaded, you don't really need to keep the program disk in the drive and you can replace it with a data disk. Diskette swapping will happen more often, but it will not be as objectionable as when using a single 3.5-inch drive.

Another thing to consider is to not purchase either a RamKeeper or second 3.5-inch disk drive. Rather, put the money you would have spent on them toward a hard disk drive. Using an Apple IIGS with System 5.0 on a hard drive with a Transwarp GS can be very enjoyable. A system configured like that has the speed of an IBM PC AT.

Some of the faster hard drives available for use with GS/OS are faster than a RAM/ROM disk. Even slower model hard disks provide a big jump in speed over diskettes.

There's a much smaller speed difference between the hard drive and a RAM/ROM disk. With a hard drive, you don't really have much need for a second diskette drive of either size. Usually, a diskette drive is used just to transfer files onto the hard drive or to run an occasional copy-protected program.

A Tale Of Two Printers

I'm a new Apple IIGS owner and have imported some of my hardware, including a Panasonic dot-matrix printer for printing letters, from my old Apple IIe to my IIGS. I have an ImageWriter II in slot

1 and the Panasonic in slot 7. I only want one printer to print at a time, but I cannot seem to get any programs to work with both printers plugged into their slots at the same time. Why?

*Tony De Castro
Clearwater, FL*

We're not sure why your setup doesn't work. We know of nothing that would prevent a program from running with two printers or with a printer in slot 7 — though that's a very unusual slot for a printer, and some programs may not be able to print to slot 7. We've seen a lot of computer configurations, and the only times we remember seeing a printer used from slot 7 are occasions when the printer is running under AppleTalk. Knowing more about the problem might point us toward a solution that's more specific than the generic advice we're about to offer.

Our guess is that your Panasonic printer is a parallel printer and uses an interface card for printing. If that's the case, and you don't need both printers to be available at the same time, try the more usual method practiced by IIGS users with both serial and parallel printers. That is to use both printers from slot 1.

It takes only a quick trip to the Control Panel to change slot 1 from using the internal printer port for your serial ImageWriter to your interface card for your Panasonic. There are also programs, such as the shareware SWCP (Switch Control Panel), that make changing a slot assignment even easier.

If you simply pop into the Control Panel and change the slot setting, it generally won't change immediately — it will require a reboot. There are desk accessories avail-able that will make the change effective immediately.

If you need to have both printers available at the same time, slot 2 is probably the second most common slot assignment for a printer. If you don't have a modem, move either printer to slot 2. If you do have a modem, move whichever printer won't interfere with the modem (though, as long as it's in the same slot, you won't be able to use that printer in a program that uses the modem) and use the Control Panel to switch between printer and modem. ■

— *Larry Miller*

Larry Miller, a programmer and consultant based in Lafayette, Indiana, is a SYSOP on CompuServe. His CompuServe I.D. is 76703,1031.

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An Eye For Color



Used with discretion, color can be a dynamic force that will make the reader pick up a document, read it and remember the message. Adding a multitude of colors

just because color is available in the latest IIGS-based desktop publishing programs usually doesn't work. Don't use color simply for the sake of using color.

One of the most common misconceptions about color is that color, any color, will attract the eye and cause the reader to read more. It is actually possible to cause just the opposite response.

Before you begin to create your document, take time to consider what purpose color will serve.

Creative Contrast. If you don't use contrast, it is actually possible for your work to become practically invisible. Red, orange, green, blue and purple stand out fine on a white background. But on a black background, only yellow and orange are visible and easy to read. If you must use red, blue, green or purple on a black background, lighten the value. For instance, use pink instead of red.

Be sure to try out color combinations by actually printing them. Do not depend on your monitor for color balance. Remember, the ImageWriter II printer can create fewer colors than the monitor.

Black Is Best. Many of us mistakenly assume that using color for a word or phrase we want to "jump off the page" will be the best solution. Unfortunately, this is seldom the case. Most of the time, black type will pop out better than any other color or value against a white background. This is because black and white have maximum contrast.

White type will, therefore, usually be the best choice against a black background. Due to its high value, yellow follows a close second in this regard.

A more effective approach to making a word stand out in a headline is to have the majority of the headline printed in a color and the word or phrase that you wish to stand out printed in black.

If you are having problems determining what works best, try viewing your test print-

out from a distance. Many times, we can see mistakes and problem areas when the work is far enough away that distracting detail cannot be seen. Another alternative is to show your work to a colleague and question him or her about what seemed to be the most important parts of the document.

Color harmony, the relationship between colors, is also important. Complementary colors are opposite one another on the color wheel. The basic sets of complementary colors are orange/blue, red/green and yellow/purple. When colors are complementary, it does not mean that they should be used together because they complement one another.

The fact is that complementary colors have a tendency to clash visually. The experience can be so strong that the colors appear to flash violently. This may seem like a good way to get attention, but the sensation is not pleasant. The average viewers will tend to avert their eyes rather than focus on the phenomenon. It is best to avoid placing complementary colors next to one another.

If you wish to set a mood, think about the key of the color combinations that you will be using. For instance, low key means that the colors are predominantly low in value and intensity and, thus, produce a somber mood. On the other hand, high-key colors are high in value and very intense and produce a festive mood.

Getting It Printed. Before finishing your design, determine how many copies of the final piece you will need and the extent of your budget.

If you only need a few copies and have the time, it is feasible to use your ImageWriter II to print out all the copies. If you need several hundred copies, you will probably want to send the artwork to a professional printer.

Adding color to a piece that will be printed can greatly increase the cost of the printing job. You will not only have to pay for another plate for each color needed, but you will also have to pay for the printer's time and the effort expended cleaning up the press between each color. This can easily add several hundred dollars to the job, depending upon the complexity of the artwork and the number of colors used.

If your desktop publishing program doesn't generate color, you can still add color

through the print process. In fact, a commercial printer will require that everything brought in to be photographed be in black and white and on separate pages. Taking a color print(s) with you can help avoid any confusion as to what color should be printed and where.

Getting It Separated. When preparing your document to be sent to a printer, break down the design into its primary color elements; this is called making separations. To do this, it will probably be easier to work backward from the finished design than to try to construct the pages for each color separately.

Let's say that you are going to prepare the page that the printer will use to print red ink. You will follow these steps: load the finished document. Have the software remove or turn white everything that is not red. Turn the remaining red elements to black and print the page. Repeat this process for each of the colors that you will need to have printed. These pages will be used by the printer to make the plates that will print the corresponding colors on the final piece. Currently, GraphicWriter 2.0 is the only desktop publishing program that can automatically make color separations of this type.

If you determine that color is beyond your budget, consider adding gray shades to the document instead. Even though there will be no color (other than black and white) printed on the page, the reader will perceive greater variety and this extra "color" will relieve the tedium of a page printed only with the extremes of black and white.

Used properly, color can add sparkle to your work and illuminate your message. Used improperly, it can create a dud. Remember that the main uses of color are to attract attention, to emphasize a portion of the text or area of the design, and to set a tone or mood. If you keep the purpose of color in mind, then you should ensure your success. ■

— Gary Ramey

Columnist Gary Ramey is director of advertising design at the National Education Center in Arizona. He has 17 years of experience in commercial art.

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Videodisc Adventures With A IIGS



Multimedia combines visual, text, graphic and audio elements into a single computing environment. It joins a computer with different

media, such as television, CD-ROM drives, laserdiscs and slide projectors, to create an innovative presentation right from the computer desktop. While some people view multimedia as the latest fashionable buzzword bandied by industry pundits to generate excitement about computers, others perceive it as a valuable tool with great educational potential.

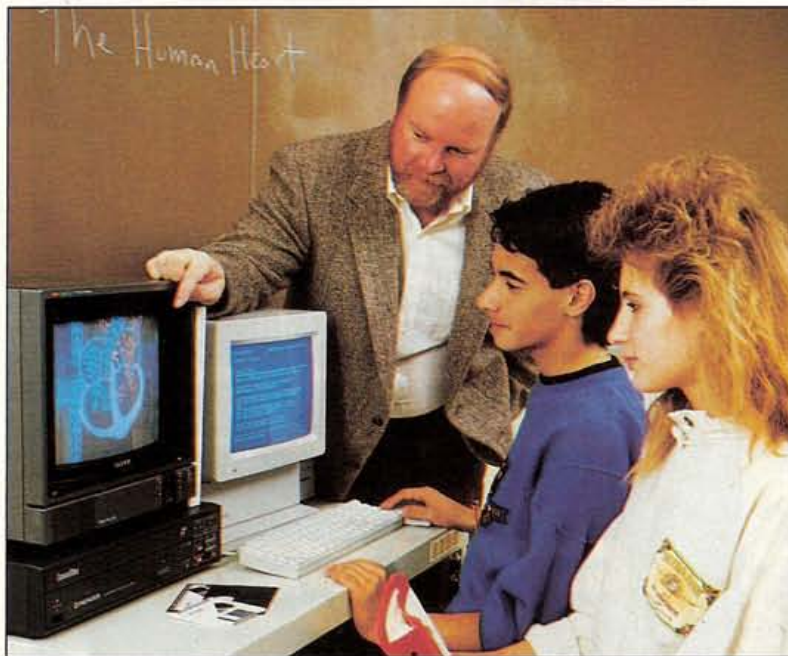
Typical multimedia development platforms include expensive scanners, audiovisual digitizers, color boards, large-screen monitors, optical discs, large storage capabilities and high-end computers. But schools don't have to *develop* multimedia presentations. Their audience (students) is there to primarily *learn* from what others have already developed.

There are several products available to enhance any standard curriculum. Because most educational institutions already own computers and a VCR-compatible monitor, all that's needed for a multimedia performance is a computer-compatible CD-ROM or videodisc player. Luckily for schools and consumers, the prices for optical disc players drop almost daily.

In Apple's eye, the future of multimedia computing lies primarily with the Macintosh. For K-12 educators, however, school computing frequently means Apple II computing. Optical Data, a leading publisher of archival laser videodiscs for science education, gives users a choice. It produces videodiscs that

interface with Macs running HyperCard or Apple IIs running AppleWorks.

The Laser Disc Story. The laser videodisc is an optical storage platter large enough to accommodate vast amounts of audiovisual information. It holds 54,000 visual images on each side of a 12-inch platter, roughly equivalent to 1,300 slide carousels of 80 slides each. Video motion runs at 30 frames per second, so a 12-inch disc plays about 60 minutes.



The teacher and students above are using an Optical Data videodisc, a videodisc player and AppleWorks on an Apple II. These components let teachers using Apple IIGS computers bring dynamic interactive media into the classroom.

Typical videodiscs consist of huge visual databases filled with text, audio and real-world video images covering hundreds of topics and thousands of records. Records consist of full-color, still-action photographs, slides, movie clips, real-time video, speech, sound effects and music.

Users cannot modify the information stored on a videodisc platter. And data cannot be added, deleted or otherwise altered. Nevertheless, these optical devices offer teachers a creative opportunity to supplement traditional textbook presentations. They enable instructors to communicate conventional

ideas in non-traditional ways, challenging children to learn more about the world.

Viewers control the videodisc display. Simple commands make it possible to search through the frames rapidly or proceed directly to desired images. Users move from subject to subject, cross-referencing or zooming in on particular topics. There's no need to view materials in a restricted linear fashion. As a result, the technology encourages youngsters to be active participants rather than passive recipients. Teachers can use audiovisual elements to support classroom discussions or to clarify complex concepts.

Living Textbooks.

Optical Data publishes several interactive multimedia libraries designed to interface with the Apple IIe, IIGS or Macintosh. The Living Textbook series includes high school-oriented videodiscs tailored for classes in Earth, Life and Physical Science.

One videodisc in this series, called *The Frog*, examines amphibian anatomy and physiology in detail. With more than 200 slides and 34 movie clips stored on a two-sided videodisc, it offers an alternative to dissection in the classroom. Viewers can look at slides to learn about major tissues, bones and muscles, embryology, development

and metamorphosis. Movie clips compare human and amphibian systems, examine the anatomy and physiology of major organs and systems, demonstrate how the frog exercises temperature control, and show the animal obtaining food, water and oxygen in its natural habitat.

The Life Science package consists of two two-sided videodiscs with still photos, movie clips, diagrams and narrations. The first platter focuses on molecular, cell and human biology. The second examines plant and

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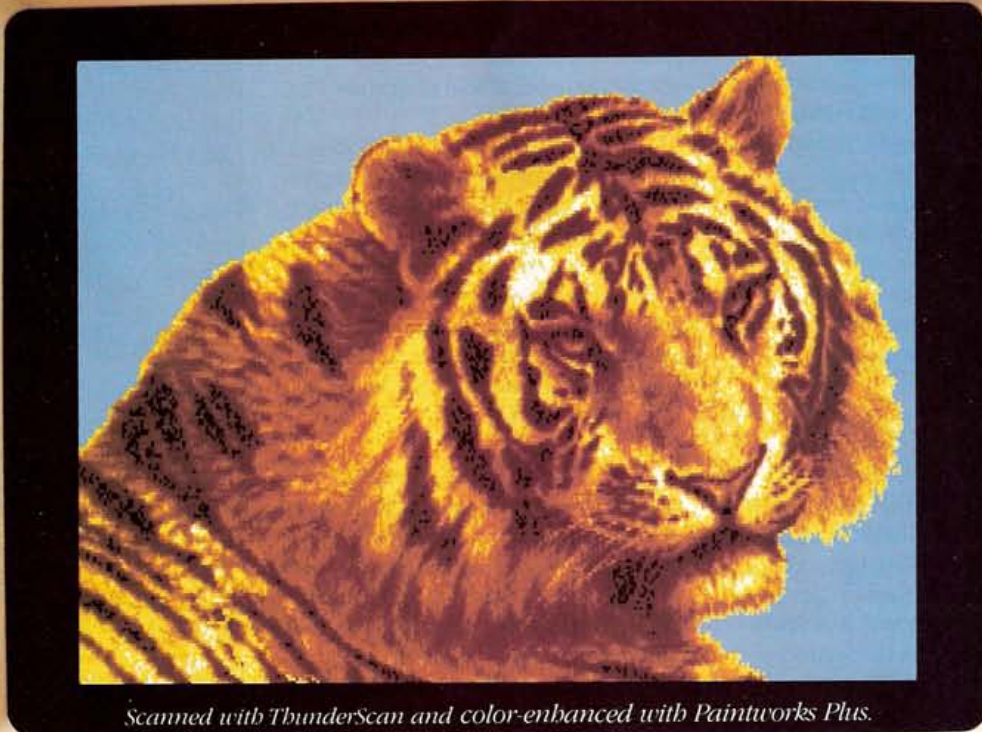
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Circle Reader Service Number 9

animal biology. The duration of each movie clip varies with the subject matter. Some clips include narration; others do not. Viewers can listen to the narration in English or Spanish.

Optical Data also publishes a Space Disc series with narration only in English. Currently there are three titles, although more are in the works. *Voyager Gallery* focuses on the Voyager spacecraft and its billion-mile excursion through the outer solar system to observe Jupiter, Saturn, Uranus and their satellites. *Planetscapes* offers a two-sided videodisc exploration of planets in the inner solar system (Earth, Mars, Venus and Mercury) with almost 12,000 video still frames and 50 minutes of motion video clips. Topics include the Earth's evolution, atmosphere, orbital photography and airborne surveys.

Side 1 presents super-computer visualizations of Earth, with animated weather satellite data, and a comprehensive Landsat Atlas of the United States. Side 2 provides pictorial surveys of the neighboring planets as viewed from Earth-based telescopes and several orbiting spacecraft.

Space Shuttle includes three double-sided discs providing audiovisual documentation of the development, testing and operation of the first 11 missions of the shuttle. The platters present launching and landing video highlights, cabin tours, weightlessness demonstrations, parachute deployment, Sally Ride's flight and many more shuttle firsts.

IIGS Connections. Viewers can watch any of these videodisc presentations on a monitor linked to a videodisc player equipped *only* with a hand-held remote unit. However, connecting the player to a computer has advantages. For example, the accompanying AppleWorks database diskette provides background information and descriptions for each still frame and motion clip.

Instructors can use the software as an authoring tool to design customized interactive courseware for their classes. While they cannot alter platter materials, they can personalize the presentations by providing descriptive information tailored to specific classroom needs. The software enables them to perform high-speed keyword searches. It sorts and prints out data files and provides hard copy of all frame descriptions.

Instructors familiar with AppleWorks will find Optical Data's Apple II software easy to operate. The disk consists of AppleWorks database and word processor files. The videodisc player responds to AppleWorks-like specific commands issued from the keyboard.

By pressing the Option key (or Closed Apple key) simultaneously with another key, users can search for information by chapter or frame (Option-F), freeze the video motion to display a still image (Option-Space), turn the audio off (Option-Q), select the appropriate audio channel (Option-R[ight] or Option-L[eft]), scan forward or backward (Option-> or <-), overlay the text in the data field onto the videodisc visual (Option-O) and more.

Optical Data recommends a Pioneer LaserDisc player (LD-4200) to run its optical discs. Apple IIe users will have to purchase a second 5.25-inch disk drive, Super Serial Card and cable to connect to the player.

Individuals with IIGS machines need only purchase a cable to connect the computer directly to the player. Connection is made through the modem port. There is no need to purchase either a second 5.25-inch drive or a Super Serial Card.

IIGS machines also simplify product operation in another significant way. Because a 3.5-inch diskette holds nearly 800K, all videodisc records can remain within a single database directory. The IIe's 5.25-inch diskette is too small to hold all database records in a single file.

Optical Data accommodates the 5.25-inch diskette by segmenting the software's single large database into several smaller databases, each holding records specific to a particular videodisc side. This makes cross-referencing and frame searching much more difficult. For the IIe to run an Optical Data LaserDisc at peak efficiency, users will have to purchase a 3.5-inch disk drive and upgrade their IIe system memory to 512K.

A New Frontier. LaserDisc products are more expensive than either conventional textbooks or computer software, but they offer students the opportunity to learn about a variety of topics in new and exciting ways. The discs combine thousands of visuals into one manageable library, which users can access from a single source with just a few keyboard commands. Students get to view

realistic photographs and real-time motion video, accompanied by descriptive narrations, music and high-quality audio. They also get to work with AppleWorks and build database management skills.

Scientific terms, concepts and subjects come alive on the video screen with able assistance from the computer. Students can easily navigate through the collection of video clips and slides, arranging the visuals in any order, while adding descriptive information to personalize their presentations. LaserDisc technology and the Apple IIGS team up to provide valuable, innovative teaching resources for any secondary science curriculum. ■

— Carol S. Holzberg, Ph.D.

Shutesbury, Mass.-based columnist Carol Holzberg is an anthropologist and computer journalist. She writes for several magazines, serves as a computer consultant and is on staff as the computer resource person at the Shutesbury Elementary School.

Product Information

Products: The Frog Interactive MultiMedia Library; \$395 retail
Planetscapes Interactive MultiMedia Library; \$395 retail
Life Science Interactive MultiMedia Library, Sides 1-4; \$1,295 retail

Prices Include: videodiscs; a print directory listing each frame by title and number; auto-boot AppleWorks software; a lesson guide with critical thinking questions, vocabulary and lesson objectives tied to the visuals.

Company: Optical Data Corp.; 30 Technology Dr., PO Box 4919; Warren, NJ 07060; 800-524-2481 or 201-668-0022

Minimal System Requirements: Apple IIGS; 512K (128K Apple IIe with Super Serial Card, two 5.25-inch drives); Pioneer LD-4200 videodisc player; NTSC monitor

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Low-Cost Excitement



Most Apple II user groups maintain a library of public domain and shareware software, and some of the very highest quality applications these

groups offer is IIGS entertainment software. For assistance in locating an Apple user group, call 1-800-538-9696.

After joining a user group, make sure to get Nucleus GS, a dazzling and incredible display of IIGS graphics, animation and music. A French program, Nucleus clearly demonstrates why the GS stands for Graphics and Sound. A graphic object that looks like a strand of DNA appears within a window on screen, surrounded by shooting stars. The object turns and twists around three axes, making an incredible 3-D representation. You can control which axis the object turns on, and it can revolve on 1, 2 or all 3 axes. While the animation is displayed, toe-tapping rock music plays. Nucleus requires 1 MB of RAM and works on a IIGS with ROM 01.

Bounce It! by John Tierney was one of the first IIGS-specific shareware super-high-resolution games available. Like Arkanoid, it is based on the classic Little Brick Out "ping pong" program. Using the mouse to control a variable-size paddle, one deflects bouncing balls toward colored boxes that occupy the top half of the screen. Each time the ball hits a box, points are scored and the box is removed. Remove all the boxes to complete one of nine levels.

Thank Heavens. During game play, Bounce It! plays music that sounds like it was produced with an angel's harp. Player-defined options allow one to speed up or slow down the ball's motion, and the user can make the paddle larger or smaller. The options make it easy for children to play this highly entertaining game. Bounce It!'s shareware fee is \$10.

F1 Raceway, by Joel Quejada, is a \$15 shareware arcade game that puts you behind the wheel of a Formula 1 race car, racing against other cars and against the clock. F1 Raceway is a fast-action, mouse-driven game. The mouse button controls acceleration,

while the Open Apple key is the brake. The screen display consists of the race track on the left and a dashboard display panel on the right. Cars are passing on either side, and you avoid them by frequent lane changing. You'll need to keep an eye on the fuel gauge and re-fill as necessary. F1 Raceway includes digitized sounds of cars crashing and music designed to keep you on your toes.

Most Apple II user groups maintain a library of public domain shareware software. For assistance in locating an Apple user group, call 1-800-538-9696.

Evil Forces. As The Link Turns, by Parik Rao and Scott Pease, is a joystick- or keyboard-controlled arcade shoot-'em-up that is action packed and filled with humor. An evil force has taken over Apple Computer, Inc. and is attempting to close the Apple II division. The goal is simple: save the Apple II. You'll battle flying diskettes, joysticks, RAM chips and Macintosh computers in this timed game. The graphics are truly amusing, the animation is very smooth, plus the sounds of digitized gunfire add to the enjoyment.

Yahtzee, by Dave Buell, is a visually stunning game. The classic board game has been translated to the IIGS desktop in a way that will keep you coming back for more action. Yahtzee, played by one or two people, is an addicting dice game. It's also one of the few games where the computer has no particular advantage. It is easy and extremely gratifying to beat the IIGS!

In Yahtzee a player rolls a pair of dice and attempts to come up with matching numbers on the dice. Rolling dice with the same number, or getting a straight, adds up points. The game requires the user to make quick mathematical calculations. Actually, it's a thinking person's strategy game. Yahtzee instructions are included.

Brian Greenstone and Dave Triplett — the team who created the highly acclaimed, commercially available Xenocide game — have

also produced several excellent IIGS arcade games. Greenstone considers computer programming an art form. After playing Copy Killers and Quadronome, you'll know you've seen the work of master artists.

Viral Infections. Copy Killers is a fast-action, joystick-controlled arcade maze game. The scenario pits the player, representing an FBI agent, against software pirates who are busy distributing illegally copied software and computer viruses. The player roams the maze shooting pirates; pirates shoot viruses back. The viruses are persistent, and the player often needs to get a shot of anti-virus medicine.

Throughout the chase, manic music plays, adding a degree of tension to the game. Although the game ends when the viruses multiply, Copy Killers is so challenging, you'll want to play it over and over again.

Quadronome is a fast-action 3-D game similar to racquetball. Played by one or two players, it offers a unique visual perspective. Side-by-side screens are shown. As the ball moves away on one screen, it gets closer on the other. The game is quite challenging, and players may wish to reset the IIGS' speed to Slow (1 MHz) when first starting out. Although the Slow setting produces some jerky animation, it does allow you to learn how to play the game without missing every ball. After lots of practice, reset the system speed to Fast.

Card Fun. Doug Davies and Todd Wood, employees of Word Perfect Corp., are another software writing team. They have produced a series of arcade games based on card games. Some of their games closely resemble the video games found in gambling casinos; others are based on classic variations of solitaire. All of Wood and Davies' games are excellent; we'll look at three of them: Video Poker, Pyramid and Monte Carlo.

Video Poker has a \$10 shareware fee and is based on video games found in Nevada casinos. A player starts with \$100 and can bet \$1 to \$5 per hand. The rules are classic five-card draw poker; the action is completely mouse driven. Five cards are dealt and the player keeps or discards any number of them. The object is to make the best five-card

SHAREWARE

poker hand. The payouts are similar to those in a Nevada casino. This game is a winner for poker players! The screen is visually stunning, and the face cards include humorous graphics.

Monte Carlo, a \$5 shareware gem, is a variation of solitaire. Twenty cards are dealt face up. The object is to remove adjacent pairs of cards by clicking on them. When pairs are removed from the playing screen, new cards are dealt and the spaces are replaced with the new cards. The cards are dealt at random and, quite often, there are no adjacent pairs. At that point, you simply start a new round. You win by removing all 26 pairs of cards.

This is a very quick game. Due to its addictive nature, a Statistics pull-down menu is provided. It shows how long you've been playing, how many games you've played and how many you've won. It's possible to play upwards of 40 rounds in an hour; if you win more than two or three of those rounds, you're doing very well.

Pyramid is another \$10 shareware solitaire variation. Twenty-eight cards are dealt out in a pyramid shape; eight cards occupy the first row. The aim is to remove pairs of cards adding up to 13. However, you can only click on cards that are unobstructed. At the beginning, that means a player can only choose from the first row. As cards are removed, those cards displayed toward the top of the pyramid can be chosen. This is a very challenging game that's lots of fun.

All of the above programs are IIGS-specific and GS/OS compatible. They will work with either System Disk 4.0 or 5.0. Of all the entertainment programs available for the IIGS, these are the most exciting; contain the best graphics, sound and animation; and have the fastest action.

When you acquire any of the shareware games, remember to honor the authors' request and remit the small fee. Your check will encourage the author to write even better games in the future. ■

— Joe Kohn

Columnist Joe Kohn is the software librarian for the Big Red Computer Club, a large international Apple II user group. You may contact Joe at 166 Alpine St., San Rafael, CA 94901.



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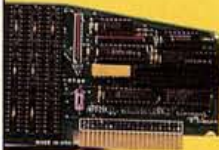
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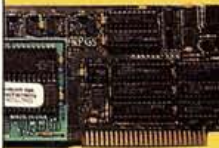
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The AppleWorks GS Identity Crisis



AppleWorks GS is having an identity crisis. It doesn't want to be called that anymore. It doesn't like the name.

Fire up the program and open a new Word Processor document. Type the following sentence: "The name of this program is APPLEWORKS GS." Use all caps for the name. Now move the cursor to the beginning of the file and invoke the spelling checker.

Surprise! Notice which word it flags. That's right, AppleWorks. Now, the name only triggers the spelling checker if you spell it in all uppercase letters, but, as you'll see, it doesn't care for it the other way, either.

All right, what does it want to be called? Let's ask it. Click on the "Suggest" button and see what it comes up with.

Interestingly, the first suggestion is... AppleWorks. Are we off the hook due to case sensitivity? Nope. Click on "Replace" and watch what happens. It replaces the word and immediately flags it as misspelled again!

Pollywogs To The Rescue. Ok, so it must prefer the second choice. Click "Suggest" again and look at the second suggested word. Can you believe your eyes? Yes you can. It sure looks like it wants to be known as Pollywogs.

Credit columnist Larry Miller, our own "IIGS Address" man, with this amazing discovery. He immediately passed the news on to the MAUG Apple II area of CompuServe, and it spread like wildfire. In those circles the program immediately began to be referred to solely as Pollywogs.

But wait! There's more. I wrote a short piece about this Pollywogs stuff, using AppleWorks Classic, for a local user group newsletter and spell checked the completed article with TimeOut QuickSpell from Beagle Bros. Guess what: It flagged Pollywogs as incorrect, suggesting the alternate spelling Polliwogs. Is there no end to this madness? Well, my trusty dictionary (the printed-on-paper type) lists both spellings as correct, but even it doesn't list AppleWorks.

Well, on to other business.

Page Layout. Last issue, we discussed basic page-layout operations using Pollywogs. Since then, I have donated the file containing the demo newsletter to the public domain and uploaded it to CompuServe. By now it should be available on the other commercial services and may even pop up in your local club's library. If you don't see it, ask!

The upload includes the page-layout file itself and a short word processor file explaining some useful things to know about it. The full text of the Generic Newsletter is present, including the ever-popular Elvis article.

Once you have the file, feel free to make any modifications you'd like. Experiment! It's there to help you learn.

If you load the newsletter file into Pollywogs and the text looks weird, read the word processor file. It tells you which fonts must be installed for the thing to make any sense; you may want to print this information for reference. Also, if the text appears to run off the page, be sure to enter the Page Setup dialog (under the File menu) and set Condensed print. Then all will be normal.

AppleWorks 3.0. Over on the eight-bit side of the house, AppleWorks Classic has recently been updated to Version 3.0. This is of interest to Pollywogs users as it changes some of the rules.

Pollywogs has some built-in compatibility with AppleWorks and can directly import files from all three of its modules without special processing. However, the new AppleWorks version added several new features that necessitated changes in AppleWorks data file structures. For example, new control codes and tokens now appear within such files to mark the application of some of the new features.

A file created by AppleWorks 3.0 that does not make use of any of the new features will still load properly into Pollywogs, but a file containing any of the new attributes (tabs, for example) will not.

You can get around this by printing the AppleWorks 3.0 file to a Text/ASCII file on disk and then loading the ASCII file into Pollywogs. Not the best possible solution, but it'll get the job done. You may still have to do some editing to make the Pollywogs file match its AppleWorks-based original.

Asked about whether an update to Pollywogs might be in the works to correct this, Claris representatives at AppleFest responded with a strong refusal to comment.

Next issue, we'll see how much fun it is to import graphics to the Page Layout module!

Tip Of The Month. Special thanks to MAUG member Tom Hanks, who reminds us that if you want to use large fonts in Pollywogs (we had used 24-point Venice for the banner in last issue's newsletter example), you must use the "Choose Font" command directly under the Font menu to set the size. The 24-point size is not a selection represented in the Size menu.

Choose Font is a useful little shortcut that allows you to set several font, size and style selections using a single dialog box. In addition, it allows you to set any desired point size for your text.

Be aware that if you try to print a font at a point size that is not present on your boot volume, Pollywogs will have to mathematically approximate the look of the font in that size. This tends to have results that are not aesthetically pleasing. The exception is the case where you have a font twice the desired size. When this is true, Pollywogs will use the double-size font and squeeze it down to half size. This shows best results when Better Text is selected in the Print dialog.

HyperStudio Update. Shortly before press time, we received from Roger Wagner Publishing a prerelease copy of HyperStudio Version 2.0. We're happy to report that it is now complete, with all advertised functions enabled and working. As an added bonus, HyperStudio now supports touch screens for users who really like to point and select!

This new version of HyperStudio requires Apple IIGS System Software 5.0.2 or later and will no longer run in just 768K; Wagner recommends at least 1 MB. Based on this new complete version of HyperStudio, last issue's Performance rating of 7.0 is raised to 9.0. ■

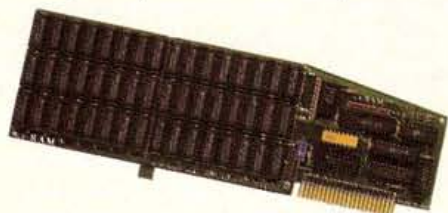
— Joe Walters

Columnist Joe Walters lives in New Mexico and can be reached via electronic mail on CompuServe (72406,742). Besides using AppleWorks GS, he hunts for "Pollywogs" in his spare time.

Three ways to grow a IIGS.

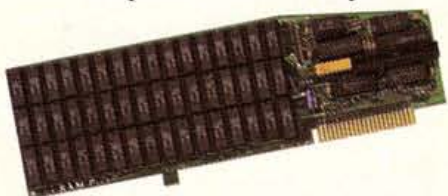
Applied Engineering makes three different memory cards for the IIGS because every IIGS owner is different. Each card was designed to suit specific needs:

1. **GS-RAM™** Start with as little as 256K of memory and grow in affordable 256K increments to 1.5 MEG (an amount that once sounded large, but is now considered a moderate amount of memory expansion.) Incorporates 256K x 1 chips.



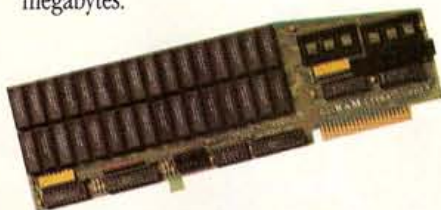
GS-RAM w/256K	\$169
1 MEG	\$319
1.5 MEG	\$419

2. **GS-RAM Plus™** Expands from 1 to 6 MEG in 1 MEG increments. Originally designed for power-users requiring a great deal of internal memory, this card has recently found favor with many moderate users. MEG-sized jumps in memory have now become practical for many users because of the enormous memory requirements of today's software titles. Incorporates 1 MEG x 1 chips.



GS-RAM Plus w/1 MEG	\$379
2 MEG	\$579
3-6 MEG	CALL

3. **GS-RAM Ultra™** AE's newest memory card incorporates a new chip - the 256K x 4, which has four times the density of 256K x 1 chips. GS-RAM Ultra offers incremental expansion like the GS-RAM and ultimate size like the GS-RAM Plus. It's expandable from 256K to 4 MEG in 256K increments, so you can start small and still grow to a massive 4 megabytes.



GS-RAM Ultra 256K	\$229
512K	\$279
768K-4 MEG	CALL

We've also added ROM sockets to the GS-RAM Ultra. ROM sockets allow hardware-based applications to be loaded permanently into EPROMs...an increasingly important feature when applications become available from Applied Engineering and others.

Consider your needs.

Need a moderate amount of memory? **GS-RAM** lets you start small and takes you up to 1.5 MEG. Need lots of memory right away? **GS-RAM Plus** is your best bet. Want to start small and leave open the possibility of a huge internal memory? **GS-RAM Ultra** is your card. And our **GS Expander™** piggyback card adds up to 2 MEG to any of the three cards. Call AE for prices.

Talk to us.

Your decision should be based on anticipated maximum memory need and growth path. Initially, it's less expensive to add 256K than 1 MEG, but buying a MEG at a time could save you money over the long haul. Call us. We'll be happy to discuss your particular applications.

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All three of our GS memory cards are fully DMA compatible (and they're the ONLY large-format cards that are), so they not only run all GS software, they also support *current and future* DMA peripherals.

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Circle Reader Service Number 3

WHAT'S INSIDE THE "NEW" IIGS

AN X-RAY
VIEW OF THE
RECENT IIGS
UPDATE FROM
APPLE.

Apple calls it a "memory upgrade." You might call it a set of overdue engineering changes. It's

definitely not a new computer: The name is still the same. It's the new, improved Apple IIGS, now appearing at an Apple dealer near you.

Externally, the "new" IIGS is unchanged — all the changes are under the hood on a revised main circuit board (which Apple calls the "logic board" and everyone else calls the "motherboard"). Apple's spec sheet simply refers to the new configuration as an "Apple IIGS with one megabyte of RAM."

Code named "Discovery" during its long development, the computer offers two big improvements and many small enhancements, at no increase in the list price (\$1,149). The first significant improvement is a full megabyte (MB) of RAM (1,024K) added to the motherboard. This memory is in addition to the 128K of "slow" RAM that makes the Apple IIe emulation work so well. The original IIGS had only 256K of memory.

Last year Apple began including, free with every system, a memory expansion card with another 256K, for a total of 512K. To use the latest software, users had to buy additional memory chips to

fill out this card. Apple probably saves money by putting fewer bigger chips on the motherboard, rather than on a separate card. The memory expansion slot is still there, and there will be plenty of customers for memory expansion beyond 1 MB.

The second major improvement is 256K of ROM, double the previous 128K ROM. This allows the IIGS ToolBox to be loaded rapidly from ROM, rather than slowly from disk. Users will notice faster start-ups, especially on a diskette-based system. Our original ("Woz Limited Edition") IIGS took more than 40 seconds to launch GS/OS Version 5.0 from a cold start. The new IIGS takes less than 30 seconds under the same conditions.

"More" Slots

Although the IIGS has seven regular slots (as well as the memory expansion slot), there were some usage restrictions. Slot 4, for example, was almost useless, because putting your own card there disabled the use of the mouse. This was a result of the way the IIGS "mapped" the functions of slots and ports.

On the Control Panel, this slot is labeled "Mouse Port." To the computer, the firmware that controls the mouse appeared as an Apple mouse controller card in slot 4. On the new IIGS, only

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Best memory expansion cards for the IIGS.

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GS-Ram Plus 1 MEG	\$277
GS-Ram Plus 2-6 MEG	\$CALL
GS-Ram Ultra 256k	\$167
GS-Ram Ultra 512k	\$204
GS-Ram Ultra 1-4 MEG	\$CALL
RamKeeper (GS battery backup)	\$138

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RamWorks III 512K	\$182
RamWorks III 1MEG	\$255
RamWorks memory Expanders	\$CALL
RamWorks RGB options	\$94
Ⓜ Ext. 80 Col. card with 64K. (IIe)	\$49

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RamExpress (IIc Plus)

DClock (Clock for RamExpress)	\$43
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Z-Ram Ultra (for original IIc)

Z-Ram Ultra 1 (Memory Only)	\$CALL
Z-Ram Ultra 2 (Memory, Clock)	\$CALL
Z-Ram Ultra 3 (Mem, Clock, Z80)	\$CALL

256K DRAMS (set of 8 150ns/120ns)	\$40/\$44
1 MEG DRAMS (set of 8)	\$161

TransWarp GS - More than doubles the speed of your Apple IIGS Computer!

TransWarp (Slotted Apple IIS)	\$123
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FastMath (Slotted Apple IIS)

FastMath	\$131
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PC Transporter - Run IBM software on your Apple II (640K IBM)

MS-DOS (v3.01)	\$85
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Installation kit. (IIGS/IIe)	\$36/\$29
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Ⓞ ReadyLink (128k supports VT100)	\$72
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Morgan Davis Group

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Ⓜ AS800 3.5" 800k drive	
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(IIc+, IIGS, Mac & IIe w/UDC)	\$195
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Ⓜ Universal Drive Controller by AMR	
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(for use with AMR 800k drive on IIe)	\$59
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A.5 5.25" drive (II, IIe)	\$135
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A.5c 5.25" drive (IIe, IIc, IIc+, IIGS)	\$135
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A.5d 5.25" drive	
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(w/daisychain port for IIe, IIc, IIGS)	\$159
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Applied Engineering

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Vulcan 100 Meg HD	\$1310
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Drive Controller card	\$50
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Chinook (requires a SCSI card)

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CT-40+ SCSI HD	\$719
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CT-80 SCSI HD	\$1200
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Ⓜ CT-20c HD for IIc & IIc+	
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(no controller card needed)	\$625
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Ⓞ Apple SCSI HD Controller	\$109
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Serial Pro (serial card & clock)	\$101
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Sonic Blaster (IIGS)	\$94
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Ⓜ Audio Animator (IIGS)	\$175
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Phasor (II+, IIe, IIGS)	\$131
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Z-80+ (II+, IIe, IIGS)	\$109
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ViewMaster-80 (80 col. for II+)	\$116
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Ⓞ Conserver (IIGS)	\$87
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Digital Vision

Ⓜ Computer Eyes GS (color)	\$199
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Ⓜ Computer Eyes (II+, IIe, IIGS)	\$108
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Kensington System Saver (II+, IIe)	\$69
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Kensington System Saver (IIGS)	\$74
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Turbo Mouse ADB (IIGS/Mac)	\$124
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Ⓞ Home Studio GS	\$209
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Ⓞ Master Tracks Jr. (IIGS)	\$119
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Other Passport for Apple II & Mac	\$CALL
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Practical Peripherals

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Apple II Software

Beagle Bros

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Broderbund

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MECA Managing your Money 4.0 (128k)	\$98
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Monogram Dollars \$ Sense (128k)	\$89
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Ⓜ HyperStudio (IIGS)	\$89
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StoneEdge DBMaster (128k)	\$192
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Timeworks Publish It! 2 (128k)	\$89
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WordPerfect (IIGS w/spell check)	\$104
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Apple IIe programs making specific mouse-card calls require slot 4 to be configured as the Mouse Port. Otherwise, you are free to set it for Your Card.

Previously, if you wanted to use AppleTalk (the basic local area network built into the firmware of every Macintosh and IIGS) you could not have a card active in slot 7, because part of the AppleTalk protocols were "mapped" to this slot. AppleTalk is usually the way you connect a IIGS to an Apple LaserWriter printer. It is also the way a IIGS can use AppleShare file server software running on a Macintosh.

Slot 7 is especially useful for a hard disk controller card. That's because, in the normal scanning order, the slot is the first place the computer looks for a start-up disk. On the new IIGS, the AppleTalk firmware has been moved to slots 1 and 2. You can connect to an AppleTalk network without losing the use of a card in slot 7.

The Hiss Is Gone

On the original IIGS, many users reported an annoying hiss or static on the audio output. This was particularly noticeable during periods of silence when playing synthesized music. The cause was apparently electronic "noise" from other components on the main circuit board. This problem has been eliminated by the redesign of the board.

Battery Included

A minor inconvenience in the original IIGS design was the soldered-in, 9-volt lithium battery, which powers the clock/calendar and keeps alive a special tiny chunk of memory (parameter RAM) that stores your Control Panel preferences when the power is off. This battery was expected to last 6 to 8 years in normal operation, but many pooped out after two or three years.

Lithium batteries are considered hazardous waste. By soldering the batteries firmly in place, Apple ensured that dead batteries would be returned for proper disposition. Unfortunately, Apple dealers can charge whatever they like for replacing a battery (some have reportedly tried to make customers pay

for a new motherboard). On the new IIGS, the battery is a snap-in model that can be replaced by the user for less than \$10.

Some Key Improvements

Apple has always shown unique sensitivity to the special needs of users challenged by physical disabilities. The keyboard on the new IIGS supports two optional features that make computing easier for anyone who cannot use 10 fingers to type. Sticky Keys allows one-finger control of multiple keystroke combinations, such as Control-Q, Command-P or Command-Control-Esc. You activate Sticky Keys by pressing the Shift key five times in succession.

While the feature is active, you can press the Command, Option, Control, Shift or Esc key and it will stay pressed until you press another non-sticky key. This means that a user can type complex keystroke combinations, even if he or she is typing with a stick or dowel held between the teeth.

The other feature is Mouse Keys, which allows the numeric keypad to emulate all the functions of the mouse. You activate Mouse Keys by pressing Command-Shift-Clear (either simultaneously or using Sticky Keys). The 5 on the numeric keypad functions as the mouse button. The other digits function as directional arrows: For example, pressing 4 moves the cursor one pixel to the left, while pressing 9 moves it one pixel up and to the right.

If you hold down a directional key, the movement of the cursor accelerates. You can also vary the movement increment from one to 10 pixels for each keypress. There are new options in the Control Panel to customize the acceleration and maximum speed of Mouse Keys.

Some touch typists may prefer using Mouse Keys, because it allows you to do anything on the desktop without taking your hands away from the keyboard.

Problems?

Programs that follow Apple's guidelines for the IIGS ToolBox should have no difficulty running on a IIGS with the new ROMs. Unfortunately, this excludes

many of the most popular arcade-style action games, which rely on programming shortcuts and tricks to address the hardware directly, rather than through calls to the ToolBox.

One example is early versions of Xenocide, which will not load on the new system. Some game publishers are planning to patch their programs to make them compatible with the new firmware. To be sure, look for labeling on the box cover that says "compatible with ROM Version 03" or similar language. Any IIGS software released after September 1989 should be fully compatible with the new system.

We tested the new IIGS with a variety of hardware options, including the TransWarp GS accelerator, Vulcan hard disk, AST SprintDisk RAM card, DataLink 2400 modem and several different joysticks. As expected, there were no compatibility problems.

What You Get

Buyers of the new system receive the CPU, power cord, keyboard, keyboard cable and mouse. There are three disks in the package: GS/OS System Tools, GS/OS System Utilities and a self-starting Tour of the Apple IIGS.

The Tour Disk, which has been completely revised, includes stunning color graphics and digitized sound. It is an excellent example of the high-quality instructional material that can be delivered on this computer. The disk teaches the fundamentals of using the mouse, icons and pull-down menus in an amusing and effective way. It presents simple, interactive examples of a word processor, spreadsheet, database and color paint program.

The system package also includes three manuals. The massive, well-indexed and lavishly illustrated 400-page *Owner's Guide* has been completely updated and revised to cover GS/OS 5.0 and the new hardware features. There is also an 80-page *Getting Started with Your Apple IIGS* booklet and the slim *Touch of AppleSoft BASIC*, an excellent 110-page tutorial about the aging language.

The computer carries Apple's standard 90-day warranty.

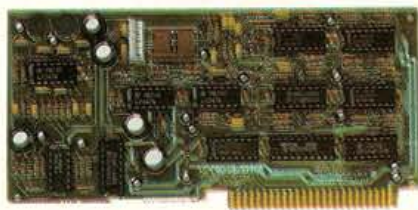


Sonic Blaster™ It's why they put the "S" in IIGS.

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Record sounds, tailor them with extensive editing options and play your own amplified versions back through your home stereo speakers. Sonic Blaster automatically digitizes and play back GS games that use the computer's built-in Ensoniq sound chip (as almost all do), with thundering results.

Kick back with your favorite computer game and immerse yourself in a roomful of sound effects. Create strange answering machine messages. Drop an interesting background sound into your phone conversations (we provide 17 to get you started). Change screen colors with a virtually infinite palette of color.



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Use the equipment you already have. You don't need special amplified speakers because Sonic Blaster's built-in amplifier works with standard 8 Ohm speakers, small or large, including those monsters next to your stereo. Take sounds from your favorite TV show, album, compact disk, VCR, even a microphone. Then amplify, play backward, create echoes and

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We designed Sonic Blaster to be complete. Here's a quick tour of part of the software screen:

The Buttons

Stop, Play, Pause and Record buttons, perform the same functions they do on a tape recorder. Also included are Single and Continuous Play buttons and a VU Meter to visually represent input levels.

The Sound Graph

The Sound Graph is the waveform at the bottom of the screen. Portions of the Sound Graph are selected with the mouse and then edited using the cut, copy and paste options within the Edit menu.



Seventeen sound effects to get you started. Add your own collection of sounds.

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The Volume bar controls amplitude of the playback. Playback and Record mode sample rates are adjusted with the next pair of bars and the Record Level bar adjusts the level from the source connected to the Sonic Blaster's input connector.

Circle Reader Service Number 3

The Blocks

Three blocks give readouts of file length, available memory, bytes selected and resolution ratio.



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Sonic Blaster's built-in oscilloscope gives you a real-time display of input sounds. Use it to set your input levels before recording. Or use the Auto Gain feature to adjust the level automatically.

Sonic Blaster

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No Upgrade?

Doubling the memory of a computer — at no increase in price — should be a significant benefit to users, and the other improvements are certainly a bonus. The reaction to this upgrade from the Apple II community, however, has ranged from disappointment to outrage.

Some early IIGS buyers are upset because Apple has not offered any upgrade path. The official press release states that "Apple is not offering an upgrade kit because the required logic board replacement is not cost-effective for customers." In other words, Apple would have to charge so much for a motherboard swap that you might as well buy a new computer.

Apple claims that by adding memory to your IIGS and using the new System Software (GS/OS 5.0) you can obtain "about 90 percent of the new machine's functionality."

Under The Hood

All of the chips (less than 50) on the IIGS logic board are surface mounted, except the CPU and two ROMs, which are socketed. Surface mounting increases reliability, but makes repair more difficult. Socketed chips are easy to replace or upgrade, but socketing increases manufacturing costs.

The most visible difference on the new logic board is the snap-in battery. The eight chips in the two banks of fast RAM are now 1 MB parts (the chips in our review unit were labeled Motorola MCM511000P10). The FPI (Fast Processor Interface), one of the custom VLSI (Very Large-Scale Integration) chips designed specially for the IIGS, has been replaced by a new chip called the CYA.

The famous Ensoniq synthesizer chip now carries an Apple copyright label, and many of the chips are from different suppliers than the ones on our original IIGS logic board — this practice is not unusual in the volatile electronics industry.

Workmanship and overall board design are up to Apple's usual excellent standards, although our review unit appeared to be a prerelease model. All IIGS computers are assembled in Apple's Singapore factory.

What's Missing?

A few widely rumored features failed to appear in the new IIGS configuration. One of these features is full stereo sound output (which Apple has included free with every Macintosh since the SE). To get stereo output from the IIGS you have to add a third-party board, such as the Applied Engineering Sonic Blaster (\$129) or MDIdeas' Supersonic (\$59.95). Apple could have provided built-in stereo sound for a few dollars worth of chips — some amplifiers and analog filters.

Another feature frequently requested by teachers is a jumper on the motherboard that could be removed to "lock-out" changes to the Control Panel. Kids are naturally curious, and the discovery that they can get into the Control Panel and drive their teacher crazy by switching the keyboard to Danish, or changing the text and background colors to something unreadable, is good for hours of fun.

The increased usability of slots 4 and 7 is encouraging, but many IIGS users are still hungry for slots. It should be possible to implement full "phantom slotting" in firmware, so that any card can appear to be in any slot. It would be even better, of course, to provide a way to use all the built-in ports without giving up access to any of the slots. The current Smartport firmware, for example, forces you to leave slots 5 and 6 vacant if you have 3.5-inch and 5.25-inch drives daisy-chained to the disk drive port.

Like the original IIGS, the new configuration can only use half of its potential RAM space. Bill Mensch, the brilliant designer of the 65C816 microprocessor, endowed his creation with a 24-bit address bus, enabling the chip to directly address more than 16 MB of RAM. Yet Apple only put in the circuitry to support 8 MB. Today, of course, 8 MB is far more than any IIGS application needs, or any user can afford.

The cost of memory is dropping again, however, and the historical trend in personal computing is that the definition of "enough RAM" doubles every few years.

The IIGS can also address 1 MB of ROM — it would be feasible to put all of

GS/OS in ROM, making the system much easier to use, but harder to update.

Apple has not given the new IIGS the capability to use its new FDHD "SuperDrive." This is a Sony-manufactured diskette disk drive that can handle double-density 3.5-inch disks (1.44 MB capacity) and read, write and initialize Macintosh, ProDOS, MS-DOS and OS/2 formats. The SuperDrive is now standard equipment on new Macintosh models.

It appears that the days of the 800K diskette are numbered, just as the double-sided 800K format replaced the single-sided 400K format a few years ago.

On the Mac, the SuperDrive upgrade is a simple matter of replacing the "IWM" drive controller chip with the new "SWM" (Super Woz Integrated Machine) chip and swapping in some new ROMs. The SuperDrive is expensive (\$549 list — as much as a small hard drive!) and the high-density disks it requires also cost more, but many IIGS applications have outgrown the limits of a single 800K volume.

A feature that would add tremendous value to the IIGS would be a built-in SCSI port. SCSI (Small Computer System Interface) is a high-speed data pathway that is used by external hard disks, CD-ROM drives, scanners and other devices. There is certainly enough space on the IIGS motherboard for the single SCSI controller chip and the few other components required, but the back panel of the computer would have to be redesigned to make space for another DB-25 connector.

If you want to use an SCSI hard drive with your IIGS, you have to buy an Apple II SCSI card (\$129 list price) to provide a capability that is included free with every Macintosh.

The feature IIGS owners yearn for most these days is more speed. With a top speed of only 2.8 MHz, the IIGS microprocessor has to do as much work as a Macintosh SE running at nearly 8 MHz. The Applied Engineering Trans-Warp GS card can boost the IIGS' clock rate to a dazzling 7 MHz, but adds more than \$300 to the cost of a system.

Apple claims it cannot obtain reliable supplies of high-speed 65C816 chips in

sufficient quantity, but there are many other ways to boost computer performance. A math coprocessor, a graphics coprocessor and a cache memory buffer are all technically feasible for the IIGS. The remarkable little Apple IIc Plus (which can run at 4 MHz) proves that Apple has engineers and designers who know how to wring every bit of performance out of a microprocessor. The increasingly powerful software that GS/OS makes possible will need more performance than today's IIGS can deliver.

It would also be technically feasible to build the functions of the Apple II Video Overlay Card directly into the IIGS. The VOC actually duplicates two chips that are already present on the IIGS motherboard: the Video Graphics Controller (VGC) and the Mega II. Video overlay is an extremely important technology for the future of the Apple II, especially in education. At a list price of \$549, though, the capabilities of the Video Overlay Card will never reach more than a fraction of users.

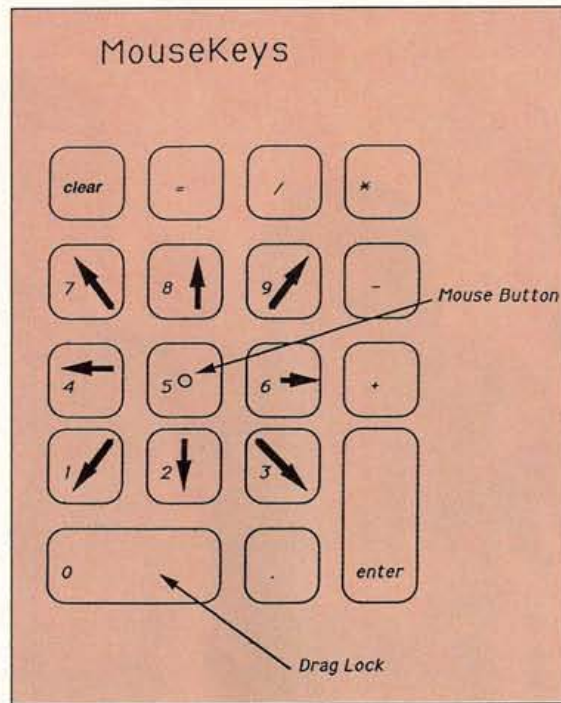
What's Next?

Despite significant improvements in the 1 MB configuration, the Apple IIGS cannot be considered a great value — certainly not at the list price.

To enjoy the full capability of the system, you have to buy a monitor, at least two disk drives and (to play it safe) a fan. Apple's dot-matrix printers are relatively expensive, but low-cost parallel printers (Epson, Okidata and so on) are poorly supported by most IIGS software.

While the Macintosh is bundled with HyperCard (a versatile tool for programming, information management and creative authoring), the equivalent software for the IIGS, HyperStudio, is a \$129 third-party product. And to use the latest software effectively, a hard disk is a virtual necessity, but Apple has failed to make this an easy option for users.

A complete IIGS system, with a little software, can easily exceed \$2,000,



The numeric keypad on the new IIGS keyboard can emulate mouse control.

while a color MS-DOS system can be bought for half that price. Of course, we know that MS-DOS computers are much harder to use and the software is rarely as good, but millions of families don't know that yet. Many will suffer unhappy computing experiences as a result.

Despite Apple's repeated reassurances that it "intends to sell Apple II products as long as Apple customers want to buy them," it is easy to understand the uneasy feeling in the Apple II community that this IIGS may be the last Apple II.

In many ways, the IIGS is a hobbyist's computer. Like a component stereo system, it offers almost unlimited potential for expansion and enhancement for users who can afford to keep pouring money into it. This is not what schools need and can afford. The ideal school computer is a one-piece "boom box," integrating the keyboard, pointing device, CPU, disk drive and display in a single ruggedized unit that can be put on a student's desk for about \$500.

Apple has the technical and manufacturing capacity to deliver such a system, but apparently lacks the will.

A Wish List

Here's what Apple needs to do to keep the IIGS viable as the system of choice for home businesses, K-12 education and personal creativity:

- Significantly lower the price for a complete system. The IIGS should be thoroughly re-engineered for low-cost producibility, like the Macintosh IIcx. One 3.5-inch drive should be built-in.
- Bundle a major software package free with each complete system. For example, a choice of HyperStudio, AppleWorks 3.0 or AppleWorks GS would cover a wide range of potential users.
- Discontinue the 8-bit Apple II line. This would send a clear message that the future of the Apple II lies with 16-bit technology. This step would simplify the choice for buyers and encourage developers to write for the IIGS.

Why does anyone buy an Apple IIGS? Is it the amazing assortment of more than 12,000 compatible programs, running under four different operating systems? Is it the incredible diversity of special-purpose boards, hardware add-ons and enhancements? Is it the legendary reliability of the product?

More than anything else, maybe it's the people. When you buy a Macintosh, you're buying an experience. When you buy an Apple II, you're buying a community — almost 5 million of the nicest people you would ever want to meet, going on 12 years deep. The Apple IIGS with 1 MB has a proud heritage. It's been a long journey from those first Apple II kits with 16K of RAM and a cassette-tape player for storage. Let's hope it's not the end of the road. ■

— Mike Markowitz
The author is a computer engineer for a large Southern California aerospace company. He has been writing about Apple II computing since 1983.

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An assortment of IIGS "outdoor" games for your winter amusement.



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Here are a few outstanding choices that are available for the Apple IIGS.

Winter Games

Winter Games from Epyx is loosely based on the activities of the 1988 Calgary Winter Games. It challenges your competitive skills with six winter events: Ski Jump, Bobsled, Figure Skating, Hot Dog Aerials, Freestyle Skating and Biathlon. You may choose to represent any of the 18 countries in the competition. Practice each event first to sharpen your skills and then go for the gold!

Winter Games provides judges, keeps scores and awards medals: gold for first, silver for second and bronze for third. If you break a world record, Winter Games will save your name and display it on a special World Record screen.

Game play is made simple by using your joystick or your keyboard to control all movements. It takes some time to master the controls. The hardest event is skating. With a total of six games in one package, Winter Games is a good value.

World Games

In World Games, also from Epyx, you compete in different parts of the world in eight separate Olympic-type events: Weightlifting in Russia, Barrel Jumping in Germany, Cliff Diving in Mexico, Slalom Skiing in France, Log Rolling in Canada, Bull Riding in the United States, Caber Toss in Scotland and, finally, Sumo Wrestling in Japan. You must understand the objectives of each sport and be able to use that knowledge to win. Timing, balance and form are critical.

Practice each event first to sharpen your skills. Again, you can choose to represent any of 18 countries and compete, be judged and win a metal. The on-screen characters are small compared to the rest of the screen, but the graphics are quite good.

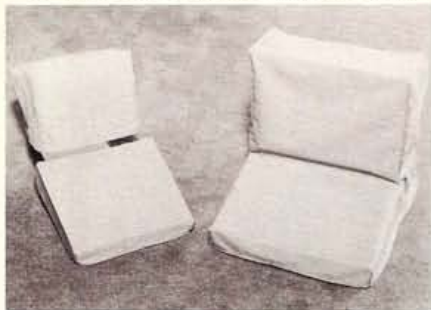
California Games

In California Games, which is also from Epyx, you can enjoy some of the traditional and off-beat sports that are popular in California, such as Surfing, Skateboarding, Hackysack, Frisbee, Roller Skating and BMX (Bicycle Motorcross) Racing. The game opens with the song "Louie, Louie," which somehow enhances that West Coast feeling!

Grab your board and head for the waves; surf's up. You ride a huge breaking wave and you're expected to perform stunts without falling. If you fall you can get back on your board, but the

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GAMES



In Jack Nicklaus' Greatest 18 Holes of Major Championship Golf, players test their skills on some of the best holes in all of golf.

beach bums holding up your scorecard won't be too impressed.

Kicking a footbag and flinging a frisbee are less hazardous to your health, but these events require more concentration. You have to keep kicking the footbag for more than a minute. With the frisbee, you need to give it a strong, even throw.

Roller skating down the boardwalk is a fun way to see the beach and enjoy the sights, but you'd better keep your eyes on the ground. You have to swerve and jump to avoid cracks in the pavement and the many obstacles in your path.

For more obstacles and jumping, try the BMX track. You could pedal slowly and make it through in one piece, but that's no fun. For extra thrills and points you'll have to speed through and do aerial stunts. Skateboarding is even harder, so be prepared to spend a lot of time sliding down the ramp on your knees and falling flat on your face.

Skate Or Die

If you can't get enough of skateboarding, try Skate Or Die from Elec-

tronic Arts. It lets you skate 'til you drop.

Skate Or Die is a colorful, fun game that offers five events: Pool Joust, Freestyle, High Jump, Downhill Race and Downhill Jam. Each event can be practiced individually before competition begins.

The actual game starts at Rodney's Skate shop, where you move a pointer around the screen to sign up for competition or practice, check out the high-scores screen, or listen to Rodney's rude remarks. After making your selection, you'll find yourself on a skateboard in the Town Square. From there you guide your board down the streets to the various events.

In Pool Joust, played in an empty swimming pool, two skaters take turns trying to splatter each other all over the concrete with a boffing stick. The High Jump and Freestyle events consist of a steep-sided ramp in front of fan-filled bleachers. In Freestyle, you score points by executing skateboarding tricks. In the High Jump event, you are allowed to make five passes from left to right. The goal is to break some heights, not the ramp.

You get maximum height by moving your joystick back and forth furiously and pressing the button at the right time. But if you make a mistake, you'll leave a nasty hole in the ramp.

The Downhill Race takes you through an obstacle-riddled park. Downhill Jam takes you through the back alleys of the inner city, which are filled with potholes and trash cans. Skateboarding is controlled by a joystick, which also controls several board tricks, including kick turns, aerials and many others.

You receive your score after completing all five events. If your point total is high enough, your name will be entered into the high-scores table in Rodney's Skate Shop.

It's fun to try all these wild tricks without worrying about losing your knees — or worse. Skate Or Die, just for the fun of it.

Final Assault

Another activity that could be dangerous and downright scary is mountain climbing. Final Assault from Epyx is a lot of fun to play, and you don't have to leave home.

The game places you in the Alps and challenges your skill at traversing routes that dangerously lead to the summit. First, you must decide whether to accept the default backpack or to pack your own. The manual explains the tools and implements that a mountaineer should take along. Afterward, you'll be off and running — or, more accurately, plodding along.

A back and forth motion of the joystick or alternately hitting the arrow keys propels you through the first level, a snowy screen. Remember to use your pole to poke at snow bridges before trusting them. Sooner or later you will find a crevasse that cannot be jumped, which is the perfect time to learn the ice-climbing routine. Here's where patience comes in, as you have to inch your way up the Alps. You better hope you packed the right equipment.

If you are not careful, you'll hear yourself screaming all the way down the mountain. Luckily, it's only a game.

Superstar Ice Hockey

If you want a traditional winter sport, there's Superstar Ice Hockey from Mindscape. Ice hockey is a team sport, but how do you control a whole team in a computer game? You don't. You basically control only one position; the computer handles the rest. You have to rely on your computerized teammates to cover for you if you get caught too far up the ice.

You can control the center and goalie or sit back, relax, let the computer control all your teammates and watch the game.

If you like, you can take over the coaching duties at any time. As a coach you can set your offense to operate on any of three levels: Attack, Normal or Setup. On defense you can choose Forecheck, Normal and Protect. You can also change your strategy after each stoppage in play.

This game is a little tricky to master. It takes practice to perfect your shots, but the quick action and clear graphics make it fun to play while you hone your skills.

For users who keep losing, there are several options that will improve your team's performance. You can send the team to training camp, call up a player from the minor leagues or trade with other teams in the SuperTime Hockey League.

If you're a serious hockey fan, you'll probably enjoy these off-ice activities. The only drawback we have with Superstar Ice Hockey is the manual copy protection. We had a difficult time locating the exact word in the manual required to make the game run. Two manuals come with Superstar Ice Hockey, and more often than not we picked up the wrong one before getting on the ice.

4th & Inches

Football is another seasonal sport that you and your IIGS can play all year long. To get going, try 4th & Inches from Accolade. Unlike real life — where 100-pound hopefuls hardly ever play football — you can play each role in football without getting laughed off the field.

If you choose to be the coach, you can select the plays on offense and

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* Need Paintworks Gold, Deluxe Paint, or Cheap Paint (GS63) or any program employing the use of fonts.

Games

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† The author requests specified donation to use the program.

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GAMES

defense. You can also be the quarterback, the ball carrier, the receiver, the middle linebacker or the defensive back. You call the plays and execute them, so winning and losing is up to you.

4th & Inches pits you against either the computer or another player. You participate in the game by controlling

selected offensive and defensive players through keyboard, mouse or joystick control.

The game is divided into four quarters, and each quarter can consist of 5, 10 or 15 minutes of playing time. Once the game starts, you can't rest. The program lacks a provision for saving a game in progress. You must play a

game through to the end.

The play screen is divided into four sections: the field; the offensive-play selection box; the defensive-play selection box; and the time, yards-to-go and score box. The line of scrimmage is displayed in the center of the field of vision with about 10 yards shown in either direction. An arrow at the bottom of the

HOW THEY COMPARE

Title And Vendor	Memory	Interface Required	# of Players	Copy Protected?	Operating System	Practice Mode
Winter Games Epyx, Inc. Reader Service Number 36	512	Keyboard/Joystick	1 - 8	Yes	ProDOS 16 V. 1.0	Yes
World Games Epyx, Inc. Reader Service Number 37	512K	Keyboard/Joystick	1 - 8	Yes	ProDOS 16 V. 1.0	Yes
California Games Epyx, Inc. Reader Service Number 38	512K	Keyboard/Joystick	1 - 8	Yes	ProDOS 16 V. 1.6	Yes
Skate Or Die Electronic Arts Reader Service Number 39	512K	Joystick	1	Yes	ProDOS 16 V. 1.6	Yes
Final Assault Epyx, Inc. Reader Service Number 40	512K	Keyboard/Mouse/Joystick	1	Yes	ProDOS 16 V. 1.3	Yes
Superstar Ice Hockey Mindscape, Inc. Reader Service Number 41	512K	Keyboard/Joystick	1 - 2	Yes ⁽¹⁾	ProDOS 16 V. 1.2	No
John Elway's Quarterback Virgin Mastertronic Int., Inc. — Melbourne House Reader Service Number 42	512K	Keyboard/Joystick	1 - 2	No	ProDOS 8 V. 1.4	No
4th & Inches Accolade, Inc. Reader Service Number 43	512K	Keyboard/Mouse/Joystick	1 - 2	Yes	ProDOS 16 V. 1.3	No
Jack Nicklaus' Golf Accolade, Inc. Reader Service Number 44	512K	Mouse	1 - 4	Yes ⁽²⁾	ProDOS 16 V.1.3	Yes

Key

⁽¹⁾ Looking up a word in the manual required.

⁽²⁾ Looking up a course sheet required.

field marks the first-down yard line.

Offensive and defensive selection boxes are separated by a series of arrows. Selections are made by moving the mouse or joystick to the indicated position and pressing the button. For most plays, the play selection boxes will be used to select the team formation, the play to be run and a player.

After all options have been selected, the play begins automatically. After a few seconds, a player on each side will begin to blink. These are the players that you control. Move the joystick or mouse in the direction you want your player to go.

If you're tired of playing with the fictitious team members supplied in the game, make up your own players by using the Team Construction Disk available separately from Accolade. You can modify the six existing teams or create your own.

Now you're the general manager. Choose the name of your team and build your roster. You select your players' names, stats and skills. When you're through, you'll have a team you can have some serious fun with.

4th & Inches' graphics look like an animated cartoon of a football game. It's fun to play, and the game's interface is similar to another of Accolade's titles, *Hardball*. Unfortunately, the manual is inadequate for people who are not football experts.

Quarterback

Another interesting football game is John Elway's *Quarterback* from Melbourne House. As the title states, you're the quarterback. You have to select from nine offensive plays and six defensive formations.

On running plays, the quarterback runs the ball. On passing plays, you act as quarterback until the receiver catches the ball and becomes the active player. To keep matters simple, there are only nine players represented on each team, instead of the usual 11.

There are other significant differences between *Quarterback* and real football. *Quarterback* has no penalties, so the computer won't let you do anything illegal. Also, there are no handoffs in *Quarterback*.



In addition to 18 holes from all over the world, Jack Nicklaus' Golf from Accolade includes two major golf courses that were designed by Nicklaus.

As in real football, each player has his assignment and, for the most part, will stick to it. This makes it fun and risky to improvise. As the quarterback, you can decide to scramble on a passing play or find an open man to throw to on a run. Because your computerized teammates will run their patterns and execute their blocks according to the play you selected, you also increase your chances of being nailed for a loss.

Due to its built-in limitations and deviations from real football, *Quarterback* isn't a game for dedicated armchair strategists. It is aimed at those looking for some simple, fast-moving arcade action.

Championship Golf

You don't have to wait until spring to play golf, thanks to Jack Nicklaus' *Greatest 18 Holes of Major Championship Golf* from Accolade. This may be the longest title ever used for a IIGS game, so we're going to refer to it as *Jack Nicklaus' Golf*.

Jack Nicklaus' Golf comes on two

disks — one containing the program, the other three major golf courses. There are two full courses included that were actually designed in real life by Jack Nicklaus: *Castle Pines Golf Club* in Castle Rock, Colorado, and *Desert Mountain Golf Club* in Scottsdale, Arizona.

The third — and most interesting — course is an amalgam of 18 holes selected from among Jack Nicklaus' favorite golf courses in the United States and Europe. These holes represent some of the most famous courses in golf, such as *Pebble Beach*, *St. Andrews*, *Oakmont* and *Augusta National*.

One drawback to *Jack Nicklaus' Golf* is that you'll have to be patient while the screen slowly redraws between holes. Applied Engineering's *TransWarp GS* accelerator card makes the game much more enjoyable. The mouse controls make the game easy to play, and the great digitized sound is exceptionally good.

Sooner or later you'll tire of playing the three courses included with *Jack*

Nicklaus' Golf. Accolade also released Jack Nicklaus Presents The Major Championship Courses of 1989, another long title. The courses included are Oak Hill Country Club, Rochester, N.Y.; Róyal Troon Golf Club, Troon, Scotland; and Kemper Lakes Golf Club, Hawthorn Woods, Ill. Accolade says it is planning to release another course disk soon. The company is also working on a course construction program for use with Jack Nicklaus' Golf.

Similar To Mean 18

Those who are familiar with Mean 18, also from Accolade, should have no trouble playing Jack Nicklaus' Golf. Accolade kept the same look and feel while adding many features.

After choosing a course in Jack Nicklaus' Golf, you see an overhead view of one of the 54 holes available for play.

Although the disk is not copy protected, the program requires you to enter the proper course number from a course sheet before play will begin. This is the latest in off-disk copy protection. The course sheet cannot be photocopied because it uses black print on burgundy. All you will get is a black sheet of paper. If a copy machine has a problem "reading" the sheet, so will a human. You must have good eyesight and good lighting to read it.

Once inside the game, you reach the main screen where you choose player options. You can be a male or female and play against any of nine computer opponents, including a simulation of Jack Nicklaus. You enter a name for your player, set a skill level of Beginner or Expert, and select either the Pro, Men's or Ladies' tee position.

If you happen to choose Jack, he plays as you'd expect — flawlessly. Finally, you can choose to let Jack Nicklaus or any of the other eight opponents play by themselves. Here you just sit back and watch the tournament.

You also choose between stroke play and skin play. Stroke is the traditional approach to golf — the lowest score for 18 holes. Skin play is a money game where you attempt to win each hole, which has a dollar amount attached to it. You will then be given four selections on the game option screen: Play a Round, Practice a Hole, Driving Range and Practice Green.

The course files from Mean 18 are not compatible with Jack Nicklaus' Golf.

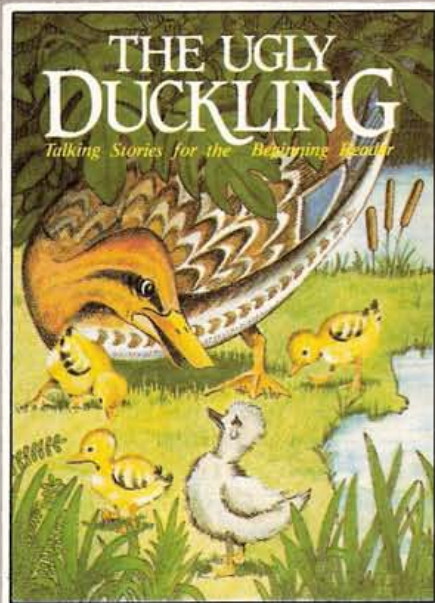
The feature of designing your own course is what attracted the craze and fun associated with Mean 18 in the first place. Today there are so many Mean 18 courses available in the public domain that you can never get tired of trying them all. Let's hope the same thing happens with Jack Nicklaus' Golf.

Finally. . .

The aforementioned sports games are by no means all there are for the Apple IIGS. Other fun sports games mentioned in past issues of *The Apple IIGS Buyer's Guide* include Hardball from Accolade, a baseball game; GBA Championship Basketball from Gamestar; World Tour Golf from Electronic Arts; and many others.

It's great having all these sports games available when you feel like playing. And don't forget, you'll be building up plenty of hand/eye coordination (if not exercise) from moving the joystick back and forth and pushing the fire button. Remember, however, that it's only a game, so don't get frustrated. The IIGS never tires from a good game workout and never laughs at the loser. ■

— Peter Chin, contributing editor



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System Software 5.0 Sends The IIGS Into Overdrive

Few system software releases have been as anxiously awaited as this one. The good news is it was worth the wait.

Trumpets should blare when you first put GS/OS 5.0 on your IIGS. If you're like us, you've been waiting for this baby for a long time. It was worth waiting for.

GS/OS 5.0 is chock full of new features, including improved speed, new Finder functions and reorganized menus, networking capabilities, scrolling menus, improved peripheral access speed and more.

The differences in the new system are apparent from the start. The background color of the opening screen has been changed to a lighter blue. Also, one feature of the thermometer, which appears on this screen to inform the user of the progress of loading the system into the machine, has been improved.

Now when you have system setup files that interrupt the loading of the software with a text screen, such as a system password screen or a virus checker, the thermometer no longer progresses along. This technique provides a better relative indication of when the Finder will be displayed on the opening screen.

These changes are minor, of course. The real fun begins once you start using the new system. In a word, System 5.0 is fast. Windows snap open and closed. Software runs faster because disk drive access is more efficient.

Switching between ProDOS 8 and GS/OS applications is also much faster. The system

does this by keeping more of GS/OS in memory while running ProDOS 8 programs. The trade-off is that less memory is available to programs such as AppleWorks Classic or Publish It!, because these programs use all the remaining extended memory in the IIGS.

Programs can also be written to be "Expressload" aware. These programs load into memory more rapidly, because they follow certain specific programming guidelines.

New device drivers accelerate access to files for disk drives and has-ten graphics printing operations while using GS/OS application programs. A scatter reading technique substantially decreases file and program loading time on 3.5-inch diskettes.

A new SCSI (Small Computer Standard Interface) manager has also been introduced to handle devices such as hard disk drives and CD-ROM drives. It optimizes the speed of access to files on these devices, as well as provides full SCSI device support.

Full SCSI device support includes access to up to seven physical devices on the SCSI chain, plus the computer itself; up to 32 partitions (volumes) on each of the SCSI storage devices; and to non-ProDOS partitions on SCSI storage devices (such as a High Sierra volume on a CD-ROM disk).

Full SCSI device support also provides a means of future expandability to access other operating systems when other File System

Performance: 9.5
Innovation: 9.0
Ease Of Use: 9.0
Documentation/Support: 8.0
Value: 8.0

Translators (FSTs) become available.

Besides speed changes, other changes are also noticeable. Lowercase letters are now permitted in both disk and filenames. This is primarily for aesthetic purposes, allowing an icon to have a name like "AppleWorks" instead of "APPLEWORKS."

A lock icon advises if a file is locked. If it appears by the volume name of a 3.5 disk, it indicates that the disk is write protected. If the icon appears beside a file or folder name, it indicates that the file or folder is locked.

Menu Changes

Almost every menu in GS/OS 5.0 has been changed. The Apple menu no longer contains the disk cache desk accessory. The adjustment for the disk cache is now included in the Control Panel New Desk Accessory (see sidebar), a new feature.

The Rename command has been removed from the File menu. Renamings are now only accomplished by clicking on an icon's name and typing the new name. The Get Info command that was formerly in the File menu has been renamed Icon Info and has been placed in the Special menu.

The Select All command that was formerly on the Special menu is now located on the Edit menu. The Initialize, Erase, Verify and Eject commands that were formerly on the Special menu have been moved to the new Disk menu.

The Remove command that was formerly on the Special menu is no longer an option. To delete a file, drag the file icon to the Trash and then empty the Trash.

The View and Color menus remain the same. Additionally, the Shut Down command can now be activated by typing Command-Q (Open Apple-Q).

Command Implementation

The Duplicate command has been enhanced. Any duplicate file or folder created with this command is now placed to the lower right of the original file or folder in that particular window. This makes the duplicate file easy to locate. It does not overlay the duplicate file icon on top of the icon to the right of the original, as it had done in past versions.

Also, the New Folder command no longer places the new folder on top of the first icon in the window. Instead, the new folder is placed after the last icon in the window.

The Icon Info command contains some

major enhancements. It is now displayed in a special window that looks like a spiral-bound book of index cards. The first card in the book lists general information about the icon, including the type of icon that was selected, the creation date and the last modification date for the icon, the lock status of a file or folder, and the activation status of specific icons.

This command also shows the size of the file or disk in both bytes and kilobytes. It can calculate the number of files or folders on the disk, folder size in bytes and kilobytes, and the number of files and folders within that particular folder. To perform the calculation, the user clicks on the Calculator icon on the first card.

The second card lists the GS/OS device location and the full pathname of the icon selected. Elements of GS/OS pathnames can now be separated by colons (:), as well as slashes (/), but the same character must be consistently used throughout a pathname.

One further change in implementation of the Finder's commands is the number of selections in the Preferences dialog box.

The three remaining preferences now let you change an icon's background color, save Finder information to disk, and hide invisible files.

The rest of the former preference selections are no longer available as options. One of these, the Control Panel's RAM disk, is no longer erased after Restart. For RAM disk size changes to take effect, the machine must be turned off for at least 30 seconds. The new settings will take effect with the next system start-up.

A new feature, scrolling menus, lets you have more items in a folder. Earlier versions of system software limited the number of items in a pull-down menu to what could be displayed on a single screen at one time, usually 16. This limited the number of New Desk Accessories (NDAs) under the Apple menu and the number of fonts that certain programs could access.

With the new system software, menus that extend beyond the screen now have a triangular arrow to indicate additional items. To access these items, move the cursor (mouse pointer) onto this arrow and click the mouse. The menu will then scroll in that particular direction, displaying the additional selections. This feature has also been made available for the Classic Desk Accessory menu.

Another new feature is pop-up menus. These menus can be found in windows and

dialog boxes and are convenient for selecting from lists of items. They also have the newly added scrolling feature mentioned earlier.

Installation

System Software 5.0 can be used on any Apple IIGS that contains at least 512K of RAM and ROM Version 0.1. You'll need at least 768K of RAM to use the AppleTalk networking capabilities of the new system software.

To update a diskette to System 5.0, you must use the Installer program, found on the System Tools disk. This is because certain files must be moved in groups for the software features to function properly. Copying these files with utility programs and earlier versions of the Finder is strictly forbidden.

The new forked file structure of GS/OS cannot be handled properly by these programs. To copy or move files with System 5.0 use the Finder. To update system files, use the Installer.

The Installer has been enhanced to handle multiple updates to a disk simultaneously, vastly accelerating the installation process. Also, the driver for 5.25-inch diskette drives comes already installed on the System disk. Therefore, no user interaction is required for GS/OS software to recognize these drives.

Drivers for SCSI devices must be added to the System disk by using the Installer. Additionally, files for accessing an AppleTalk network must also be added via the Installer.

One word of caution: If you've dabbled with an icon editor and modified the Finder.Icons file, make a backup copy of that icon file as the Installer will overwrite that file during the update process.

The new System Software is compatible with all ProDOS 8 application programs and all ProDOS 16 and GS/OS programs that have properly followed the programming guidelines established by Apple.

Many ProDOS 16 and GS/OS programs will be able to take advantage of the new features that System Software Version 5.0 provides. Firsthand observations showed programs such as Writer's Choice Elite and Show Off with scrolling font menus of more than 200 fonts.

Programs that list "Choose Printer" in one of their menus will now produce a dialog box that states "Use Control Panel to select printer." This will only be a problem in programs that lock out access of New Desk Accessories to the Apple menu.

Remember that older utility programs that copy files, optimize disks and perform disk repair, as well as earlier versions of the Finder, can be fatal to a System 5.0 disk. Abstain from using any of these programs on diskettes that contain any GS/OS application or system files. Newer versions of many of the utility programs that can handle the new forked GS/OS file structure are due to be released or are in development.

Networking Capabilities

Full AppleTalk implementation is now a part of the System software. This has been accomplished through an AppleShare FST. The Finder now supports AppleShare by displaying both Apple II and Macintosh files and windows with full 31-character Macintosh filenames. New icons are included for drop folders, public folders, group folders, private folders and bulletin board folders used on an AppleShare file server.

Apple II applications can be launched from an AppleShare file server, and data files from these applications can be stored and manipulated on the server.

The IIGS can now be booted directly by accessing a file server on the network, or the file server can be accessed from the Finder. The Control Panel NDA contains a file server Chooser. This helps you select a specific server on a multiserver network. This NDA also includes the capability for auto-logout to a specific server. The Installer even includes options for creating specific 3.5 login disks, as well as automatic login sequences for a IIGS equipped with its own hard disk drive.

With the exception of accessing files from other operating systems that are on the server, these operations represent a total implementation of the AppleTalk network. Foreign operating system access will be a future addition to the network with the development of other FSTs.

Package Contents

GS/OS 5.0 will be distributed by Authorized Apple Dealers in a package containing three 3.5-inch diskettes and two manuals. Two of the disks are Apple II disks (System.Disk and System.Tools). The third is a Macintosh disk (Apple.II.Setup), used to provide Apple II network support on an AppleShare file server.

The two manuals are the *Apple IIGS System Software User's Guide, Version 5.0*, and

AppleTalk Network User's Guide for the Apple IIGS. The suggested retail cost of this package is \$49.

The software alone will be available for downloading from the major online services, such as GENie, CompuServe and AppleLink Personal Edition. Authorized Apple II user groups that have paid Apple for the IIGS software duplication license will also be able to duplicate the diskettes for their members.

Apple Dealers will be allowed to duplicate the system software diskettes for IIGS owners. There should be no cost for this software duplication, other than for blank diskettes, which the user can provide, and connect time charges on the online services.

The Apple IIGS System Software User's Guide is informative and describes most of the functions of the System Software, including the Finder, Installer and Advanced Disk Utilities. It is a necessity for the beginning user and provides good information about the added features of Version 5.0 for the more advanced user. However, it lacks the detail that earlier Apple II manuals contain.

For instance, the manual discusses deactivating certain files, but it does not list the types of files or the specific files that can be deactivated. It also describes the procedure for installing additional fonts and desk accessories, but does not carry the description of this procedure through to icon files, system setup files, control device files, driver files and file system translators.

Contrarily, the *AppleTalk Network User's Guide for the Apple IIGS* is a thorough reference source for the IIGS AppleTalk user. It provides step-by-step information on establishing and using an AppleShare file server from a IIGS workstation, as well as printing over the AppleTalk network. Every AppleShare IIGS workstation feature is explained in detail with no obvious deletions.

GS/OS 5.0 adds many capabilities to the IIGS and its operating environment. Software developers can no longer claim that the IIGS is an incapable machine. The release of this software is a strong indication of Apple's recommitment to the Apple II line. ■

— Tyler Weisman

The author is a Gainesville, Florida-based free-lance writer (E-mail ID: A2. Tyler).

Inside The New Control Panel

Probably the most interesting new feature of System Software 5.0 is the Control Panel New Desk Accessory (NDA). This single NDA performs all the functions of the older ROM-based Text Control Panel, available from the Classic Desk Accessory menu, and many other features. The functional categories of the Control Panel NDA are broken down into specific icons on the Control Panel's scrolling menu.

The standard icons in the menu include Alphabet, DC (Direct Connect) Printer, General, Keyboard, Modem Port, Monitor, Mouse, Printer Port, RAM, Slots, Sound and Time. Additional icons are added to the menu by the installation of Control Panel Devices, or CDEVs.

Some of the other CDEVs that can be added with the Installer are LaserWriter, AT (AppleTalk) ImageWriter, AT ImageWriter LQ and AppleShare. Third-party hardware manufacturers have the opportunity to write their own CDEVs to control devices such as printers, modems, accelerator boards, scanners, digitizers and stereo cards.

Selecting a Control Panel NDA icon brings up a window that contains the options for the different devices. Most of these options are selected via scrolling or pop-up menus. If a shadow appears behind an option box, it uses a pop-up menu. Italics are used to indicate the original factory (default) settings in these menus.

One of the new selections is Translation, located in the Alphabet category. This allows the typing of international language characters in graphics-based applications. Another new selection, found in the General category, is Menu Blinking, which controls the number of times a menu command blinks when it is selected. A third new selection is RAM Cache, which replaces its predecessor, the RAM Cache NDA. It is located in the RAM category.

All changes selected in the Control Panel NDA take effect immediately, except for changes in slot selections and RAM disk size. For slot selection changes to be implemented, the Shut Down command must be selected from the Finder and Restart selected from the Finder Shut Down dialog box.

To implement changes in the RAM disk, the Shut Down sequence must be used. In addition, the power to the computer must be turned off for at least 30 seconds before the computer is restarted.

APPLEWORKS 3.0, A CLASSIC IS IMPROVED



THE MOST
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PRODUCT RECEIVES
A MAJOR
OVERHAUL.

What happens when you combine the all-time best-selling Apple II software application, a majority of the patch programs designed to improve upon this software and a touch of the Beagle Bros.? Could this be what all the excitement in the Apple II software world is about lately? Well, exciting it is, because the resulting product is Claris' new AppleWorks 3.0 for the IIe, IIc, IIc+ and IIGS computers.

AppleWorks 3.0 was a joint development project between Claris Corp. and Beagle Bros. It contains more than 100 new features, including a built-in spelling checker for the word processing module. Yet, with all these new features, AppleWorks 3.0 can still operate on an Apple IIe with as little as 128K of memory.

The Long Road Forward

When AppleWorks was introduced in the fall of 1983 by Apple Computer, Inc., it was the first integrated software package for the Apple II. The program combined word processing, database management and spreadsheet modules into one package and allowed combining reports from each of the modules into one final, presentable document.

AppleWorks has undergone other enhancements in the past, including the incorporation of mail merge and additional spreadsheet formula functions, but never anything as extensive as this

recent version, which was announced on June 21, 1989. The official release of Version 3.0 occurred in mid-August.

According to Claris, AppleWorks is one of the three best-selling microcomputer software packages in the world. The registered installed base of customers is more than 750,000. The program is a standard for productivity software in the Apple II world and is marketed toward education, small and home businesses, community groups, and homes.

The major excitement is generated by the new features that have been added to the recent version. Some of the major enhancements that have been made to each of the modules are explained below.

Performance: 8.5
Innovation: 8.5
Ease Of Use: 8.5
Documentation/Support: 9.5
Value: 9.0

The Desktop

The first noticeable new feature in AppleWorks 3.0 is the elimination of the "push spacebar to continue" screen (splash screen) when loading the program. In fact, if there is a ProDOS-compatible clock installed in the computer (each IIGS has one), AppleWorks will proceed immediately into the initial loading process without stopping or prompting. A thermometer-type screen will be displayed, indicating installation progress.

All major types of RAM expansion cards are now recognized automatically on the various Apple II machines by



AppleWorks 3.0's spreadsheet function may be as good as that found on many stand-alone spreadsheet packages.

AppleWorks, so no RAM-expansion patch programs are necessary. This allows more of the program to be loaded into memory at one time, eliminating the need for periodic disk reads when different functions of the program are selected. It also expands the size of the available AppleWorks desktop by using any available expansion memory at its disposal. Because of the many added enhancements, the new version of the program uses more memory. The standard desktop size in a 128K machine will be reduced to 40K.

The software is now totally modularized, similar to AppleWorks GS, so a user can configure which of the various combinations of modules (database, word processor or spreadsheet) are to be loaded when the program is initially started. This is helpful on limited-memory machines, because desktop size is slightly reduced when no expanded memory is available. It can also be useful on machines with only 5.25-inch drives, because specific disks can be configured by the user for a specific module, minimizing the number of disk swaps that may be necessary while loading and operating the program.

Clipboard size is now only limited by available memory, increased from 255 lines or rows in earlier versions of the software. Therefore, if sufficient memory is available on the machine, entire documents can be cut and pasted into others. Furthermore, by using the Copy or Move commands, the Clipboard

can now be used to transfer information among each of the three AppleWorks modules, not just specific ones.

A data-conversion protocol has been built into the Clipboard to allow for these types of transfers. This nearly eliminates the need to print to a text file, DIF file or to the Clipboard itself to transfer data between modules.

The JEM Software patch, Pathfinder, will no longer be necessary. This filing feature is now built into AppleWorks. Basically, this feature follows the standard ProDOS file-selection protocol found on the IIGS for changing directories and adding or importing files to the desktop.

Selecting a subdirectory during file selection produces the list of files within that directory. The file types that are displayed will depend on the specific AppleWorks function currently being accessed.

Commands have also been added to access various levels of directories and for switching disk drive locations. Memorization of long ProDOS pathnames is no longer mandatory.

Printer support has been greatly enhanced. AppleWorks can now support three individual custom printers, compared to one in prior versions. In addition, many more standard printers have been added to the printer configuration menu, including the ImageWriter II and LQ; the Brother HR series; the Juki 5500 series; the Juki 6100, 6200, 6300 and 6500; the Okidata 192, 193, 82A, 83A, 89, 92 and 93; and the Panasonic 1080, 1090, 1091 and 1092. Also, users now have the capability to edit the codes for the standard printers.

Finally, with regard to printers, six different user-defined specialty codes have been added. This is useful for adding codes specific for individual printers, such as italics, shadow printing, ribbon-color selection, paper-bin control, foreign character sets and so forth.

The Database

The database can now handle more than 16,000 records, on machines with more than 256K of memory. This is a significant increase from the former 6,350 maximum number of records on earlier versions. Similarly, the number of

report formats for a single database file has been increased from eight to 20.

Additional Open Apple commands have been added to make database operations within AppleWorks much easier. A command has been added to toggle inverse displayed titles in single-record layout, for example. Other commands have been included to move the cursor to the last or the first category of a record.

A bonus added in AppleWorks 3.0 is the capability to type @ in a date or time field; the current date or time is automatically inserted after pressing Return. This is a handy item when printing a table report, especially when AppleWorks prompts you for the date of the report.

Horizontal scrolling is now available in multirecord layout. Thanks to this added feature, category widths no longer have to be shortened or categories hidden to allow a large number of them to be visible in the layout. Furthermore, left-side titles can now be set similarly to the way they had been in the spreadsheet. Thus, it is as easy to enter full records of data in a multirecord layout as it is in a single-record layout.

With AppleWorks 3.0, it is now possible to do multiple category sorts. Up to three categories can be selected to perform a single rearrangement of a file. The highest order sort is selected first (such as "Last Name"), followed by the next highest level (such as "First Name"). A third level can also be chosen. The sorts are now performed as one action, instead of three separate actions — as was done in the earlier versions.

Likewise, multiple category searches (finds) can now be performed. This feature can be useful if different categories within a file hold similar types of data. The search is limited to a single specific category or it can be for all categories.

The capability to create multirecord layouts from report formats has been added. The converse is also true — report formats can be created from record layouts. This can turn out to be a major timesaver for creating different screen formats in multirecord layout or for creating a new report format that can be easily edited.

Printing labels is no longer limited to "one up labels." Up to 24 labels can be printed across a page. AppleWorks will automatically calculate the columns necessary to produce the labels, using the information within the Printer Options menu. This can be handy for producing anything from small-size pricing labels to large-size bookplate labels.

The Word Processor

The number of lines available in the word processor has been increased to 16,000, up from 7,250 on Apple II machines with more than 256K of RAM. Thus, longer documents are now a reality. Commands have also been added to move the cursor keys to the beginning and end of lines, and control codes have been included for such functions as print justification and page breaks.

Some new codes have been added to the Printer Options menu. One is for right justification. Others allow for printing of the current date and time within a document. Finally, a code has been added to call up the special user-defined printer codes that were mentioned earlier in the Desktop discussion.

The boasted enhancement for the word processor is the new built-in 90,000-word spelling checker. It is capable of reviewing single words, blocks of text or entire documents. A user is also given an option of choosing a specific custom dictionary for each time the spelling checker is called up. Misspelled words are displayed in context or in a list format, depending on the user's preference. An optional spelling summary is also available, providing a total word count, a count and list of suspect words, and the corrections made to them.

Another major enhancement is in the area of tabulation. A system of "real tabs" is now an integral part of AppleWorks 3.0. This basically means that four different types of tabs are available. Tabs can either be left-justified (as were all the tabs in prior versions of AppleWorks), right-justified, centered or decimal. Decimal tabs are extremely useful in lining up columns of numbers.

Multiple tab rulers are now insertable into a document. This allows tabs to be changed by the paragraph, instead of having the same tabs throughout an entire document. These additions will simplify the creation of professional-looking word processed documents.

Headers and footers are no longer limited to a single line. The size limit has been increased to half the number of lines on a page minus 1 line. Double and triple spacing will also be available within a header or footer. User flexibility is the key here.

Exportation to text files has an added bonus; adding carriage returns at the ends of lines is now an option. Also, tabs can either be printed in text files as "real tabs" or the proper number of spaces can be substituted for the tabs. The latter can be useful when converting a file for uploading to an online service.

Finally, a page-printing range has been made available. This allows a user to choose a starting page number and an ending page number for printing consecutive pages. This can be advantageous when pages need to be printed or re-printed in the middle of a document.

The Spreadsheet

The spreadsheet can contain up to 9,999 rows of data on machines with more than 256K of memory. This represents a major increase from the former limit of 999 rows. The capability to copy and move blocks within a single spreadsheet has also been added. A block move is basically moving a group of several columns and rows at the same time. This was one of the most requested user improvements.

Many new spreadsheet functions have also been added. Some of the new arithmetic functions include Pi, natural and common logarithms, and division remainders. A full set of trigonometric functions is now included, such as sine, cosine, tangent, arcsine, arccosine, arc-tangent, radians and degrees. New financial functions include internal rate of return, present value, future value, number of payment periods, periodic payment and interest rate. Finally, some additional logical functions have been

included. The full description of these is best left to the *AppleWorks Reference Manual*.

Version 3.0 can also determine if a referenced cell is either a label or a value and use the proper course of action when carrying out a function on that cell. This provides the capability to do major lookup tables and use string values. This type of functionality was previously only available on stand-alone spreadsheet programs.

Finally, the printing of entire spreadsheets has been enhanced. AppleWorks will now print as many columns and rows as will fit on a single sheet of paper. It will continue by printing the following rows on subsequent sheets. When it reaches the final row, it will return to the top of the spreadsheet and begin printing the next sheet of columns, located to the right of the columns previously printed. This will continue ad infinitum until the final cell of the spreadsheet has been printed out. Users will then be able to paste together columns to view the entire spreadsheet.

Compatibility

Word processor, database and spreadsheet files from earlier versions of AppleWorks are totally compatible with AppleWorks 3.0. However, similar files created with AppleWorks 3.0 are incompatible with earlier versions of AppleWorks, if any of the added features found in Version 3.0 are used in a file. Similarly, files are not directly importable into AppleWorks GS if any of the added features are used. More details about file compatibility are elaborated upon in the AppleWorks Release Notes in the AppleWorks 3.0 package.

Documented Bugs

Realizing that AppleWorks 3.0 is a total rewrite of the program, some bugs in the release version are to be expected. No bugs have been found that cause the program to crash or destroy data integrity. The bugs that have been documented, basically cause a minor inconvenience, and work-arounds have been provided.

The first of these bugs involves adding deleting printers. It appears that deleting a printer fails to remove enough of the information about that one printer. The suggested work-around for this is to not delete the ImageWriter printer driver, if at all possible. If it is absolutely necessary delete all printers, then add the new printers in the desired order, one at a time.

Another bug can be found in the word processing module, but only on an Apple IIc. Luckily, it has an easy work-around. If a user accidentally types a carriage return in the middle of a sentence, the Delete key will not remove it. It can only be removed by using the Open Apple-D command.

Printing multiple database reports brings our a third bug. AppleWorks will properly produce the first copy of the report. All subsequent copies will be unacceptable. If the report is printed to the Clipboard and then transferred to the word processor, production of multiple copies is possible.

Hopefully, Claris will either release a corrected version, such as AppleWorks 3.0.1, or a patch program to eradicate these bugs. As of press time, this has not been determined.

Add-On Products

Because AppleWorks recognizes all available RAM memory, desktop expansion software by Applied Engineering or Checkmate Technologies will no longer be necessary for this function. Also, because most of the patch programs that were formerly available through JEM Software are incorporated into the new version of AppleWorks, these programs will not be upgraded.

The Pinpoint desk accessories, Key-player and Spelling Checker will not work with AppleWorks 3.0. Owners of these Pinpoint products should avail themselves of the upgrade offer to the TimeOut products that Beagle Bros. has publicized.

All the Beagle Bros. TimeOut products have been upgraded to work with AppleWorks 3.0; earlier versions of these products are incompatible with the new

AppleWorks. TimeOut UltraMacros has been totally rewritten to take full advantage of the new AppleWorks enhancements, and various new features have also been added to UltraMacros.

SuperPatch has been upgraded to Version 6.1 to work with AppleWorks 3.0. It includes more than 100 patches for such enhancements as time and date display, date insertion in the spreadsheet and database modules, printer enhancements, a Diablo printer driver that will output to a LaserWriter, use of Mousetext, cursor substitution and many more. If this version lives up to the previous product, it is something that every power AppleWorks user should own.

The Product Package

The entire AppleWorks 3.0 package consists of two 3.5-inch disks (a Training disk and a Program-Sample Files-Dictionary disk), four 5.25-inch disks (a Training disk, a Startup/Word Processor and Database disk, a Dictionary/Spreadsheet disk and a Sample Files disk), a *Getting Started* manual, a *Tutorial* manual, a *Reference* manual, a *Support Service and Registration* pamphlet, a trifolded Quick Reference Card, Release Notes, Compatibility Notes, a packing list, a National AppleWorks User Group application, and a coupon for half off the retail price of TimeOut UltraMacros. The suggested retail price remains at \$249.

Current registered owners of AppleWorks Versions 1.X or 2.X can upgrade to the new version for \$79 retail by filling out the upgrade form or by calling Claris' toll-free number (800-628-2100) and providing a Master Card or Visa charge number. AppleWorks owners who have not registered with Claris should mail in the \$79, the upgrade form and an original 3.5-inch or 5.25-inch AppleWorks disk. Upgrade forms are available by calling the same toll-free number. The upgrade packages are supplied in either 5.25-inch or 3.5-inch versions and lack the *Tutorial* manual and Training disk.

Evaluation

Overall, AppleWorks 3.0 is an outstanding demonstration of innovative programming. The upgrade achieves what it was aimed to do, improve upon an outstanding Apple II productivity product. Considering the number of new features that have been added and the fairly low cost of the upgrade, current AppleWorks owners would be foolish to pass this upgrade by.

Every Apple II owner should own a copy of AppleWorks 3.0, even Apple IIGS owners. For most productivity situations, text-based word processing, database management and spreadsheet calculations are more than sufficient. The extended memory features and their speed of execution clearly make AppleWorks 3.0 a desired product for the IIGS, as well as for the IIe, IIc and IIc+.

AppleWorks 3.0 represents state-of-the-art 8-bit software for the Apple II line. Its low memory requirement and its capability to use any additional available memory provide it with a means to run efficiently on a broad spectrum of the machines that make up the Apple II line. The recent additions and enhancements included in this latest version make it competitive with many of the stand-alone word processing, database and spreadsheet products on the market. Any individual considering the purchase of integrated productivity software for the Apple II should definitely evaluate this product. ■

— Tyler Weisman

The author is a Gainesville, Florida-based free-lance writer and an Apple II library SYSOP on GENIE. He can be reached via electronic mail at A2.Tyler.

Product: AppleWorks 3.0

Price: \$249 retail

Company: Claris Corp.; 5201 Patrick Henry Dr.; PO Box 58168; Santa Clara, CA 95042; 408-987-7000

Requirements: Apple IIGS; other Apple II models; 128K

Circle Reader Service Number 45

The Reality Of Simulation



Computers are capable of doing many wonderful things. One of them is to provide you with a simulation of reality. If you make a big mistake in real life, you'll pay for the consequences. But if you make a mistake on a computer simulation, at least you can get up off your chair and try again. In this column, we are going to examine some of the latest simulations available for the Apple IIGS.

Driving Force. Many of us have dreams of driving a fast, fancy car. More often than not, the cost of these cars is astronomical. Even if we can afford one, we may never be able to find a road good enough for it (or one where we can drive fast without breaking the speed limit). So the closest that some of us will ever get to fancy driving is on a computer simulation. Since the introduction of the Apple IIGS, we have been waiting for a good driving simulation and now there's one from Accolade. It's called *The Duel: Test Drive II*.

The *Duel* allows you to choose between driving two cars, a Porsche 959 or a Ferrari F-40. The reason it's called *The Duel* is because you don't have to be alone on the road. You can race against another car driven by a computer-controlled driver. You'll have to avoid obstacles in the road that can damage your vehicle, traffic in both directions and the law. You may also race against the clock.

The *Duel* has 12 levels of difficulty, which affect variables such as your opponent's speed, the density and speed of traffic and auto-shifting. Auto-shifting makes driving easier, but for realism choose the manual shifting method. You can actually drive off a cliff or onto the desert, but you'll have to face the consequences. Crashes in *The Duel* are spectacular; a splintered windshield lets you know that you've just lost one of your five lives.

The police are everywhere. Even if your car is outfitted with a radar detector, sooner or later you're going to hear a siren. You can choose to pull over and take your ticket or try



In the *Duel*: Test Drive II, you can choose to be behind the wheel of a Porsche 959 or a Ferrari F-40.

to outrun the law. If you pull over, a speeding citation appears and there's a time penalty added to your time; then you're on the road again. There's no penalty for trying to outrun the police, so you might as well give it a shot. If you try to pass a police car, you'll rear end it and lose all your lives.

Joystick control is optional, but recommended for this type of game. The joystick control tends to be very sensitive. If you're not careful, you'll end up crashing. The numeric keypad on the IIGS can also be used to control your vehicle. Although not as quick as with the joystick, control is very responsive. We like having the option of using both controls.

The *Duel* is a huge program that tends to be very slow loading. To make matters worse, you cannot have a RAM disk active while booting. You must reset your RAM disk to zero.

Despite these problems, *The Duel*'s graphics and sound are among the best we've seen. If you enjoy driving fast cars, this program's for you.

Two supplementary disks add to the enjoyment of using *The Duel*. The Supercars

disk has five different vehicles. These are the Lotus Turbo Esprit, Ferrari Testarossa, Porsche 911 RUF, Lamborghini Countach 5000S and the Corvette ZR1.

If you're tired of driving around in the 959 or the F-40, try these cars. Each car has its own characteristics, so you'll enjoy testing them out. Although *The Duel* has three sceneries of its own, you may want to try the California Challenge scenery disk, which allows players to race down the California coast. So go ahead, take the wheel and step on the gas!

What You Sea... Another simulation many users will enjoy is a good submarine battle. The Navy doesn't pick just anybody to command a submarine, so this may be your only chance.

First in this genre is *Silent Service* from MicroProse. *Silent Service* simulates U.S. submarine operations in the Pacific during World War II. You command your sub from a realistically detailed control room, using the mouse to move an animated figure between various

battle stations. When you're on the surface, you can get a wide-angle view from the bridge or spot targets with binoculars.

When submerged, you use the periscope. You steer, rotate the scope, launch torpedoes and fire your deck gun by clicking on various icons at the bottom of the screen. The action can be sped up by clicking on a time-scale indicator.

You have three levels of selection to choose from on the opening screen. Torpedo/Gun Practice gives you the feel of pointing and shooting. Convoy Actions are six historical battles from different periods of the war. War Patrols requires you to set out from a base and hunt down enemy convoys.

The game offers realistic options such as limited visibility, convoys that zig-zag, even dud torpedoes that will give you fits. Victories can be recorded on disk in the Submariner's Hall of Fame. Attention to detail is superb, and the quality of the color graphics and sound is outstanding.

Another submarine simulation is Sub Battle Simulator from Epyx. Sub Battle Simulator is a historically accurate game that includes 60 missions based on World War II scenarios. The game allows you to command one of six U.S. Navy subs or German U-Boats.

Sub Battle Simulator's screen organization makes more sense than that of Silent Service, because everything is on screen. All you do is click the mouse on the choice you want. You can steer, dive, surface, fire torpedoes and perform other functions from one screen. From the same screen, you can see the outside world through the periscope or binoculars.

In reality, submarines have walls of consoles and controls. Silent Service requires you to jump back and forth among the many screens. A single computer screen can't do it all. Yet Sub Battle Simulator puts two main control consoles on a single screen very nicely. We like the results.

A Red October. This game is based on the book by Tom Clancy of the same name. You are Captain Marko Ramius, a top submarine captain in the Soviet navy and the commander of the Red October, a Soviet nuclear-powered submarine on its maiden voyage to test its caterpillar drive, a super-quiet propulsion system.

Your disillusionment with the Soviet system has led you to a daring plan in which you intend to defect to the West, offering your sub in trade for political asylum. The Russians are going to put everything they have into keeping the Red October out of enemy hands. The Americans are suspicious of a trap. They're also ready, should you try anything unusual.

This game doesn't demand as much in the way of offensive tactics as it does brilliant stealth, evasion and navigation. You do have a few torpedoes, but not enough to handle all the situations you'll encounter.

The Hunt For Red October features an easy interface for controlling your submarine. Your compass, speed and depth gauges are always on screen, so you just move the cursor and click on a position to make quick adjustments. Tom Clancy's fascinating plot works as well in the game as it did in the book.

Just as in the book, the Red October's commander has a tough job ahead of him. Make no mistake, this is an animated strategy and not an action adventure. The biggest challenge for you is to plot a successful course, and the tension is real. Read the book and ponder upon it as you're charting a course across the Atlantic.

Let's Get Real. In reality, most computer games are simulations of real activities. The products mentioned above are only a few of the possibilities to choose from. Isn't it great that we can try these adventures and activities out on the IIGS and not worry about the consequences? Being able to do what you normally can't is what simulation is all about.

The Last Word. The year is 2088. The place is Crylla, a small planet in the Gamma-Chi sector. You are the commander of a team of six specialists searching the surface of Crylla for the missing crew members of the U.S.S. Houston.

Does this sound like a movie plot? No, it's a new role-playing game from Victory Software called 2088: The Cryllan Mission.

This game takes full advantage of the window environment of the Apple IIGS. It uses the familiar desktop interface and, under GS/OS Version 5.0, the windows really fly.

The mouse is easily used throughout the game for control. Just click in the direction you want to go, use the pull-down menus for selection and you are ready for adventure.

This is one of the best windows-based role-playing games we have seen. 2088: The Cryllan Mission comes on four disks and requires a full 1.25 MB of memory. Fortunately, you can install this game on a hard disk drive. ■

— Peter Chin

Columnist Peter Chin can be reached via electronic mail on CompuServe (71076,606) or GENie (P.CHIN).

Products Mentioned

(Additional company and product information is listed in the "Apple IIGS Hardware And Software Directory.")

2088: The Cryllan Mission

Victory Software
Circle Reader Service Number 46

Hunt For Red October

The Software Toolworks
Circle Reader Service Number 47

Silent Service

MicroProse
Circle Reader Service Number 48

Sub Battle Simulator

Epyx
Circle Reader Service Number 49

The Duel: Test Drive II

Accolade
Circle Reader Service Number 50

Revolution '76

Tyranny With Honor

Performance: 8.0

Innovation: 8.0

Ease Of Use: 7.5

Documentation/Support: 8.0

Value: 7.5

Revolution '76 is more than a war game. It's a realistic historical simulation of America's fight for independence.

The program runs on a IIGS equipped with only one 3.5-inch disk drive, but be prepared for disk swapping — even on a system with two 3.5-inch disk drives. Revolution '76 ships on three 800K diskettes! Because the program is not copy protected, transferring the files to a hard disk offers the best solution.

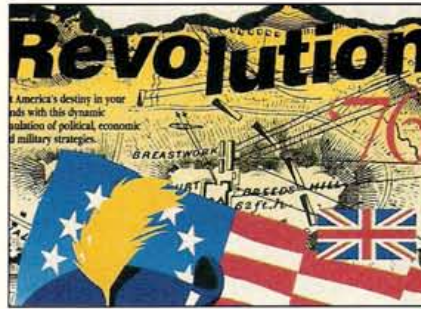
Super-high-resolution graphics and stereo music enhance game play, and realistic sound effects pepper the presentation throughout. Even if your IIGS relies solely on its internal speaker, you won't be disappointed. On a IIGS with 768K or less, however, there's neither music nor sound.

Game play begins in the year 1775 and proceeds through six phases of activity: Organize Government, Administer, Recruit, Supply, Campaign and Diplomacy. When you complete all six phases, a progress report appears and the program announces the start of a new year. A Save Game option makes it possible to quit after completing a phase. You can resume at the same spot later.

In each phase, players issue instructions about how best to handle the tasks at hand. For example, in Organize Government, strategists must select four political figures to head up the War, Navy, Finance and Foreign Committees of the Continental Congress. An Assign Leaders screen presents portraits of 12 famous political figures (including Benjamin Franklin, Thomas Jefferson, John Hancock and Sam Adams).

Preparing for war involves making decisions about defense, taxation, military leadership, troop movements and more. Patriots end up controlling an area at a campaign's end if more revolutionary troops remain than Loyalists and British soldiers. Americans also do better with support from other European powers (France, Spain and Holland).

When the game ends, the patriots must control four North American regions and



Revolution '76

cities. Only then will the British concede independence.

Successful game play requires knowledgeable mapping skills and an understanding of the geography of the Eastern seaboard. Players must read electronic maps to make successful troop assignments. They should not underestimate the importance of troops in Canada and the Royal Navy's control of the sea for British military success.

The simulation delves into the politics of the time, both in North America and in England. American victories give the Whig Party in England more votes in Parliament. American losses favor the Tories. Revolutionary generals are more popular with their troops if they hail from the same geographic region. Fighting a successful war means raising money for troops, supplies and ships. Players must take care of business as well as politics.

The package ships with an *Historical Perspective* manual detailing the course of the revolution. If you intend to use Revolution '76 in a classroom setting, be prepared to supplement program materials with conventional textbook readings.

Revolution '76 offers much to recommend, but we were bothered by a few features. For example, while the program is not copy protected, it nevertheless employs a mild protection scheme at start-up. Players must enter a password. Responding correctly involves searching for the answer on a specified page in one of the manuals.

The first time we played the game, the program stipulated the wrong page for the answer. Also, when American troops win battles, Revolution '76 plays the "British Grenadier." "Yankee Doodle" would be much more appropriate. Another problem is that dialog boxes with prompts or messages suggesting a course of action often contain inappropriately capitalized words or spelling errors.

The bibliography listed at the back of the *Historical Perspective* manual provides information on author, book title and year of publication, but omits all publisher references. And the documentation does not contain any reproducible black-line masters (maps or biographies), lesson plans or suggestions for offline activities. Perhaps even more significant, neither manual provides an index.

Despite these limitations, Revolution '76 is a well-designed simulation. The product will give players a feel for this historical period in ways no textbook can achieve.

Revolution '76 is suitable for use both at home or in class. Kids can play alone or team up with others for cooperative decision making. Because the simulation is sophisticated enough to engage even the most discerning adult, it can provide hours of educational family entertainment.

— Carol S. Holzberg, Ph.D.

Product: Revolution '76

Price: \$49.95 retail

Company: Britannica Software; 345 4th St.; San Francisco, CA 94107; 800-572-2272 or 415-546-1866

Requirements: Apple IIGS; 1.2 MB; GS/OS; RGB monitor; two 3.5-inch disk drives or hard disk recommended

Circle Reader Service Number 51

Softdisk G-S Magazine On A Disk

Performance: 8.5

Innovation: 8.5

Ease Of Use: 8.5

Documentation/Support: 8.5

Value: 8.5

Like its predecessor for the Apple II, Softdisk is a monthly magazine on a disk. As with most computer magazines, there is a review section, a question-and-answer column, and letters to the editor. In fact, there is enough variety that you are likely to find something that appeals to you in each issue.

Unlike a regular magazine, this is a full-blown software package with beautiful graphics and an extensive help section. The documentation is on the disk, as is the latest GS/OS system disk. The standard pull-down menus are easy to use, but you can also

REVIEWS

choose keyboard commands or click on various icons to move from section to section. For example, you can print out the review and letter sections and read them at your leisure.

You should also print the "Report Card" section, which lets you tell the editors what you think about the magazine and what you would like to see in future issues.

You can begin by checking the time with the Quicktime New Desk Accessory (DA). You can then install this DA on your other system disks using the included Installer (part of the included system disk). If you want to use the Keyboard Font program, install this utility so it will be available when you need it. This GS font DA shows how the keyboard keys actually look and could be useful for creating documentation.

If you're in the mood for fun, you could begin with the Jukebox or SAM. The Jukebox includes three pieces of music, but can be used to play any Music Studio (music-creation software from Activision) songs you may have. This DA is great if you don't have a program to create music, but would still like to hear your computer play some tunes. Jukebox will use your stereo card, if you have one, but it would be nice if it had its own software volume control.

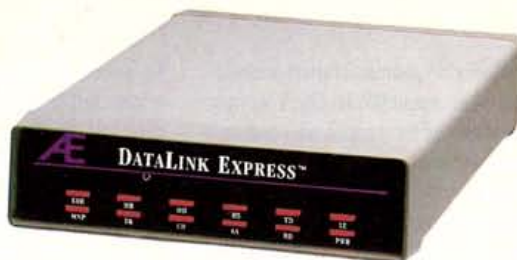
SAM, or Softdisk Adventure Machine, serves two purposes. It allows you to create text adventure games by using a text editor (word processor) to write scripts that it (the software) can play back. A built-in editor may be included in a future edition, which we think is an excellent idea — the current method for editing is somewhat confusing.

If all you want to do is play along with your computer, there's a crime adventure included. One nice feature of SAM is that a game can be saved in progress.

Another just-for-fun item is Beachhead V, a Mean 18 (golf game from Accolade) fantasy golf course. The plan is to include a golf course in each issue, but Arkanoid II (an arcade-style game from Taito Software) screens are also being considered for future issues.

Measure for Measure is a set of AppleWorks GS spreadsheets that allows you to convert metric and standard units of measure with ease. Just insert the figure you want to convert and the calculations are done for you! There are three spreadsheets: one each for weight, area and volume.

DataLink Express™



The Upgradeable External

Waited long enough for an upgradeable, full-featured modem? Introducing the new DataLink Express™ from Applied Engineering. With the *first* comprehensive status light array. The *first* Line Engage indicator. The *first* upgradeable design allowing for the addition of send-Fax capability and MNP error correction. And the *first* to offer these features affordably.

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The included Christmas clip art is also meant for use with AppleWorks GS. You may select one or more of the graphics to enhance a seasonal newsletter, for example. It seems strange not to have these graphics in color, but the black and white images give a crisper printed look and are, therefore, better for making multiple copies.

It is obvious that a lot of thought went into this publication and that it will appeal to a wide variety of people. A subscription to Softdisk G-S is an economical way to add interesting software to your library.

— *Merry Perry*

Product: Softdisk G-S

Price: \$12.95 retail; single issue

\$29.95 retail; three-month introductory subscription

\$89.95 retail; one-year subscription

Company: Softdisk Publishing; PO Box 30008; Shreveport, LA 71130-0008; 318-221-8718, 800-831-2694 for subscriptions

Requirements: Apple IIGS; 768K (1.25 MB recommended); 3.5-inch drive; not copy protected; supports stereo cards

Circle Reader Service Number 52

Audio Animator

MIDI And More

Performance: 7.0

Innovation: 8.5

Ease Of Use: 8.0

Documentation/Support: 5.0

Value: 10.0

The Audio Animator by Applied Engineering provides the functions of a stereo card, a digitizer and a MIDI (Musical Instrument Digital Interface) sequencer on one card, along with a box that allows you to control input, output and microphone levels.

The box also lets you connect and chain a number of MIDI devices using standard five-pin MIDI in, out and through connectors. Line in and out jacks are included so you can plug in a radio, CD player or tape recorder and have its sound play through your speakers when using a program that has no sound.

Installing the Audio Animator is no different than a stereo card. The board plugs into a slot — slot 2 is recommended but there are other options. Using the Audio Animator

for stereo playback, a modem or other device connected to the modem port need not be disabled. However, using the digitizer or MIDI sequencer requires that you change the Control Panel settings from Modem Port to Your Card and reboot.

Connected to the card is a female plug that screws into the back panel of the computer. It is important that the supplied metal shielding plate is installed on the inside of the case. This plate acts as a ground, and the board will be noisy and unpredictable if this is not done.

The manual, though specific on the fact that the plate must be installed, isn't clear on whether it should go on the inside or outside. The mixing box plugs into the connector on the back panel, and a ribbon cable from the top of the card plugs into the Ensoniq lead on the front right side of the motherboard.

Plugging in microphones, speakers, CD players and whatever else you might have will probably require some adapters. Applied Engineering wisely explains this in a chapter of the manual along with providing the Radio Shack part numbers of what you may need.

The Audio Animator's sound quality, dynamic range and stereo separation are the best we've ever heard on a IIGS. The output is a bit noisy, however. There is a slight hiss evident in the left channel and a faint echoing of the motor of our Sider D9 hard drive when it's accessed.

There are output volume controls for both channels. Using these controls can lessen the hiss but not entirely eliminate it.

Because there is a 1-watt amplifier built into the mixing box, you can connect unamplified speakers. However, the low power delivered by Audio Animator would probably be inadequate to realize their full potential. Connecting amplified speakers is a better idea.

The digitizer lets you record from any source that you can plug into the box. It works great with a microphone, CD player, tape deck and keyboard.

The quality of reproduction is better than that of the Sonic Blaster board, because you can record at faster speeds. At its quickest, Audio Animator can sample in stereo at 37,000 Hertz (Hz). At the fastest possible speed, a one megabyte (MB) GS launching from ProSel 16 can only record for around two seconds. Slow the speed down and you'll get a larger sample, but less quality. The short recording time is due to the fact that GS/OS and the Audio Animator software together take up a hefty 700K.

When memory gets exhausted, you can

close any opened windows to recover it, but systems without vast memory can have problems. Quitting the program and starting it again will set everything right.

When the recording is finished, the real fun starts. The sound graph of your sample is displayed, which can be zoomed in or out to explore it in more detail. You can select any part or all of it and cut, copy or paste to any part of the graph. Choose either or both channels for effects and fade it up or down, play it backwards, amplify or have it echo.

You can print the sound graph and save the file in a variety of file formats. The HyperStudio format is not currently supported, but Applied Engineering tells us that it will be in a future release.

The MIDI Sequencer module is the most complex and, in our opinion, the most interesting aspect of Audio Animator. Add a MIDI capable keyboard or other instrument and you can make some serious music and do tricks that only a few years back would have required a professional recording studio.

Select one of the eight available tracks, choose the speed, decide if you want a full measure click count or a non-recorded metronome tone to keep the beat, click on record and play. The manual mentions a tempo box to set the time signature, but that isn't supported in the 1.1 version of the software we used. Your music will be recorded in memory. Play it back and the music comes out your keyboard just as you played it. Now set the next track to record while the first track plays back and you can play along. Or select both tracks to play while a third track records.

Because most MIDI keyboards contain a variety of instrument voices, by using Audio Animator's 16 channels it's possible to record a number of instruments in the same piece of music.

If your keyboard is up to it, eight instrument voices can be put onto a single piece. Any group of measures can be cut, pasted or copied to any part of the recording. If a measure or two comes out wrong, it can be selected and redone keeping everything else intact. Playback speed can be changed without affecting the pitch, so it's possible for a starting musician to record very slowly and have it play back sounding great.

As far as drawbacks go, the first version of the manual is both inadequate and inaccurate. For example, a poorly chosen word and picture prevented us from properly installing the board.



Audio Animator

A few other things were also worded vaguely and prevented a clear understanding of the intentions.

The world of MIDI encompasses terms and concepts that can be quite unfamiliar to people just starting out, and the manual does nothing to smooth the road. What is needed is a chapter containing an overview of MIDI along with many words clearly defined in the glossary. Encouragingly, Applied Engineering tells us that the manual is in the process of being rewritten.

Taken as a whole, Audio Animator is quite an achievement. It turns the GS into a powerful and versatile sound engine, and the list price of \$239 is very reasonable. New and more powerful software is now being completed that should eliminate a few current bugs and make the product even more attractive.

— David Winograd

Product: Audio Animator

Price: \$239 retail

Company: Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Requirements: Apple IIGS; 1 MB (more RAM recommended); 3.5-inch drive

Circle Reader Service Number 3

DataLink And ReadyLink

A Communications Dynamic Duo

DataLink 2400

Performance: 9.0

Innovation: 8.0

Ease Of Use: 10.0

Documentation/Support: 9.0

Value: 9.0

ReadyLink

Performance: 10.0

Innovation: 9.0

Ease Of Use: 10.0

Documentation/Support: 10.0

Value: 10.0

A modem allows a user to connect a computer to the telephone lines. Once that

happens, the user can join the large community of Apple IIGS owners who have gone online, communicate with them, share software, get answers to technical-support questions, and bring home a wealth of information that is not generally available through other mediums.

Applied Engineering makes going online easier and less costly than ever before with its DataLink 2400 modem and its first stand-alone software product, ReadyLink. Although both

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 Apple IIgs Version; 1MB \$89.95
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 Run Your Own Train: \$34.95
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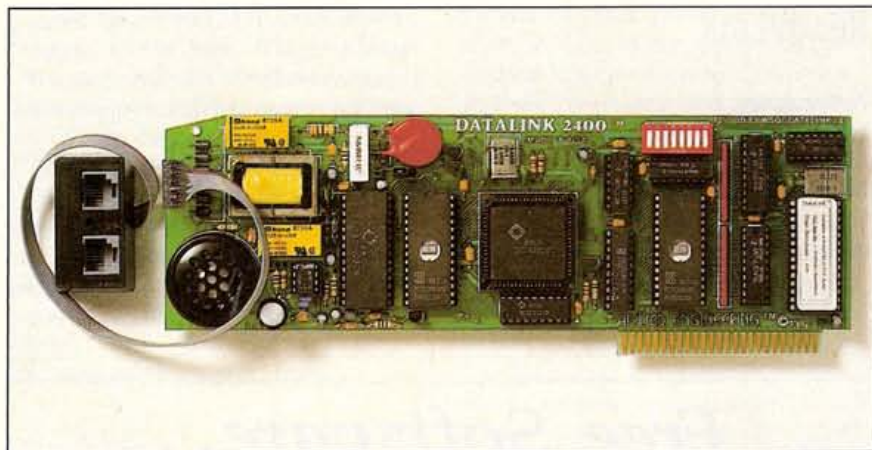
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Circle Reader Service Number 22

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EUGENE, OR 97402
(503) 342-3030



DataLink 2400

products are sold separately, in combination they are unbeatable.

The DataLink 2400 modem is a completely self-contained circuit board that plugs into an open slot in the IIGS. Although the modem comes with eight dip switches and three jumper blocks, the vast majority of IIGS owners will simply insert it into a free slot, connect the supplied phone cord to their phone line, change their Control Panel settings to Your Card and be ready to go online.

The hardware is only one part of the formula necessary to go online. Software to communicate with the modem is also needed. The DataLink comes with an unprecedented three different methods to address the modem. A user can use the firmware contained within the modem's ROM; the OnLine 64 program supplied with the modem; or the powerful DataTerm program, also supplied with the modem.

The firmware allows a user to dial numbers, save entire online sessions as text files for offline reading, and transfer files by using the widely instituted Xmodem protocol. OnLine 64 also allows all of the above activities — from a menu-driven environment — as well as the capability to display text files from within the program. Both methods are adequate for using the modem to call online BBSs (bulletin board systems) or online networks. However, they are basically plain-vanilla methods. DataTerm is a powerhouse program.

One of DataTerm's strongest features is the capability to automate all aspects of going online. The program comes with a powerful scripting language that allows individuals to write their own macros to automate the proce-

dures. Using DataTerm, a user can create a script that will call an online service; automatically check if there is any electronic mail waiting and, if so, read it; read all new messages; download a file; and then log off.

DataTerm has other attractive features. It supports Xmodem and its much faster relative, 1K Xmodem. It allows a user to save an entire online session as a text file and display that file from within the program. It includes a Turbo Xmodem module that can speed up downloads. It allows a user to set a timing constant for use with networks. And it includes terminal emulation for 14 popular terminals, including VT52.

ReadyLink, available separately or as a \$49 upgrade to registered DataLink owners, offers virtually all the features of DataTerm, plus a number of others, in an easy-to-use, mouse-driven environment. In many ways, ReadyLink and DataTerm are similar in that they both have a powerful scripting language and are both extremely dependable. ReadyLink is easier for the novice to master, however.

ReadyLink allows full mastery of its macro capabilities by use of an Auto-learn feature. Rather than having the user write a customized script, ReadyLink actually records keystrokes for playback later. When accessing a remote computer for the first time, the user enters log-on information manually. The program automatically saves that information as a macro, and the user never need enter the information again. In a similar manner, the user can have ReadyLink "learn" to retrieve messages automatically or download a series of programs.

ReadyLink comes with a built-in, Mac-like word processor that serves as an editor. That editor can be used to prepare text for uploading or to edit text that's been downloaded. The editor contains most of the features desired in a word processor, including Cut and Paste and Find and Replace commands.

ReadyLink's commands are issued by pointing and clicking the mouse. For those who prefer command-driven software, ReadyLink has keyboard equivalents to all its commands and allows the user to change any command. A user used to a particular word processor can change any of ReadyLink's commands to resemble those of the other program.

Among some of ReadyLink's other features are 132-column VT100 terminal emulation, Ymodem file-transfer protocols, auto-configuration capabilities, a split-screen Chat mode and a timer that calculates how much an online session is costing. Its most unique feature is the capability to have more than one movable active window open at the same time. Although not true multitasking, this feature allows a user to download messages while writing text in the editor.

The DataLink 2400 modem comes with a number of money-saving coupons that allow a user to sign up — free of charge — to such diverse services as GENie, NewsNet and the Electronic edition of the *Official Airline Guide*. ReadyLink also comes with a free sign-up package for America Online.

DataLink 2400 is a dependable modem that provides a complete package of telecommunications programs and utilities at a competitive price. ReadyLink, which can be used with DataLink or any other Hayes-compatible modem, is a powerful program that will be loved by novices and long-time modem users alike.

— Joe Kohn

Products: DataLink 2400 and ReadyLink

Prices: \$239 retail; DataLink 2400

\$99 retail; ReadyLink

\$49 retail; ReadyLink Upgrade for

DataLink Owners

Company: Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Requirements: Apple IIGS; other Apple II models

Circle Reader Service Number 3

ThunderScan GS

The Joy Of Scanning

Performance: 8.0

Innovation: 8.0

Ease Of Use: 8.0

Documentation/Support: 6.0

Value: 9.0

If you own or have used a ThunderScan digitizing scanner, you will be happy to know Thunderware has improved the software interface by releasing ThunderScan GS. The new program runs circles around the old software. The new interface, designed for the Apple IIGS, follows Apple's guidelines for pull-down menus and keyboard shortcuts.

ThunderScan GS works equally well with ProDOS 16 or GS/OS. The only real difference is in memory requirements. It is possible to run ThunderScan GS under ProDOS 16 with only 512K of memory. If you want to print the screen from within the program, however, 768K is needed. Running ThunderScan GS under GS/OS Version 5.0 requires at least 1.25 MB.

The process of scanning an image hasn't changed. ThunderScan still works with an ImageWriter I, ImageWriter II or wide-carriage ImageWriter printer. It is still necessary to replace the ImageWriter ribbon with the ThunderScan cartridge, focus the scanner manually, and turn the printer on and off as prompted by the software. What has been improved is the ease of making changes in the scanner's software settings.

To prepare to scan an image, pull down the Scanner menu and select New Scan. A full-screen dialog box that allows adjustments to the format, resolution and mode of the scanned image appears. All numbers and values within the dialog box are updated instantly, except for blocks available on the volume. If the prefix is changed, you must click on the words "Blocks Avail.:" to update this information.

Radio buttons are used to determine if an image will be scanned in super-high-resolution or ultra-high-resolution and High or Normal quality. It is also possible to determine whether the scan will be in Color or Line Art Mode. Color can be added to an image scanned in Color Mode, but the scanner does not "see" color. Color pictures are converted into gray-scale images during scanning.

The scanner works best if the original image has a quarter-inch border on the left side. It must be alerted if this border isn't present. With the new software, all you do is select either of the radio buttons labeled Smooth or Rough.

Images can be enlarged by changing the number of dots per inch (DPI). The dots-per-inch number can be adjusted by using a scroll bar that ranges from 36 to 350. This allows a smaller area of the original image to take up more space on screen.

ThunderScan GS uses disk space while scanning an image. To change to a different volume, you must enter the pathname of the new volume in the prefix selection box.

Within the same dialog box, there is also a representation of a full page, including horizontal and vertical rulers. A view rectangle indicates the portion of the page that will be visible on a full screen. The size of the view rectangle changes with the DPI number selected.

A scan rectangle indicates the area of the page that will be scanned. The scan rectangle has two easy-to-use handles. The handle in the lower right corner is used to change the size of the scan area; the handle in the upper left corner is used to change the position of the scan area on the page.

While displaying the scanned image, the refresh rate of the screen is slow. This is especially evident if the image is large and scanned at a high DPI number. Moving from one section of the scan to another takes some time. The old software worked better in this regard. Fortunately, both versions of the software are shipped with the scanner, and a saved scan is completely compatible with either version.

Contrast and brightness levels are changed through the use of scroll bars that appear within a dialog box. Unfortunately, this box cannot be moved to another part of the screen. If the part of the image you are most interested in altering is under the box, you might be out of luck.

Images can be saved as a Scan file or various type and resolution screen files. The file types available are compatible with popular IIGS painting programs. Scan files can be gigantic in size, depending upon the DPI number selected and the size of the area to be scanned. Such files are so large that it may not be possible to save a scan of, say, an entire page at 350 DPI onto an empty 3.5-inch disk.

In addition to Apple's standard Print command, ThunderScan GS includes a new command, Tile Print. If a scanned image is larger than 8 by 10 inches, it is possible to automatically print a series of pages that fit together perfectly when trimmed. This is a memory-intensive operation, so it is conceivable to scan an image that is too large to Tile Print.

We only encountered one bug while testing ThunderScan GS. The program refused to allow us to reposition the scroll bars after we saved a screen file to disk, claiming that the scan file must be saved before the image can be scrolled. Only after opening the saved scan file did the program stop preventing us from scrolling through the image.

ThunderScan GS is an excellent program that makes using the ThunderScan digitizing scanner a breeze. If you own a ThunderScan, Thunderware will update your software for \$25. The charge includes a 3.5-inch disk, user's guide, quick reference card and U.S. shipping. ■

— Gary Ramey

Product: ThunderScan

Price: \$219 retail (hardware and software)
\$25 retail (software update)

Company: Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94563; 415-254-6581

Requirements: Apple IIGS; 512K minimum; ProDOS 16; ImageWriter I or II printer
Circle Reader Service Number 55

Apple IIGS Hardware And Software Directory

About This Directory

The Apple IIGS Hardware And Software Directory includes every Apple IIGS product for which we received a response from our most recent mailing to all Apple IIGS product developers. The products are listed alphabetically by category and within categories, primarily by product. The product directory also includes many products identified with a box (■). These are Apple IIGS products that are either new or listed for the first time in *The Apple IIGS Buyer's Guide*. These descriptions are longer than the others because they are appearing for the first time.

For a vendor's program to be listed in this directory, the product must either be Apple IIGS-specific or at least available on a 3.5-inch disk. This is because many Apple IIGS owners do not own 5.25-inch disk drives, or they may opt for two 3.5-inch drives rather than one 3.5-inch drive and one 5.25-inch drive. In addition, the program must be based on the ProDOS 8, ProDOS 16 or GS/OS operating system, or take advantage of IIGS-specific features, such as super-high-resolution graphics and sound.

Every effort has been made to verify this information for readers. However, neither Redgate Communications Corporation nor *The Apple IIGS Buyer's Guide* assume responsibility for the accuracy of the production descriptions nor the suitability of any product for specific tasks.

An electronic version of the Apple IIGS Hardware And Software Directory can be found on The Source. Type Applesig at any system prompt for additional information. This directory also includes products identified by a diamond (◆). These are paid listings.

Accessories

■ A Better Mouse Trap

Mouse-holding device
Apple IIGS mouse.

A Better Mouse Trap is a mouse-holding device that attaches to the side of the IIGS monitor. It is soft, flexible, removable and fully padded for complete protection. It is available in gray or blue.

\$8.95 retail

Peri-Peripheral Co.; 1201 204th Pl. SE, Bothell, WA 98012; 206-486-3003

A-B Box

Lets users connect two peripherals to one serial port or share one peripheral between two computers

Apple IIGS.

\$99.95 retail

Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Analog Edge; Analog Plus

Joysticks using Injected Resistor Technology

Apple IIGS; other Apple II models.

\$29.99 retail; Analog Edge

\$39.99 retail; Analog Plus

Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

Apple IIGS Armor

Security system

Apple IIGS.

\$213.50 retail

Omni Tech Corp.; 21850 Watertown Rd.; Waukesha, WI 53186; 414-784-4112

Apple IIGS Dust Cover

Cover for Apple IIGS computer, monitor and keyboard

Apple IIGS.

\$13.75 retail

Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Apple IIGS Dust Cover

Custom-sewn rip-stop nylon covers for IIGS and printers

Apple IIGS.

\$15.95 to \$27.95 retail

Computer Covers Unlimited; 7969 Engineer Rd., Ste. 104; San Diego, CA 92111; 619-277-0622 or 800-722-6837

Apple IIGS Soft Keyboard Protector

Clear, precision-molded keyboard protector that stays in place while a user works

Apple IIGS.

\$29.95 retail

Computer Covers Unlimited; 7969 Engineer Rd., Ste. 104; San Diego, CA 92111; 619-277-0622 or 800-722-6837

Apple Security System

Complete security kit that uses Apple's built-in security slots

Apple IIGS.

\$49.95 retail

Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

AppleCenter Plus

Physical security system

Apple IIGS.

\$69.95 retail

Doss Industries; 1224 Mariposa St.; San Francisco, CA 94107; 415-861-2223

AppleTalk Clips

Secures AppleTalk network connections

Apple IIGS; AppleTalk network.

\$25 retail; 25 clips for plain cables

\$13.75 retail; three clips for connection boxes, four clips for plain cables

\$25 retail; 25 clips for connection boxes

Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Bose RoomMate Powered Speaker System (Special Platinum Edition)

Digital sound speakers with full-range drivers, a dual-channel amplifier, an equalization network and distortion-limiting circuitry

Apple IIGS (plugs into headphone jack).

\$229 retail; per system

Bose Corp.; The Mountain; Framingham, MA 01701; 508-879-7330

Cable Assemblies

Cable connections for the IIGS and peripherals

Apple IIGS.

\$9.95 to \$28.95 retail

Data Spec; 9410 Owensmouth Ave.; Chatsworth, CA 91311; 818-772-9977

CCK 100 Universal Computer Care Kit

Helps keep computers free of dust, dirt and static

\$29.95 retail

Scooter Products; a Div. of OHM Electronics, Inc.; 746 Vermont St.; Palatine, IL 60067; 312-359-6040 or 800-323-2727 (dealers)

Computer Accessories Cables

Cables

Apple IIGS.

\$19.95 retail; C252-2 (Mini-DIN 8 to DB25 adapter)

\$24.95 retail; C250-9 (IIGS to ImageWriter II; Apple modem)

\$29.95 retail; C255-2 (IIGS to SCSI disk drive)

Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

■ Computer Specialty Products

Dust covers, keyboard skins, anti-static pads, mouse pads

The Apple IIGS Dust Covers are machine-washable, static-free and waterproof. Each cover is custom sewn to fit the IIGS monitor, keyboard and printer. Covers are computer gray with a black binding.

Each Soft Keyboard Skin/Cover is custom manufactured to protect the keyboard against spills, dirt, dust, liquids and abuse. The Skin fits securely over the keyboard and provides an operator with smooth ease of handling.

The Anti-Static Pad is a static dissipative pad designed to prevent static-caused data loss. A ground cord is provided to eliminate the possibility of overloading the pad with static discharge. It measures 10 by 21 inches and is available in gray.

The Keyboard/Mousepad is a custom designed static-free pad for the IIGS. Measuring 8 by 28 inches, it provides room for both the keyboard and mouse. It is available in blue, red and gray.

The Mousepads are available in gray, red or blue and measure 8 by 10, 9.5 by 11 or 12 by 12 inches.

The Imprinted Mouse Pads are customized with school/company logos, etc.

\$19.95 retail; Apple IIGS Dust Cover (three-piece set)

\$18 retail; Soft Keyboard Skin/Cover

\$12.95 retail; Anti-Static Pad

Accessories

\$9.95 retail; Keyboard/Mousepad (quantity discounts available)

\$3.95 to \$6.95 retail; Mousepads
\$8.50 (12 pieces) to \$3.70 (144 pieces) each retail;
Imprinted Mousepads (quantity discounts available)
Computer Specialty Products; 10016 Sandmeyer Ln.;
Philadelphia, PA 19116; 215-969-4489

■ Consumer Laserdisc Player Cable Interface

Laserdisc interface
Apple IIGS; other Apple II models.

There are several versions of the LDI Interface available for various systems. These interfaces work with the Pioneer LD-V2000, CLD 909, LD-V4200, 1070, 2070, 3070 or compatible laserdisc players. An available option includes the single cable interface, which is non-switching and easy to install.

\$25 retail
Teaching Technologies; PO Box 3808; San Luis Obispo, CA 93403; 805-541-3100

■ The Cordless Mouse

Cordless input device
Apple IIGS.

The Cordless Mouse uses the latest in infrared signal transmission technology to give mouse users long-awaited freedom. It can be operated from up to 5 feet away from its base receiver. The Cordless Mouse features a sleek, lightweight contoured design that allows ease of use for both right- and left-handed operators. Using an 8-bit, 12 MHz CMOS CPU, it provides a high-resolution of 200 cpi and a tracking speed of up to 600mm per second. The Cordless Mouse also has an automatic shutoff to extend battery life (two AAA batteries required). No special gridplate or mousepad is necessary.

\$149.95 retail
Practical Solutions; 1135 N. Jones Blvd.; Tucson, AZ 85716; 602-322-6100

Desktop Printer Stands

Modular, adjustable desktop printer stands available in beige (PRT-1B) or gray (PRT-1G)
\$13.95 retail
Data Spec; 9410 Owensmouth Ave.; Chatsworth, CA 91311; 818-772-9977

Dilly Dolly Computer Cart

Two-wheel portable cart
Apple IIGS; other Apple II models.
\$195 retail
The Dilly Dolly Co.; 2957 Mariposa Dr.; Burlingame, CA 94010; 415-697-9272

The DisKeeper

Organizes, stores and transports 3.5-inch disks
\$6.95 retail; three pages
\$19.95 retail; binder with five pages
Cobar, Inc.; 301 Highland Rd.; Cheltenham, PA 19012; 215-379-2440

DSM802 And DSM804 Data Switches

Two- and four-way compact data switches with 8-pin mini DIN connectors
Apple IIGS; peripherals.
\$49.95 retail; DSM802
\$59.95 retail; DSM804

Data Spec; 9410 Owensmouth Ave.; Chatsworth, CA 91311; 818-772-9977

Dust Covers

Protect your computer
Apple IIGS.
\$29.95 retail
Co-Du-Co; 4802 W. Wisconsin Ave.; Milwaukee, WI 53208; 414-476-1584

E-ZEE Inker II

Ribbon inker
\$39.50 to \$189 retail
Borg Industries, Ltd.; 525 Main St.; Janesville, IA 50647; 319-987-2976 or 800-553-2404

Extra Long ADB Keyboard Cable

Eight-foot replacement keyboard cable
Apple IIGS.
\$39.95 retail
Kensington Microwave Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Flightstick

Aircraft joystick with pistol grip
Apple IIGS.
\$74.95 retail
CH Products; 1225 Stone Dr.; San Marcos, CA 92069; 619-744-8546

■ Graflex

Gives users a choice when selecting a printer
Apple IIGS; parallel dot matrix printer.
Graflex is a cable that gives users a choice when selecting a printer for the Apple IIGS. It provides ImageWriter II emulation for almost any nine-wire printer. Large-scale integration and surface-mount technology allow the Graflex to hide its circuitry within one of its connectors. It requires no external power supply. Users run the supplied configuration program and pick a printer from a list of more than 100. Settings are stored in non-volatile memory. The configuration program can also be used to switch off ImageWriter emulation for those programs that take advantage of special features of a user's printer.
\$119.95 retail
ICD, Incorporated; 1220 Rock St.; Rockford, IL 61101; 815-968-2228

IIGS Anti-Glare Filter

Reduces glare reflected from a IIGS color monitor screen by 91 percent; easily attaches with included adhesive fasteners
Apple IIGS.
\$49.95 retail
Kensington Microwave Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

The Incliner

Adjustable, portable computer cart
\$699 retail
Jenston Mfg.; PO Box 34074; San Antonio, TX 78265; 512-653-0414

■ Interflex

Provides transparent serial to parallel conversion
Apple IIGS; parallel dot matrix printer and printer driver.
For Apple IIGS and IIc owners with parallel printers and compatible software, Interflex provides transparent serial to parallel conversion in the guise of a simple cable. Its circuitry is hidden in one of the connectors,

and Interflex draws its power from the computer. All settings are changed with the supplied configuration software. Interflex will automatically select and configure itself to a port's baud rate.

\$69.95 retail
ICD, Incorporated; 1220 Rock St.; Rockford, IL 61101; 815-968-2228

JuiceBox

Surge suppressor and fan
Apple IIGS.
\$39 retail
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

Kablit

Computer and peripheral tie-downs
Apple IIGS; monitor; other peripherals.
\$39.95 retail
Secure-It, Inc.; 18 Maple Ct.; E. Longmeadow, MA 01095; 413-525-7039 or 800-451-7592

Kensington Printer Accessories

Noise reduction by 75 to 85 percent; stands that raise printer and Printer Muffler 4 inches for paper storage underneath; and stand that raises printer 2.5 inches at the front and 4.5 inches at the back
Apple IIGS; printer.
\$69.95 retail; Printer Muffler 80
\$29.95 retail; Printer Muffler 80 Stand
\$89.95 retail; Printer Muffler 132
\$29.95 retail; Printer Muffler 132 Stand
\$24.95 retail; Universal Printer Stand
\$29.95 retail; Space Saving Printer Stand
Kensington Microwave Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Keyboard/Computer Vacuum Model MV5

Portable vacuum featuring a high-power motor and including brush/nozzle attachments
Apple IIGS.
\$18.95 retail
Data Spec; 9410 Owensmouth Ave.; Chatsworth, CA 91311; 818-772-9977

Kraft Joysticks

Three-button joysticks
Apple IIGS.
\$44.95 retail; Kraft Premium III
\$29.95 retail; Kraft KC3
Kraft Systems, Inc.; 450 W. California Ave.; Vista, CA 92083; 619-724-7146

Kraft Premium II

Two-button joysticks with "center-look" mode selector
Apple IIGS.
\$32.95 retail; model 008-10
\$39.95 retail; model 308
Kraft Systems, Inc.; 450 W. California Ave.; Vista, CA 92083; 619-724-7146

Kurta IS/GS

Cordless graphic input system; graphics tablet
Apple IIGS.
\$395 retail
Kurta Corp.; 3007 E. Chambers St.; Phoenix, AZ 85040; 602-276-5533

Accessories

LaserKleen

Laser printer cleaning and maintenance system
\$39.95 retail
PerfectData Corp., 1825 Surveyor Ave., Simi Valley,
CA 93063; 805-581-4000

LDI-4200 And LDI-2000

Laserdisc interfaces
Apple IIGS; other Apple II models.
There are several versions of the LDI Interface available for various systems. These interfaces work with the Pioneer LD-V2000, CLD 909, LD-V4200 or compatible laserdisc players. An available option includes the LDI Video Switching Interface, which provides the capability of video switching.
\$175 retail; LDI-4200
\$150 retail; LDI-2000
Teaching Technologies; PO Box 3808; San Luis Obispo, CA 93403; 805-541-3100

Lynx Trackball

High-technology input device
Apple IIGS; other computers.
\$99.95 retail
Lynx Computer Products, Inc.; 15115 Ramona Blvd.,
Baldwin Park, CA 91706; 818-960-4839 or 800-824-3522

Mac-Kit 3A

Security kit
Apple IIGS; Macintosh II.
\$39.95 retail
Qualtec Data Products, Inc.; 47767 Warm Springs Blvd.,
Fremont, CA 94536; 415-490-8911

Mach I And Mach I Plus

Analog joysticks
Apple IIGS.
\$21.95 retail; Mach I
\$29.95 retail; Mach I Plus
CH Products; 1225 Stone Dr.; San Marcos, CA 92069;
619-744-8546

Mach II and Mach III

Two- and three-button joysticks
Apple IIGS.
\$39.95 retail; Mach II Joystick
\$49.95 retail; Mach III Joystick
CH Products; 1225 Stone Dr.; San Marcos, CA 92069;
619-744-8546

Mach IV Plus

Professional mouse/joystick that includes an absolute mode, which tracks and acts like a mouse
Apple IIGS.
\$89.95 retail
CH Products; 1225 Stone Dr.; San Marcos, CA 92069;
619-744-8546

MacPack

Micro maintenance kit for computers using 3.5-inch disk drives
\$34.95 retail
PerfectData Corp.; 1825 Surveyor Ave.; Simi Valley,
CA 93063; 805-581-4000

MicroClene And FloppiClene

Anti-static cleaning products
\$24.95 retail; MicroClene CRT/Workstation Cleaning Kit
\$24.95 retail; MicroClene Mouse, Printer And Keyboard
Cleaning Kit
\$34.95 retail; FloppiClene
Tech-Sa-Port; PO Box 5295; Pittsburgh, PA 15206;
412-661-2629

Mirage

Joystick/mouse interface
Apple IIGS; joystick.
\$54.95 retail
CH Products; 1225 Stone Dr.; San Marcos, CA 92069;
619-744-8546

Modunet

Networking connectors
Apple IIGS; AppleTalk network.
\$37.95 to \$47.95 retail
Data Spec; 9410 Owensmouth Ave.; Chatsworth,
CA 91311; 818-772-9977

Mouse Pads Imprinted By Computer Expressions

Customized with school seals and business logos
Apple IIGS; mouse.
\$8.50 each; 12 pieces
\$4.90 each; 72 pieces
\$3.70 each; 144 pieces
Quantity discounts available
Computer Expressions; 3833 Chestnut St.; Philadelphia,
PA 19104; 800-443-8278

Mouse Pocket ADB

Mouse holder that keeps a user's mouse out of the way when not in use
Apple IIGS mouse.
\$9.95 retail
Kensington Microwave Ltd.; 251 Park Ave. S; New York,
NY 10010; 212-475-5200 or 800-535-4242

MouseCat

Mouse holder
\$6.95 retail
H&H Enterprises; 4069 Renate Dr.; Las Vegas, NV 89103;
702-876-6292 or 800-242-6292

MousePouch

Mouse container that carries eight 3.5-inch disks
\$5.95 retail
H&H Enterprises; 4069 Renate Dr.; Las Vegas, NV 89103;
702-876-6292 or 800-242-6292

Mousetrap

Copy stand; storage space
\$39.95 retail
Gered Corp.; 2401 NE Cornell Rd., Ste. 125; Hillsboro,
OR 97124; 503-591-8658

Mousetrap Jr.

Keeps the mouse in an enclosed, yet accessible area;
copy stand
\$19.95 retail
Gered Corp.; 2401 NE Cornell Rd., Ste. 125; Hillsboro,
OR 97124; 503-591-8658

Mouseway

Mouse pad
\$9.95 retail
Kensington Microwave Ltd.; 251 Park Ave. S; New York,
NY 10010; 212-475-5200 or 800-535-4242

Mouspad

Mouse pads
\$7.95 to \$9.95 retail
Moustrak, Inc.; 930 Dowdell Ln.; St. Helena, CA 94574;
800-221-6687 or 800-621-6687 in CA

Nada-Chair

Legless chair that offers low back support
\$30 retail
Nada-Chair; 842 22nd Ave. SE; Minneapolis, MN 55414;
612-623-4436 or 612-623-0711

Ricks RamStar's Disk Valets And Body Shields

Disk holders and body shields
\$17.50 retail; Meeting Folder
\$13.50 retail; 12 Pak
\$8.50 retail; 6 Pak
\$5 retail; 3 Pak
\$7.50 retail; 12 Sofpak
\$3 retail; Promo Sofpak
\$18 retail; Dual Pak
\$39.50 retail; Body Shield Apron
Ricks RamStar, Inc.; PO Box 759; Sardis, GA 30456;
912-569-9000 or 800-327-2303

RollerMouse

High-performance trackball
Apple IIGS.
The RollerMouse is a trackball designed to replace a conventional mouse. It is a high-performance, full-featured pointing and controlling device. RollerMouse provides three times the pointing accuracy and positioning speed in a fluid, effortless movement.

Its stationary design gives users the capability to move the cursor across large monitors in one smooth roll. Its contained design is less susceptible to problems such as dust, reducing the friction needed to roll the ball.
\$169.95 retail
CH Products; 1225 Stone Dr.; San Marcos, CA 92069;
619-744-8546

Sta-Blk Ribbon Cartridge For ImageWriter I And II

Re-inking ribbon cartridge
ImageWriter I or II.
\$59.95 retail
Chronos Computers; 4186 Sorrento Valley Blvd., Ste. H;
San Diego, CA 92121; 619-455-8200

Star Fighter For Apple

Analog joystick
Apple IIGS; other Apple II models.
\$24.99 retail
Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090;
312-459-8000

Static Controlling Cleaning Agents

Anti-static products
Call for pricing
Tech-Sa-Port; PO Box 5295; Pittsburgh, PA 15206;
412-661-2629

System Saver IIGS

Power control center offering four outlets, surge suppression, noise filtering and a whisper-quiet cooling fan

Accessories

Apple IIGS

\$99.95 retail

Kensington Microwave Ltd., 251 Park Ave. S, New York, NY 10010; 212-475-5200 or 800-535-4242

Tac1+

Joystick used with games and graphics

Apple IIGS; other Apple II models.

\$29.99 retail

Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

Tilt Swivel Base Model W30

12-inch tilt swivel base

\$24.95 retail

Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Turbo Mouse ADB

Trackball offering auto-acceleration feature, 200 CPI pin-point precision and two mouse buttons, click lock and chording button features

Apple IIGS

\$169.95 retail

Kensington Microwave Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Universal Copy Stand

Adjustable stand that attaches to the side of any monitor to place working copy next to the screen, directly in a user's line of vision

\$29.95 retail

Kensington Microwave Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Universal Security Kit

Physical security system

Apple IIGS

\$49.95 retail

Grimes Co.; 115 S. Arovista Cir.; Brea, CA 92621; 714-671-3931

Whimsical Computer Stationery

Computer stationery featuring boats, bears, butterflies, dinosaurs, holidays, sea gulls and banner paper

\$12.95 retail; Stationery

\$14.95 retail; Banner Paper

\$7.95 retail; Designer Envelopes

Computer Sensations, Inc.; PO Box 3744; Long Beach, CA 90803; 213-434-2655

Animation

Art And Film Director

Full-featured paint and animation package

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$79.95 retail

Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Fantavision IIGS

Animation and special effects program; supports Apple IIGS sound capabilities

Apple IIGS; color monitor; 256K; ProDOS 8; copy protected.

\$59.95 retail

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

The Graphics Studio

Easy-to-use paint program with animation

Apple IIGS; 768K; ProDOS 16; copy protected.

\$49.95 retail

Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Iconix IIGS

Super-high-resolution graphics and animation interface for Applesoft Basic and the Apple IIGS

Apple IIGS; two 3.5-inch drives; RGB monitor; 512K; ProDOS 8; not copy protected.

\$49.95 retail

So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298, 714-963-3392 or 800-648-9621 (orders)

Supergraphix 256

Super-high-resolution access and development tool for Applesoft Basic

Apple IIGS; 512K; ProDOS 8; not copy protected.

\$89 retail

Lynx Computer Products, Inc.; 15115 Ramona Blvd.; Baldwin Park, CA 91706; 818-960-4839 or 800-824-3522

VCR Companion

Creates colorful titles, credits, introductions, intermissions and endings for videotapes

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$49.95 retail

\$59.95 retail; school edition

\$119.95 retail; lab pack

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

Video Link

Provides access to video laser players while inside another software program

Apple IIGS; laser disc player; 512K; GS/OS; not copy protected.

\$79 retail

KnowledgeWare; PO Box 2292; Paso Robles, CA 93447;

805-238-5233

Viva

Interactive video authoring system

Apple IIGS; videodisc player; 1 MB; GS/OS; not copy protected.

\$200 retail

KnowledgeWare; PO Box 2292; Paso Robles, CA 93447;

805-238-5233

AppleWorks

1040Works-X

Integrated templates for preparing individual tax returns

Apple IIGS; other Apple II models; AppleWorks; 256K;

ProDOS 8; not copy protected.

\$27.95 retail; \$3 for 3.5-inch disk

Personal Financial Services; PO Box 1401; Melville, NY 11747; 516-757-3201

1980 To 1989 Collectors Guide — Topps, Donruss And Fleer Baseball Cards

Hobby software

Apple IIGS; other Apple II models; AppleWorks; 128K;

ProDOS 8; not copy protected.

\$24.95 each retail

\$45 retail; any two

\$60 retail; complete set

\$6 retail; updates

Pop-Fly Software; Div. of Product Control, Inc.; 345-B N. McLean Blvd.; S. Elgin, IL 60177; 312-741-5915

Agent Organizer Program

Insurance templates for P&C agents

Apple IIGS; other Apple II models; AppleWorks V1 to 2.0; 128K; ProDOS 8; not copy protected.

\$69.95 retail

Info-Med; PO Box 24412; Jacksonville, FL 32241;

904-723-2771

AppleWorks Forum

Monthly newsletter

\$3 retail; each monthly issue

\$27 retail; one-year subscription

National AppleWorks Users Group; PO Box 87453; Canton, MI 48187; 313-454-1115

AppleWorks GS

Integrated software package

Apple IIGS; 1.25 MB; GS/OS; not copy protected.

\$299 retail

(For AppleWorks GS upgrade information, call 800-544-8554)

Claris Corp.; 5201 Patrick Henry Dr.; PO Box 58168; Santa Clara, CA 95052; 408-987-7000

AppleWorks; AppleWorks/Network

Provides word processing, database management, mail merge and spreadsheet analysis; extends to the AppleTalk Network System

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$249 retail; AppleWorks 3.0

\$1,414 retail; AppleWorks 10-pack

\$1,616 retail; AppleWorks/Network

(For AppleWorks 3.0 upgrade information, call

800-544-8554)

Claris Corp.; 5201 Patrick Henry Dr.; PO Box 58168;

Santa Clara, CA 95052; 408-987-7000

FactWorks Volumes I - IV

More than 120 AppleWorks databases designed for student research

Apple IIGS; other Apple II models; AppleWorks; 128K;

ProDOS 8; not copy protected.

\$32.95 retail, per volume

ImagiMedia Software; 16640 Roscoe Pl.; Sepulveda,

CA 91343; 818-894-1131 or 800-544-3228

ImageWorks

Videodisc utility for AppleWorks

Apple IIGS; other Apple II models; 64K; ProDOS 8.

ImageWorks enables users to combine the capabilities of the AppleWorks database, word processor and spreadsheet with the audiovisual data stored on a laserdisc. It provides users with complete control of the

AppleWorks

laserdisc player via AppleWorks at all times. In addition, database, word processing and spreadsheet files can all be easily set up to activate the laserdisc player. Therefore, as users call up a record of information in the database, the corresponding audiovisual material can come up simultaneously from the laserdisc player.

\$19.95 retail
Teaching Technologies, PO Box 3808; San Luis Obispo, CA 93403; 805-541-3100

The Kula Index

A series of AppleWorks database files that enables users to find articles and reviews that appeared in various computer publications

Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.

\$8 retail
Kula Software; 2118 Kula St.; Honolulu, HI 96817; 808-595-8131

Loan Qualifier

Spreadsheet template designed for mortgage brokers, loan officers and real estate agents

Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.

\$99 retail
Financial Microware; PO Box 40; Cupertino, CA 95015; 408-446-5639

Sports Scheduler

Creates league schedules for any sport; League/Team Standings allows quick entry of game results, then sorts, arranges and saves the data entered

Apple IIGS; other Apple II models; 80-column card; 128K; ProDOS 8; copy protected.

\$99.95 retail; Sports Scheduler
\$49.95 retail; Universal League/Team Standings
Sports Software Associates; 75 Recreation Park Dr.; Hingham, MA 02043; 617-749-7880

The TimeOut Series

AppleWorks enhancements
Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.

\$49.95 retail; GS Font Editor
\$49.95 retail; Program Writer
\$49.95 retail; TimeOut DeskTools
\$49.95 retail; TimeOut DeskTools II
\$49.95 retail; TimeOut FileMaster
\$89.95 retail; TimeOut Graph
\$25 retail; TimeOut MacroTools
\$25 retail; TimeOut MacroTools II
\$49.95 retail; TimeOut PowerPack
\$69.95 retail; TimeOut QuickSpell
\$49.95 retail; TimeOut SideSpread
\$59.95 retail; TimeOut SpreadTools
\$69.95 retail; TimeOut SuperFonts
\$49.95 retail; TimeOut Thesaurus
\$59.95 retail; TimeOut UltraMacros
\$79.95 retail; TimeOut ReportWriter
\$69.95 retail; TimeOut TeleComm
Beagle Bros, Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-452-5500, 800-345-1750 (orders) or 800-992-4022 in CA (orders)

Vacation Orlando

Travel software series featuring hotel and resort listings, area attractions and shopping and dining guides for Orlando and Disney World (includes new Disney/MGM Studios)

Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.

\$19.95 retail
Pop-Fly Software; Div. of Product Control, Inc.; 345-B N. McLean Blvd.; S. Elgin, IL 60177; 312-741-5915

WriteWorks

Turns the AppleWorks word processor into a more powerful and flexible word processing system

Apple IIGS; other Apple II models; 256K; ProDOS 8; not copy protected.

\$29.95 retail
Mike Crane; 1110 W. Alamos; Fresno, CA 93705; 209-225-1394

Books And Publications

1001 Things To Do With Your Apple IIGS

Useful activities for an Apple IIGS user
\$12.95 retail; paperback
\$18.95 retail; hardbound (book no. 2886)
Tab Books, Inc.; Blue Ridge Summit, PA 17294; 800-822-8138

Advanced AppleWorks — 2nd Edition

Insight into AppleWorks
\$17.95 retail (book no. 3048)
Tab Books, Inc.; Blue Ridge Summit, PA 17294; 800-822-8138

Apple 16, A Comprehensive Guide To IIGS Computing

A non-technical book that discusses the IIGS' use of color, paint and draw programs, desktop publishing, laser printing, telecommunications, music and more
\$22 retail; includes newsletter update
The Archives Press; 140 University Ave., #38; Palo Alto, CA 94301

Apple Care Manual: Diagnosing And Maintaining Your Apple Iie, Iic And IIGS Computers

Teaches Apple II owners how to perform preventive maintenance, troubleshoot malfunctions and make simple repairs
\$17.95 retail; paperback (book no. 3121)
Tab Books, Inc.; Blue Ridge Summit, PA 17294; 800-822-8138

Apple IIGS Assembler Toolbox Quick Reference; C Toolbox Quick Reference

Summaries of the toolbox calls
\$20 each retail
APDA — Apple Computer, Inc.; 20525 Mariani Ave., MS 33G; Cupertino, CA 95014; 800-282-2732

Apple IIGS Assembly Language Programming

Assembly language tutorial
\$24.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

The Apple IIGS Book

Chronicles the Apple IIGS computer from conception to development
\$19.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

Apple IIGS Firmware Reference

Technical guide for programmers and hardware designers
\$24.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS GS/OS Reference

Description and reference to the GS/OS operating system
The Apple IIGS GS/OS Reference begins with an overview of GS/OS and then delves into a variety of file and volume-related topics, with references for each GS/OS command. Appendices cover extensions for CD-ROM directory structures, as well as GS/OS error codes and constants.
\$29.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS Hardware Reference

Provides an extensive description of the mechanisms and internal operations of an Apple IIGS
\$26.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS Machine Language For Beginners

Assembly language tutorial for use with the Merlin 8/16 assembler
Apple IIGS; 512K for disk portion; ProDOS 16; not copy protected.
\$19.95 retail; book
\$15.95 retail; disk
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

Apple IIGS ProDOS 16 Reference

Technical-reference source packaged with ProDOS 16 software and the System Loader
\$29.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS Technical Reference

Apple IIGS architecture overview
\$19.95 retail
Free catalog is available
Osborne/McGraw-Hill; 2600 Tenth St.; Berkeley, CA 94710; 800-227-0900

Apple IIGS Toolbox Reference, Vol. III

New tools for Apple IIGS programmers
The Apple IIGS Toolbox Reference, Vol. III covers six previously undocumented tools now provided with System Software V5.0 for the Apple IIGS. In addition, it discusses many new function calls and incorporates updates to the tools covered in Volumes I and II.
Apple IIGS programmers will find complete information on the managers that control the interface, file handling and sound capabilities. Appendices provide the source code for the sample program that highlights toolbox features throughout the book.

Books And Publications

\$39.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS Toolbox Reference, Vols. I And II

Toolbox description book in two volumes

\$28.95 each retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

The Apple IIGS Toolbox Revealed

Introduces a reader to the toolbox and other IIGS circuits

\$21.95 retail

Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

AppleWorks Made Easy, Third Edition

Tutorial that covers AppleWorks Version 3

\$19.95 retail

Osborne/McGraw-Hill; 2600 Tenth St.; Berkeley, CA 94710; 800-227-0900

Discovering Science On Your Apple II, II+, IIc and IIGS

Guidebook designed for individual student use or as a supplemental text for use in middle or junior high school science classes

\$14.95 retail; paperback (book no. 2680)

Tab Books, Inc.; Blue Ridge Summit, PA 17294; 800-822-8138

Exploring Apple GS/OS and ProDOS 8

Provides programming techniques for the GS/OS and ProDOS 8 operating systems

\$21.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Exploring The Apple IIGS

Graphics and sound programming guide

\$22.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

GS/OS Reference, Volume I And II

Technical references to GS/OS

\$35 each retail

APDA — Apple Computer, Inc.; 20525 Mariani Ave., MS 33G; Cupertino, CA 95014; 800-282-2732

Human Interface Guidelines

Defines the desktop interface used in Apple IIGS-specific programs

\$14.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

ImageWriter IQ Reference

Technical reference source for printer

\$22.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Inside ProDOS 16

Examines the latest version of ProDOS 16

\$24.95 retail; paperback (book no. 3129)

Tab Books, Inc.; Blue Ridge Summit, PA 17294; 800-822-8138

LaserWriter Reference

Technical resource for laser printers

\$19.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Programmer's Introduction To The Apple IIGS

Essential concepts for programming the Apple IIGS

\$32.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Programming The 65816

Teaching manual and reference guide for the 65816

\$24.95 retail

Brady Books/Simon & Schuster; 1 Gulf + Western Plaza, 14th Fl.; New York, NY 10023; 212-373-8500

Programming The Apple IIGS In Assembly Language

Shows how to program the Apple IIGS in a step-by-step manner

\$29.95 retail; book

\$20 retail; disk (available from: Ron Lichty, author; PO Box 27262; San Francisco, CA 94127; 415-564-2697)

Brady Books/Simon & Schuster; 1 Gulf + Western Plaza, 14th Fl.; New York, NY 10023; 212-373-8500

Programming The Apple IIGS In C And Assembly Language

Source for programmers who want to program in C and integrate assembly language routines into their programs

\$18.95 retail

Howard W. Sams & Co.; 4300 W. 62nd St.; Indianapolis, IN 46268; 317-298-5400 or 800-928-7267

Technical Introduction To The Apple IIGS

Overview of the IIGS for programmers

\$9.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Using AppleWorks GS

Comprehensive guide to using the six integrated applications of AppleWorks GS

\$19.95 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

X-Ref (Cross-Reference) For Apple II Books And Notes

Contains indexes to all of the programming books for the Apple II family of computers

X-Ref is the key to all of the programming books for the Apple II family of computers and to the Technical Notes from the Apple II Developer Technical Support Team at Apple. It contains complete indexes to all of the books, as well as a compiled glossary of terms.

\$20 retail

APDA — Apple Computer, Inc.; 20525 Mariani Ave., MS 33G; Cupertino, CA 95014; 800-282-2732

Business Productivity

◆ BusinessWorks

General Ledger, Accounts Payable, Accounts Receivable, Inventory Control, Payroll and the System Manager
Apple IIGS; two 3.5-inch disks or hard disk; 80-column printer; 128K; ProDOS 8; not copy protected.

BusinessWorks is a full-featured accounting program comprised of the following modules: General Ledger, Accounts Payable, Accounts Receivable, Inventory Control, Payroll and the System Manager. The modules may be purchased separately or as a bundle.

Features of the program include online help, which is available at almost every prompt; pop-up windows that list needed account numbers and other information; password security; an interface that looks and acts like AppleWorks; ability to send information to AppleWorks database and spreadsheet files; and more.

\$195 retail; each module

\$95 retail; System Manager

\$495 retail; complete system bundle (includes all except Payroll)

Manzanita Software Systems; 2130 Professional Dr., Ste. 230; Roseville, CA 95661; 800-531-3552 or 800-447-5700 in CA

CADApple 3.5

Contains sophisticated precision drafting tools for educational and professional use

Apple IIGS; Apple IIc and IIe; 128K; Pascal 1.3; not copy protected.

\$395 retail

Versacad Corp.; 2124 Main St.; Huntington Beach, CA 92648; 714-960-7720

Calendar Crafter

Creates customized calendars

Apple IIGS; printer; 512K; ProDOS 16; copy protected.

\$89 retail

\$49 retail; home version

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Darad IIe

Database and report generator that features Search, Edit and Print modes

Apple IIGS; 256K; ProDOS 8; not copy protected.

\$49.95 retail; Darad IIe

\$89.95 retail; Darad IIe with Self Teaching Manual and Report Generator

\$29.95 retail; Darad IIe Report Generator (for custom reports)

DAR Systems International; PO Box 16-4933; Miami, FL 33116; 305-529-3572

DB Master Version 5; DB Master Professional

Versatile database management systems; DB Master Professional brings multifile, relational capability to the DB Master user

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$179 retail; DB Master Version 5

\$295 retail; DB Master Professional

\$500 retail; DB Master Version 5/Multiuser

\$500 retail; DB Master Version 5/Classroom

Stone Edge Technologies, Inc.; PO Box 3200; Maple Glen, PA 19002; 215-641-1825

Business Productivity

Dental Office Management IIP

Integrated application for patient billing, claim-form preparation, appointment scheduling and more
Apple IIGS; SCSI hard drive; 3.5-inch disk drive; 130-column printer; 512K; ProDOS 16; not copy protected.
\$1,995.95 retail
CMA Micro Computer; 55888 Yucca Trail; PO Box 2080; Yucca Valley, CA 92286; 619-365-9718

GeoCalc

Spreadsheet analysis and charting
Apple IIGS; other Apple II models; 128K (256K RAM expansion recommended); GEOS; not copy protected.
\$69.95 retail
Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883

GeoFile

Database and forms manager
Apple IIGS; other Apple II models; 128K (256K RAM expansion recommended); GEOS; not copy protected.
\$69.95 retail
Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883

GS File

Graphical database management system designed for the IIGS
Apple IIGS; 768K; ProDOS 16; not copy protected.
\$99.95 retail
Softwood Co.; PO Box 90331; Santa Barbara, CA 93190; 805-964-8622

The Invoicer With Accounts Receivable And Sales Tracking/Inventory

Small business accounting
Apple IIGS; 128K; ProDOS 8; not copy protected.
\$223.50 retail
MiccaSoft, Inc.; 406 Windsor Ln.; New Braunfels, TX 78132; 512-629-4341 or 800-950-7943

List Plus

Database and report generator for business or personal records, mailing lists, labels and more
Apple IIGS; 768K; GS/OS; not copy protected.
\$69.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Medical Office Management IIP

Medical office system for patient billing, claim-form preparation, appointment scheduling and more
Apple IIGS; SCSI card; SCSI hard disk; 130-column printer; 512K; ProDOS 16; not copy protected.
\$1,995.95 retail
CMA Micro Computer; 55888 Yucca Trail; PO Box 2080; Yucca Valley, CA 92286; 619-365-9718

Notes 'N Files

Database filing system with a word processor-like editor and powerful mail merge
Apple IIGS; 512K; ProDOS 16; not copy protected.
\$95 retail
DataPak Software, Inc.; 14011 Ventura Blvd., Ste. 507; Sherman Oaks, CA 91423; 818-905-6419 or 800-327-6703

Salary Magic

Spreadsheet/database program for the management of negotiation process/salary schedules
Apple IIGS; 512K; ProDOS 8; not copy protected.
\$495 retail
Magic Software, Inc.; 1602 Cascio Dr.; Bellevue, NE 68005; 402-291-0670 or 800-342-6243

Tax Preparer

Fully automated tax preparation software designed to simplify tax calculations for professional tax preparers and individuals with involved returns
Apple IIGS; other Apple II models; 128K minimum; ProDOS 8; not copy protected.
\$250 retail
\$75 retail; annual updates
HowardSoft; 1224 Prospect St., Ste. 150; La Jolla, CA 92037; 619-454-0121

Trio Plus

Integrated word processor, database, spreadsheet, desk accessories
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
\$29.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

VIP Professional

Lotus 1-2-3-compatible spreadsheet with database and graphics features
Apple IIGS; extended memory card recommended; 512K; ProDOS 8; not copy protected.
\$149.95 retail
ISD Marketing, Inc.; 2651 John St., Unit 3; Markham, Ontario, Canada L3R 2W5; 416-479-1880

Visualizer

Business graphics program
Apple IIGS; 512K; ProDOS 16; not copy protected.
\$99.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Creative

816/Paint

Color graphics program that supports all Apple color graphics modes
Apple IIGS; other Apple II models; color monitor; 128K; 512K; ProDOS 8; ProDOS 16; not copy protected.
\$75 retail
\$125 retail; Education Version
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49512; 616-698-0888

Award Maker Plus

Graphics software for creating awards, certificates, licenses, coupons and more
Apple IIGS; printer; 64K; ProDOS 8; not copy protected.
\$49.95 retail; Award Maker Plus
\$24.95 retail; Sports Award Library
\$24.95 retail; Education Award Library
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49512; 616-698-0888

Beagle Bros Clip Art/Volume I

Clip art
Apple IIGS.
These IIGS clip art graphics let users add a professional touch to letters, cards and flyers. It includes a poster-size map of the United States.
\$49.95 retail
Beagle Bros, Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-452-5500, 800-345-1750 (orders) or 800-992-4022 in CA (orders)

BeagleDraw

Object-oriented drawing program
Apple IIGS; color monitor; 512K; ProDOS 16; not copy protected.
\$89.95 retail
Beagle Bros, Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-452-5500, 800-345-1750 (orders) or 800-992-4022 in CA (orders)

Car Builder

Scientific simulation program for designing, constructing, modifying and testing cars; ages 8 to adult
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
\$49.95 retail
\$85 retail; five-disk lab pack
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Cartooners

Cartoon studio that allows children to create lively, animated productions; ages 6 to 12
Apple IIGS; ImageWriter optional; 1 MB; ProDOS 16; not copy protected.
\$59.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Deluxe Library

Color clip art disks for DeluxePaint II
Apple IIGS; DeluxePaint II; 768K; ProDOS 16; not copy protected.
\$29.95 each retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

DeluxePaint II

Paint software containing more than 90 painting tools and effects; optional 30-minute videotape of tips and techniques for using DeluxePaint II
Apple IIGS; color monitor; 768K; ProDOS 16; not copy protected.
\$99.95 retail; DeluxePaint II
\$19.95 retail; Video Guide to DeluxePaint II
\$129.95 retail; DeluxeWrite/DeluxePaint II
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Design Your Own Home: Architecture

Allows users to draw floor plans, elevations and structural details
Apple IIGS; 1 MB; ProDOS 16; not copy protected.
\$89.95 retail
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Creative

Design Your Own Home: Interiors

Allows users to design room interiors with color, patterns, shapes and furnishings

Apple IIGS; 1 MB; ProDOS 16; not copy protected.

\$89.95 retail

Abracadata; PO Box 2440; Eugene, OR 97402;

503-342-3030

Design Your Own Home: Landscape

Allows users to plan the grounds around home or office

Apple IIGS; 1 MB; ProDOS 16; not copy protected.

\$89.95 retail

Abracadata; PO Box 2440; Eugene, OR 97402;

503-342-3030

Design Your Own Home: Landscape Regional Image Libraries

Provides landscape images for five U.S. regions

Apple IIGS; Design Your Own Home: Landscape; 1 MB; ProDOS 16; not copy protected.

The Landscape Regional Image Library series, for use with Design Your Own Home: Landscape includes beautiful, artistic renderings of different types of trees, shrubs and other landscape elements that are specific to particular geographical areas. There are five different libraries in the series representing East, South, Midwest, Southwest and Northwest/Mountain regions.

Each library contains dozens of images from both top and side views in several sizes. Each library also contains common landscape elements, such as fountains, bird baths, sheds, fences, gates, stone walls, trees and shrubs.

\$29.95 each retail

Abracadata; PO Box 2440; Eugene, OR 97402;

503-342-3030

Design Your Own Home: Libraries

Seven disk libraries containing four dozen house plans, interior or landscape designs

Apple IIGS; one of the Design Your Own Home programs; 1 MB or more; ProDOS 16; not copy protected.

\$29.95 each retail

Abracadata; PO Box 2440; Eugene, OR 97402;

503-342-3030

Designer Prints

Drawing and graphics utility

Apple IIGS; 1 MB or more; GS/OS; copy protected.

Designer Prints is a versatile drawing and graphics utility. Users can create posters and other printed materials easily and with creative options. Features include: easy to use, yet can produce simple or complex documents; pictures, graphics, maps and text can be imported for use in Designer Prints documents from other IIGS sources; large posters can be printed with guidelines and cutting lines along the appropriate sides; includes a tool box of the basic drawing tools; graphics and text can be placed anywhere on the same page; includes the use of smooth, professional-looking laser fonts, even on large posters; includes ready-to-use graphics and borders covering events, holidays and curriculum area; and allows borders to be edited or created.

\$89 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126;

612-481-3500 or 800-228-3504

Draw Plus

Drawing program for use with Paintworks Plus, Writer's Choice Elite and Clip Art Gallery

Apple IIGS; 512K; GS/OS; not copy protected.

\$69.95 retail

Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025;

415-329-0500

E-Z Paint 256

Paint program

Apple IIGS; 512K; ProDOS 8; not copy protected.

E-Z Paint 256 lets users paint with 640 and 320

mode, and displays up to 256 colors at once.

Features include: full paint activity; story making and playback; access up to 10 shape tables per story; load and print multipalette pictures; print individual shapes anywhere on an ImageWriter; mix 320 and 640 modes; animate shapes; fast animation and color cycling; add sound effects with animation and shapes; and more.

\$69.95 retail

Lynx Computer Products, Inc.; 15115 Ramona Blvd.;

Baldwin Park, CA 91706; 818-960-4839 or 800-824-3522

Hometown, U.S.A.

Creativity and learning program; templates that allow users to design, print and produce miniature 3D buildings

Apple IIGS; standard GS paint program (i.e., Paintworks Plus); not copy protected.

\$39.95 retail

Publishing International; 333 W. El Camino Real, Ste.

222; Sunnyvale, CA 94087; 408-738-4311

Image Master; Basic Paint

Paint program with up to 136 colors on screen at one time and eight million possible color mixtures

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$44.95 retail

Jada Graphics, Inc.; 7615 S. 48th St.; Omaha, NE 68157;

800-634-4552

Paint Write Draw

Three programs in one: Paintworks Plus, Writer's Choice Elite and Draw Plus

Apple IIGS; color monitor; 1.25 MB suggested when

using Writer's Choice Elite; 512K; GS/OS; not copy protected.

\$129.95 retail

Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025;

415-329-0500

Paintworks Gold

Sophisticated paint program

Apple IIGS; RGB monitor; 1.25 MB; GS/OS; not copy protected.

\$69.95 retail

Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025;

415-329-0500

Paintworks Plus

Paint program containing clip art gallery of more than 650 images

Apple IIGS; 512K; GS/OS; not copy protected.

\$49.95 retail

Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025;

415-329-0500

ShowOff

Produces professional-looking overhead transparencies, 16-color printed sheets and IIGS interactive video slide

shows (includes more than 400 graphics, 126 borders and an icon editor lets users create their own graphics)

Apple IIGS; 512K; ProDOS 16; copy protected.

\$59.95 retail; consumer edition

\$69.95 retail; school edition

\$139.95 retail; Lab Pack

\$10 retail; teacher's guide

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael,

CA 94903; 415-492-3500, 415-492-3200 (dealers only) or

800-521-6263

Slide Shop

Desktop presentations program for schools; grades 4 to 12

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$79.95 retail; net to educators

\$29.95 retail; Booster Packs

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.;

Jefferson City, MO 65102; 800-541-5513 or

800-392-2179 in MO

ThunderView

Low-cost program for creating personalized slide shows; designed for users of painting software and scanners

Apple IIGS; other Apple II models; RGB monitor recommended; 64K; ProDOS 8; not copy protected.

\$29 retail

Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94563;

415-254-6581

Desk Accessories

Beagle Bros GS Desk Accessories

Desk accessories

Apple IIGS.

Beagle Bros GS Desk Accessories includes a telephone dialer, keyboard macros, screen preserver, programmable scientific calculator, notepad, alarm clock and much more.

\$59.95 retail

Beagle Bros, Inc.; 6215 Ferris Sq., Ste. 100; San Diego,

CA 92121; 619-452-5500, 800-345-1750 (orders) or

800-992-4022 in CA (orders)

CDA Power: Volume 1

Classic desk accessories: Text File Editor, ASCII Table, 65816 Reference Chart, KeyCaps, Scientific Calculator, Mini-GS/OS Shell and Communications Program

Apple IIGS; 150K RAM, in addition to the memory

requirements of the primary application; not copy protected.

\$59.95 retail

360 Microsystems; PO Box 1192; Oviedo, FL 32765;

407-365-6714

DeskPak Desk Accessories

File tools, calculator, system security lock, file printer, appointment calendar, scrapbook and more under the Apple icon

Apple IIGS; 10K per accessory; ProDOS 16; not copy protected.

\$89.95 retail

SSSI, Inc.; 4612 N. Landing Dr.; Marietta, GA 30066;

404-924-2667

The Desktop Manager

Accessories include: note pad, calculator, printer manager, envelope labeler, ASCII chart, screen print, cut and

Desk Accessories

paste, appointment calendar, disk manager and communications manager

Apple II GS; 512K; GS/OS; not copy protected.

\$39.95 retail

On Three, Inc.; 123 Groveland Ave.; Riverside, IL 60546; 312-447-3924

Disk Initializer

Lets users initialize 3.5- and 5.25-inch data disks from within other programs; works with any program that is GS/OS compatible

Apple II GS; GS/OS; not copy protected.

\$12.50 retail

Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 904-576-9415 or 800-627-3836

GS Calendar DA

Installs a calendar on start-up disks

Apple II GS; 512K; ProDOS 16; not copy protected.

\$25 retail

DataPak Software, Inc.; 14011 Ventura Blvd., Ste. 507; Sherman Oaks, CA 91423; 818-905-6419 or 800-327-6703

Softswitch

Desk accessory that allows users to switch among several applications loaded into RAM

Apple II GS; 768K; ProDOS 16; copy protected.

\$59.95 retail

Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

TDM Super Accessories #1

Add-on ProDOS accessories: file type changer; character ruler; regular file viewer/printer; keyboard lockout; a clock with job timer capabilities; and more

Apple II GS; The Desktop Manager; 512K; GS/OS; not copy protected.

\$39.95 retail

On Three, Inc.; 123 Groveland Ave.; Riverside, IL 60546; 312-447-3924

TDM Toolkit

Contains information needed to create a user's own desk accessories that work under The Desktop Manager

Apple II GS; The Desktop Manager; APW assembler; 512K; GS/OS; not copy protected.

\$39.95 retail

On Three, Inc.; 123 Groveland Ave.; Riverside, IL 60546; 312-447-3924

Desktop Communications

ASCII Express

Advanced telecommunications program that supports data transfer speeds up to 9,600 baud

Apple II GS; other Apple II models; modem; 64K; ProDOS 8; not copy protected.

\$129.95 retail

United Software Industries; 22231 Mulholland Hwy., Ste. 212A; Woodland Hills, CA 91364; 818-887-5800 or 800-332-7244

Burple

Hardware/software attachment for the Apple II GS that allows the micro to communicate with Burroughs mainframe computers using the Burroughs "poll select" protocol

Apple II GS; ProDOS 8; not copy protected.

\$495 retail

Midwest Data Source, Inc.; 1615 Burney Ave.; Cincinnati, OH 45230; 513-231-2023

MouseTalk

Telecommunications product with Mac-like user interface and pull-down menus that accommodates data transfer speeds up to 19,200 bits per second; mouse optional

Apple II GS; other Apple II models; modem; 128K; ProDOS 8; not copy protected.

\$119.95 retail

United Software Industries; 22231 Mulholland Hwy., Ste. 212A; Woodland Hills, CA 91364; 818-887-5800 or 800-332-7244

Point-To-Point

Versatile telecommunications program

Apple II GS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$99.95 retail

Beagle Bros, Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-452-5500, 800-345-1750 (orders) or 800-992-4022 in CA (orders)

Proterm

Telecommunications program featuring scrollback buffer for capturing text on screen

Apple II GS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$129 retail

Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 602-966-5802 or 800-325-7347

ReadyLink

Communications software

Apple II GS; modem; 128K; ProDOS 8.

ReadyLink is communications software that's intuitive enough to speed users through the hassle of logging on, flexible enough to work with the mouse or keyboard, sophisticated enough to reach virtually any bulletin board or service and simple enough to be used right away. It has two mobile, resizable windows that can be open at the same time. Users can work with the built-in text editor window while the online window continually updates incoming messages and information. ReadyLink actually "watches" a user log on the first time and "learns" how to do it the next time. Also included is a macro language, automatic protocol selection. Mac-like desktop interface, automatic hardware configuration, automatic rate calculator and built-in conference mode.

\$99 retail

Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Teleworks Plus

II GS-specific telecommunications program

Apple II GS; 768K; GS/OS; not copy protected.

\$99.95 retail

Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Desktop Publishing

Beagle Bros Font Library/Volume I

II GS fonts

Apple II GS.

Beagle Bros Font Library provides 90 new II GS fonts in 40 different font families. Users can enjoy a wide selection of fonts with BeagleWrite GS and other II GS programs.

\$49.95 retail

Beagle Bros, Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-452-5500, 800-345-1750 (orders) or 800-992-4022 in CA (orders)

FingerPrint Slide Show

Desktop presentation and computer slide-show software

Apple II GS; FingerPrint GSI Version II; 256K; ProDOS 8; not copy protected.

\$25 retail

Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

Font Disks 1 And 2

Add-on printer fonts for use with Print-Quick's Quick-Font utility

Apple II GS; other Apple II models; 64K; ProDOS 8; not copy protected.

\$24.95 each retail

Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44111; 216-671-8991

Font Factory GS

Standard II GS font editor

Apple II GS; 768K; GS/OS; not copy protected.

\$39.95 retail

Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 904-576-9415 or 800-627-3836

GeoPublish

Graphically oriented desktop publishing

Apple II GS; other Apple II models; 128K (256K RAM expansion recommended); GEOS; not copy protected.

\$99.95 retail

Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883

Graph It!

High-impact presentation graphics

Apple II GS; other Apple II models; printer; 128K; ProDOS 8; not copy protected.

\$69.95 retail

Timeworks, Inc.; 444 Lake Cook Rd.; Deerfield, IL 60015; 312-948-9200

Graphics And Pictures Converter

Allows users to transfer a wide variety of graphic formats between Apple II programs

Apple II GS; other Apple II models; 512K; ProDOS 8; not copy protected.

\$9.95 retail

Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

GraphicWriter Version III

II GS-specific desktop publisher with combination page layout, graphics and word processing

Apple II GS; 512K; GS/OS; not copy protected.

Desktop Publishing

\$149.95 retail

Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 904-576-9415 or 800-627-3836

GS07 And GS08 Graphics For Print Shop IIGS

Two disks containing multicolor graphics, borders and fonts compatible with The Print Shop IIGS

Apple IIGS; 512K; ProDOS 8; not copy protected.

\$7.50 each retail

Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

Labels, Labels, Labels

Makes labels, badges, postcards, name tags, price tags and more

Apple IIGS; other Apple II models; one disk drive; dot matrix printer; 128K; ProDOS 8; not copy protected.

\$39.95 retail

Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

MagnaCharta

Presentation graphics program with Macintosh-like user interface

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$64.95 retail

Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44111; 216-671-8991

Medley

IIGS-specific integrated desktop publishing program combining word processing, artwork and page layout capabilities

Apple IIGS; color monitor recommended; 1.25 MB; ProDOS 16; not copy protected.

\$195 retail

Milliken Publishing Co.; 1100 Research Blvd.; PO Box 21579, St. Louis, MO 63132; 314-991-4220 or 800-643-0008

Personal Newsletter

Graphics and page composition program

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$59.95 retail

\$69.95 retail; academic

\$174.88 retail; educational lab pak

Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

Print-Quick

Five printer support programs used with word processors, databases and spreadsheets

Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.

\$54.95 retail

Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44111; 216-671-8991

The Print Shop Graphics Library Sampler Edition

Clip art for The Print Shop IIGS

Apple IIGS; The Print Shop IIGS; 512K; ProDOS 16; not copy protected.

\$34.95 retail

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

The Print Shop IIGS

Personal publishing program with multicolor graphics editor that allows users to create, design and print out multicolor custom cards, signs, banners and letterheads

Apple IIGS; printer; 512K; ProDOS 8; copy protected.

\$59.95 retail

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

Printrix 1.1

Typesetter of word processing text files

Apple IIGS; printer; 128K; ProDOS 8; not copy protected.

\$65 retail

Data Transforms, Inc.; 616 Washington St.; Denver, CO 80203; 303-832-1501

PS Lovers' Utility Set

Makes charts of Print Shop graphics, borders and fonts; also makes bookmarks, mailing labels and envelope cachets

Apple IIGS; other Apple II models; one disk drive; dot matrix printer; 256K; ProDOS 8; not copy protected.

\$39.95 retail

Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

Publish-It! 2

Desktop publishing program that allows users to edit, design, lay out and print documents

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$129.95 retail

Timeworks, Inc.; 444 Lake Cook Rd.; Deerfield, IL 60015; 312-948-9200

Springboard Publisher

Desktop publishing program with full-featured page layout, word processor and graphics tools

Apple IIGS; other Apple II models; 128K minimum and a 1 MB RAM disk; ProDOS 8; not copy protected.

\$139.95 retail

Springboard Software; 7808 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3915

Springboard Publisher Library

Add-on products to extend the capability of Springboard Publisher

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$39.95 each retail; Works of Art (Assortment Series, Education and Holidays)

\$29.95 retail; Springboard Publisher Fonts

Springboard Software; 7808 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3915

SuperPrint II: The Next Generation

Curriculum-based printing program

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$69.95 retail; net to educators

\$29.95 retail; graphics activity packs

\$24.95 retail; graphics packs

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or

800-392-2179 in MO

Education

■ The Adventures Of Sinbad

An exciting voyage in language arts

Apple IIGS; 768K; ProDOS 16; copy protected.

Journey along with Sinbad as he sets out to earn his fortune and see the world. Exciting, animated graphics will capture children's interests and imaginations while building their vocabulary and reading skills. More than 600 reading comprehension and synonym and antonym questions based on the built-in glossaries will enhance their language-arts skills. The program includes a built-in word processor, quiz maker and concentration game.

\$49.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

■ Alge-Blaster Plus

Covers first and second semester algebra; ages 12 to adult

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

Alge-Blaster Plus covers both first and second semester algebra in one program and includes a challenging graphing game. The program offers a step-by-step approach to algebra through practice in positive/negative numbers, order of operations, monomials and polynomials, equations, factoring systems of equations, algebraic fractions, radical expressions and quadratic equations. The program contains more than 500 algebraic equations and an infinite number of computer-generated problems for graphing and translating word problems. It also contains an optional help feature, on-screen instructions and a helpful glossary.

\$49.95 retail

Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Algebra Shop

Introduces pre-algebra concepts; grades 7 to 10

Apple IIGS; 64K; ProDOS 8; not copy protected.

\$69.95 retail; net to educators

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.;

Jefferson City, MO 65102; 800-541-5513 or

800-392-2179 in MO

Algernon

Students program Algernon to find his way through a maze

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$65 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

■ All About America

American history; ages 6 to 11

Apple IIGS; 768K; ProDOS 16; copy protected.

All About America gives children and students an introduction to America's fascinating past. Each of the 16 stories features large, easy-to-read text enhanced by colorful graphics. Stories are followed by reading comprehension and vocabulary questions. The map disk includes maps of the Thirteen Colonies, the U.S. Before the Civil War and Our 50 States, as well as quizzes involving states, capitals, postal abbreviations and directions.

Education

\$59.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

■ Animal Adaptations

Introduces students to the terminology and concepts associated with animal adaptation and survival
Apple IIGS; other Apple II models; 64K; DOS 3.3; copy protected.

Animal Adaptations teaches students about animal behavior and instinct, camouflage, migration and hibernation. It also makes students aware of the structural adaptations animals make and the adaptations humans have copied.

\$59.95 retail

MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

Animal Tracker 2.0

Teaches about North American animals; grade 3 to adult
Apple IIGS; 768K; GS/OS; not copy protected.

\$79.95 retail; stand-alone version

\$350 retail; school site license

Nature Boy Software; PO Box 596; S. Lancaster, MA 01561; 508-481-2911

Ant Farm

Helps students examine assumptions using trial and error; grades 3 to 12

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$65 retail; includes backup

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Atlas Explorer

World geography quiz

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$49.95 retail

\$100 retail; Lab Pack

Springboard Software; 7808 Creeknidge Cir.; Minneapolis, MN 55435; 612-944-3915

Audubon Wildlife Adventures: Grizzly Bears

Involves players in current issues on the effects of science and technology upon society

Apple IIGS; 512K; GS/OS; not copy protected.

\$59.95 retail

Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

Audubon Wildlife Adventures: Whales

Involves students in current issues on the effects of science and technology upon society

Apple IIGS; 512K; GS/OS; not copy protected.

\$59.95 retail

Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

■ Backyard Birds

Bird identification; grades 3 to jr. high

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

Backyard Birds is a discovery-learning simulation that allows students to "observe" a variety of characteristics of a "mystery bird." Students then use the information that they gather to identify the bird.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

■ Bookmate

Helps students find quality books to read; grades 4 to 6
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Bookmate helps students find a book to read. It features 300 books, written by highly noted and popular authors. Four enjoyable activities lead students to a list of reading suggestions. Students can use Calendar Trivia to find books that relate to special dates on the calendar year. Studio One lets students find books that have been made into movies or be the director of their own film company by choosing Your Production Company. Time Machine lets students use headlines to select a time period to read about. In Mind Reader, students pick symbols that suit their moods and thoughts. Bookmate then uses their choices to suggest special books that match.

\$65 retail

\$195 retail; lab pack

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Bounce!

Introduces the concept of pattern and helps develop recognition skills

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$65 retail; includes backup

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Captain's Log

Cognitive training system

Apple IIGS; other Apple II models; 64K; ProDOS 8.

\$495 retail; each module

\$1,495 retail; complete system (four modules)

Intuit Computing, Inc.; 1915 Huguenot Rd.; Richmond, VA 23235; 804-794-4841

Checkerboard Trails

Game involving mathematical and problem-solving skills for grades 3 to 8

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49 retail

Focus Media, Inc.; PO Box 865; 839 Stewart Ave.; Garden City, NY 11530; 516-794-8900 or 800-645-8989

The Children's Writing And Publishing Center

Word processing and desktop publishing for ages 8 to 14
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59.95 retail; home edition

\$89.95 retail; school edition

\$159.95 retail; lab pack

The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Classroom Jeopardy

Classroom review game

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$29.95 retail

DEC Software; 5307 Lynnwood Dr.; West Lafayette, IN 47906

College Bound

College preparation

Apple IIGS; other Apple II models; 64K; DOS 3.3; copy protected.

\$82.50 retail

MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

College Life

College orientation program; grades 11 and 12

Apple IIGS; other Apple II models; 64K; copy protected.

\$82.50 retail

MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

■ CommuniKeys

Keyboarding lessons with language-arts activities; grades 3 to 8

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

CommuniKeys is an elementary, language-based keyboarding package with modeling, lessons, activities and feedback. Students are "in-training" for expeditions around the world to gather information on exciting topics.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Computer Mad Libs

Strategic word and party game using SmoothTalker; ages 8 to adult

Apple IIGS; 768K; ProDOS 16; not copy protected.

\$19.95 retail

First Byte; Clauset Centre; 3100 S. Harbor Blvd., Ste. 150; Santa Ana, CA 92704; 714-432-1740; 800-523-8070 or distributed by Electronic Arts (800-245-4525)

Conquering Decimals (+, -)

Mathematics; grades 4 to 6

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Conquering Fractions (+, -)

Mathematics; grades 5 to 8

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

■ Conquering Percents

Mathematics; grades 5 to 8

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

Conquering Percents gives students an opportunity to visualize percents and solve percent problems. Built-in help sequences, visual representations of percents and the optional use of an on-screen calculator provide students with tools to master skills in understanding and working with percents. Also included is an optional game that can be used for reinforcement or enrichment.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Education

■ Conquering Ratios And Proportions

Mathematics; grades 5 to 8

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

Conquering Ratios And Proportions provides guided practice in solving word problems involving ratios and proportions. Built-in help sequences, visual representations of problems and the optional use of unit rate help students master skills in working with ratios and proportions. Also included are optional games that can be used for reinforcement or enrichment.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Coordinate Math

Teaches graphing points in a Cartesian coordinate system for grades 4 to 12

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

CSL Marks

Grading software for teachers

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$95 retail; individual teacher license

\$300 retail; school site license

Chancery Software, Ltd.; 1122 Mainland St., 4th Fl.; Vancouver, BC, Canada V6B 5L1; 800-937-0016

Curious George Goes Shopping

Explores classification of objects

Apple IIGS; 64K; ProDOS 8; copy protected.

\$24.95 retail

\$62 retail; Lab Pack

DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Curious George In Outer Space

Explores comparison skills

Apple IIGS; 64K; ProDOS 8; copy protected.

\$24.95 retail

\$62 retail; Lab Pack

DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Curious George Visits The Library

Explores position words and concepts

Apple IIGS; 64K; ProDOS 8; copy protected.

\$24.95 retail

\$62 retail; Lab Pack

DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Cyberlearn

Authoring system

Apple IIGS; 256K; ProDOS 8; not copy protected.

\$295 retail; site license

Cyberlearn, Inc.; 1308 Masonic Ave.; San Francisco, CA 94117; 415-252-0600

CyberWorld

Geography

Apple IIGS; 256K; ProDOS 8; not copy protected.

\$59.95 retail

Cyberlearn, Inc.; 1308 Masonic Ave.; San Francisco, CA 94117; 415-252-0600

Dataflo Math Duo

First Math, an introduction to number concepts and more; Flash Math, materials for addition, subtraction and multiplication; features additional speech capability

Apple IIGS; other Apple II models; Applied Engineering's Phasor board for added speech capability; 64K; ProDOS 8; not copy protected.

\$49.95 each retail

Dataflo Computer Services, Inc.; HC 32, Box 1; Enfield, NH 03748; 603-448-2223

Dataflo Spelling And Vocabulary Trio

Helps, a word Scrambler; Spell and Tell, a series of blank spaces that, when filled, reveal the correct word; and Tell and Spell, a classic spelling bee simulation; available in English and Spanish; all feature additional speech capability

Apple IIGS; other Apple II models; Applied Engineering's Phasor board for additional speech capability; 64K; ProDOS 8; not copy protected.

\$49.95 each retail

Dataflo Computer Services, Inc.; HC 32, Box 1; Enfield, NH 03748; 603-448-2223

Decimal Concepts

Mathematics

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Designasaurus

Primary education program, composed of Walk A Dinosaur, Build-A-Dinosaur and Print-A-Dinosaur

Apple IIGS; 768K; ProDOS 8; not copy protected.

\$49.95 retail

Britannica Software; 545 N. La Grange Rd.; Chicago, IL 60611; 312-424-1800

Dinosaur Days Plus

Graphic writing program

Apple IIGS; printer optional; Echo II board recommended; 128K; ProDOS 8; copy protected.

\$49.95 retail

Learning Lab Publishing; 2000 Northhoff St.; Chatsworth, CA 91311; 818-708-8800; 800-247-4641 or 800-222-7000

Dinosaurs

Introduces preschool children to the skills of reading, classification, directionality, sequencing, and counting

Apple IIGS; 512K; ProDOS 8; not copy protected.

\$49.95 retail

Advanced Ideas; 2902 San Bruno Ave.; Berkeley, CA 94702; 415-526-9800

DiscoverCAD II And DiscoverCAD Courseware

Teaches students the fundamentals of computer-aided design

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$325 retail; DiscoverCAD II

\$12.95 retail; DiscoverCAD Courseware

\$335 retail; DiscoverCAD II and one copy of DiscoverCAD Courseware, student worksheets and instructor's guide

Hearlily & Co.; 714 W. Columbia St.; PO Box 869; Springfield, OH 45501; 800-622-1000

DLM Math Fluency Program

Teaches math facts to children in special and remedial education

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$24.95 retail; Single Pack

\$75 retail; Class Pack

\$15 retail; Additional Student Disk

\$225 retail; AppleShare Network

DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Dr. Peet's Talk/Writer

From letter recognition to word processing, "reads" all text and "sings" all menu items for children in grades pre-K to 2

Apple IIGS; other Apple II models; Echo speech synthesizer; 64K; copy protected.

\$69.95 retail; more than 100 other programs are available

— call for catalog

Hartley Courseware, Inc.; Box 419; Dimondale, MI 48821; 517-646-6458 or 800-247-1380

Dueling Questions 1.5

Authoring tool/educational game, where students compete to answer their teachers' questions

Apple IIGS; 512K; GS/OS; not copy protected.

\$39.95 each retail

Coyote Computing; PO Box 265; Dewitt, NY 13214; 315-446-1035

Easy Street

Shape and number recognition with optional speech; ages 4 to 7

Apple IIGS; other Apple II models; color monitor recommended; Echo II board optional; 64K; DOS 3.3; copy protected.

\$49.99 retail

Mindplay; 3130 N. Dodge Blvd.; Tucson, AZ 85716; 602-322-6163 or 800-221-7911

Educational Activities

Educational programs for pre-K to adult

Apple IIGS; 48K, 64K or 128K; DOS 3.3; copy protected.

\$63 to \$950 retail

Educational Activities, Inc.; PO Box 392; Freeport, NY 11520; 516-223-4666 or 800-645-3739

Electric Crayon Deluxe — Coloring Calendars

Computer coloring book that offers custom banner, calendar and poster-making capabilities

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$29.95 retail

Polaware, Inc.; 1055 Paramount Pkwy., Ste. A; Batavia, IL 60510; 312-232-1984

Electric Crayon Deluxe — Dinosaurs Are Forever

Teaches dinosaur evolution

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

Education

\$29.95 retail

Polarware, Inc.; 1055 Paramount Pkwy., Ste. A; Batavia, IL 60510; 312-232-1984

Elfe

Grammar for French students

Apple IIGS; 512K; ProDOS 8; copy protected.

\$440 retail; complete set

Conduit; The University of Iowa; Oakdale Campus; Iowa City, IA 52242; 319-335-4100

En Route And Caminando

French and Spanish simulation programs

Apple IIGS.

\$37.95 each retail

Gessler Publishing Co., Inc.; 55 W. 13th St., Ste. 34; New York, NY 10011; 212-627-0099

Equation Math

Plotting algebraic equations

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

ESL Writer

Word processing program designed to help ESL (English as a Second Language) students write essays, reports, etc.; grades 5 to 9

Apple IIGS; other Apple II models; 128K; not copy protected.

\$99.95 retail; net to educators

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Ethics And You

Introduces students to the terminology and concepts associated with ethics; grades 5 to 6

Apple IIGS; 64K; copy protected.

\$59.95 retail

MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

Explore-A-Science Series

Offers elementary and middle school students exciting and realistic reading/writing-based scientific investigations

Apple IIGS; other Apple II models; 128K; ProDOS 8; program disk copy protected; student disk not copy protected.

\$75 retail; academic

\$39.95 retail; home version

William K. Bradford Publishing Co./D.C. Heath Software; PO Box 1355; Concord, MA 01742; 617-862-2570 or 800-421-2009

Explore-A-Story Classics

Three classic children's tales; grades pre-K through 3

Apple IIGS; other Apple II models; 128K; ProDOS 8; program disk copy protected; student disks not copy protected.

\$75 each retail; Stone Soup, The Three Little Pigs or The Princess and The Pea

William K. Bradford Publishing Co.; PO Box 1355; Concord, MA 01742; 617-862-2570 or 800-421-2009

Explore-A-Story Series

Reading and writing skills environment for elementary and middle school students; includes 12 titles based on an original storybook

Apple IIGS; other Apple II models; 128K; ProDOS 8; program disk copy protected; student disk not copy protected.

\$75 retail; academic

\$39.95 retail; home version

William K. Bradford Publishing Co./D.C. Heath Software; PO Box 1355; Concord, MA 01742; 617-862-2570 or 800-421-2009

Explore-Australia

Interactive history adventure

Apple IIGS; other Apple II models; 128K; ProDOS 8; program disk copy protected; student disk not copy protected.

Explore-Australia is an interactive history, geography, social studies, art and creative writing program that allows students to relive Australian history for themselves. The program contains everything needed to get started: two program disks; a comprehensive teacher's manual that is full of hints and information; and a 32-page student book packed with stories, activities and challenges.

\$99 retail

William K. Bradford Publishing Co.; PO Box 1355; Concord, MA 01742; 617-862-2570 or 800-421-2009

Fact Blaster

Helps students learn facts; accommodates any subject

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$24.95 retail

DEC Software; 5307 Lynnwood Dr.; West Lafayette, IN 47906

File-Talk And Word-Talk

Talking database and word processor

Apple IIGS; other Apple II models; synthesizer; 128K (512K preferred); ProDOS 16; not copy protected.

\$195 each retail

Access Unlimited-Speech Enterprises; 9039 Katy Freeway, Ste. 414; Houston, TX 77024; 713-461-0006

First Categories For The Apple IIGS

Beginning training in categories

Apple IIGS; 512K; GS/OS; copy protected.

First Categories is for students or adults who need to improve their categorization skills. Students work with 60 nouns in six categories: animals, body parts, clothes, foods, utensils and vehicles. The program features speech and pictures, and easy-to-use menus allow lesson formats to be tailored to suit individual needs.

\$175 retail

Laureate Learning Systems, Inc.; 110 E. Spring St.;

Winooski, VT 05404; 802-655-4755

First Letters And Words

Alphabet learning program with talking narrator; ages 3 to 8

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$49.95 retail

First Byte; Clauset Centre; 3100 S. Harbor Blvd., Ste. 150; Santa Ana, CA 92704; 714-432-1740, 800-523-8070 or distributed by Electronic Arts (800-245-4525)

First Shapes

Basic geometric shapes recognition; ages 3 to 6

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$49.95 retail

First Byte; Clauset Centre; 3100 S. Harbor Blvd., Ste. 150; Santa Ana, CA 92704; 714-432-1740, 800-523-8070 or distributed by Electronic Arts (800-245-4525)

First Verbs For The Apple IIGS

Training in verb comprehension, with animated pictures

Apple IIGS; 512K; GS/OS; copy protected.

First Verbs offers training in 40 verbs, each one represented by two pictures that depict the action. A friendly voice offers instruction and Roggi, an animated creature, performs amusing antics.

\$200 retail

Laureate Learning Systems, Inc.; 110 E. Spring St.; Winooski, VT 05404; 802-655-4755

First Words For The Apple IIGS

Language development

Apple IIGS; 512K; GS/OS; copy protected.

\$200 retail

Laureate Learning Systems, Inc.; 110 E. Spring St.; Winooski, VT 05404; 802-655-4755

First Words II For The Apple IIGS

Language development

Apple IIGS; 512K; GS/OS; copy protected.

\$200 retail

Laureate Learning Systems, Inc.; 110 E. Spring St.; Winooski, VT 05404; 802-655-4755

Food Chains

Helps elementary students gain an understanding of the relationships among organisms in a community

Apple IIGS; 128K; copy protected.

\$59.95 retail

MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

Fraction Practice Unlimited

Develop fraction skills for children in grades 4 to 6

Apple IIGS; other Apple II models; 128K; CDOS; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Fractions Concepts, Inc.

Introduction to fractions for grades 4 through 6

Apple IIGS; other Apple II models; 128K; CDOS; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

The Game Show

Develops vocabulary, logical thinking and deductive reasoning skills; grades 3 to 8

Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.

\$39.95 retail

Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

Geographic Jigsaw

Players solve a jigsaw puzzle by using the individual states of the United States; ages 6 and up

Apple IIGS; 512K; ProDOS 8; not copy protected.

Geographic jigsaw is an educational and entertaining Hires graphics program. Players solve the super-high-resolution jigsaw puzzle by using the individual states of the United States. An Optional Quiz asks for the

Education

spelling of the state names and capitals. The State Facts section allows users to click on a state to call up a "Facts Page" that contains such information as state capital, population from the most recent census, square miles, state nickname, state bird and more. The Trivia Quiz section asks geographic-type questions with selected degrees of difficulty.

\$39.95 retail
Eclat Microproducts; PO Box 570-756; Miami, FL 33257; 305-233-4666

The Geometric Presupposer

Explores introductory topics in geometry
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$99 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

The Geometric Supposers

Includes triangles, quadrilaterals and circles
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$99 each retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Geometry

Interactive educational program designed to serve as an extension of classroom work, a refresher or a private tutor

Apple IIGS; 512K; ProDOS 16; copy protected.
\$79.95 retail; consumer version
\$89.95 retail; School Edition (includes backup disk and Teacher's Guide)
\$179.95 retail; Lab Pack (includes Teacher's Guide and five disks)
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

Gradebook Plus ProDOS 8 Edition

Teachers' student management program
Apple IIGS; other Apple II models; 80-column card; 128K; ProDOS 8; not copy protected.
\$59.95 retail; individual version
\$199.95 retail; building license
E.M.A. Software; PO Box 339; Los Altos, CA 94023; 415-969-4679

The Great Poster Disk

Posters for the classroom
Apple IIGS; printer; 64K; ProDOS 8; copy protected.
The Great Poster Disk allows users to print out 25 exciting mini posters for the classroom. The subject matter ranges from humorous to serious. Designed for both teachers and students, the program is easy to use and effortlessly printed.
\$25 retail
Psychological Psoftware Co.; 312 Los Altos Dr.; Aptos, CA 95003; 408-688-6808

Hide And Find

Memory game designed to reinforce recognition of the alphabetic and numeric characters and basic math symbols

Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.

\$29.95 retail
Dataflo Computer Services, Inc.; HC 32, Box 1; Enfield, NH 03748; 603-448-2223

Homework Helper — Math Word Problems

Solving math word problems by building equations; grades 7 through 12
Apple IIGS; 64K; ProDOS 8; copy protected.

\$49.95 retail
Spinnaker Software Corp.; 1 Kendall Sq.; Cambridge, MA 02139; 617-494-1200 or 800-826-0706

Homework Helper — Writing

Term paper program for students in grades 7 through 12
Apple IIGS; 64K; ProDOS 8; copy protected.

\$49.95 retail
Spinnaker Software Corp.; 1 Kendall Sq.; Cambridge, MA 02139; 617-494-1200 or 800-826-0706

Homeworker

Secondary education program providing Word Processor, Outliner, Flash Card Maker, Grade Keeper, Calendar and Calculator
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
\$49.95 retail; home edition
\$179.95 retail; school lab pack (contains 10 disks and coupon for free teacher's resource guide)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Information Laboratory Software: Chemistry IIGS

Research database of comprehensive chemistry information and interesting facts; features interactive graphics and includes tutorial and problem-solving situations
Apple IIGS; 512K; GS/OS; not copy protected.
\$96 retail; consumer
\$77.76 retail; academic
Addison-Wesley Publishing Co., Inc. — Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Information Laboratory Software: Earth Science IIGS

Research database of comprehensive earth science information and interesting facts; includes interactive graphics
Apple IIGS; 512K; ProDOS 16; copy protected.
\$96 retail; consumer
\$77.76 retail; academic
Addison-Wesley Publishing Co., Inc. — Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Information Laboratory Software: Life Science IIGS

Research database of comprehensive life science information and interesting facts; features interactive graphics; includes tutorial and problem-solving situations
Apple IIGS; color monitor; 512K; ProDOS 16; copy protected.
\$96 retail; consumer
\$77.76 retail; academic
Addison-Wesley Publishing Co., Inc. — Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Information Laboratory Software: Physical Science IIGS

Research database of comprehensive physical science information and interesting facts; features interactive graphics and includes tutorial and problem-solving situations
Apple IIGS; 512K; GS/OS; not copy protected.
\$96 retail; consumer
\$77.76 retail; academic
Addison-Wesley Publishing Co., Inc. — Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Information Laboratory Software: World History IIGS

Research database of comprehensive world history information and interesting facts; features interactive graphics and includes tutorial and problem-solving situations
Apple IIGS; 512K; GS/OS; not copy protected.
\$96 retail; consumer
\$77.76 retail; academic
Addison-Wesley Publishing Co., Inc. — Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Instant Survey

Survey construction; grades 7 to 12, adult
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
Instant Survey is a utility that allows users to create surveys that can be given interactively or printed and then given in the more traditional "paper and pencil" method. Once survey results have been collected, Instant Survey also helps in the tabulation and analysis of the data.
\$89 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

The Integrated Learning System

Integrated learning system that features a comprehensive K through 8th grade reading, writing and mathematics software curriculum; works in an AppleShare environment
Apple IIGS; 1.25 MB per workstation; GS/OS; copy protected.
Call for pricing
Jostens Learning Corp.; 6170 Cornerstone Ct. E., Ste. 300; San Diego, CA 92121; 619-587-0087

Invisible Bugs

Life science; grades 3 to 6, junior high
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
Invisible Bugs is a discovery-learning simulation that contains two major programs (Explore and Challenge) that actively involve students in a series of investigations to rediscover basic Mendelian genetics.
\$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Joshua's Reading Machine Premium Pack

Reading program for ages 4 to 7
Apple IIGS; other Apple II models; color monitor; 128K; ProDOS 16; not copy protected.
\$49.95 retail
\$99.95 retail; academic (contains five sets of disks, scope and a sequence chart and an instruction manual)
Compu-Teach Corp.; 78 Olive St.; New Haven, CT 06511; 203-777-7738 or 800-448-3224

Education

Keep Your Balance!

Students use deductive reasoning to solve balance equations; grades 5 to 8

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$65 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

KidsTime II Version 2

Number and letter sequencing (Dot-to-Dot), letter-recognition/keyboard skills (ABKey) and introductory music (KidsNotes); ages 3 to 8

Apple IIGS; color monitor; 512K; ProDOS 16; not copy protected.

\$39.95 retail

Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

KidTalk

Talking notebook with word-oriented and picture-oriented pull-down menus; ages 5 to 12

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$49.95 retail

First Byte; Clauzet Centre; 3100 S. Harbor Blvd., Ste. 150; Santa Ana, CA 92704; 714-432-1740, 800-523-8070 or distributed by Electronic Arts (800-245-4525)

Kidwriter Golden Edition

Teaches writing and word processing skills; ages 6 to 10

Apple IIGS; 768K; copy protected.

Kidwriter Golden Edition teaches children writing and word processing skills with state-of-the-art graphics and editing features, including cursor movement, insert, delete, word wrap and more. Children can choose from nearly 300 images of people, monsters, animals, flowers and more to build virtually any picture they can imagine. And, with a few simple keystrokes, children are able to flip, color and move the images on screen. After creating a colorful setting, children write their story in the space provided underneath the picture or directly onto the scene.

\$49.95 retail

Spinnaker Software Corp.; 1 Kendall Sq.; Cambridge, MA 02139; 617-494-1200 or 800-826-0706

Kinderama

Five early learning games; ages preschool to 6

Apple IIGS; 1.25 MB; GS/OS; copy protected.

Kinderama is a delightful way to introduce young learners to the computer. Because it has five different activities and stunning animated graphics, it will provide children with hours of educational fun. Robot Story is an interactive nursery tale that helps introduce the concept of subtraction. Count The Robots randomly generates robots on the screen to be counted. Robot Letter Match lets children match upper or lowercase letters. Robot Addition provides simple addition problems. Robot Construction is a creative activity that lets children build their own robots while learning about mouse technology.

\$49.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Krell Software

High school and college exam preparation

Apple IIGS; copy protected.

\$59.95 to \$399.95 retail

Krell Software Corp.; Flowerfield Bldg. #7, Ste. 1D; St. James, NY 11780; 516-584-7900 or 800-245-7355

Land Of The Unicorn

An adventure in synonyms, antonyms and logic; ages 9 to 15

Apple IIGS; 1.25 MB; GS/OS; copy protected.

Land Of The Unicorn builds important vocabulary and logic skills through the use of several interesting and exciting educational activities. In Synonym Review And Quizzes, more than 600 words, meanings and sentences geared to 4th to 8th grade levels are included to develop word power. Antonym Review And Quizzes includes 600 words and their opposites. In The Quest Of The Silver Unicorn, a player assumes the role of the silver unicorn whose quest is to save his land from doom by finding his magic necklace. Players must correctly answer vocabulary questions to earn the change to continue the quest.

\$59.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Learn About Animals

Introduces children to animal life

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$65 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Lego TC Logo Starter Pack

Educational construction set for children

Apple IIGS; Apple IIe; 64K; ProDOS 8; not copy protected.

\$485 retail; school edition

Lego Systems, Inc.; 555 Taylor Rd.; Enfield, CT 06082; 203-749-2291 or 800-527-8339

Life Cycles

Elementary science; grades 3 to 6

Apple IIGS; other Apple II models; 64K; DOS 3.3; copy protected.

Life Cycles is an elementary science program for grades 3 to 6 that has a fourth-grade reading level. Its primary purpose is to introduce students to the various stages all living things, including humans, go through as they grow and change. Students interact with the program when they investigate the life cycles of a frog, butterfly, tomato plant and young girl.

\$59.95 retail

MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

Linkword Language Series

Foreign language tutorials

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$29.95 each course retail

Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield, NY 14526; 800-828-6573

Little Shoppers Kit

Elementary math made fun; grades K to 4

Apple IIGS; other Apple II models; 64K.

The Little Shoppers Kit is an elementary classroom store that provides a rich learning environment that teachers can use to reinforce skills from many curriculum areas. The program assigns jobs from cashier to bagger and designates duties, which the manager checks off as

completed. When the store is ready to open, the computer takes on the role of a smart cash register, keeping track of units sold, helping students with money transactions and producing receipts. The program includes a backup disk, groceries, cash box, play money, reproducible store signs, comprehensive Teacher Guide and a classroom idea book.

\$109.95 retail

Tom Snyder Productions, Inc.; 90 Sherman St.; Cambridge, MA 02140; 617-876-4433 or 800-342-0236

The Logic Master

Analogies and number series; grades 5 to high school

Apple IIGS; 1.25 MB; GS/OS; copy protected.

The Logic Master aims to develop critical high-level thinking skills through the introduction of a broad variety of analogy and number series activities. Designed for students who enjoy a challenge, The Logic Master covers both verbal and mathematical areas.

\$49.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Logo Plus

Full-featured version of the Logo language that allows students to create maps, animated stories, improved adventure games, detailed charts and graphs, and more complex and realistic pictures

Apple IIGS; other Apple II models; 128K; ProDOS 8; single unit and lab packs copy protected; site license not copy protected.

\$119.95 retail; single unit

\$299.95 retail; lab pack (includes 10)

\$399.95 retail; lab pack (includes 20)

\$399.95 retail; site license

Terrapin, Inc.; 400 Riverside St.; Portland, ME 04103; 207-878-8200

LogoWriter Home Edition

Integrates word processing, graphics and music in the Logo programming environment

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$99 retail

Logo Computer Systems, Inc. (LCSI); 3300 Cote Veru, Ste. 201; Montreal, Quebec, Canada H4R 2B7; 514-331-7090 or 800-321-5646

LogoWriter Software

Integrates word processing and graphics in the Logo programming environment

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$450 retail; site license (intermediate, secondary, primary)

\$299 retail; primary lab pack

\$299 retail; secondary lab pack

\$299 retail; intermediate lab pack

\$169 retail; primary set

\$169 retail; secondary set

\$169 retail; intermediate set

\$549 retail; LCSI Logo II site license

\$399 retail; LCSI Logo II lab pack

\$99 retail; LCSI Logo II single user

Logo Computer Systems, Inc. (LCSI); 3300 Cote Veru, Ste. 201; Montreal, Quebec, Canada H4R 2B7; 514-331-7090 or 800-321-5646

Education

LogoWriter Spanish

Combines Logo programming and graphics with word processing; grades 3 and up
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
 \$169 retail; set
 \$299 retail; lab pack
 \$450 retail; site license
 Logo Computer Systems, Inc. (LCSI); 3300 Cote Vertu, Ste. 201; Montreal, Quebec, Canada H4R 2B7;
 514-331-7090 or 800-321-5646

Look, Listen & Touch

A sensory approach to learning; junior high school to adult
Apple IIGS; other Apple II models; 64K; DOS 3.3; copy protected.
 Look, Listen & Touch helps students discover their best learning style and increase their ability to learn by understanding which of their senses contributes most to gathering information. A simple, but comprehensive, test determines which style (visual, auditory, kinesthetic or multisensory) students use, then individual program segments cover how each type of learner assimilates information and what techniques can be used to maximize learning. After examining their own styles, students have the option of reviewing any of the other styles. A final section shows students how they can better communicate with others by understanding their learning styles.
 \$82.50 retail
 MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

Lunar Greenhouse

Plant growth; grades 3 to 6, junior high
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 In Lunar Greenhouse, students are challenged to raise a variety of vegetable crops to meet specific harvest sizes in a controlled environment on the moon. When setting up the experiment, students adjust such variables as hours of light, environmental temperature, amount of water and amount of plant food, keeping in mind the final goal (yield or harvest size and days to harvest) they are to meet.
 \$59 retail
 MECC; 3490 Lexington Ave. N; St. Paul, MN 55126;
 612-481-3500 or 800-228-3504

Magic Slate II

Word processing program
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$129 retail
 Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Magic Spells

Sharpens spelling skills for children ages 6 to 12
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$39.95 retail; home edition
 \$59.95 retail; school edition (includes backup disk, teacher's guide and online and offline activities)
 The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555;
 415-792-2101

Magical Myths

A journey in Greek Mythology; ages 8 to 12
Apple IIGS; 768K; ProDOS 16; copy protected.
 Magical Myths introduces children to the wonders of the ancient Greek Myths and includes three animated stories: Creation of the Gods, Pandora's Box and King Midas. Included are more than 600 reading comprehension and vocabulary questions, as well as a mythical match game for memory building and a Myth Maker word processor.
 \$49.95 retail
 Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Map Skills

Teaches and reinforces map reading skills; ages 8 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$49.95 retail
 \$85 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Master Gradebook Plus

Automates the task of recording, calculating and averaging students' grades
Apple IIGS; 128K; ProDOS 8; not copy protected.
 \$29.95 retail
 DEC Software; 5307 Lynnwood Dr.; West Lafayette, IN 47906

Math And Me

Builds early math skills for children ages 3 to 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$29.95 retail
 \$129.95 retail; school lab pack (contains five disks and coupon for free teacher's resource guide)
 Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Math Blaster Mystery

Develops problem-solving skills, logical thinking skills and strategies for solving word problems; ages 10 and up
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$49.95 retail
 Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Math Blaster Plus

Addition and subtraction, multiplication and division, fractions, decimals and percents; for grades 1 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$49.95 retail
 \$149.95 retail; school lab pack (contains five disks and coupon for free teacher's resource guide)
 Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Math Blaster Plus IIGS

Builds accuracy and speed as students master skills in addition, subtraction, multiplication, division, fractions, decimals and percents; grades 1 to 6
Apple IIGS; 512K; GS/OS; copy protected.
 \$49.95 retail
 Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Math Masters

Consists of two programs that cover basic mathematical operations for numbers from 0 through 25
Apple IIGS; other Apple II models; 64K; ProDOS 6; copy protected.
 \$46 retail
 \$115 retail; Lab Pack
 DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Math Rabbit

Introduces key math concepts in a series of four image games; ages 4 to 7
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$39.95 retail; home edition
 \$59.95 retail; academic edition
 \$129.95 retail; lab pak
 The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555;
 415-792-2101

Math Shop Jr.

Introduces math concepts; grades 1 to 4
Apple IIGS; 64K (128K recommended); ProDOS 8; not copy protected.
 \$69.95 retail; net to educator
 Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Math Tutor

Skill-building in fractions, decimals and percentages; grades 1 to 6
Apple IIGS; 64K; ProDOS 8; not copy protected.
 Math Tutor Fractions Part I contains 23 lessons on numerator and denominator, proper and improper fractions; addition, subtraction and multiplication of fractions; mixed numbers; rewriting improper fractions; and equivalent fractions.
 Math Tutor Fractions Part II includes 24 lessons covering least common multiples, factors, greatest common factors, simplifying fractions, converting whole numbers to improper fractions or mixed numbers and division of fractions.
 In Math Tutor Decimals, students explore reading and writing of decimals, equivalent decimals, decimal point alignments and converting fractions to decimals.
 Math Tutor Percents, Ratios And Proportions contains 19 lessons that teach calculating percents, converting percentages to decimal figures, converting decimals to percents and converting fractions to percents.
 \$59.95 each retail; net to educator
 Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Math Wizard

Four educational games; ages 5 to 13
Apple IIGS; 768K; ProDOS 16; copy protected.
 Math Wizard contains four educational games with animated graphics. Skills developed include addition, subtraction, multiplication, division, simple equations and math word problems. Activities include: Wizard's Flash, Elf's Equations, Dragon Race and Troll's Toy Shop.
 \$49.95 retail
 Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Education

Math Word Problems

Provides practice at analyzing and solving math word problems; ages 8 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$49.95 retail
 \$85 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.;
 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or
 800-327-1473

MathTalk

Talking notebook featuring math tutorials, simulations and games; ages 5 to 10
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$49.95 retail
 First Byte; Clauset Centre; 3100 S. Harbor Blvd., Ste. 150;
 Santa Ana, CA 92704; 714-432-1740, 800-523-8070 or dis-
 tributed by Electronic Arts (800-245-4525)

MathTalk Fractions

Talking notebook featuring decimals, fractions and per-
 cents; ages 8 to 15
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$49.95 retail
 First Byte; Clauset Centre; 3100 S. Harbor Blvd., Ste. 150;
 Santa Ana, CA 92704; 714-432-1740, 800-523-8070 or dis-
 tributed by Electronic Arts (800-245-4525)

Mavis Beacon Teaches Typing!

Expert-system typing teacher
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 The Software Toolworks; 19808 Nordhoff Pl.;
 Chatsworth, CA 91311; 818-885-9000

McGee

Independent exploration for young children
Apple IIGS; other Apple II models; 64K; DOS 3.3; copy protected.
 McGee is an independent exploration program that
 contains no words. Rising with the sun, McGee goes
 exploring while mom is asleep. Because the program
 contains no menus, keystrokes or words of any kind,
 children can run the completely mouse-driven program
 by themselves.

Colorful rooms and animated sequences are drawn
 from a child's perspective. McGee feeds the dog, crawls
 under an ornamental rug, watches TV, bounces a ball,
 plays with a puppet and more — all accompanied by
 realistic sounds.
 \$39.95 retail
 MCE, A Div. of Lawrence Productions; 1800 S. 35th St.;
 Galesburg, MI 49053; 800-421-4157

MeasureWorks

Linear measurement, area, perimeter measurement and
 appropriate units of measurement; grades 1 to 4
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 MeasureWorks is a set of five programs that provide
 students with opportunities to practice measuring the
 height, width and length of objects; determine the appro-
 priate unit (weight, linear or liquid); and estimate linear
 size using non-standard units of measurement.
 \$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126;
 612-481-3500 or 800-228-3504

Memory Building Blocks

Memory skills; grades K to adult
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

In Memory Building Blocks, students build visual
 and auditory memory skills as they play five colorful,
 concentration-type games: Pictures, Words, Colors,
 Shapes and Tunes. An easy-to-use teacher editor lets a
 user enter the words to be used in the Words game. A
 choice of nine different game boards makes this program
 suitable for a wide range of abilities.

\$65 retail
 \$195 retail; lab pack
 Sunburst Communications, Inc.; 39 Washington Ave.;
 Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Memory Castle

Memory skills; grades 5 to 12
Apple IIGS; other Apple II models; 48K; ProDOS 8; copy protected.

Memory Castle is an exciting adventure game that
 introduces students to a special memory strategy
 designed to help them remember instructions and follow
 directions.

\$65 retail
 \$195 retail; lab pack
 Sunburst Communications, Inc.; 39 Washington Ave.;
 Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Memory Machine

Memory skills; grades 5 to adult
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Memory Machine is designed to strengthen students'
 memory skills and provide practice with visualization
 and attention to detail. In Words to Pictures and Words to
 Shapes, students practice visualization skills. Students
 first study the description of a picture or a set of shapes.
 They then must use that description to choose the corre-
 sponding picture or set of shapes. In Pictures to Words
 and Shapes to Words, students study a picture or a set of
 shapes. They then choose which statement about the
 picture or shapes is true, based on what they remember
 seeing.

\$65 retail
 \$195 retail; lab pack
 Sunburst Communications, Inc.; 39 Washington Ave.;
 Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

The Milliken Storyteller

Interactive computer storybook; ages 4 to 7
Apple IIGS; color monitor recommended; 512K; GS/OS; not copy protected.

The Milliken Storyteller is an interactive computer
 storybook that features real human speech. Children
 become inspired to learn to read as they travel with
 Henny Penny, venture with Little Red Riding Hood or
 search for beauty in The Ugly Duckling. Each story is
 beautifully illustrated and uses synchronized animation
 of lips to words. Children have the option of responding
 to questions and suggestions, giving them the opportu-
 nity to interact with the "page" on which they are reading.
 Rewards include activities such as being able to "color
 in" some of the screen art.

\$44.95 retail
 Milliken Publishing Co.; 1100 Research Blvd.; PO Box
 21579; St. Louis, MO 63132; 314-991-4220 or
 800-643-0008

Miner's Cave

Physical science; grades 4 to 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$59 retail
 MECC; 3490 Lexington Ave. N; St. Paul, MN 55126;
 612-481-3500 or 800-228-3504

Modular Management System For Schools (MMS)

Complete educational management system
Apple IIGS; monitor and printer; 1 MB; GS/OS; not copy protected.
 \$399 retail; Student Master File System
 \$449 retail; Attendance Reporting System
 \$349 retail; Discipline Reporting System
 \$949 retail; Grade Reporting System
 \$1,099 retail; Student Scheduling System
 \$449 retail; Tuition/Fee Accounting System
 Computer Resources, Inc.; Rte. 125, PO Box 60;
 Barrington, NH 03825; 603-664-5811

Money Works

Teaches money recognition, counting and more; grades
 1 to 4
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$59 retail
 MECC; 3490 Lexington Ave. N; St. Paul, MN 55126;
 612-481-3500 or 800-228-3504

Monsters And Make Believe Plus

Graphic writing program
*Apple IIGS; printer optional; Echo II synthesizer option-
 al; 128K; ProDOS 8; copy protected.*
 \$49.95 retail
 Learning Lab Publishing/Pelican Software; 21000 Nord-
 hoff St.; Chatsworth, CA 91311; 818-341-9611,
 800-247-4641 or 800-222-7026 in CA

More Teasers From Tobbs

Decimal and fractions practice; grades 5 to 12
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$65 retail
 Sunburst Communications, Inc.; 39 Washington Ave.;
 Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Mr. Py And I Coloring Adventures

Educational learning series in the form of a coloring
 book
*Apple IIGS; 3.5-inch disk drive; RGB monitor; 768K
 (1.25 MB suggested); ProDOS 16 and GS/OS; not copy
 protected.*
 \$59 retail
 Pygraphics Corp.; PO Box 639; Grapevine, TX 76051;
 817-481-7536 or 800-222-7536

The Muppet Collection

Develops skills in sorting and classifying, determining
 likenesses and differences and more; grades K to 1
*Apple IIGS; other Apple II models; works with regular
 keyboard, Muppet Learning Keys or Touch Window;
 64K; ProDOS 8; copy protected.*
 \$65 retail; Muppets On Stage (includes backup)
 \$65 retail; Muppetville (includes backup)
 \$65 retail; Muppet Word Book (includes backup)
 \$195 retail; Muppet Word Book lab pack (contains 10
 programs)
 Sunburst Communications, Inc.; 39 Washington Ave.;
 Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Education

■ Muppet Slate

Word and picture processor; grades K to 2
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Muppet Slate inspires children to write creatively by making writing fun. It features large, easy-to-read letters, simple editing features and 126 pictures of Muppets, bugs, animals and other things kids love. Twenty-four language-arts lessons are included to help teachers provide a variety of quality writing experiences. A choice of 10 decorative borders lets students publish their masterpieces with pride.

\$75 retail
 \$225 retail; lab pack
 Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Mystery Objects

Physical science; grades 4 to 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$59 retail
 MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

■ National Gallery Of Art (ImageWorks Video Directory)

Video directories
Apple IIGS; other Apple II models; 64K; ProDOS 8.
 ImageWorks can provide a video directory so users can quickly and easily find material stored on laserdiscs. With the search capabilities of AppleWorks, users can quickly find and reorganize material on videodisc. For example, with an art disc, users can search for any given painter or call up paintings by style, period, country or theme.
 \$49.95 retail
 Teaching Technologies; PO Box 3808; San Luis Obispo, CA 93403; 805-541-3100

The New Talking Stickybear Alphabet

Talking upper and lowercase letter recognition; features two pictures for each letter; three activities to complement and encourage alphabet learning; ages 3 to 6
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 \$85 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

■ The New Talking Stickybear Opposites

Teaches beginning learners about opposites and helps build reasoning skills; ages 3 to 6
Apple IIGS; 512K; ProDOS 16; copy protected.
 The New Talking Stickybear Opposites uses sounds and big, bright, animated pictures to help youngsters learn concepts, such as up/down, stop/go, near/far and numerous other opposite pairs. It's easy for children to switch between opposite pairs by pressing an arrow key or moving the mouse. They'll see Stickybear smile when he's happy, then frown when he's sad; jump off a box, then back on. Other delightful scenes and sounds keep children fascinated while learning such concepts as spatial relationships; time, rate and distance; and measurement.

\$49.95 retail
 \$85 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

■ The New Talking Stickybear Shapes

Helps children identify shapes; includes a poster and Stickybear stickers; ages 3 to 6
Apple IIGS; 512K; ProDOS 16; copy protected.

The New Talking Stickybear Shapes uses sound and big, bright, animated pictures to fascinate children as they work with three different activities to learn the most common shapes. In Pick It, children identify the missing shape in each picture. In Name It, children match shapes with the names of the shapes. In Find It, children match a shape with one hidden in the picture. When a child selects the correct answer, pictures become animated.
 \$49.95 retail
 \$85 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

New Teasers From Tobbs

Addition and multiplication using whole numbers or integers
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$65 retail
 Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Newbery Adventures

Adventure series; grades 4 to 6
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$65 retail; Mrs. Frisby and the Rats of NIMH
 \$65 retail; Island of the Blue Dolphins
 Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

■ OGI Pascal Development System

Allows development of programs using the Pascal programming language; targeted toward education environment
Apple IIGS; other Apple II models; 128K; not copy protected.
 The OGI Pascal Development System gives Apple IIGS, IIc and IIc users a convenient method of developing programs in the Pascal language. The system contains an editor, compiler and debugger that run under the ProDOS operating system. The system also includes sample programs to help users get started. The system is well suited for the education environment. The compiler generates code in-line with the Pascal source statements, allowing students to observe what kind and how many machine statements it takes to implement a single Pascal statement. The debugger works with the compiler-generated code and allows a user to: single-step execution of the program; examine program locations; set, clear and display breakpoints within the code; and display the stack contents and the last 15 instructions executed.
 \$55 retail
 On-Going Ideas; Rd. #1, Box 810; Starksboro, VT 05487; 802-453-4442

Once Upon A Time...

Desktop publishing program for ages 6 to 12
Apple IIGS; color monitor; 512K; GS/OS; not copy protected.
 \$49.95 retail; Once Upon A Time...
 \$99.95 retail; academic, Once Upon A Time...
 \$59.95 retail; Once Upon A Time... Talking IIGS
 \$119.95 retail; academic, Once Upon A Time... Talking IIGS
 Compu-Teach Corp.; 78 Olive St.; New Haven, CT 06511; 203-777-7738 or 800-448-3224

One For The Books

Program that generates personalized book lists and motivates students to read; grades 3 to 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$149 retail
 Focus Media, Inc.; PO Box 865; 839 Stewart Ave.; Garden City, NY 11530; 516-794-8900 or 800-645-8989

Patterns

Language arts; preschool
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
 \$59 retail
 MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Pfs: Write And Pfs: File/Report

Programs designed to help students in grades 7 through 12 master word processing, filing and reporting skills
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
 \$79.95 each retail; net to educators
 Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

■ Pow! Zap! Ker-Plunk!

Comic book maker
Apple IIGS; Echo II board optional; 128K; ProDOS 8; copy protected.
 This simple-to-use program produces sensational-looking comic books. Users choose from a variety of paneled backgrounds and hundreds of pieces of original clip art to begin a design. The sequential printout option has a variety of page layouts. The program features speech bubbles for creating dialog between characters and an easy-to-use text processor with four font styles to write stories about the panels created. Special learning skills include reading and writing, story sequencing, critical thinking and collaborative writing.
 \$49.95 retail
 \$59.95 retail; school edition
 Learning Lab Publishing/Pelican Software; 21000 Nordhoff St.; Chatsworth, CA 91311; 818-341-9611, 800-247-4641 or 800-222-7026 in CA

ProWords And ProBraille

Word processor and translator for the blind
Apple IIGS; other Apple II models; synthesizer (Echo or Slotbuster II); 128K per program (512K preferred); ProDOS 16; not copy protected.
 \$150 retail; ProBraille
 \$195 retail; ProWords
 Access Unlimited-Speech Enterprises; 9039 Katy Freeway, Ste. 414; Houston, TX 77024; 713-461-0006

Education

Punctuation Rules

Teaches and reinforces the proper use of punctuation; ages 8 to 11
Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.
 \$49.95 retail
 \$85 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

QuickTests

Test generator
Apple IIGS; other Apple II models: 128K; ProDOS 8; not copy protected.
 \$180 retail; single user
 \$450 retail; unlimited copies per school or college department
 Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 904-576-9415 or 800-627-3836

Read & Rhyme

Four language-arts activities; ages 5 to 10
Apple IIGS; 768K; ProDOS 16; copy protected.
 Children will delight in learning as they interact with the space creatures and earn the chance to make a wish on the happy star. Skills developed include phonics, reading, rhyming, tense, vocabulary, classification, discrimination, alphabetical order and meaning in context. Activities include: Rhyming Rockets, Flying Saucer, Alpha Blast and Rhyming Challenge.
 \$49.95 retail
 Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Read 'N Roll

Reading comprehension program for grades 3 through 6
Apple IIGS; other Apple II models: 128K; ProDOS 8; copy protected.
 \$49.95 retail
 \$149.95 retail; school lab pack (contains five disks and coupon for free teacher's resource guide)
 Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Read, Write And Publish

Process writing skills environment for grades 1 through 8; includes eight topics in each grade-level package
Apple IIGS; other Apple II models: 128K; ProDOS 8; program disk copy protected; student disks not copy protected.
 \$99 retail; academic
 \$99 retail; Spanish Edition
 William K. Bradford Publishing Co./D.C. Heath Software; PO Box 1355; Concord, MA 01742; 617-862-2570 or 800-421-2009

Read-A-Rama

Five early learning activities; ages 5 to 8
Apple IIGS; 1 MB; ProDOS 16; copy protected.
 Read-A-Rama is designed for young children who are just beginning to learn to read and spell. This two-disk program contains many common everyday words children need to be familiar with. Words are organized into 14 categories per disk. Activities include: Word-A-Rama, Read-A-Rama, Spell-A-Rama, Read & Remember and Spell & Remember.

\$59.95 retail
 Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Reader Rabbit

Talking early education program that reinforces reading, spelling and vocabulary skills; ages 4 to 7
Apple IIGS; color monitor recommended; 256K; ProDOS 16; copy protected.
 \$59.95 retail; home edition
 \$79.95 retail; school edition
 \$149.95 retail; lab pack
 The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Reading And Me

Prepares children ages 4 to 7 for reading
Apple IIGS; other Apple II models: 128K; ProDOS 8; copy protected.
 \$39.95 retail
 \$129.95 retail; school lab pack (contains five disks and coupon for free teacher's resource guide)
 Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Reading Comprehension

Includes 29 high-interest story and question sets designed to help children learn important reading skills; ages 9 and up
Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.
 \$49.95 retail
 \$85 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Reading Magic Library

Storybooks that let parents and their children choose what happens next
Apple IIGS; other Apple II models: 512K; ProDOS 8; copy protected.
 \$34.95 each retail
 Tom Snyder Productions, Inc.; 90 Sherman St.; Cambridge, MA 02140; 617-876-4433 or 800-342-0236

Recycling Logic

Teaches basic principles of logic; ages 6 to adult
Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.
 \$65 retail; includes backup
 Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Report Card II

Teacher's grading system
Apple IIGS; other Apple II models: 128K; ProDOS 8; not copy protected.
 \$59.95 retail
 Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48063; 313-528-1950

Return Of The Dinosaurs

An entertaining, problem-solving adventure that also teaches database access skills; ages 10 and older
Apple IIGS; 128K.
 Return Of The Dinosaurs promotes intuitive thinking and computer literacy. As players follow the trail of lost dinosaurs — deciphering clues and getting in and out of wacky situations — they discover fascinating facts about

70 different dinosaurs, learn how to use a database and become more familiar with pop-up utilities and the computer keyboard. DinoFile, a sophisticated electronic database, is an integral part of this game. Players quickly learn to sort and sequentially search the database as they match clues with dinosaur characteristics in a madcap race to solve each adventure.
 \$39.95 retail
 American Educational Computer, Inc.; 7506 Broadway Ext., Ste. 505; Oklahoma City, OK 73116; 405-840-6031

Revolution '76

Historical simulation
Apple IIGS; 1.2 MB; GS/OS.
 \$49.95 retail
 Britannica Software; 345 4th St.; San Francisco, CA 94107; 415-546-1866

The Right Turn

Students learn mathematical concepts of rotation and transformation
Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.
 \$65 retail
 Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

School Speller And School Speller Manager

Spelling instruction
Apple IIGS; other Apple II models: Magic Slate II; 128K; ProDOS 8.
 The School Speller is a spell-check program that also includes tools to work with collected speller records and custom dictionaries. Designed to work with the 40- and 80-column versions of Magic Slate II, the School Speller is shipped on two disks. The School Speller Dictionary Disk contains a 61,000-word main dictionary and room for a 500-word custom dictionary. The School Speller Tools Disk allows users to spell check and print word processing files, to view or print Speller Records, to edit or print the custom dictionary, to make another Dictionary Disk and to catalog a disk. The Tools Disk allows a teacher to customize spelling instructions and to evaluate vocabulary choice.

The School Speller Manager, a separate program, allows teachers to collect and collate on one disk misspelled words from all students in a class, a grade level or even a whole school. It also allows teachers to add words to each student's dictionary.
 \$75 retail; School Speller (40 or 80 column version)
 \$65 retail; School Manager
 Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Scorekeeper 3.0

Gradebook management system
Apple IIGS; other Apple II models: 128K; ProDOS 8; copy protection limited.
 \$79.95 retail
 Stokes Publishing Co.; 1125 Robin Way, Ste. C; Sunnyvale, CA 94087; 408-736-4637

Seasons And Special Days

Language activities; grades K to 2
Apple IIGS; other Apple II models; Muppet Slate; 64K; ProDOS 8; copy protected.
 Seasons And Special Days expands the versatility of Muppet Slate. It contains more than 90 pictures, including pilgrims, spring flowers, fireworks, etc., for calendar events, and a Teacher's Guide full of fun classroom

Education

activities. The classroom activities encourage self-expression, exploration and understanding of each holiday. The art and activities included are adaptable to a wide range of cultures and religions. In one lesson, students can even celebrate local heroes or holidays.

\$59 retail

\$177 retail; lab pack

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Sesame Street Series

Introduces children to ABCs, numbers and opposites
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$17.95 each retail; Letters For You, Numbers Count, Opposites Attract

Polarware, Inc.; 1055 Paramount Pkwy., Ste. A; Batavia, IL 60510; 312-232-1984

Sky Travel

Astronomy database program featuring 1,200 stars, 88 constellations and more

Apple IIGS; 256K; ProDOS 8; not copy protected.

\$52.95 retail

Microworlds; 17408 Chatsworth St.; Granada Hills, CA 91344; 818-360-3715 or 800-522-2041

SmoothTalker

Software-only speech synthesizer that converts text into speech

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$49.95 retail

First Byte; Clauset Centre; 3100 S. Harbor Blvd., Ste. 150; Santa Ana, CA 92704; 714-432-1740, 800-523-8070 or distributed by Electronic Arts (800-245-4525)

Solve It!

Teaches students how to search for information in a database; exercise logical thinking; organize and analyze data; and to enhance language art skills

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$75 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Space Waste Race

An animated storybook with learning games; preschool through grade 2

Apple IIGS; other Apple II models; 48K; ProDOS 8; copy protected.

\$65 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Spacelace

An interactive kaleidoscope and Basic tutorial

Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.

\$29.95 retail

Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

■ Spell It Plus

Spelling; ages 10 and up

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

Spell It Plus has five learning activities, including an entertaining, arcade-style game. Throughout the program, spelling is taught and reinforced with the humorous antics of an amazingly athletic frog who slam dunks basketballs, runs hurdles and even rides the waves on a surfboard. The program contains more than 1,000 commonly misspelled words and an easy-to-use editor that allows parents and teachers to add their own word lists in English, Spanish, French and German. The program prints a Certificate of Excellence, word-search puzzles and lists of words mastered and missed.

\$49.95 retail

Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Speller Bee

Incorporates talking notebook and graphics to improve spelling skills; for children ages 5 to 10

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$49.95 retail

First Byte; Clauset Centre; 3100 S. Harbor Blvd., Ste. 150; Santa Ana, CA 92704; 714-432-1740, 800-523-8070 or distributed by Electronic Arts (800-245-4525)

Spellelevator

Spelling; grades 1 to 6

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Stars And Planets

Provides six educational games that reinforce particular learning skills; ages 2 1/2 to 6

Apple IIGS; 512K; GS/OS; not copy protected.

\$49.95 retail

Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

Stickybear Math

Basic addition and subtraction; great graphics motivate students through 20 levels of difficulty; program advances automatically — based on rate of success; ages 6 to 9

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$39.95 retail

\$75 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Math 2

Basic multiplication and division; features automatic level-of-difficulty monitor that adjusts to suit individual learning rates; ages 7 and up

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$39.95 retail

\$75 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Numbers

Counting and number recognition program; colorful animation reinforces "forward and backward" counting skills; multiple image options for each numeral; ages 3 to 6

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$39.95 retail

\$75 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Opposites

Teaches beginning learners about opposites; helps build reasoning skills; package includes 32-page book and Stickybear stickers; ages 3 to 6

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$39.95 retail

\$75 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Parts Of Speech

Helps children recognize parts of speech using both word lists and sentence formats to reinforce student skills

Apple IIGS; other Apple II models; ProDOS 8; copy protected.

\$49.95 retail

\$85 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Reading

Three interactive and highly enjoyable activities build vocabulary and reading comprehension skills; ages 5 to 8

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$39.95 retail

\$75 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Reading Comprehension

Multilevel reading program containing 30 stories and comprehension question sets; program automatically advances to suit individual learning rates and can be customized with new story and question exercises; ages 7 to 9

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49.95 retail

\$85 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Shapes

Helps children identify shapes with bold, bright colors, music and animation; package includes poster, 32-page book and Stickybear stickers; ages 3 to 6

Apple IIGS; 64K; ProDOS 8; copy protected.

\$39.95 retail

\$75 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Education

Stickybear Spellgrabber

Builds spelling and vocabulary skills with three exciting, arcade-style activities; ages 6 to 9

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49.95 retail

\$85 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Town Builder

Teaches basic map reading, compass reading, positioning and direction skills; children build their own towns complete with roads, parks, bridges, airports and more; ages 6 to 9

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49.95 retail

\$85 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Typing

Typing instruction for all ages, featuring activities to sharpen both typewriter and computer keyboard skills

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49.95 retail

\$85 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Word Problems

Provides beginning practice at analyzing and solving math word problems; rewards correct answers with bright, colorful animation; ages 7 and up

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49.95 retail

\$85 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Success With Literature

Computer-based approach to writing about literature; grades 8 to 12

Apple IIGS; 128K; ProDOS 8; not copy protected.

Success With Literature is designed to help students with writing assignments on 12 classic titles from Hamlet to Walden. Each program in the series presents book themes with suggested writing topics, brief plot summaries and commentaries.

Success With Literature stresses the writing process, from the prewriting stage through the completion of a cohesive, cogent book report or literary essay. Step-by-step suggestions help students understand the major themes in a literary work, gather ideas for a paper topic, develop a thesis and write with confidence.

\$29.95 retail; net to educator

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Success With Writing

Four-module program that guides students through the writing process; grades 7 to 12

Apple IIGS; printer optional; 128K; ProDOS 8; not copy protected.

\$99.95 retail; net to educators (lab packs available)

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Super Factory

Problem-solving strategies learned from observing a 3-D cube

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$65 retail; includes backup

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Super Story Tree

Interactive story maker that allows students in grades 6 through 12 to illustrate their stories with exciting graphics, music and sound effects

Apple IIGS; other Apple II models; joystick, mouse or Koala Pad; Epson or Scribe printer; 128K; ProDOS 8; not copy protected.

\$79.95 retail; net to educators (lab packs available)

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Tales From The Arabian Nights

A unique learning experience in reading comprehension; ages 8 to 12

Apple IIGS; 768K; ProDOS 16; copy protected.

This program contains three captivating stories of the Arabian Nights: Aladdin's Lamp, The Ebony Horse and Ali Baba. Each story has its own glossary for vocabulary building. The main learning objectives are to enhance children's reading comprehension, creative writing and language arts skills. The disk contains more than 600 multiple choice and fill-in reading and vocabulary questions. The program includes a built-in word processor, quiz maker and concentration game.

\$49.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Talking Aesop's Fables

Reading comprehension and language arts; ages 6 to 9

Apple IIGS; 768K; ProDOS 16; copy protected.

Children will develop reading, vocabulary building, contractions, comprehension, alphabetizing, memory building, spelling, rhyming and computer literacy skills while reading these charming age-old fables, each depicted with stunning graphics and large text. The four learning modules include Aesop's Fables, Aesop's Spells, Spelling Skills and Memory Builder.

\$49.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Talking Math And Me

Builds early math skills using digitized speech; ages 3 to 6

Apple IIGS; 512K; ProDOS 16; copy protected.

\$49.95 retail

\$149.95 retail; school lab pack (contains five disks and coupon for free teacher's resource guide)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Talking Reading And Me

Prepares children for reading using digitized speech; ages 4 to 7

Apple IIGS; 512K; ProDOS 16; copy protected.

\$49.95 retail

\$149.95 retail; school lab pack (contains five disks and coupon for free teacher's resource guide)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Talking Schoolhouse Series

16 software programs that use real human speech to teach basic skills

Apple IIGS; 512K.

\$49 each retail

\$59 each retail; School Edition

Orange Cherry-Talking Schoolhouse Software; PO Box 390 Westchester Ave.; Pound Ridge, NY 10576; 914-764-4104 or 800-672-6002

Talking Text Libraries

Synthesized speech that reads stories aloud for young readers

Apple IIGS; other Apple II models; Echo IIb board; 128K; ProDOS 8; not copy protected.

\$39.95 each retail; (net to educators); Beginning Classics (Grades K to 1), Classics for Young Readers (Grades 2 to 3), Discover History (Grades 2 to 4), Explore Science (Grades 2 to 4)

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Talking Text Spelling

Talking spelling tutor

Apple IIGS; other Apple II models; Echo IIb board; 128K; ProDOS 8; not copy protected.

\$99.95 retail; net to educators (without board) for grade specific core package

\$99.95 retail; Echo board net to educators

\$59.95 retail; net to educators (additional list packages for grades 1 to 6)

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Talking Text Writer

Combines word processing with the Echo board from Street Electronics

Apple IIGS; Echo, Cricket or PC2 speech synthesizer board; 512K; ProDOS; not copy protected.

\$149.95 retail; net to educators

\$99.95 retail; Echo board net to educators

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

Teasers By Tobbs With Integers

Mathematics; grades 2 to adult

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Using whole numbers or integers, Tobbs presents addition and multiplication problems with one or more missing numbers. Students must then decide which number "can't be," "might be" or "must be" the one that solves the problem. To solve the addition and multiplication problems, students must also use division and subtraction.

Education

\$65 retail

\$195 retail; lab pack

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

■ Teddy & Iggy

Memory and sequencing skills; grades K to 2
Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.

Teddy, the bear, and Iggy, the inchworm, challenge students' memory and sequencing skills. In *Teddy's Bed*, Teddy makes his colorful bed layer-by-layer, and in *Teddy Shapes Up* he stacks brightly colored shapes in a particular order. In a third game, *Iggy's Boxes*, Iggy opens boxes marked with the first letter of the object hidden inside. Students must remember the sequence in which Teddy and Iggy perform these tasks by using a memory strategy called "chaining." The teacher's guide contains seven field-tested lessons with reproducible worksheets to help reinforce memory skills.

\$65 retail

\$195 retail; lab pack

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

■ Teddy's Playground

Critical-thinking skills; grades K to 4
Apple IIGS; other Apple II models: 48K; ProDOS 8; copy protected.

In *Teddy's Playground*, children develop critical-thinking skills as they work with shapes, colors and shading. Children can travel freely from the three main areas of the playground — *Swing Games*, *SeeSaw Sorting and Slide Games* — working with attributes and sorting colors and shapes. Correct responses will cause Teddy to slide down the slide, swing on his swing or ride on the seesaw.

\$65 retail

\$195 retail; lab pack

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Test It! Deluxe

Allows teachers to create customized tests
Apple IIGS; other Apple II models: 128K; ProDOS 8; not copy protected.

\$59.95 retail

EduSoft; PO Box 2560; Berkeley, CA 94702;

415-548-2304 or 800-338-7638

Think Quick!

Fast-paced adventure game that helps develop thinking skills for ages 7 to 14

Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.

\$49.95 retail

The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

The Thinking Machine

Educational system designed to help students use their brain more effectively

Apple IIGS; printer optional; 64K; ProDOS 8; copy protected.

\$89.50 retail

Psychological Psoftware Co.; 312 Los Altos Dr.; Aptos, CA 95003; 408-688-6808

Ticket To London

Adventure that teaches social studies, art and literature; ages 10 to adult

Apple IIGS; 512K; ProDOS 16; copy protected.

\$39.95 retail

Blue Lion Software; 7506 N. Broadway Ext., Ste. 505; Oklahoma City, OK 73116; 405-840-6031 or 800-222-2811

Ticket To Paris

Adventure that teaches French and social studies; ages 12 to adult

Apple IIGS; 512K; ProDOS 16; copy protected.

\$39.95 retail

Blue Lion Software; 7506 N. Broadway Ext., Ste. 505; Oklahoma City, OK 73116; 405-840-6031 or 800-222-2811

Ticket To Spain

Adventure that teaches Spanish, social studies, art and literature; ages 12 to adult

Apple IIGS; 512K; ProDOS 16; copy protected.

\$39.95 retail

Blue Lion Software; 7506 N. Broadway Ext., Ste. 505; Oklahoma City, OK 73116; 405-840-6031 or 800-222-2811

Ticket To The National Parks

Adventure that enriches a user's knowledge of our country's natural resources as they experience the splendor of our nation

Apple IIGS; 512K; ProDOS 16; copy protected.

\$44.95 retail

Blue Lion Software; 7506 N. Broadway Ext., Ste. 505; Oklahoma City, OK 73116; 405-840-6031 or 800-222-2811

Ticket To Washington, D.C.

Adventure that teaches social studies, art and literature; ages 10 to adult

Apple IIGS; 512K; ProDOS 16; copy protected.

\$44.95 retail

Blue Lion Software; 7506 N. Broadway Ext., Ste. 505; Oklahoma City, OK 73116; 405-840-6031 or 800-222-2811

Tiger's Tales

Interactive adventure stories; grades K to 2

Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.

\$65 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

■ Time Navigator

History; grades 8 to 12

Apple IIGS; other Apple II models: 128K; ProDOS 8; copy protected.

Time Navigator is a simulation that allows students to "go back in time" and try to navigate their way back to the present (or to a year of the teacher's choice). To do this, students must choose one of six topic categories (headlines, conversations, books, movies, songs or artifacts) and then select from a group of three items the one that occurred most recently in history. If students do this, they move forward in time, closer toward their goal. If they choose incorrectly, they may go even farther back into the past. Unpredictable events, such as "storms" in

the time stream, add an additional element of excitement and challenge. Program content focuses on developing students' historical sequencing skills.

\$59 retail

MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

To Preserve, Protect And Defend

U.S. Constitution lesson

Apple IIGS; other Apple II models: 128K; ProDOS 8; copy protected.

\$59 retail

MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Touch 'N Write

Penmanship practice; grades K to 3

Apple IIGS; other Apple II models: Touch Window; 64K; ProDOS 8; copy protected.

\$75 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Tutor-Tech 2.6

Apple IIGS hypermedia tool for educators featuring a tool box of writing and drawing tools, text fonts, various buttons similar to HyperCard, videodisc and video overlay card support and more

Apple IIGS; other Apple II models: 128K; ProDOS 8; not copy protected.

\$195 retail; basic

\$290 retail; complete with grade-book manager
Techware Corp.; PO Box 151085; Altamonte Springs, FL 32715; 407-695-9000

Type To Learn

Teaches typing skills

Apple IIGS; other Apple II models: 64K; ProDOS 8; copy protected.

\$75 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Typing Teacher

Typing tutor

Apple IIGS; other Apple II models: 128K; ProDOS 8; not copy protected.

\$29.95 retail

Future Age Computers; 3 McCrary Dr. SW; Rome, GA 30161; 404-235-4948

Typing Tutor IV

Customizing keyboard instruction

Apple IIGS; RGB color monitor recommended; 512K; ProDOS 16; not copy protected.

\$44.95 retail

Simon & Schuster Software; 1 Gulf + Western Plaza, 13th Fl.; New York, NY 10023; 800-624-0023 or 800-624-0024 in NJ

■ USA GeoGraph

Geography; grades 5 to adult

Apple IIGS; 768K; GS/OS; copy protected.

USA GeoGraph is a geography discovery-learning tool that features on-screen maps, graphics capabilities and an in-depth database that includes 105 categories of information about our 50 states, plus six territories and the District of Columbia. It is designed to help users

Education

learn to "think like geographers" as they exercise their inquiry and analytical skills in learning about the United States.

\$139 retail

MECC, 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Video Studio IIGS

Interaction assembler and presentation processor
Apple IIGS; 64K; ProDOS 8; not copy protected.

Video Studio enables non-programmers to create interactive audiovisual curricula and organize complex audiovisual presentations using the IIGS to control a laser disc system. It allows total control over and ease of access to information contained on laserdiscs. It enables users to prepare and organize lessons easily, taking advantage of the power of the IIGS and the archival capability of the laserdisc.

\$99 retail

Teaching Technologies; PO Box 3808; San Luis Obispo, CA 93403; 805-541-3100

Vocabulary Development

Increases vocabulary and strengthens reading skills with a multilevel series of high-interest questions; context clues, parts of speech, multiple meanings and more covered in 44 lessons; ages 8 and up

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49.95 retail

\$85 retail; five-disk lab pack

Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Weeds To Trees

Plant succession; grades 3 to 10

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

Weeds To Trees is a discovery-learning simulation that enables students to apply science process skills while discovering the processes of secondary plant succession. Students use the information that they gather to predict how a plant community will change over time.

\$59 retail

MECC, 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

What's In A Frame?

Memory strategies; grades K to 6

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Pictures of brightly colored objects appear in a frame and students are challenged to remember what they saw. In the program's two games, Did You See This? and What Did You See?, students work with two memory strategies: noting the number of items to remember and grouping items with common attributes. By using these strategies, students will find they can recall more items with greater accuracy. Teachers may select the number of objects that appear in the frame and players may choose how long they want to study the pictures.

\$65 retail

\$195 retail; lab pack

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Where In The World Is Carmen Sandiego?

Players track Carmen and her gang of thieves around the world to recover stolen treasures

Apple IIGS; 512K; ProDOS 16.

\$44.95 retail

\$54.95 retail; School Editions

\$109.95 retail; Lab Packs

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

Winker's World Of Patterns

Offers three arenas for understanding patterns; grades K to 6

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$65 retail

Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

The Wonders Of The Animal Kingdom

Six educational activities; ages 6 to 12

Apple IIGS; 1 MB; ProDOS 16; copy protected.

The Wonders Of The Animal Kingdom contains six activities to develop language-arts, reading comprehension, discrimination and memory skills. Superb graphics depicting animals from the various zoological species, including prehistoric, jungle, fish, insects, amphibians, birds and more, make this a stimulating way to introduce young children to the intriguing aspects of science. Activities include: All About Animals, Animal Spells, Animalgrams, Who Am I?, What's Different? and Animal Memory Game.

\$49.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

Wood Car Rally

Physical science; grades 4 to 7

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$59 retail

MECC, 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Word Attack Plus

Teaches students 700 new words and their definitions; grades 4 to 12

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$49.95 retail

\$149.95 retail; school lab pack (contains five disks and coupon for free teacher's resource guide)

Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Word Attack Plus Spanish And French

Teaches students to master a beginning foreign language vocabulary; grade 7 to adult

Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.

\$49.95 each retail

Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

The Word Master

Vocabulary builder; grades 3 to 8

Apple IIGS; 1 MB; GS/OS; copy protected.

The Word Master contains four educational activities designed to build essential word-power skills. Vocabulary Test is a placement test for grades 3 to 8 that will recommend an individualized learning plan dependent upon test results. Master's Review consists of a database of more than 500 third to eighth grade words and their definitions. Vocabulary Challenge has students match words with their meanings. Master's Maze is a maze game designed to build vocabulary and comprehension skills.

\$49.95 retail

Unicorn Software Co.; 2950 E. Flamingo Rd., Ste. B; Las Vegas, NV 89121; 702-737-8862

World GeoGraph

Social studies; grade 6 to adult

Apple IIGS; two 3.5-inch drives recommended; color monitor; 768K; GS/OS; copy protected.

\$139 retail; includes illustrated user guide

\$19 retail; comprehensive classroom guide

MECC, 3490 Lexington Ave. N; St. Paul, MN 55126;

612-481-3500 or 800-228-3504

Writer Rabbit

Builds reading comprehension and writing skills for ages 7 to 10

Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

\$49.95 retail; home edition

\$69.95 retail; school edition

\$139.95 retail; lab pak

The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Writer's Helper Stage II

Prewriting and revising software

Apple IIGS; two disk drives (hard disk drive optional); printer recommended; 128K; ProDOS 8; copy protected.

\$120 retail

\$240 retail; Educator Pack with six disks

Conduit; The University of Iowa; Oakdale Campus; Iowa City, IA 52242; 319-335-4100

Your First Job

Teaches students how to conduct a job search and to improve their chances of finding their first job

Apple IIGS; 64K; copy protected.

\$69.95 retail

MCE, A Div. of Lawrence Productions; 1800 S. 35th St.; Galesburg, MI 49053; 800-421-4157

Zoyon Patrol

Game-like simulation that provides an environment for learning the scientific method

Apple IIGS; other Apple II models; 128K; MDOS; copy protected.

\$59 retail

MECC, 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

Entertainment

■ 2088: The Cryllan Mission

Role-playing game
Apple IIGS

In 2088: The Cryllan Mission, you are summoned regarding the loss of contact with the U.S.S. Houston. The Houston had discovered a small planet, Crylla, in the Gamma-Chi sector. You must assemble your six-person team of specialists within 72 hours for immediate dispatch to Crylla. There you must determine the crew's whereabouts without disclosing your mission to any natives.

\$69.95 retail

Victory Software; PO Box 821381; Houston, TX 77282; 713-493-3232 or 800-232-3828

4th & Inches

Football simulation featuring 20 plays and 11 different formations

Apple IIGS; keyboard, joystick or mouse; 512K; ProDOS 16; copy protected.

\$44.95 retail

\$14.95 retail; Team Construction Kit
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

AAARGH!

Arcade action game
Apple IIGS

\$39.99 retail

Arcadia; 18001 Cowan, Ste. A; Irvine, CA 92714; 714-833-8710

Alien Mind

Space arcade adventure game that challenges users to neutralize adversaries and regain control of a research space station

Apple IIGS; RGB monitor; SuperSonic stereo card recommended; 512K; copy protected.

\$54.95 retail

PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

■ Anchorman

Realistic bowling game

Apple IIGS; 128K; not copy protected.

Anchorman (the last bowler on a team) is a realistic tenpin and duckpin bowling game. To achieve the desired release point, direction of roll and curve (size and direction), the joystick or keyboard bowler must prepare carefully, approach smoothly in a four-step sequence and release precisely. Once released, the ball rolls and caroms through the pins in a highly realistic manner: the pins fly, bounce, spin, roll, wiggle and topple.

Up to four players can bowl at one time, or a user can bowl against an automatic bowler.

\$39.95 retail

Virginia Real Software, Inc.; PO Box 8545; Norfolk, VA 23503; 804-587-4952

Arkanoid II — The Revenge Of Doh

Arcade action in which users must penetrate an alien ship and break down 67 energy barriers

Apple IIGS; 512K; GS/OS; copy protected.

\$34.95 retail

Taito Software, Inc.; 206 - 267 W. Esplanade, N. Vancouver, BC, Canada V7M 1A5; 604-984-3344 or 800-663-8067

Balance Of Power: The 1990 Edition

Global politics

Apple IIGS; 1 MB; ProDOS 16; copy protected.

\$49.95 retail

Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

■ Barbarian

Arcade action

Apple IIGS; 512K; ProDOS 16; not copy protected.

You are Hegor, the Barbarian. Enter the fearful realms of the underground world of Durgan, a world terrorized by the evil Necron. Battle powerful warriors and horrific monsters. Use your wits to defeat cunning traps and ingenious machines protecting the path to Necron's lair. Features include 48 high-resolution background screens, more than 20 different enemies and traps and more than 300 animation sequences.

\$39.99 retail

Virgin Mastertronic Int'l., Inc. — Melbourne House; 18001 Cowan, Ste. A; Irvine, CA 92627; 714-833-8710

The Bard's Tale

Medieval adventure; the goal is to halt the evil magic spell spread by the wizard Mangar

Apple IIGS; 512K; ProDOS 8; copy protected.

\$49.95 retail

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

The Bard's Tale II: The Destiny Knight

Features new story line, more areas to explore and more magic items

Apple IIGS; 512K; ProDOS 8; copy protected.

\$49.95 retail

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Battle Chess

Animated chess game

Apple IIGS; 512K; GS/OS; not copy protected.

\$49.95 retail

Interplay Productions; 1575 Corporate Dr.; Costa Mesa, CA 92626; 714-549-2411 (technical support) or 800-969-4263 (orders)

Beyond Zork

Adventure into the Great Underground Empire

Apple IIGS; 512K; ProDOS 16; copy protected.

\$19.95 retail

Infocom, Inc.; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0800

Black Jack Academy

Card game on disk

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$39.95 retail

Microllusions; 17408 Chatsworth St.; Granada Hills, CA 91344; 818-360-3715 or 800-522-2041

Bridge 5.0/6.0

Bridge playing program

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$39.95 retail

Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield, NY 14526; 800-828-6573

Bubble Ghost

Bubble-blowing arcade action

Apple IIGS; keyboard or mouse; 512K; ProDOS 16; copy protected.

\$34.95 retail

Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

California Games

Games of skill: surfing; half-pipe skateboarding; roller skating and more

Apple IIGS; 512K; ProDOS 16; copy protected.

\$44.95 retail

Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Captain Blood

Science-fiction adventure

Apple IIGS; 512K; ProDOS 16; copy protected.

\$44.95 retail

Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

Cavern Cobra

Fast action arcade game involving a mission to destroy the world's most dangerous terrorist

Apple IIGS; 768K; ProDOS 16; copy protected.

\$49.95 retail

PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

■ CheatMaster

"Cheat" program

Apple IIGS; 768K.

CheatMaster is a six-in-one "cheat" program. A "cheat" program is one that modifies a user's status in a game to improve their ability to win. It includes character editors for Bard's Tale I, Bard's Tale II and Questron II, and a saved game editor for The Last Ninja. Also included are CDA (Classic Desk Accessory) cheats for TheXder and Arkanoid. These CDA cheats help users survive in the game while they play. There are no "patches" that must be applied to the disk. Documentation is provided in simple help menus.

\$20 retail

Martin Hill; 32 Chelford Rd.; Toronto, Ontario, Canada M3B 2E5; 416-449-8544

Club Backgammon

Accurate simulation of backgammon

Apple IIGS; 512K; ProDOS; not copy protected.

\$39.95 retail

California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Crossword Creator

Creates crossword puzzles

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$29.95 retail

DEC Software; 5307 Lynnwood Dr.; West Lafayette, IN 47906

Dark Castle

Adventure

Apple IIGS; supports SuperSonic Card; 512K; GS/OS; not copy protected.

\$39.95 retail

Three-Sixty Pacific, Inc.; 2105 S. Bascom Ave., Ste. 290; Campbell, CA 95008; 408-879-9144

Entertainment

Defender Of The Crown

Adventure into the Age of Chivalry; battle against the Normans to save England
Apple IIGS; 768K; ProDOS 16; not copy protected.
 \$49.95 retail
 Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake Village, CA 91362; 805-495-6515

Deja Vu II: Lost In Las Vegas

Mystery
Apple IIGS; RGB monitor; 768K; ProDOS 16; copy protected.
 \$49.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

Deja Vu: A Nightmare Comes True

Murder mystery
Apple IIGS; RGB monitor; 768K; ProDOS 16; copy protected.
 \$49.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

Destroyer

Action and simulation game involving a Navy destroyer
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Dondra: A New Beginning...

An animated graphics quest for the Apple IIGS
Apple IIGS; 768K; ProDOS 16; not copy protected.
 \$49.95 retail
 MicroIllusions; 17408 Chatsworth St.; Granada Hills, CA 91344; 818-360-3715 or 800-522-2041

Dream Zone

Graphic adventure game with stereo sound
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49512; 616-698-0888

The Duel: Test Drive II

Driving simulation
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$44.95 retail
 \$19.95 each retail; California Challenge scenery disk or The Supercars car disk
 \$19.95 retail; European Challenge
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Famous Courses Volume II

Three golf courses for use with Mean 18
Apple IIGS; mouse; Mean 18; 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Famous Courses Volume III & IV

Six golf course simulations for use with Mean 18
Apple IIGS; mouse; Mean 18; 512K; ProDOS 16; copy protected.
 \$34.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Fast Break

Three-on-three basketball simulation
Apple IIGS; 512K; ProDOS 16; copy protected.
 Fast Break is a basketball simulation featuring three-on-three, full court action with pro-style plays and television court perspective. Other features include: players and substitutes are chosen by talent and skill; a playbook that features 15 pro-style offenses and five defenses; three-point bombs, soft jumpers and rim-ripping slams; the capability to design plays with Playmaker, one or two-player capability; and more.
 \$44.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

The Fidelity Chessmaster 2100

Computer chess
Apple IIGS; 512K; not copy protected.
 \$49.95 retail
 The Software Toolworks; 19808 Nordhoff Pl.; Chatsworth, CA 91311; 818-885-9000

Final Assault

A mountain-climbing adventure
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Fire Power

Arcade tank battle game
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$24.95 retail
 MicroIllusions; 17408 Chatsworth St.; Granada Hills, CA 91344; 818-360-3715 or 800-522-2041

Flintstones

Prehistoric adventures
Apple IIGS; ROM 1.1; 768K; ProDOS 16; not copy protected.
 \$39.95 retail
 MicroIllusions; 17408 Chatsworth St.; Granada Hills, CA 91344; 818-360-3715 or 800-522-2041

Fractal Explorer

High-resolution color graphic fractal generation program
Apple IIGS; 256K; ProDOS 8; not copy protected.
 \$39.95 retail
 Eclat Microproducts; PO Box 570-756; Miami, FL 33257; 305-233-4666

Garfield Trivia Game

Mind-teasing questions about the world's favorite "fat cat"
Apple IIGS; printer; 64K; ProDOS 8; copy protected.
 \$24.95 retail
 \$62 retail; Lab Pack
 DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Gauntlet

Arcade game featuring attacks by ghosts, grunts, demons and sorcerers

Apple IIGS; 256K; ProDOS 16; copy protected.
 \$44.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

GBA Championship Basketball: Two-On-Two

Basketball simulation
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Gamestar; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0800

Gnarly Golf

Miniature golf
Apple IIGS; color monitor; 512K; ProDOS 8; copy protected.
 \$29.95 retail
 Britannica Software; 345 4th St.; San Francisco, CA 94107; 415-546-1866

GraillQuest

Interactive graphic adventure
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$29.95 retail
 Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield, NY 14526; 800-828-6573

Grand Prix Circuit

Formula One racing simulation
Apple IIGS; 512K; ProDOS 16; copy protected.
 From the curves of Monaco to the straightaways of Germany to the tunnels of Japan, Grand Prix Circuit whisks you to the exclusive world of Formula One racing. Climb behind the wheel of an authentic Formula One race car and compete against nine international rivals for the World Driving Championship. Features include pit stops, tire changes, mirrors, power shifting, eight fast tracks, five skill levels and 900 horsepower.
 \$44.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Great Western Shootout

Action-packed arcade game
Apple IIGS; color monitor; 512K; ProDOS 8; copy protected.
 \$29.95 retail
 Britannica Software; 345 4th St.; San Francisco, CA 94107; 415-546-1866

HardBall!

Baseball simulation
Apple IIGS; color monitor; 512K; ProDOS 16; copy protected.
 \$44.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Hostage

S.W.A.T. terrorist attack
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$39.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

Entertainment

Hunt For Red October

Submarine combat simulation
Apple IIGS; 768K; ProDOS 16; copy protected.
 \$49.95 retail
 The Software Toolworks; 19808 Nordhoff Pl.,
 Chatsworth, CA 91311; 818-885-9000

Impossible Mission II

Action-packed strategy game
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood
 City, CA 94063; 415-366-0606

Jack Nicklaus' Greatest 18 Holes Of Major Championship Golf

Golf simulation
Apple IIGS; mouse; joystick or keyboard; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 \$19.95 retail; add-on accessory disk
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San
 Jose, CA 95128; 408-296-8400

Jigsaw! The Ultimate Electronic Puzzle

Puzzle game
Apple IIGS; color monitor; 768K; ProDOS; not copy protected.
 \$39.95 retail; includes 24 image disks
 \$19.95 retail; additional image disks
 Britannica Software; 345 4th St.; San Francisco,
 CA 94107; 415-546-1866

John Elway's Quarterback

Football action
Apple IIGS; 512K; ProDOS 8; not copy protected.
 Third and ten on your own 30 yard line. Forty-three
 seconds left on the clock and you're down by two
 points. Suddenly, the end zone seems to be miles away.
 If you're going to be a hero, now's the time. John Elway's
 Quarterback features real football action, bringing all the
 strategy and ground pounding excitement of the world's
 greatest sport right to your computer screen. One or two
 players.
 \$39.99 retail
 Virgin Mastertronic Int'l, Inc. — Melbourne House;
 18001 Cowan, Ste. A; Irvine, CA 92627; 714-833-8710

KaleidoKubes

Strategy game
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$29.95 retail
 Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield,
 NY 14526; 800-828-6573

Keef The Thief

Role-playing experience that mixes humor with action
Apple IIGS; 512K.
 In Keef The Thief, you are young Keef, a juvenile
 delinquent out on your own for the first time. You're
 faced with survival in the Tri-City Area — a vermin-
 infested continent tangled with thick, steamy jungles. If
 things aren't bad enough, rumor has it that a supremely
 evil magician is trying to create the magic necessary to
 rule the continent. Since you have delusions of grandeur,
 you set out to beat him to it.
 \$49.95 retail

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404;
 415-571-7171

King Of Chicago

Struggle for power
Apple IIGS; 768K; GS/OS; copy protected.
 \$24.95 retail
 Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake
 Village, CA 91362; 805-495-6515

King's Quest I

3-D medieval adventure that takes Sir Graham on a jour-
 ney to find the magical items that will save the kingdom
 of Daventry
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614;
 209-683-4468

King's Quest II: Romancing The Throne

3-D animated adventure
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614;
 209-683-4468

LaserForce

Three-dimensional, arcade action game
Apple IIGS; color monitor; 1.2 MB; ProDOS 8;
copy protected.
 \$29.95 retail
 Britannica Software; 345 4th St.; San Francisco,
 CA 94107; 415-546-1866

The Last Ninja

Action/adventure martial arts game
Apple IIGS; 128K; GS/OS; copy protected.
 \$19.95 retail
 Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025;
 415-329-0500

Leisure Suit Larry

3-D animated adventure game featuring Larry, the nerd,
 in Lost Wages
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$39.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614;
 209-683-4468

Mad Match

Visual perception game
Apple IIGS; 512K; GS/OS; not copy protected.
 \$39.95 retail
 Baudville, Inc.; 5380 52nd St. SE; Grand Rapids,
 MI 49512; 616-698-0888

Magic Johnson's Basketball

Basketball action
Apple IIGS; 512K; ProDOS 16; not copy protected.
 Magic Johnson's Basketball is an arcade-action game
 featuring high-quality animated graphics, a full-court
 scrolling screen, two-on-two play and full stats. Users
 can make the "jump shot," the "alley oop" and Magic's
 famous "fast break" with a "slam dunk" finish. Dribble
 around your opponent to make the "lay up" that wins
 the game.
 \$39.99 retail
 Virgin Mastertronic Int'l, Inc. — Melbourne House;
 18001 Cowan, Ste. A; Irvine, CA 92627; 714-833-8710

Mancala

Comprehensive simulation of the national game of Africa
Apple IIGS; 512K; ProDOS; not copy protected.
 \$39.95 retail
 California Dreams; 780 Montague Expwy., #403; San
 Jose, CA 95131; 408-435-1445

Marble Madness

Six levels of 3-D runway mazes with stereo music
Apple IIGS; 512K; ProDOS 8; copy protected.
 \$34.95 retail
 Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404;
 415-571-7171

Mean 18: Ultimate Golf

Realistic golf simulation
Apple IIGS; mouse; 512K; ProDOS 16; copy protected.
 \$44.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San
 Jose, CA 95128; 408-296-8400

Mines Of Moria; Mines Of Moria II

Fantasy adventure
Apple IIGS; 256K; ProDOS 8; not copy protected.
 \$19.95 each retail
 DAR Systems International; PO Box 16-4933; Miami,
 FL 33116; 305-529-3572

Mini-Putt

Miniature golf simulation
Apple IIGS; mouse; 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San
 Jose, CA 95128; 408-296-8400

Mixed-Up Mother Goose

Transports children to an "adventure in Mother Goose-
 land"; for the home, nursery school and kindergarten
 class
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$29.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614;
 209-683-4468

Monte Carlo

Blackjack, roulette, craps, baccarat, poker and trente-et-
 quarante
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$39.95 retail
 PBI Software, Inc.; 1155A Chess Dr., Ste. 1; Foster City,
 CA 94404; 415-349-8765

Neuromancer

Role-playing adventure
Apple IIGS; 512K; ProDOS 8; not copy protected.
 \$49.95 retail
 Interplay Productions; 1575 Corporate Dr.; Costa Mesa,
 CA 92626; 714-549-2411 (technical support) or
 800-969-4263 (orders)

Omega

Players design the future's ultimate military cybertank
Apple IIGS; 64K; ProDOS 8; copy protected.
 \$49.95 retail
 Origin Systems, Inc.; 136-B Harvey Rd.; Londonderry,
 NH 03053; 603-644-3360

Entertainment

Paperboy

Paper route packed with the unexpected
Apple IIGS: joystick; 256K; ProDOS 16; copy protected.
 \$39.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook,
 IL 60062; 708-480-1948

Pirates! IIGS

17th century Spanish adventure on and around the
 Caribbean Sea
Apple IIGS; 256K; ProDOS 8; copy protected.
 \$44.95 retail
 MicroProse Software, Inc.; 180 Lakefront Dr.; Hunt Val-
 ley, MD 21030; 301-771-1151

Pits Of Doom!

Adventure
Apple IIGS; 512K; ProDOS 16; not copy protected.
 Pits Of Doom! is a stand-alone text adventure. The
 game starts as you enter a cavern. Suddenly, you are
 trapped far below the surface of the earth. You now must
 find a way out. As you explore, you find something
 extraordinarily evil and decide to investigate.

The description of each room projects its essence,
 features and hidden treasures. In the underground caverns
 there are monsters, pits, traps and secret doors. The
 game contains hundreds of possible combinations. As
 you explore, who knows what you will run into — or if
 you'll live long enough to see what it was.
 \$19.95 retail
 DAR Systems International; PO Box 16-4933; Miami,
 FL 33116; 305-529-3572

Police Quest

3-D animated adventure featuring Sonny Bonds in an
 attempt to stop the flood of illegal drugs into his commu-
 nity
*Apple IIGS: color monitor (SuperSonic stereo card
 optional); 512K; ProDOS 16; not copy protected.*
 \$49.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614;
 209-683-4468

QIX

Arcade game
Apple IIGS; 512K; GS/OS; copy protected.
 QIX is a classic game of mental dexterity and superi-
 or strategy. A player enters an electrical world where he
 or she must avoid packs of roving sparks and waves of
 wandering energy, while trying to conquer a series of
 grids. The game features detailed graphics, unusual
 sound and sophisticated play.
 \$34.95 retail
 Taito Software, Inc.; 206 - 267 W. Esplanade; N. Vancou-
 ver, BC, Canada V7M 1A5; 604-984-3344 or
 800-663-8067

Questmaster I — The Prism Of Heheutotol

First of a trilogy
*Apple IIGS; joystick optional; 768K; GS/OS; not copy
 protected.*
 \$49.95 retail
 MicroIllusions; 17408 Chatsworth St.; Granada Hills,
 CA 91344; 818-360-3715 or 800-522-2041

Questron II

Sequel to Questron
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$49.95 retail
 Strategic Simulations, Inc.; 675 Almanor Ave.; Sunnyvale,
 CA 94086; 408-737-6800

Rastan

Venture to an ancient world of danger
Apple IIGS; 512K; GS/OS; copy protected.
 Rastan is an arcade epic that transports a player to
 the ancient and mythical land of Lograth. Rastan's jour-
 ney takes place on six different levels, and features a
 host of evil creatures and powerful adversaries. Look for
 magical weapons to protect and strengthen Rastan in his
 quest.
 \$34.95 retail
 Taito Software, Inc.; 206 - 267 W. Esplanade; N. Vancou-
 ver, BC, Canada V7M 1A5; 604-984-3344 or
 800-663-8067

Realm Of Altair Series

Trilogy of all-text adventures
Apple IIGS; 256K; ProDOS 8; not copy protected.
 \$69.95 retail
 DAR Systems International; PO Box 16-4933; Miami,
 FL 33116; 305-529-3572

Renegade

Street-style karate action
Apple IIGS; 512K; GS/OS; copy protected.
 Renegade is a fast-paced, street-fighting action game
 that takes place on subway platforms, old shipping piers
 and seedy city streets. The objective is to defeat the gangs
 that you encounter, using all kinds of fast and furious
 fighting techniques. Every level presents new problems.
 \$34.95 retail
 Taito Software, Inc.; 206 - 267 W. Esplanade; N. Vancou-
 ver, BC, Canada V7M 1A5; 604-984-3344 or 800-663-8067

Roadwar 2000

Futuristic war game
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$44.95 retail
 Strategic Simulations, Inc.; 675 Almanor Ave.; Sunnyvale,
 CA 94086; 408-737-6800

Rocket Ranger

Movie tale involving time travel, vile Nazis, mind control
 machines and a jet propelled rocket suit
Apple IIGS; 768K; ProDOS 16; not copy protected.
 \$49.95 retail
 Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake
 Village, CA 91362; 805-495-6515

Scooby Doo

Join Scooby and the gang on four mysteries
*Apple IIGS; ROM 1.1; 768K; ProDOS 16; not copy pro-
 tected.*
 Call for pricing
 MicroIllusions; 17408 Chatsworth St.; Granada Hills,
 CA 91344; 818-360-3715 or 800-522-2041

Sea Strike

Arcade game involving oil tankers under attack
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$39.95 retail
 PBI Software, Inc.; 1155A Chess Dr., Ste. 1; Foster City,
 CA 94404; 415-349-8765

Serve & Volley

Action/strategy tennis simulation
*Apple IIGS; keyboard; 512K; ProDOS 16;
 copy protected.*
 \$39.95 retail
 Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San
 Jose, CA 95128; 408-296-8400

Shadowgate

Fantasy
*Apple IIGS; RGB monitor; 768K; ProDOS 16; copy pro-
 tected.*
 \$49.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook,
 IL 60062; 708-480-1948

Shanghai

Derived from an ancient oriental game called Mah Jongg
Apple IIGS; 512K; GS/OS; copy protected.
 \$19.95 retail
 Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025;
 415-329-0500

Silent Service

World War II submarine simulation game
*Apple IIGS; color monitor recommended; 256K;
 ProDOS 8; copy protected.*
 \$39.95 retail
 MicroProse Software, Inc.; 180 Lakefront Dr.; Hunt Val-
 ley, MD 21030; 301-771-1151

Silpheed

Shoot-'em-up action game
Apple IIGS; 512K.
 \$34.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614;
 209-683-4468

Sinbad And The Throne Of The Falcon

Epic seafaring quest in a search for the Caliph
Apple IIGS; 768K; GS/OS; copy protected.
 \$24.95 retail
 Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake
 Village, CA 91362; 805-495-6515

Skate Or Die

Skateboarding competition
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$39.95 retail
 Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404;
 415-571-7171

Solitaire And Cribbage

Card games
Apple IIGS; 512K; ProDOS 8; not copy protected.
 \$34.95 retail
 Computrek; 28278 Enderly St.; Canyon Country,
 CA 91351; 805-252-4244

Space Quest I — The Sarien Encounter

Animated 3-D adventure game that features Roger Wilco,
 sanitation engineer turned space-age swashbuckler
Apple IIGS; 512K; ProDOS 16; copy protected.
 \$49.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614;
 209-683-4468

Entertainment

Space Quest II — Vohaul's Revenge

3-D animated space adventure game with quality graphics
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$49.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-4468

Star Saga: One, Beyond The Boundary

An interstellar, interactive, role-playing space opera set 800 years in the future; first of a trilogy
Apple IIGS; monitor; 512K; ProDOS 16; not copy protected.
 \$79.95 retail
 Masterplay Publishing Corp.; 8417 Sun State St.; Tampa, FL 33614; 813-888-7773

Star Saga: Two, The Clathran Menace

Combines a captivating science fiction story with the tactics and strategy of a challenging board game
Apple IIGS: 512K; ProDOS 16; not copy protected.
 \$79.95 retail
 Masterplay Publishing Corp.; 8417 Sun State St.; Tampa, FL 33614; 813-888-7773

Stickybear Basketbounce

A multilevel game with bright graphics and animation for the entire family
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
 \$39.95 retail
 \$75 retail; five-disk lab pack
 Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Strategic Conquest II

Strategy war game with 2 billion different world maps and 15 levels of play
Apple IIGS: 128K; ProDOS 8; copy protected.
 \$49.95 retail
 PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Street Sports Soccer

Playing soccer with the old neighborhood gang
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Strip Poker II

Five-card draw poker game with some different stakes; for 18 years and older
Apple IIGS: 512K; ProDOS 16; not copy protected.
 \$39.95 retail; master disk
 \$19.95 each retail; data disk
 Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield, NY 14526; 800-828-6573

Sub Battle Simulator

Command a Navy sub or German Kreigsmarine U-Boat between 1939 and 1945
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Superpuzzle

Fun and learning
Apple IIGS; color monitor; 512K; ProDOS 8; not copy protected.
 \$44.95 retail
 Lynx Computer Products, Inc.; 15115 Ramona Blvd.; Baldwin Park, CA 91706; 818-960-4839 or 800-824-3522

Superstar Ice Hockey

Multilevel ice hockey simulation
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$44.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

Sword Of Sodan

Action-packed, arcade adventure
Apple IIGS; joystick optional; 768K plus extra memory for two-hour instant replay mode; ProDOS 8; copy protected.
 \$49.95 retail
 Discovery Software International, Inc.; 163 Conduit St.; Annapolis, MD 21401; 301-268-9877

Tetris IIGS

Game for developing quick reflexes
Apple IIGS: 512K; ProDOS 16; not copy protected.
 \$39.95 retail
 Spectrum Holobyte; A Div. of Sphere, Inc.; 2601 Challenger Dr.; Alameda, CA 94501; 415-522-3584

Thexder

Pilot an armored robot through multiple attack scenarios and more
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$34.95 retail
 Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-4468

■ The Three Stooges

Interactive movie
Apple IIGS; stereo card and joystick optional; 1 MB; ProDOS 16; not copy protected.
 The Three Stooges is an interactive movie that features eye-popping graphics and animation in coin-op quality arcade sequences. Voices and sound effects are digitized from their classic films.
 The movie begins with our heroes stumbling upon an evil banker who is about to evict an old lady and her three beautiful daughters from their broken down orphanage. Can the boys raise enough money to stave off foreclosure? It's up to the player as the Stooges are maneuvered through a series of odd jobs, including prizefighting, pie throwing and medical madness.
 \$49.95 retail
 Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake Village, CA 91362; 805-495-6515

Ticket To Hollywood

Hollywood trivia; ages 15 to adult
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$39.95 retail
 Blue Lion Software; 7506 N. Broadway Ext., Ste. 505; Oklahoma City, OK 73116; 405-840-6031 or 800-222-2811

Tomahawk

Simulates the cockpit of the U.S. Army's AH-64A Apache helicopter
Apple IIGS; joystick; 768K; ProDOS 16; copy protected.

\$39.95 retail
 Datasoft/IntelliCreations, Inc.; 19808 Nordhoff Pl.; Chatsworth, CA 91311; 818-886-5922

The Tower of Myraglen

Adventure action game; revolves around a dying world known as Myraglen
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$54.95 retail
 PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Triango

Futuristic game of strategy and cunning based on the ancient oriental game of "Go"
Apple IIGS: 512K; ProDOS; not copy protected.
 \$39.95 retail
 California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Trilogy

Sophisticated adventure game involving many intricate plot twists
Apple IIGS: 256K; ProDOS 8; not copy protected.
 \$49.95 retail
 DAR Systems International; PO Box 16-4933; Miami, FL 33116; 305-529-3572

■ Tunnels Of Armageddon

Fast action arcade-style game
Apple IIGS: 512K for ProDOS 16; 768K for GS/OS; not copy protected.
 Beneath the icy wastes of Antarctica, mankind has discovered the entrance to an underground complex left by spacefaring aliens. When an attempt is made to enter the complex, the aliens offer Earth the secret to faster-than-light travel — but only if Earth proves itself worthy. Beyond the door is a series of tunnels that must be successfully navigated in time to prevent the detonation of an explosive device. You have been selected as the best pilot in the solar system. If you are successful, you will go down in history. If you are not successful, the Earth will be destroyed. You are about to enter the Tunnels Of Armageddon.
 \$39.95 retail
 California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Uninvited

Supernatural graphic adventure
Apple IIGS; RGB monitor; 768K; ProDOS 16; copy protected.
 \$49.95 retail
 Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 708-480-1948

Vegas Craps

Accurate simulation of craps as it's played in big Vegas casinos
Apple IIGS: 512K; ProDOS; not copy protected.
 \$39.95 retail
 California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Vegas Gambler

Enter the exciting world of a Las Vegas casino
Apple IIGS: 512K; ProDOS; not copy protected.
 \$39.95 retail
 California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Entertainment

War In Middle Earth

Fantasy game
Apple IIGS: 512K; ProDOS 16; not copy protected.
 J.R.R. Tolkien's panoramic vision of the cataclysmic struggle between good and evil has been skillfully crafted into a single computer game of epic proportions. Follow in the footsteps of Frodo, Aragorn and Gandalf as they battle to get The One Ring to the Crack of Doom. Ranged against you are all the evil forces of the Dark Lord Sauron and the corrupt wizard Saruman. The game takes place on a smoothly scrolling map of Middle Earth. On it, you may test your strategic abilities as you command entire legions to move against the forces of evil.
 \$49.99 retail
 Virgin Mastertronic Int'l., Inc. — Melbourne House; 18001 Cowan, Ste. A; Irvine, CA 92627; 714-833-8710

Warlock

Arcade adventure that combines clever animation and humor
Apple IIGS: 512K; ProDOS 16.
 \$39.95 retail
 Three-Sixty Pacific, Inc.; 2105 S. Bascom Ave., Ste. 290; Campbell, CA 95008; 408-879-9144

Windwalker

Adventure set in the third century B.C.
Apple IIGS: 128K; ProDOS 8; copy protected.
 \$39.95 retail
 Origin Systems, Inc.; 136-B Harvey Rd.; Londonderry, NH 03053; 603-644-3360

Winter Games

Bobsledding, downhill skiing, ice skating, ski jumping and more
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

World Games

International games
Apple IIGS: 512K; ProDOS 16; copy protected.
 \$19.95 retail
 Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

World Tour Golf

Features the world's great courses, complete with hills, trees, sand traps and weather
Apple IIGS: 512K; ProDOS 16; not copy protected.
 \$39.95 retail
 Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Xenocide

Science fiction arcade game
Apple IIGS; joystick recommended; 512K.
 In Xenocide, you are given the task of destroying the three moons orbiting the planet Talos IV in hopes of killing a vicious alien race that has been spreading throughout the galaxy. You will be required to travel across three moon surfaces, through six caverns and three underground Biolabs — each with its own unique features. With agility, strength, endurance and a little luck, you will be able to carry out the mission of Xenocide.

\$49.95 retail
 Micro Revelations, Inc.; PO Box 70430; Reno, NV 89570; 702-825-1132 or 800-442-6002

Zany Golf

A wacky fantasy into miniature golf
Apple IIGS; other Apple II models; 512K; ProDOS 8; copy protected.
 \$39.95 retail
 Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Zoom!

Arcade action
Apple IIGS; joystick optional; 512K; ProDOS 8; copy protected.
 \$29.95 retail
 Discovery Software International, Inc.; 163 Conduit St.; Annapolis, MD 21401; 301-268-9877

Hardware And Peripherals

A2S Series

20, 30, 45 and 60 MB external SCSI hard disk subsystems
Apple IIGS.
 Call for pricing
 CMS Enhancements, Inc.; 1372 Valencia Ave.; Tustin, CA 92680; 714-259-9555

Apollo PC Presenters For Apple IIGS

Allows users to display large-screen presentations; no special software required
Apple IIGS.
 \$1,369 retail; PC-9100GS (add-on)
 \$2,318 retail; PC-9601 (add-on)
 \$1,709 retail; PC-9250GS (built-into OHP)
 \$2,583 retail; PC-9296 (built-into OHP)
 \$2,498 retail; PC-9350GS (built-into OHP and portable)
 \$3,250 retail; PC-9396 (built-into OHP and portable)
 \$199 retail; PC-9670 Wireless Remote for PC-9601, PC-9296, PC-9396
 Apollo Audio Visual; 60 Trade Zone Ct.; Ronkonkoma, NY 11779; 516-467-8033

Apple 3.5 Drive

The IIGS standard drive; provides 800K of program and file storage
Apple IIGS.
 \$429 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple 5.25 Drive

Runs earlier Apple II software released on 5.25-inch disks
Apple IIGS.
 \$329 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple Hard Disk 20SC And 40SC

Provides 20 and 40 MB of storage
Apple IIGS; Apple SCSI Card.
 \$899 retail; 20SC
 \$1,299 retail; 40SC
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple II SCSI Interface Card Revision C

Provides compatibility with high-performance peripherals that use the SCSI standard, including Apple's CD-ROM.
Apple IIGS; SCSI System Cable.
 \$129 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple II Video Overlay Card

Enables users to superimpose computer graphics over video images from an external source
Apple IIGS; 512K; ROM Version 01 or bigger; AppleColor or Composite or RGB monitor.
 \$549 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS Memory Expansion Card

Extended memory board expandable to 1 MB using additional memory in 256K increments
Apple IIGS.
 \$229 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS System Fan

Cools Apple IIGS with three or more expansion cards
Apple IIGS.
 \$49 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS Upgrade

Transformer kit for Apple IIe; includes 256K of built-in memory, with RAM that is expandable to 8 MB
Apple IIe.
 \$499 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple MIDI Interface

Musical instrument digital interface (MIDI); includes one MIDI-In plug and one MIDI-Out plug
Apple IIGS; MIDI-equipped instrument; compatible software
 \$99 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple Personal Modem

1,200/300-baud modem
Apple IIGS.
 \$279 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleCD SC

Optical disc storage device
Apple IIGS; Apple SCSI Card (Rev. C).
 \$1,199 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleColor RGB Monitor

Displays high-resolution text and color graphics
Apple IIGS.
 \$599 retail
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Hardware And Peripherals

Audio Animator

MIDI device, stereo digitizer and stereo playback machine combined; includes software and external connector box

Apple IIGS; 1 MB; GS/OS.

\$239 retail

Applied Engineering, PO Box 5100; Carrollton, TX 75011; 214-241-6060

ComputerEyes IIGS

Color video digitizer that captures images for use in popular desktop publishing and paint programs

Apple IIGS; video source: 768K; GS/OS.

\$249.95 retail

Digital Vision, Inc.; 270 Bridge St.; Dedham, MA 02026; 617-329-5400

ComputerEyes/2

Video digitizer with GS software support that captures images for use in popular desktop publishing and paint programs

Apple IIGS; video source: 256K; ProDOS 8.

\$129.95 retail; ComputerEyes/2

\$19.95 retail; ComputerEyes/2 GS Support Package

Digital Vision, Inc.; 270 Bridge St.; Dedham, MA 02026; 617-329-5400

Conserver

Integrated unit providing six AC outlets, surge protection and a fan

Apple IIGS.

The Conserver is an integrated disk drive organizer, switched power surge suppressor and cooling fan. Drawing air from the top of the IIGS at a rate of 18 cubic feet per minute, Conserver offsets the dangerous heat produced by expansion cards. Special line conditioning filters and dual surge suppression circuitry protect against power surges, reduce noise and provide "clean" power. Six switched AC power outlets line the rear of the Conserver to accommodate the computer, monitor and four other peripherals. To reduce clutter, the unit is designed to house two 3.5-inch disk drives or one disk drive and the special diskette holder included.

\$119 retail

Applied Engineering, PO Box 5100; Carrollton, TX 75011; 214-241-6060

The CrystalPrint Publisher

PostScript-language-compatible page printer

Apple IIGS.

\$4,499 retail

Qume Corp.; 500 Yosemite Dr.; Milpitas, CA 95035; 408-942-4000

CT-20; CT-40

20 and 40 MB external hard disk drives

Apple IIGS.

\$759 retail; CT-20 (includes Apple SCSI card)

\$999 retail; CT-40 (includes Apple SCSI card)

Chinook Technology; 601 Main St., #635; Longmont, CO 80501; 303-678-5544

DataLink 1200 And DataLink 2400

Internal 1,200 bps and 2,400 bps modem boards complete with communications software

Apple IIGS; other Apple II models.

\$179 retail; DataLink 1200

\$239 retail; DataLink 2400

Applied Engineering, PO Box 5100; Carrollton, TX 75011; 214-241-6060

DataLink Express

External modem

Apple IIGS.

DataLink Express is an upgradable, full-featured external modem. It features a comprehensive status light array, Line Engage indicator and an upgradable design that allows for the addition of send-only fax capability and MNP error correction. DataLink Express is fully Hayes compatible and operates at 300, 1,200 and 2,400 baud. With the optional send-only fax, text and graphics can be composed on the IIGS and directly faxed at 4,800 baud. The MNP option assures 100 percent transmission accuracy.

\$249 retail

\$89 retail; optional MNP

Applied Engineering, PO Box 5100; Carrollton, TX 75011; 214-241-6060

DCA1000

Six outlet strip with surge suppressors and phone/modem protection

Apple IIGS.

\$59.95 retail

Data Spec; 9410 Owensmouth Ave.; Chatsworth, CA 91311; 818-772-9977

Deluxe Power Console-Plus Surge Suppressor And Noise Filter

Surge suppressor and noise filter

Apple IIGS.

\$125.95 retail

Kalgio Electronics Co., Inc.; 6584 Ruch Rd.; E. Allen Township; Bethlehem, PA 18017; 215-837-0700 or 800-524-0400

Digitizer And Digitizer Professional

Two-channel multifunction audio digitizer; plugs directly into the Supersonic stereo card expansion connector

Apple IIGS; 512K; ProDOS 16.

\$59.95 retail; Digitizer

\$189.95 retail; Digitizer Professional

MDIdeas, Inc.; 1155A Chess Dr., Ste. H; Foster City, CA 94043; 415-573-0580

DoubleTalk

Speech synthesizer

Apple IIGS; other Apple II models: 64K; ProDOS 8.

\$249.95 retail

RC Systems, Inc.; 121 W. Winesap Rd.; Bothell, WA 98012; 206-672-6909

Echo IIb Speech Synthesizer

Text-to-speech board compatible with software written for the Echo II and Echo+ boards

Apple IIGS; 256K; ProDOS 8 and DOS 3.3.

\$129.95 retail

Street Electronics Corp.; 6420 Via Real; Carpinteria, CA 93013; 805-684-4593

Fast-Kache Card

Hard disk DMA caching controller

Apple IIGS.

The Fast-Kache Card is a hard disk controller that improves the performance of any SCSI hard disk (and the Applied Engineering Vulcan and Applied Ingenuity

InnerDrive internal hard drives) by 500 to 1,000 percent. The card replaces the current hard disk controller(s), uses ANSI and Apple Standard partitioning, supports the latest software from Apple and executes at a fast 10 MHz.

Features include: direct replacement for the Apple SCSI Card; super-fast Native Mode Driver for GS/OS (System Disks 4.0 and 5.0); can boot into the Finder in under four seconds; will control up to eight SCSI and internal disk devices; will control both an internal drive and up to seven external SCSI devices; can reduce or eliminate slot congestion; is compatible with all accelerators on the market; and more.

\$250 retail; 256K

\$375 retail; 1 MB

\$79.95 retail; Applied Engineering Vulcan option add-on

\$79.95 retail; Applied Ingenuity InnerDrive/OuterDrive option add-on

Ohio Kache Systems Corp.; 4160 Little York Rd.; Dayton, OH 45414; 513-890-3913 or 800-338-0050

FastMath

Math coprocessor card

Apple IIGS.

FastMath is a math coprocessor card that calculates math functions, such as multiply, divide, square root, sine, cosine, tangent, arc tangent, logarithms and exponentials, two to 12 times faster. Although it works alone, FastMath's accelerations are actually in addition to the speed improvements of the TransWarp GS accelerator. It comes complete with four disks of Applied Engineering's Applesoft Basic Enhancer software, assembly language source code and macro-controlled firmware for faster and more accurate math functions.

\$179 retail

Applied Engineering, PO Box 5100; Carrollton, TX 75011; 214-241-6060

FingerPrint G+

Parallel graphic interface for parallel printers

Apple IIGS; printer.

\$79 retail

Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FingerPrint GSi Version III

Screen dump graphic utility card

Apple IIGS; printer.

\$149 retail

Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FingerPrint SuperSerial

Enhanced serial graphic printer interface card

Apple IIGS; printer.

\$79 retail

Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FX/20, FX/45, FX/80

External SCSI hard disk drive; contains FX System Software on 3.5-inch disk

Apple IIGS; SCSI board.

\$649 retail; FX/20

\$799 retail; FX/45

\$1,049 retail; FX/80

GCC Technologies, Inc.; 580 Winter St.; Waltham, MA 02154; 617-890-0880

Hardware And Peripherals

Grappler C/Mac/GS

Universal parallel printer interface for Epson, Okidata, Star and other printers

Apple IIGS; parallel printer.

\$119 retail

Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

GS Juice Plus

Memory cards that provide 1 to 4 MB of memory expansion

Apple IIGS.

\$299 retail; 1 MB

Applied Ingenuity; 14922M Ramona Blvd.; Baldwin Park, CA 91706; 818-960-1485 or 800-346-0811

GS-RAM And GS-RAM Plus

Extended memory boards, come with AppleWorks enhancement, graphic memory test and disk caching software

Apple IIGS; ProDOS 8.

\$109 retail; 0K GS-RAM

\$219 retail; 256K GS-RAM

\$359 retail; 512K GS-RAM

\$639 retail; 1 MB GS-RAM

\$919 retail; 1.5 MB GS-RAM

\$169 retail; 0 MB GS-RAM Plus

\$599 retail; 1 MB GS-RAM Plus

\$1,049 retail; 2 MB GS-RAM Plus

Call for pricing; GS-RAM 3-8 MB

Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

GS-RAM Ultra

Memory expansion

Apple IIGS; ProDOS 16 or GS/OS.

\$169 retail; 0K

\$239 retail; 256K

\$379 retail; 512K

Call for pricing; 1 MB to 4 MB

Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

ImageBuffer

ImageWriter II printer buffer providing 64K (expandable to 128K) of buffer storage

Apple IIGS; other Apple models; ImageWriter II.

\$79 retail

Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

ImageWorks II Board

Gives the Apple IIGS advanced imaging and graphics capabilities

Apple IIGS; other Apple II models; 64K.

\$350 retail; ImageWorks Board

\$150 retail; ImageWorks II Color Adapter

Redshift Limited; PO Box 4335; Mountain View, CA 94040; 415-322-7373

ImageWriter II

Apple standard printer

Apple IIGS; other Apple models.

\$595 retail; ImageWriter II

\$99 retail; ImageWriter II 32K Memory Option

\$225 retail; Sheet Feeder

565 retail; Black Ribbon (pack of six)

\$83.70 retail; Color Ribbon (pack of six)

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

ImageWriter LQ

Letter-quality, wide-carriage, dot matrix printer

Apple IIGS; other Apple models.

\$1,399 retail; ImageWriter LQ

\$299 retail; Sheet Feeder

\$169 retail; Additional Bins

\$49 retail; Envelope Feed

\$114 retail; Black Ribbon (pack of six)

\$150 retail; Color Ribbon (pack of six)

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Indiana Cash Drawer

Cash drawers

Apple IIGS.

The EL-Series and SI-Series Cash Drawers are hardwood or steel electronic cash drawers designed to operate from the same serial communications port as the printer at a point-of-sale workstation. The units are completely cabled to the system requirements and are available in popular colors with a variety of removable money trays to suit specific applications.

\$220 to \$472 retail; price depends on application

Indiana Cash Drawer Co., Inc.; PO Box 236; Shelbyville, IN 46176; 317-398-6643

Inner Drive

Internal hard disk drives

Apple IIGS; IIe.

\$499 retail; 20 MB

\$699 retail; 40 MB

Applied Ingenuity; 14922M Ramona Blvd.; Baldwin Park, CA 91706; 818-960-1485 or 800-346-0811

J/L 910

14-inch high-resolution color monitor on swivel;

1,120 by 750 pixels

Apple IIGS.

\$1,495 retail

J/L International Trading Co. USA, Inc.; 8730 Sunset Blvd.; Los Angeles, CA 90069; 213-657-1836

KoalaPad+

Graphics input system for the Apple II family of computers

Apple IIGS; 48K; DOS 3.3.

\$135.95 retail

Koala Technologies, A Pentron Co.; 70 N. 2nd St.; San Jose, CA 95113; 408-287-6311

Line-Saver Uninterruptible Power Systems (UPS)

Provide emergency power when the utility power fails or is unstable. Novell and Unix compatible

Apple IIGS; other Apple II models.

\$549 retail; starting price

Kalglo Electronics Co., Inc.; 6584 Ruch Rd.; E. Allen

Township; Bethlehem, PA 18017; 215-837-0700 or

800-524-0400

M300

3.5-inch 800K floppy disk drive

Apple IIGS.

\$259 retail

SystemGate, Inc.; 1406 S. Raymond Ave.; Alhambra, CA 91803; 818-282-4720

MagniView 200

Computer-data display panel

Apple IIGS.

\$1,095 retail

Dukane Corp.; 2900 Dukane Dr.; St. Charles, IL 60174; 800-634-2800 or 800-356-6540

Master Piece Remote

Two-part power center (outlet strip and remote control) with five outlets, surge, noise and modem protection

Apple IIGS.

\$169.95 retail

Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Meirick UPS Systems

Uninterruptible power system (UPS) that provides continuous computer-grade power during power failures, brownouts and surges

Apple IIGS; other Apple II models.

\$449 retail; Meirick 400

\$549 retail; Meirick 450 Slimline

\$749 retail; Meirick 850 Slimline

\$795 retail; Meirick 1000

\$1,045 retail; Meirick 1400

Meirick, Inc.; Box 298; Frisco, CO 80443; 303-668-3251

MemorySaver

Hardware/software system that transforms standard IIGS memory boards into instant-access ROM disks

Apple IIGS; compatible memory card; 256K; ProDOS 8.

\$149.95 retail

Checkmate Technology, Inc.; 509 S. Rockford Dr.;

Tempe, AZ 85281; 602-966-5802 or 800-325-7347

MP6

5.25-inch diskette drive

Apple IIGS; other Apple II models.

\$179 retail

Quality Computers; 15102 Charlevoix; Grosse Pointe, MI 48230; 313-331-0700 or 800-443-6697

Multi-Kache Card

Multidisk DMA caching controller

Apple IIGS.

\$295 retail; 256K

\$465 retail; 1 MB

\$79.95 retail; SCSI option add-on

\$79.95 retail; Applied Engineering Vulcan option add-on

\$79.95 retail; Applied Ingenuity InnerDrive/OuterDrive option add-on

Ohio Kache Systems Corp.; 4160 Little York Rd.; Dayton, OH 45414; 513-890-3913 or 800-338-0050

MultiRam GS

Extended memory board adding from 256K to 2 MB of memory

Apple IIGS; 256K; ProDOS 8.

\$254 retail; 256K

\$399 retail; 512K

\$689 retail; 1 MB

\$1,238 retail; 2 MB

\$7.95 retail; MemorySaver Adapter

\$39.95 retail; MemorySaver Extender

Checkmate Technology, Inc.; 509 S. Rockford Dr.;

Tempe, AZ 85281; 602-966-5802 or 800-325-7347

Hardware And Peripherals

OCS 2-40 Stereo Amplifier; JBL Control 1 Speakers

Stereo amplifier
Apple IIGS.
 \$179 retail; OCS 2-40
 \$239 retail; JBL Control 1 Speakers
 Orange County Speaker, Inc.; 13686 Newhope St.; Garden Grove, CA 92643; 714-530-3860

OctoRam And OctoRam ESP

Extended memory boards; available with an optional Extended Static Ram Pack (ESP board)
Apple IIGS.
 \$199.95 retail; OctoRam with 256K
 \$899.95 retail; OctoRam with 2 MB (other configurations available)
 \$179.95 retail; 128K OctoRam ESP (requires OctoRam board)
 MDIdeas, Inc.; 1155A Chess Dr., Ste. H; Foster City, CA 94404; 415-573-0580

Parallel Pro and Buffer Pro

Parallel printer interface and buffer
Apple IIGS; other Apple II models.
 \$99 retail; Parallel Pro
 \$109 retail; Buffer Pro Option with 32-page buffer
 \$169 retail; Buffer Pro Option with 128-page buffer
 \$239 retail; Buffer Pro Option with 256-page buffer
 Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Passport MIDI Interface For IIGS (Serial Port)

Provides one MIDI In and one MIDI Out
Apple IIGS; any MIDI equipped synthesizer or drum machine.
 \$129.95 retail
 Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

PC Transporter

Board that brings MS-DOS capabilities to the Apple IIGS
Apple IIGS; other Apple II models; 64K; ProDOS 8.
 \$499 retail; PC Transporter with 768K
 \$259 retail; 5.25" 360K Drive
 \$389 retail; Dual-Drive 5.25" System
 \$139 retail; optional IBM-style keyboard
 Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Phasor

Speech and sound board that runs many sound-oriented software programs written for Apple II computers
Apple IIGS; 64K; ProDOS 8.
 \$169 retail
 Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Power Tree

Outlet strip surge suppressors
Apple IIGS.
 \$29.95 retail; Power Tree 10
 \$49.95 retail; Power Tree 20
 \$99.95 retail; Power Tree 50
 Kensington Microwave Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

PowerLine

Surge suppressors
Apple IIGS.
 \$14.95 retail; PowerLine One Model S1
 \$29.95 retail; PowerLine Four Model S4A
 \$29.95 retail; PowerLine Six Model S6A
 Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Professional Plus

MIDI interface
Apple IIGS; any MIDI-equipped synthesizer.
 \$125 retail
 Opcode Systems; 3641 Haven Dr., Ste. A; Menlo Park, CA 94025; 415-369-8131

ProGrappler

Parallel printer interface
Apple IIGS; Apple IIe.
 \$119 retail
 Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

ProModem 2400A

Internal modem
Apple IIGS; other Apple II models; communications software; 64K.
 \$179 retail
 Prometheus Products, Inc.; 7225 SW Bonita; Tigard, OR 97223; 503-624-0571

Proxima Data Display 200

LCD display panel that projects computer images via an overhead projector
Apple IIGS.
 \$1,199 retail
 Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Proxima Intelligent Power Systems

Standby power supply
Apple IIGS.
 \$649.95 retail; Proxima IPS 450+
 \$749.95 retail; Proxima IPS 500+
 Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Proxima Power Director P25

Power protection and surge suppression with four-outlet power control center
Apple IIGS.
 \$99.95 retail
 Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

RamKeeper

Constant power for RAM boards; provides instant access to programs
Apple IIGS; 256K; extended memory board.
 \$189 retail
 Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

RAMTalker

A SmoothTalking speech card
Apple IIGS; Apple IIe; 64K; ProDOS 8.
 \$159.95 retail
 Electronic Learning Systems, Inc.; 2630 NW 39th Ave.; Gainesville, FL 32605; 800-443-7971

RAMTalker Plus

All-in-one multifunction speech board that combines a battery-protected RAM Disk, high-quality SmoothTalker speech and a clock/calendar
Apple IIGS; IIe; 64K; ProDOS 8.
 \$200 retail; 128K Model
 \$340 retail; 256K Model
 Electronic Learning Systems, Inc.; 2630 NW 39th Ave.; Gainesville, FL 32605; 800-443-7971

Serial Pro

Multifunction board combining a serial port with a functioning clock/calendar board
Apple IIGS; other Apple II computers.
 \$139 retail
 Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Sider

External hard disk drive and tape backup system
Apple IIGS; IIe.
 \$595 retail; Sider Model D2 (20 MB/65ms)
 \$795 retail; Sider Model D4A (40 MB/61ms)
 \$995 retail; Sider Model D4F (40 MB/25ms)
 \$895 retail; Sider Model T6 Tape (60 MB/89 ips)
 \$1,195 retail; Sider Model D7T (70 MB/29ms)
 \$1,695 retail; Sider Model D9 (87 MB/18ms)
 \$2,495 retail; Sider Model C96 (87/60 MB combo)
 First Class Peripherals; 2875 Northwestern Pkwy.; Santa Clara, CA 95051; 408-980-0200

Slide-On

Replacement battery for Apple IIGS
Apple IIGS; 512K.
 The Slide-On is a user-installable battery replacement for the Apple IIGS. Using wire cutters, scissors or nail clippers, the old battery is cut out, leaving the original wires still soldered to the motherboard. The Slide-On battery has special terminals designed to fit into the old battery wires. Installation takes a few minutes, and complete, easy-to-follow instructions are included.
 \$9.95 retail
 Nite Owl Productions; 5734 Lamar Ave.; Mission, KS 66202; 913-362-9898

Slot-Mover

Expansion card
Apple IIGS; RamKeeper.
 Combined with RamKeeper, Slot-Mover enables a user to combine two memory cards, RamKeeper and still keep Slot 7 open.
 \$39 retail
 Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

SmartCard

SCSI board that allows the MacCrate external drives to be compatible with the Apple IIGS and IIe
Apple IIGS; IIe.
 \$129 retail; SmartCard
 \$645 retail; bundled with MacCrate 20
 \$840 retail; bundled with MacCrate 40
 \$939 retail; bundled with MacCrate 60
 Crate Technology; 6850 Vineland Ave., Bldg. M; N. Hollywood, CA 91605; 818-766-4001

Hardware And Peripherals

Smartmodem 1200A

Provides 1,200-baud communications and more
Apple IIGS; communications software.
\$349 estimated retail; Smartmodem 1200A
\$119 retail; Smartcom software
Hayes Microcomputer Products, Inc.; PO Box 105203;
Atlanta, GA 30348; 404-449-8791

Sonic Blaster

Stereo digitizer that records, amplifies, allows editing and
plays back in full stereo; includes software
Apple IIGS; 512K; GS/OS.
\$129 retail
Applied Engineering; PO Box 5100; Carrollton, TX
75011; 214-241-6060

SoundAce 2.0

Audio digitizer that uses powerful mouse-and-windows
software to record and edit sounds
Apple IIGS; 768K; GS/OS.
\$34.95 retail; software only
\$79.95 retail; with microphone and hardware
Parallax, Inc.; 6200 Desimone Ln., #69A; Citrus Heights,
CA 95621; 916-721-8217

Studio Plus Two

MIDI interface
Apple IIGS; any MIDI-equipped synthesizer
\$225 retail
Opcode Systems; 3641 Haven Dr., Ste. A; Menlo Park,
CA 94025; 415-369-8131

Super-Comm

Serial interface card that makes communications possible
between any Apple or Franklin computer and a variety
of devices
Apple IIGS; other Apple II models.
\$89.95 retail
Sequential Systems, Inc.; 1200 Diamond Cir., Ste. M-2;
Lafayette, CO 80026; 303-666-4549

Supersonic

Digitized stereo board; supports Ensoniq sound chip
Apple IIGS; 512K; ProDOS 16.
\$59.95 retail
MDIdeas, Inc.; 1155A Chess Dr., Ste. H; Foster City,
CA 94404; 415-573-0580

TeleSpiker

Surge suppressor/power line filter
Apple IIGS.
\$85.95 retail
Kalglo Electronics Co., Inc.; 6584 Ruch Rd., E. Allen
Township; Bethlehem, PA 18017; 215-837-0700 or
800-524-0400

ThunderScan GS

Replaces an ImageWriter's ribbon cartridge with a digitizing
scanning cartridge
*Apple IIGS; other Apple II models; ImageWriter; 512K;
ProDOS 16.*
\$219 retail
Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94563;
415-254-6581

TransWarp GS

Accelerator card that increases the IIGS' processing
speed 2.5 times; compatible with all standard software
and hardware
Apple IIGS.
\$399 retail
Applied Engineering; PO Box 5100; Carrollton,
TX 75011; 214-241-6060

Vulcan

Internal hard disk drives
Apple IIGS; IIe
\$649 retail; 20 MB
\$849 retail; 40 MB
\$1,795 retail; 100 MB
Applied Engineering; PO Box 5100; Carrollton,
TX 75011; 214-241-6060

Æ 3.5 Drive

External 3.5-inch drive
Apple IIGS; Apple IIe.
Call for pricing
Applied Engineering; PO Box 5100; Carrollton,
TX 75011; 214-241-6060

■ Æ 5.25" Disk Drive

Hard disk drive
*Apple IIGS; other Apple II models with 5.25-inch con-
troller card.*
The Æ 5.25" Disk Drive features an improved design
for greater reliability. A DB-19 connector plugs directly
into the back of an Apple IIGS, and the drive can be
daisy-chained on the back of an Apple or Applied Engi-
neering 3.5-inch drive. The FCC-approved drive is fully
compatible with all Apple II software and features a spe-
cial pulse motor for accuracy, reliability and speed. It is
143K formatted with 35 tracks; 16-sector, super quiet
operation; and a full one-year warranty. A 24-inch cable
is included.
Call for pricing
Applied Engineering; PO Box 5100; Carrollton,
TX 75011; 214-241-6060

Music

A Guide To Computer Music

Introductory resource for musical electronics, Apple,
IIGS, Macintosh and MIDI setups
\$16.95 retail
Sound Management; PO Box 3053; Peabody, MA 01961;
800-548-4907

Diversi-Tune

Turns the Apple IIGS into a MIDI synthesizer and
recorder; plays up to 32 channels simultaneously
*Apple IIGS; MIDI interface optional; 512K; ProDOS 8;
not copy protected.*
\$75 retail
Diversified Software Research, Inc.; 34880 Bunker Hill;
Farmington, MI 48331; 313-553-9460

ECS Music Training Programs

Family of music training products
*Apple IIGS; internal MIDI card; synthesizer; 512K; DOS
3.3; copy protected.*

\$39.95 retail; Keyboard Tutor-MIDI
\$39.95 retail; Early Music Skills-MIDI
\$79.95 retail; Keyboard Extended Jazz Harmonies-MIDI
\$79.95 retail; Keyboard Fingerings-MIDI
\$79.95 retail; Keyboard Chords-MIDI
\$79.95 retail; Keyboard Arpeggios-MIDI
\$79.95 retail; Keyboard Speed Reading-MIDI
\$39.95 retail; Musical Stairs-MIDI
\$39.95 retail; Note Speller
\$99.95 retail; Elements Of Music
\$99.95 retail; Music Flash Cards
\$99.95 retail; Patterns In Pitch
\$99.95 to \$129.95 retail; 21st Century Music Series
Electronic Courseware Systems, Inc.; 1210 Lancaster Dr.;
Champaign, IL 61821; 217-359-7099

■ Fundamentals Of Music

Fundamental musical concepts and literacy
Apple IIGS; 512K; ProDOS 8; not copy protected.
Fundamentals Of Music contains 11 programs,
including four note spellers in four clefs (as students
view a note on the staff, they will click a labeled key on
a keyboard icon — a correct response sounds the correct
pitch); two multiple-choice programs to identify com-
mon Italian musical terms and common musical symbols;
two programs in key signature recognition for all major
and minor keys; one scale tutorial to introduce and rein-
force concepts of constructing major scales; one major
scale builder (students construct scales by "playing"
proper notes on a keyboard icon); and one program with
four levels of rhythmic recognition (after a pattern is
sounded by the computer, students select the proper
notation).
\$39.95 retail
AABACA; 3137 James Ave. S; Minneapolis, MN 55408;
612-822-9279

Instant Music

Music creativity tool; up to four instruments can be
played at once; uses colored bars in place of standard
notation to allow anyone to make music quickly
Apple IIGS; 512K; ProDOS 16; not copy protected.
\$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404;
415-571-7171

Instant Synthesizer

Turns the IIGS into a sampling synthesizer
Apple IIGS; 768K; ProDOS 16; not copy protected.
\$79.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404;
415-571-7171

■ Intervals, Scales & Chords

Provide exercises in constructing intervals, scales and
chords, all in treble clef; intended for more advanced stu-
dents of music theory
Apple IIGS; 512K; ProDOS 8; not copy protected.
Intervals, Scales & Chords is comprised of 11 pro-
grams. Interval Tutorial is a step-by-step, self-tutor used in
the construction of all common major and minor inter-
vals, from seconds to sevenths. Intervals contains two
drill programs: one for common intervals and the other
for the more uncommon intervals. Scales contains four
programs: Major scales, Harmonic Minor scales, Melodic
Minor scales and Modal scales. Chords contains four pro-
grams: Triads I (common major and minor triads), Triads
II (diminished and augmented triads), Inversions (of
common triads) and Sevenths (root position dominant,
major, minor and fully diminished sevenths).

Music

\$39.95 retail

AABACA; 3137 James Ave. S; Minneapolis, MN 55408; 612-822-9279

Master Tracks Jr. For IIGS

Personal MIDI recording studio that provides tools for composing, recording and editing music via a graphical interface

Apple IIGS; Passport serial port MIDI interface; MIDI-equipped instrument; 1.25 MB; GS/OS; not copy protected.

\$149.95 retail

Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

Master Tracks Pro

MIDI recording and editing package

Apple IIGS; Passport Serial Interface or compatible MIDI instrument(s); 1.25 MB; GS/OS.

\$395 retail

Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

■ MIDI Messenger

TML Pascal source-code-based IIGS programming tutorial and MIDI utility

Apple IIGS; MIDI interface optional; 768K; GS/OS; not copy protected.

MIDI Messenger provides both a ready-to-run MIDI utility and an easy-to-follow tutorial series that documents the included source code. The utility lets users compose and transmit a variety of basic MIDI commands using the IIGS' mouse and keyboard.

Taken from the "Inside Your IIGS Toolbox" and "Reference Pull-Out" features of "Music, Midi and Your Apple II," the TML Pascal-based programming tutorial will help users take command of their IIGS computers. By using the supplied source code and following the suggested readings and study goals, users can learn the essentials of IIGS programming or customize their own personal "Son of MIDI Messenger" application.

\$29.95 retail; single unit

\$149.95 retail; lab pack (10 students)

MMP Systems; 20681 Celeste Cir.; Cupertino, CA 95014; 408-996-9270

Music Construction Set

Music composition system; 33 digitized instruments; MIDI output; and stereo-music capability

Apple IIGS; stereo card and speakers recommended; 256K; ProDOS 8; not copy protected.

\$49.95 retail

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

The Music Studio 2.0

Music creation program with pull-down menus, music paint box and more

Apple IIGS; 768K; GS/OS; not copy protected.

\$69.95 retail

Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Music, Midi And Your Apple II

Informational newsletter

\$14.95 retail; one-year subscription

\$26 retail; two-year subscription

MMP Systems; 20681 Celeste Cir.; Cupertino, CA 95014; 408-996-9270

MusicShapes

Creative learning environment that involves a user in the process of music making and idea development; uses Ensoniq sound chip. MIDI compatible — Apple MIDI device MIDI card

Apple IIGS; 512K; GS/OS; not copy protected.

\$129 retail

Music Systems for Learning, Inc.; 311 E. 38th St., Ste. 20C; New York, NY 10016; 212-661-6096

Pyware Instrument Designer

Sound-wave designer that enables users to create an infinite variety of synthesized sounds using the built-in Ensoniq chip; sounds can be ported to the Pyware Music Writer

Apple IIGS; synthesizer and printer optional; 512K;

ProDOS 16; not copy protected.

\$129 retail

Pygraphics Corp.; PO Box 639; Grapevine, TX 76051; 817-481-7536 or 800-222-7536

Pyware MIDI Translator

Converts sequencer files into notation files to be used with Pyware Music Writer

Apple IIGS; synthesizer and sequencer program; 768K; ProDOS 16 and GS/OS; not copy protected.

\$79 retail

Pygraphics Corp.; PO Box 639; Grapevine, TX 76051; 817-481-7536 or 800-222-7536

Pyware Music Writer

Professional music writing program designed for the IIGS; any type of markings and notations are available; tutorial on basic music theory available with Level I

Apple IIGS; printer; optional MIDI-compatible synthesizer; 768K; ProDOS 16 and GS/OS; not copy protected.

\$119 retail; Limited Edition

\$295 retail; Special Edition

\$595 retail; Professional Model

Pygraphics Corp.; PO Box 639; Grapevine, TX 76051; 817-481-7536 or 800-222-7536

Sonix

Music interface for Basic programs

Apple IIGS; two 3.5-inch drives; RGB monitor; 1 MB; ProDOS 8; not copy protected.

\$59.95 retail

So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298, 714-963-3392 or 800-648-9621 (orders)

Supermusic

Adds six music commands to Applesoft Basic

Apple IIGS; 512K; ProDOS 8; not copy protected.

\$39.95 retail

Lynx Computer Products, Inc.; 15115 Ramona Blvd.; Baldwin Park, CA 91706; 818-960-4839 or 800-824-3522

■ Understanding Music

Helps develop the cognitive concepts necessary to understand and deal with fine music

Apple IIGS; 512K; ProDOS 8; not copy protected.

Understanding Music was prepared for music appre-

ciation courses that are based as much or more on listening skills as upon historical data. Numerous vocabulary exercises help develop the cognitive concepts necessary to understand and deal with fine music. Many polyphonic musical examples provide practice in perceiving compound and simple meters, musical textures, major and minor modes, tonic and dominant relationships and phrase types. There are several demonstrations of musical forms, from fugues to sonatas, that print an on-screen analysis as the music itself unfolds.

\$39.95 retail

AABACA; 3137 James Ave. S; Minneapolis, MN 55408; 612-822-9279

■ The Well-Tempered Ear

Ear training

Apple IIGS; 512K; ProDOS 8; not copy protected.

Designed as an ear-training disk, these exercises provide many examples for practice in recognizing, recreating and identifying intervals, chords, melodies and rhythms. Exercises include: Rhythm; Intervals, Triads and Seventh Chords; and Melodic Dictation.

\$39.95 retail

AABACA; 3137 James Ave. S; Minneapolis, MN 55408; 612-822-9279

Networking

AppleShare File Server V2.0

Workgroup file server software

Apple IIGS; other Apple computers.

\$799 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleShare IIGS Workstation Software

Workgroup software

Apple IIGS; other Apple models.

\$99 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleShare Print Server

Network print server; enhanced version of LaserShare

Apple IIGS; other Apple computers.

\$299 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Aristotle

Provides educational institutions with access to ProDOS applications stored on an AppleShare File Server

Apple IIGS; other Apple II models.

\$199 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

ELAN Networking System

Educational Local Area Network (ELAN)

Apple IIGS; other Apple II models; one Satellite board; one expander card; twisted pair cable; AROS III software; 128K; ProDOS 8; DOS 3.3; copy protected.

\$267 retail; per remote station

Lan-Tech, Inc.; 11811 N. Tatum Blvd., Ste. P-150;

Phoenix, AZ 85028; 602-953-6300

Networking

Inter•Poll Network Administrator's Utility

Contains tools that an AppleTalk network administrator can use to implement a network support program
Apple IIGS; workstation software.
\$129 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

MouseFiler Network Utilities

Enables an Apple II user to work with an AppleShare server over the AppleTalk network; Macintosh-style desktop using windows, pull-down menus and the mouse
Apple IIGS; AppleShare Server, AppleTalk Network and Apple II Workstation board; 128K; ProDOS 8; not copy protected.
\$199.95 retail; institutional POs accepted
Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton, MA 01720; 508-263-1870

Q-System II

Printer-sharing network
Apple IIGS; 64K; ProDOS 8.
\$495 retail; 256K
Sequential Systems, Inc.; 1200 Diamond Cir., Ste. M-2; Lafayette, CO 80026; 303-666-4549

Online Databases

America Online

Online service
Apple IIGS; Hayes-compatible modem; 512K; ProDOS 16 (disk also contains ProDOS 8 version that will be launched); not copy protected.
America Online is a nationwide online service that features a powerful, custom software interface that provides intuitive, easy-to-use online navigation. It replaces AppleLink Personal Edition.
Services offered through America Online include extensive computing support, software libraries, computer forums and a technical product database and news from Apple Computer, Inc. Consumer-oriented services, such as electronic mail, bulletin boards, multiplayer games, travel, stock quotes, sports news and a chat area, are also featured on the service.
\$5.95 per month retail; membership fee, includes one free connect hour
\$5 per hour retail; evenings and weekends
\$10 per hour retail; daytime use
Quantum Computer Services, Inc.; 8619 Westwood Center Dr.; Vienna, VA 22182; 800-227-6364

Boston CitiNet

Free online information service
ASCII terminal with modem.
Free to access
Boston CitiNet; Ste. 717, World Trade Center; Boston, MA 02210; 617-439-5678 or 617-439-5699 (modem)

CompuServe Information Service

Online telecommunications with several Apple forums
Apple IIGS; modem; communications software; Vidtex communications software available.

\$39.95 retail; Subscription Kit
CompuServe Information Service; PO Box 20212, Columbus, OH 43220; 614-457-0802 outside U.S. or 800-848-8199

GENie

Online database with an Apple II special interest group
Apple IIGS; modem.
\$5 per hour retail; after hours
\$35 per hour retail; prime time
General Electric Information Services Co.; 401 N. Washington St.; Rockville, MD 20850; 800-638-9636

Personal Productivity

Address Master

Integrated name and address database
Apple IIGS; printer optional; 512K; ProDOS 16; not copy protected.
\$39.95 introductory retail
Prelude Software, Inc.; PO Box 1317; Costa Mesa, CA 92628; 714-751-5736

Dollars And Sense 2.0

Financial management package
Apple IIGS; other Apple II models; 3.5-inch drive or hard disk drive or RAM disk with battery backup; 128K; ProDOS 8; not copy protected.
\$119.95 retail
Monogram; 531 Van Ness Way; Torrance, CA 90501; 213-533-5120

Family Matters

Household organization
Apple IIGS; 128K; ProDOS 8; not copy protected.
\$49.95 retail
Springboard Software; 7808 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3915

The Food Processor II

Nutrition and diet analysis with 2,400 foods and 30 nutrients
Apple IIGS; other Apple II models; one or two disk drives; 128K; ProDOS 8; not copy protected.
\$295 retail; free demo available
ESHA Research; PO Box 13028; Salem, OR 97309; 503-585-6242

Genealogical Data Base System (GDDBS) 2.0

Genealogical software for novices or professionals
Apple IIGS; other Apple II models; 48K; ProDOS 8 and DOS 3.3; not copy protected.
\$99.95 retail
Data Base Systems; PO Box 7263; Huntsville, AL 35807; 205-881-6957

L.I.F.E. Diary

Diary text, idea and reminder files, tables and graphs, etc., for understanding stress
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
\$24.95 retail
Maretech; 325 Newell St., Dept. A3; Walla Walla, WA 99362; 509-529-1894

Managing Your Money 4.0

Financial planning, budgeting and checkbook and small business package combining nine integrated programs

into one
Apple IIGS; two disk drives; 256K; ProDOS 8; not copy protected.
\$149.95 retail
MECA Ventures, Inc.; 355 Riverside Ave.; Westport, CT 06880; 203-226-2400

Multidimensional Personality Inventory

Personality evaluation
Apple IIGS; printer; 64K; ProDOS 8; copy protected.
Multidimensional personality evaluation is a test for anyone interested in self-knowledge. Two hundred multiple choice questions evaluate personality in terms of passivity, assertiveness, aggression, manipulation, introversion, sociability, warmth, pessimism, conservatism, trusting, genuineness, insecurity, lethargy, sensitivity, calmness, depression and egocentrism. The generated report is written in non-clinical language. It is both a narrative of personality dynamics and a charted display of scores.
\$89.50 retail
Psychological Psoftware Co.; 312 Los Altos Dr.; Aptos, CA 95003; 408-688-6808

Nutriplan

Diet and nutritional analysis software
Apple IIGS; printer optional; 128K; ProDOS 8 and DOS 3.3; not copy protected.
\$75 retail
Micromedex Computer Software Corp.; 187 Gardiner Ave.; Levittown, NY 11756; 516-579-6392

Personal Accountant 2.6

Personal accounting system for personal and small business use
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
\$49.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

Quicken

Single-entry bookkeeping software for small business and personal use
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
\$59.95 retail
Intuit, Inc.; 540 University Ave.; Palo Alto, CA 94301; 415-322-0573

TaxView

Tax preparation and planning
Apple IIGS; 512K; ProDOS 16; two 3.5-inch disk drives or hard disk drive; not copy protected.
\$99 retail
Softview, Inc.; 1721 Pacific Ave., Ste. 100; Oxnard, CA 93033; 805-385-5000

Total Stress Management System

Covers many techniques to reduce stress and tension
Apple IIGS; printer optional; 64K; ProDOS 8; copy protected.
\$89.50 retail
Psychological Psoftware Co.; 312 Los Altos Dr.; Aptos, CA 95003; 408-688-6808

Programming And Utilities

360 Text Toolkit V2.0

System library for APW/ORCA-based languages
Apple IIGS; APW or ORCA development environments; GS/OS; not copy protected.
 \$64.95 retail; Library with Assembly Macros
 \$24.95 retail; ORCA/Pascal Interface (requires Library)
 \$24.95 retail; APW C Interface (requires Library)
 360 MicroSystems; PO Box 1192; Oviedo, FL 32765;
 407-365-6714

AC/Basic Compiler

Basic compiler
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$125 retail
 Absoft Corp.; 2781 Bond St.; Rochester Hills, MI 48309;
 313-853-0050

Apple IIGS Icon Editor

Tool to create and modify icons
Apple IIGS; 512K; ProDOS 16; not copy protected.
 \$25 retail
 APDA — Apple Computer, Inc.; 20525 Mariani Ave.,
 MS 33G; Cupertino, CA 95014; 800-282-2732

Apple IIGS Source Code Sampler, Volume 1

Contains source code for IIGS applications that use the desktop interface
Apple IIGS; ProDOS 16; APW native or MPW IIGS cross-development system; not copy protected.
 \$30 retail; includes two 3.5-inch Apple II disks and one 3.5-inch Macintosh disk
 APDA — Apple Computer, Inc.; 20525 Mariani Ave.,
 MS 33G; Cupertino, CA 95014; 800-282-2732

Apple IIGS System Software (GS/OS) Version 5.0

Increases the speed and performance of an Apple IIGS
Apple IIGS; 512K (768K for AppleShare); GS/OS; not copy protected.
 \$49 retail; documentation and disks
 (Software available separately, free of charge, from Authorized Apple Dealers)
 Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino,
 CA 95014; 408-996-1010

Apple IIGS System Software V5.0.2 (Developer Package)

Contains the most current release of IIGS System Software for developers
Apple IIGS; 512K (768K for AppleShare); GS/OS; not copy protected.
 This product contains the most current release of the Apple IIGS System Software, including GS/OS. It supports networking with the Apple IIGS AppleShare File Server. The package contains a 30-page release note that summarizes program bug fixes and additions to the system software. This product is designed for developers and does not contain the end-user documentation.
 \$25 retail
 APDA — Apple Computer, Inc.; 20525 Mariani Ave.,
 MS 33G; Cupertino, CA 95014; 800-282-2732

APW C: Apple IIGS Programmer's Workshop C V1.0.2

APW C compiler
Apple IIGS; APW; 1.25 MB; ProDOS 16; two 3.5-inch disk drives or one 3.5-inch disk drive and a hard disk drive; hard disk drive highly recommended; not copy protected.

\$100 retail
 APDA — Apple Computer, Inc.; 20525 Mariani Ave.,
 MS 33G; Cupertino, CA 95014; 800-282-2732

APW: Apple IIGS Programmer's Workshop V1.0.2

Software development system
Apple IIGS; 1.25 MB; ProDOS 16; two 3.5-inch disk drives or one 3.5-inch disk drive and a hard disk drive; hard disk drive highly recommended; not copy protected.
 \$100 retail
 APDA — Apple Computer, Inc.; 20525 Mariani Ave.,
 MS 33G; Cupertino, CA 95014; 800-282-2732

Call-Box

Multilanguage Toolbox programming system
Apple IIGS; two 3.5-inch drives; RGB monitor; 1 MB; ProDOS 8, ProDOS 16 and GS/OS; not copy protected.
 \$99 retail
 So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298, 714-963-3392 or 800-648-9621 (orders)

Chinook SCSI Utilities

Utilities for use with embedded SCSI drives and the Apple II SCSI card
Apple IIGS.
 Chinook SCSI Utilities are a powerful set of utilities for use with embedded SCSI drives and the Apple II SCSI card. These utilities provide such functions as disk verification, true SCSI bad block re-mapping, creation of up to seven partitions and ProDOS volume initialization. The program uses a filecard interface and is user friendly.
 \$29.95 retail
 Chinook Technology; 601 Main St., #635; Longmont, CO 80501; 303-678-5544

Copy II Plus 8.4

Backs up copy protected disks
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
 \$39.95 retail
 Central Point Software, Inc.; 15220 NW Greenbrier Pkwy., Ste. 200; Beaverton, OR 97006; 503-690-8090

Cross-Works

Utility that exchanges AppleWorks (except AppleWorks GS) with IBM PC software
Apple IIGS; 128K; ProDOS 8; not copy protected.
 Cross-Works is a utility that transfers and converts files between Apple II and IBM PC-compatible computers. A universal 8-foot cable (included) plugs in the serial ports to transfer files in either direction at 19,200 baud.
 AppleWorks files are automatically converted to or from WordPerfect, Lotus 1-2-3 and Dbase files on the PC by simply picking files to transfer from a menu. ASCII text files and many other types of files may also be exchanged.
 For computers too far apart for direct connection, remote transfers can be made using Hayes-compatible modems. Cross-Works also supports the Applied Engineering PC Transporter.
 \$79.95 retail
 SoftSpoken Co.; PO Box 97623; Raleigh, NC 27624;
 919-878-7725

Directory Labeler II V2.0

Disk labeling utility
Apple IIGS; other Apple II models; 80-column card and Apple-compatible printer interface card; 128K; ProDOS 8; not copy protected.

\$26.95 retail
 Sourceware; 6899 S. Yukon Ct.; Littleton, CO 80123;
 303-933-9148

Disc Commander

ProDOS disk editor
Apple IIGS; two 3.5-inch disk drives; RGB monitor; 512K; ProDOS 8; not copy protected.
 \$39.95 retail
 So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298, 714-963-3392 or 800-648-9621 (orders)

Disk Util II

Backs up copy protected software
Apple IIGS; 3.5-inch disk drive; 512K; GS/OS; not copy protected.
 \$59.95 retail
 FWB, Inc.; 2040 Polk St., Ste. 215; San Francisco, CA 94109; 415-474-8055

The Diversi Series

Family of utility software designed to enhance performance of the Apple IIGS and disk drives
Apple IIGS; 512K; ProDOS 8; not copy protected.
 \$45 retail; Diversi-Key (requires 512K)
 \$35 retail; Diversi-Cache (requires 512K)
 \$30 retail; Diversi-Copy (any Apple II)
 Diversified Software Research, Inc.; 34880 Bunker Hill; Farmington, MI 48331; 313-553-9460

EasyDrive

Software interface for hard disk drives
Apple IIGS; 3.5-inch disk or hard disk drive; 128K; ProDOS 8, ProDOS 16 and GS/OS; not copy protected.
 \$69.95 retail
 Quality Computers; 15102 Charlevoix; Grosse Pointe, MI 48230; 313-331-0700 or 800-443-6697

Fasthouse

Software program for controlling the X-10 Powerhouse
Apple IIGS; other Apple II models; disk drive; X-10 Home Control Interface; 64K; ProDOS 8; not copy protected.
 \$34.95 retail; includes cable
 \$59.95 retail; X-10 Home Control Interface
 KADO Systems; PO Box 1115; Pflugerville, TX 78660;
 512-990-2390

File Utilities I & II

Shell utilities for APW/ORCA programming environments
Apple IIGS; APW or ORCA development system; GS/OS; not copy protected.
 \$34.95 each retail
 360 MicroSystems; PO Box 1192; Oviedo, FL 32765;
 407-365-6714

Graphic Environment Operating System (GEOS)

Operating system that brings a Macintosh-like graphic interface to all Apple II computers; key features include word processor, spell checker, mail merge, paint program and desk accessories
Apple IIGS; other Apple II models; 128K; not copy protected.
 \$69.95 retail
 Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883

Programming And Utilities

The Graphic Exchange

Universal graphics conversion utility
Apple IIGS; 768K.

\$49.95 retail

Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P, El Cajon, CA 92020; 619-442-0522

Graphics Supermarket

General purpose painting program

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$49.95 retail; program only

\$149.95 retail; program and source code

Abracadata; PO Box 2440; Eugene, OR 97402;

503-342-3030

GS Memory Test

Performs diagnostic tests on the Apple and Apple IIGS memory expansion board

Apple IIGS; extended memory card; 512K; ProDOS 8; not copy protected.

\$19.95 retail

On Three, Inc.; 123 Groveland Ave.; Riverside, IL 60546;

312-447-3924

GSBug And Debugging Tools V4.0B1

Machine language debugger

Apple IIGS; 512K; GS/OS; not copy protected.

\$30 retail

APDA — Apple Computer, Inc.; 20525 Mariani Ave., MS 33G; Cupertino, CA 95014; 800-282-2732

HyperLaunch

Launcher/program switcher

Apple IIGS; two 3.5-inch drives; RGB monitor; 512K; ProDOS 16 and GS/OS; not copy protected.

\$49.95 retail

So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298, 714-963-3392 or

800-648-9621 (orders)

HyperStudio

Hypermedia authoring system

Apple IIGS; 1.25 MB.

\$129.95 retail

Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P, El Cajon, CA 92020; 619-442-0522

KeyLisp

Advanced Lisp programming language; 424-page bound manual

Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.

\$149 retail; single (or first) copy

\$39 retail; manual only for additional user (site license)

XPrime Corp.; 10835 Santa Monica Blvd., Ste. 204A;

Los Angeles, CA 90025; 213-470-4663

LifeGuard

File recovery software for files deleted under ProDOS 8, ProDOS 16 and GS/OS

Apple IIGS; 256K; ProDOS 16 and GS/OS; not copy protected.

\$29.95 retail

MindCraft Publishing Corp.; 52 Domino Dr.; Concord, MA 01742; 508-371-1660

Lisa 816 V5.0

Apple IIGS native mode release of the Lisa interactive assembly language development system

Apple IIGS; 512K; 1 MB recommended; ProDOS 16; not copy protected.

\$70 retail

H.A.L. Labs; 9472 Magnolia Ave.; Riverside, CA 92503;

714-359-8480

MacroMate

Universal macro program.

Apple IIGS; 768K.

\$49.95 retail

Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P, El Cajon, CA 92020; 619-442-0522

Menu Maker

Allows users to design custom pull-down menus

Apple IIGS; two 3.5-inch drives; RGB monitor; 512K; ProDOS 8; not copy protected.

\$20 retail

So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298, 714-963-3392 or

800-648-9621 (orders)

Merlin 8/16

Includes two versions of Merlin 8 for assembling 8-bit ProDOS and DOS 3.3 programs and Merlin 16 for assembling 8- and 16-bit ProDOS programs

Apple IIGS; other Apple II models; 128K; ProDOS 8, ProDOS 16 or DOS 3.3; not copy protected.

\$124.95 retail

Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P, El Cajon, CA 92020; 619-442-0522

Micol Advanced Basic 3.0

Allows programmers to write Basic programs that operate specifically for the IIGS

Apple IIGS; not copy protected.

\$145 retail

Micol Systems; 9 Lynch Rd.; Willowdale, Ontario, Canada

M2J 2V6; 416-495-6864

Micol Macro

Integrated text editor, monitor/shell and self-relocating macro-assembler, designed for programmers working in assembly language

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$99.95 retail

Micol Systems; 9 Lynch Rd.; Willowdale, Ontario, Canada

M2J 2V6; 416-495-6864

MouseFiler 2.0

Replaces the Finder in the Apple IIGS with a much faster desktop; includes program selector, find file searching and more

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$69.95 retail

Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton,

MA 01720; 508-263-1870

MPW IIGS

Cross development system; development environment; cross development assembler; cross development C compiler; cross development Pascal compiler

Apple IIGS; Macintosh with 2 MB of RAM; MPW 2.0.2 or later; MPW IIGS Tools; not copy protected.

\$50 retail; MPW IIGS Tools V1.1B1

\$100 retail; MPW V3.0

\$100 retail; MPW IIGS Assembler V1.0

\$150 retail; MPW IIGS C V1.0.1

\$175 retail; MPW IIGS Pascal V1.0B1

APDA — Apple Computer, Inc.; 20525 Mariani Ave., MS 33G; Cupertino, CA 95014; 800-282-2732

ORCA/C

ANSI C compiler

Apple IIGS; 1 MB of RAM.

\$150 retail

The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/Desktop For The IIGS

Programming environment for APW compatible languages

Apple IIGS; memory depends on language used; ProDOS 16; not copy protected.

\$60 retail

The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/M Assembler For The Apple IIGS

Complete development environment for assembly language programming

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$69.95 retail

The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/M Support Programs

Adds 12 new commands to the ORCA/M, ORCA/Pascal or Apple Programmer's Workshop shell; library contains the source code to the ORCA/M and ORCA/Pascal; takes Merlin source code and translates it to ORCA/M source code

Apple IIGS; ORCA/M For The Apple IIGS; 512K; ProDOS 16; not copy protected.

\$39.95 retail; Utility Package #1

\$39.95 retail; Subroutine Library Source

\$29.95 retail; Merlin to ORCA Source Code Translator

The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/Pascal For The IIGS

Pascal programming language with desktop programming environment and source level debugger

Apple IIGS; 768K for text environment; 1,024K for desktop environment; ProDOS 16; not copy protected.

\$150 retail; ORCA/Pascal with desktop and debugger

The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

The Power System

Programming systems: UCSD Pascal, PDQ Pascal, Modula-2, Fortran 77, Basic and C

Apple IIGS; other Apple II models; ProDOS 16; not copy protected.

\$249.95 retail

Pecan Software Systems, Inc.; 1410 39th St.; Brooklyn, NY 11218; 718-851-3100 or 800-637-3226

Programming Tools And Interfaces For APW

Development tools and interfaces to help programmers take advantage of the new features of Apple IIGS System Software 5.0

Apple IIGS; two 3.5-inch drives or one 3.5-inch drive and hard disk drive; 1.25 MB; GS/OS; not copy protected.

Programming And Utilities

The new tools within this package include a resource compiler (Rez), a resource decompiler (DeRez), a utility to compare resources of different files (ResEqual), a new scriptable linker (LinkIIGS), a stack segment creation utility (MakeDirect) and a utility for converting existing load files into ExpressLoader-compatible load files (Express). Other tools include revised versions of many long-time APW tools: Canon, Compact, Crunch, Equal, Files, MakeBin, MakeLib and Search. Also included with these new tools are the interfaces for use with the APW assembler and the APW C compiler that have been updated to include the new tools in System Disk 5.0.

\$50 retail

APDA — Apple Computer, Inc., 20525 Mariani Ave., MS 33G, Cupertino, CA 95014; 800-282-2732

RamUp 4.0

Organizes and speeds up RAM disks

Apple IIGS: Applied Engineering or Checkmate RAM card; 128K; ProDOS 8; not copy protected.

\$39.95 retail

Quality Computers; 15102 Charlevoix; Grosse Pointe, MI 48230; 313-331-0700 or 800-443-6697

Screen Thief

Captures/saves any super high-resolution screen image to disk

Apple IIGS; two 3.5-inch drives; RGB monitor; 1 MB of RAM; ProDOS 8; not copy protected.

\$20 retail

So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298, 714-963-3392 or 800-648-9621 (orders)

TML Basic V1.10

Full-featured 16-bit Basic compiler

Apple IIGS; 768K; GS/OS; not copy protected.

\$125 retail

TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

TML Pascal II V1.0

Complete Pascal programming environment

Apple IIGS; 768K; GS/OS; not copy protected.

\$125 retail

TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

TML Source Code Library II V1.0

Set of more than 15 example programs written in TML Pascal II

Apple IIGS; TML Pascal II; 768K; GS/OS; not copy protected.

\$49.95 retail

TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

TML Speech Toolkit For The IIGS V2.0

Adds the latest in English text-to-speech technology to programs written in TML Basic or TML Pascal II

Apple IIGS; TML Basic or TML Pascal II; 768K; GS/OS; not copy protected.

\$69 retail

TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

UniDOS Plus

Allows users to use 3.5-inch disks with DOS 3.3

Apple IIGS; 64K; DOS 3.3; not copy protected.

\$39.95 retail

MindCraft Publishing Corp.; 52 Domino Dr.; Concord, MA 01742; 508-371-1660

Word Processing

//Write

Full-featured word processor with Macintosh simplicity

Apple IIGS; 128K; ProDOS 8; copy protected.

\$93.27 retail

\$186.60 retail; lab pak

McGraw-Hill Educational Resources; PO Box 408; Heightstown, NJ 08520; 800-722-4726

Bank Street Writer III

Word processing program featuring integrated 60,000-word spelling checker and a 50,000-synonym thesaurus; for primary and high school students grades 2 to 12

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$89.95 retail; net to educators

Scholastic, Inc.; PO Box 7501; 2931 E. McCarty St.; Jefferson City, MO 65102; 800-541-5513 or 800-392-2179 in MO

BeagleWrite GS

Word processor

Apple IIGS.

BeagleWrite GS is a true WYSIWYG word processor. Users can add graphics, color and a wide variety of fonts to their documents.

\$99.95 retail

Beagle Bros, Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-452-5500, 800-345-1750 (orders) or 800-992-4022 in CA (orders)

The Character Factory

Lets users print special characters used in math, science, foreign languages, etc.

Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.

\$24.95 retail; single user

\$49.95 retail; unlimited copies per school or college department

Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 904-576-9415 or 800-627-3836

DeluxeWrite

Word processor that combines text and graphics to create documents for letters, school reports, business reports and more

Apple IIGS; 768K; ProDOS 16; not copy protected.

\$79.95 retail

\$129.95 retail; DeluxeWrite/DeluxePaint II

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Mercury

Word processor

Apple IIGS; 1 MB or more; GS/OS; copy protected.

Mercury is a powerful word processor that combines text and graphics in a high-resolution WYSIWYG environment with an easy-to-use point-and-click, Mac-like

interface. Features include: all standard word processing and editing features; sophisticated search and replace functions; formatting options for justifying, spacing and columns; drawing tools and picture importing; document layout options; and a variety of fonts, sizes and styles.

\$89 retail

MECC; 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500 or 800-228-3504

MouseWrite Version 2.6

ProDOS moused-based word processor with print spooling, spelling checker, mail merge, AppleWorks conversion and more

Apple IIGS; other Apple II models; extended memory card recommended for expanded desktop (384K); two disk drives; 128K; ProDOS 8; not copy protected.

\$149.95 retail

Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

Sensible Grammar

Proofreading program that checks word processing files for common grammatical errors

Apple IIGS; word processing program; 128K; ProDOS 8; copy protected.

\$99.95 retail

Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Sensible Speller For ProDOS

Electronic dictionary containing the 80,000-word Concise Edition of the Random House Dictionary on disk; RAM compatible

Apple IIGS; word processing program; 64K; ProDOS 8; copy protected.

\$125 retail

Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Sensible Writer

Word processor featuring built-in mail merge and automatic envelope addressing; shares data with AppleWorks

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$99.95 retail

Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Wordbench

Word processing program

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

\$149 retail

Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

WordPerfect For The Apple IIGS

Full-featured word processor with more than 110 features

Apple IIGS; two disk drives or a hard disk drive recommended; additional memory card recommended; 768K; GS/OS (System 5.0) compatible; not copy protected.

\$179 retail

WordPerfect Corp.; 1555 N. Technology Way; Orem, UT 84057; 801-225-5000

O T H E R S O F T W A R E

Other Software

Apple IIGS Software Library

Total of 100 disks of public domain software and shareware

Apple IIGS; 512K; ProDOS 16; not copy protected.

\$9 each retail

\$39.95 retail; IIGS Editor's Choice Set (six-disk set featuring six reviews: Wheel, Iconed, Bounce-It!, Firace, Viewer and Control Panel NDA)

Write or call for free catalog

\$3 retail; P.D.E.'s Guide to Affordable IIGS Software (contains detailed descriptions of nearly 1,000 files from 100 P.D.E. IIGS public domain and shareware disks)

P.D.E.; 2074C Walsh Ave., Dept. 155; Santa Clara,

CA 95050; 408-496-0624 or 800-331-8125

Public Domain Catalog

Public domain software catalog

Apple IIGS; other Apple II models; 512K; ProDOS 8 or ProDOS 16; not copy protected.

\$7.50 retail; each disk

Catalog free on request

Big Red Computer Club; 423 Norfolk Ave.; Norfolk,

NE 68701; 402-379-4680

Public Domain Software On File CD-ROM

CD-ROM public domain software

Apple IIGS; other Apple II models; color or monochrome monitor; Apple II SCSI Card, Rev. C; CD-ROM drive with compatible SCSI interface; printer optional; 64K; ProDOS 8 or ProDOS 16; not copy protected.

\$195 retail

Facts On File, Inc.; 460 Park Ave. S; New York,

NY 10016; 212-683-2244

UpTime, The Disk Monthly

Disk-based magazine

Apple IIGS; 128K; ProDOS 8; not copy protected.

\$9.95 per issue retail

Viking Technologies, Inc.; 6 John Clarke Rd.; Newport,

RI 02840; 401-847-2455

"The family suggests
that memorial
contributions be made
to the American
Heart Association."
When people want to
honor a loved one
and fight heart disease.

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ASSOCIATION
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Build Your IIGS/IIe Hard Disk Apple-Hive •• a disk enclosure

- room for two 5.25" or 3.5" drives
- horizontal or vertical placement
- provision for cartridge drive • FCC certified
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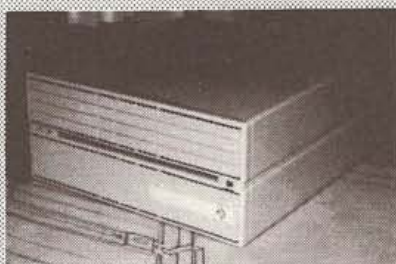
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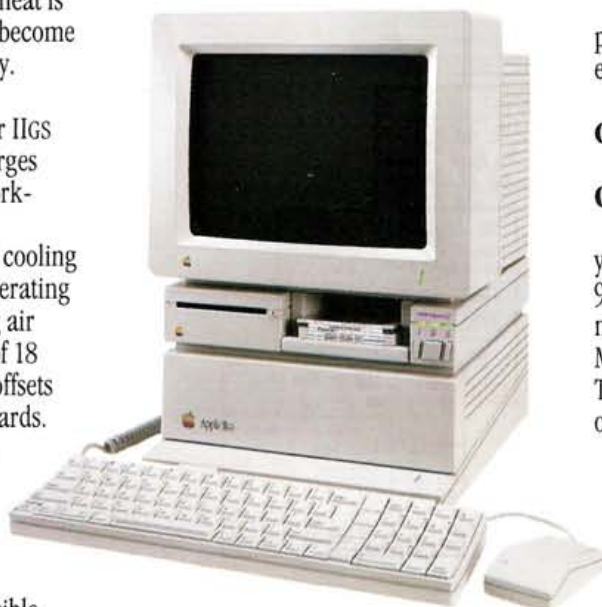
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