More Than 650 Product Listings And Descriptions

The Apple IIGS Buyer's Guide

A Redgate Publication
Summer 1989 Vol. 2, No. 4
U.S. $4.00, Canada $5.00

Summer Creativity Issue:

Concerts By Computer
Music Software Rendezvous
A MIDI Primer
Better Color Printouts
New Wave Graphics Adventures
Shareware Secrets



Sneak Preview:
TransWarp GS

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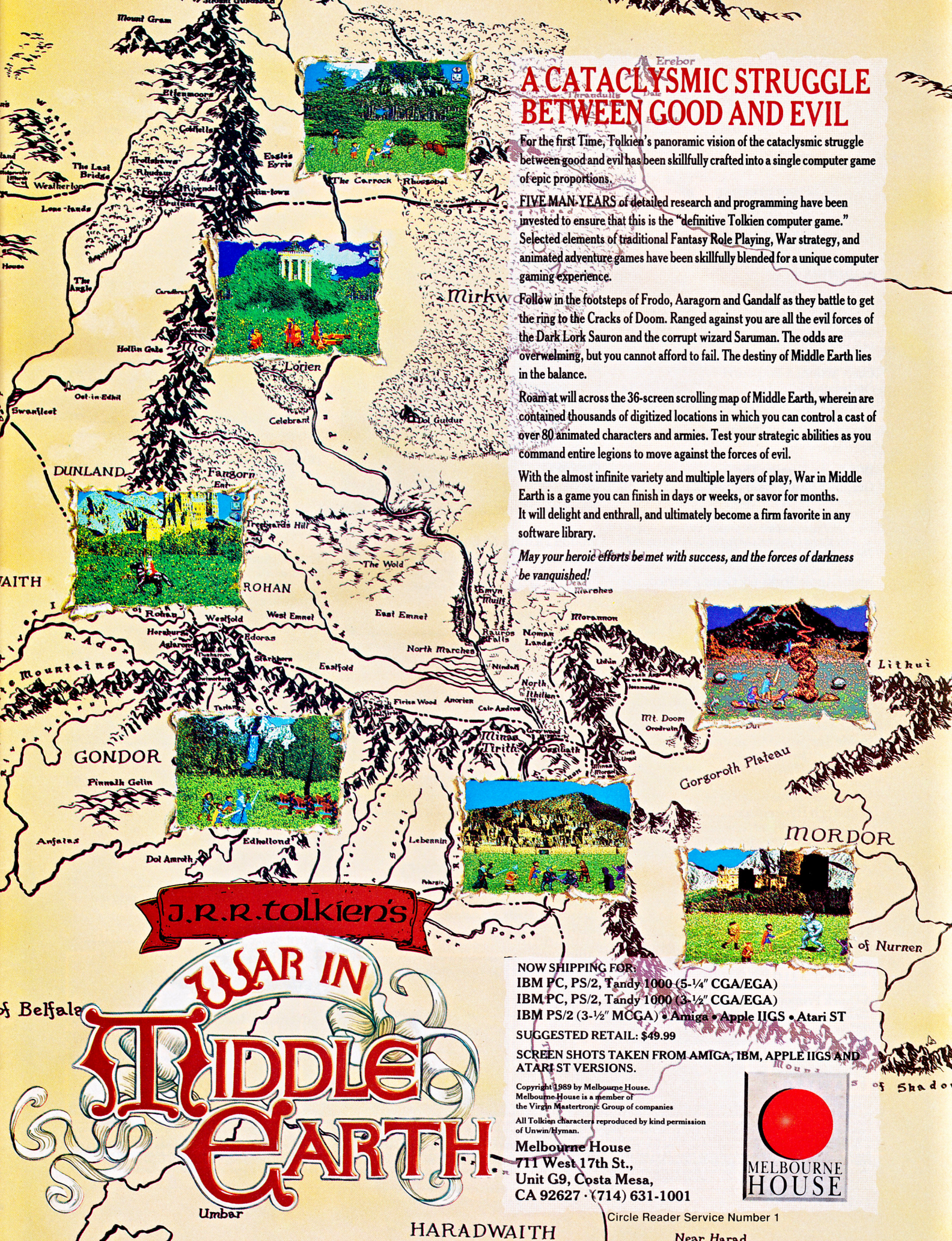
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"...this game has been programmed by magicians." *L.R. Shannon*, New York Times



Amiga screen



Apple IIGS screen



Apple IIGS screen

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Slash your way to these retailers: Electronics Boutique, Software Etc., Software City, Walden Software, Egghead Discount Software or your favorite specialty software store for your own copy. If you don't see it, ask for it. Suggested retail price $49.95. Discovery Software, 163 Conduit Street, Annapolis, MD 21401 (301) 268-9877.

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The Apple IIGS Buyer's Guide

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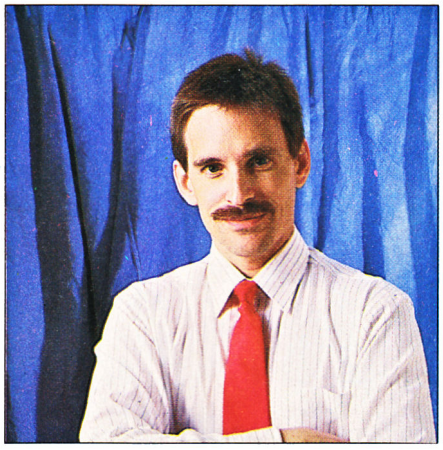
Subscription Information
The Apple IIGS Buyer's Guide,
5615 W. Cermak Rd., Cicero, IL 60650-2290,
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BPA

Sweet Creative Chaos



Let's save creativity forever and nourish and encourage it as a precious national resource. Why? Because the world depends on creative thinking. With creativity, we don't have to dream about sending men and women to Mars, refining fusion power, inspiring a beautiful painting and achieving a permanent peace. We can *do* it.

It's funny, but creativity doesn't fit well in a bottle or lend itself naturally to strict academic settings.

The Japanese, for example, dominate the world economy, thanks to incredible productivity, a strong work ethic and national determination. Their world-class educational system that emphasizes the basics is just one factor that accounts for their success.

Nevertheless, the same dogged emphasis on structured learning may be undermining Japan's potential for creativity, at least for now.

If creativity still reigns in the United States, we had better work hard to keep it here. Perhaps the best we can do is to encourage what I call creative chaos.

When I was growing up, I lived in a world of crazy, chaotic potential. It was a world of infinite possibilities, where a kid or a group of kids were allowed to ponder the world on their own terms.

It was a world where the zinc could be retrieved from a dead flashlight battery and mixed with cheap muriatic acid in a coke bottle to create hydrogen gas for a balloon. Where a grasshopper could be sent aloft in a model rocket, landing as a dazed but heroic astronaut bug. Where a firecracker attached to a Frisbee would up the ante in an otherwise boring game of satellite war.

There are no rules in creative chaos, but that's part of its charm and its strength. Nothing is impossible.

The Apple IIGS thrives on creative chaos. Sure, you can spend all of your computer time (or your children's time) running off-the-shelf educational packages. Just plug in the software and sit back and watch the show.

But real creativity is opened up by using the IIGS as a two-way street, where the mind interacts with the computer to create digital combinations where none existed before. In this infinitely more interesting world, anything's game.

Welcome to a world where the super-high-resolution face of Marilyn Monroe can be attached to the body of Arnold Schwarzenegger, thanks to a little downloading from a local bulletin board and a IIGS paint program. Where grandma's digitized recitation of "The Star Spangled Banner" can be sped up to sound like the hilarious voice of Alvin, the chipmunk. And where a 12-year-old Beethoven-to-be can work hours on end with a $49 music program and, possibly, compose what will be recognized as the greatest symphony of the late 20th century.

So, welcome to our creativity special. Enjoy the creative chaos within, from music to color to animation and more.

Rumor Central. As this issue goes to press, rumors are flying about Apple Computer, Inc.'s future intent with the Apple II line, including the IIGS.

We've heard all the talk, including the IIGS' predicted demise within a year or two, and Apple's merging of the Mac and IIGS lines through a low-cost color Mac with IIGS ROMs (or vice versa). Chances are you've heard all this stuff, too.

Unfortunately, we don't have any inside information to share, and Apple isn't talking. As of this date, nobody seems to really know the future of the Apple II.

My bet is that Apple will continue evolving the IIGS, speed up its processor, improve its sound and otherwise follow the Apple II's tradition of innovation. But a statement of direction from Apple on where the Apple II line is heading would be the least we should expect for our investment.

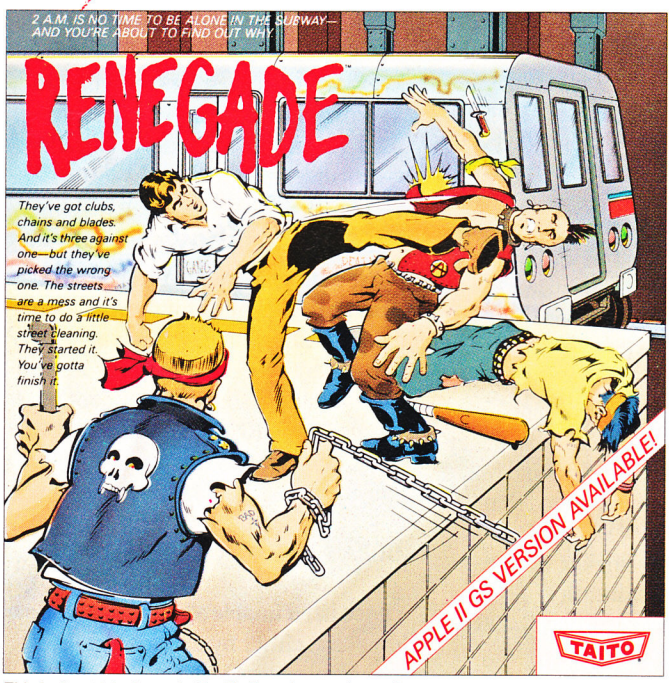
Perhaps we will hear something at AppleFest in Boston. What's the word, Mr. Sculley? ■

— Paul Pinella, Editor-In-Chief

THREE WAYS TO MAKE YOUR APPLE SCREAM



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This is the original arcade hit. Thrill to the arcade quality graphics of this fast-paced, street-style karate brawl. Find out what real action is all about!



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COMING SOON, THE CLASSIC MIND GAME, QIX.

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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 AppleLink (Pinella), Compuserve (71625,567), The Source (SIG049) or MCI Mail (352-9601). Individual responses cannot be guaranteed.

Erratum And Other Issues

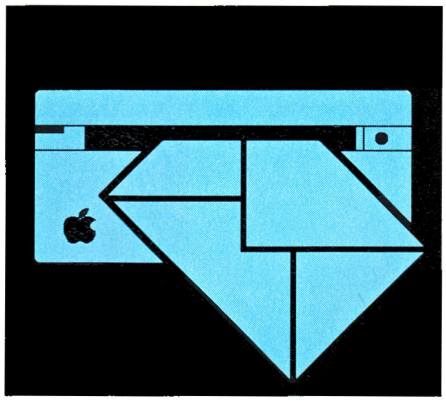
The last issue of *The Apple IIGS Buyer's Guide* introduced several new columns and columnists, expanded review coverage and more editorial pages than ever before in our two-year history. In so doing, we neglected to properly introduce each columnist to readers, a situation we've addressed in this issue with short author biographies at the end of each column. Where appropriate, we've also included E-mail addresses, so that you can correspond with the columnists firsthand.

We also heard from several vendors regarding the last issue. Two of them, Milliken Publishing Co. and Applied Engineering, raised several concerns regarding coverage of their products.

• Milliken Publishing Co. wrote a long letter concerning our write-up of Medley 1.1 in the "IIGS Press" column in the Spring issue. Among other items raised, Milliken questioned the fairness of our comparison of Medley 1.1 with a prerelease version of GraphicWriter 3.0 from Seven Hills Software.

We did get some of the facts wrong here. Among them: Medley's word-wrap routines are not limited to a single page, and nowhere in the program does the user have to enter information in order to place an object. Our apologies.

• Applied Engineering also wrote to point out that nowhere in our review of Sonic Blaster do we make it clear that the software, hardware and documentation under review were all prereleased versions. A problem our reviewer experienced, caused by a short cable, was cleared up before the product



began shipping, as were a few last-minute bugs in the software.

The documentation, as well as the hardware, were all clearly stamped "beta." Nevertheless, we rated Sonic Blaster using our customary review scale and downgraded the product — unfairly in this case — for unfinished hardware, software and documentation.

Both Milliken and Applied Engineering raise valid concerns regarding our treatment of beta or prerelease products. In future issues, our policy is this: We will continue to look at beta products when they are made available to us, but only in the new "First Look" section of the magazine, beginning with this issue. Also, we will dismiss with the ratings scale for "First Look" products and will only rate products that are finished and shipping at the time of the review.

• Addison-Wesley Publishing Co. wrote us concerning coverage of Wordbench in a chart comparison of the product within the "Word Processing On The Apple IIGS" feature. Although the chart says the product cannot handle multiple documents on screen, it can, in fact, display two documents at one time. The product can also display both footnotes and end notes.

The Editors

DOS 3.3 On A 3.5

I have a good checkbook program from Money Street. I would like to use it on a 3.5-inch disk, but it is written in DOS 3.3. When I asked the vendor, they said they didn't think they were going to make a 3.5-inch package for the IIGS.

Tom Buescher
(via Compuserve)

Sometimes you just can't get there from here. This looks like one of those times.

Many programs written under DOS 3.3 can be transferred to 3.5-inch diskettes while remaining DOS 3.3 programs. This is possible through software modifications that allow DOS 3.3 to recognize and use 3.5-inch disks.

Modified versions of DOS 3.3 are available from several sources.

One of our favorites comes from Glen Bredon, author of ProSel. Glen's version not only allows DOS 3.3 programs to be run from 3.5-inch disks, they can be started up from Glen's ProSel program selector.

Unfortunately, this won't work with Money Street. We talked to the programmer who wrote Money Street and discovered that the application was written when only 5.25-inch disks existed. In its quest for speed, the program bypasses part of DOS 3.3 to directly access a 5.25-inch disk and can't be run from a 3.5-inch disk.

Over The Rainbow

I have a statistics program titled Daisy Professional. It's written for the Apple II and published by Rainbow Computing, Inc.

The program boots and works fine on our old Franklins, but will not boot on an Apple IIe or IIGS. It will start to boot on my IIGS with 1.25 MB, then stop and display:

PROGRAM TOO LARGE BREAK IN 110

I have been unable to contact Rainbow Computing, either by mail or by telephone. Any suggestions?

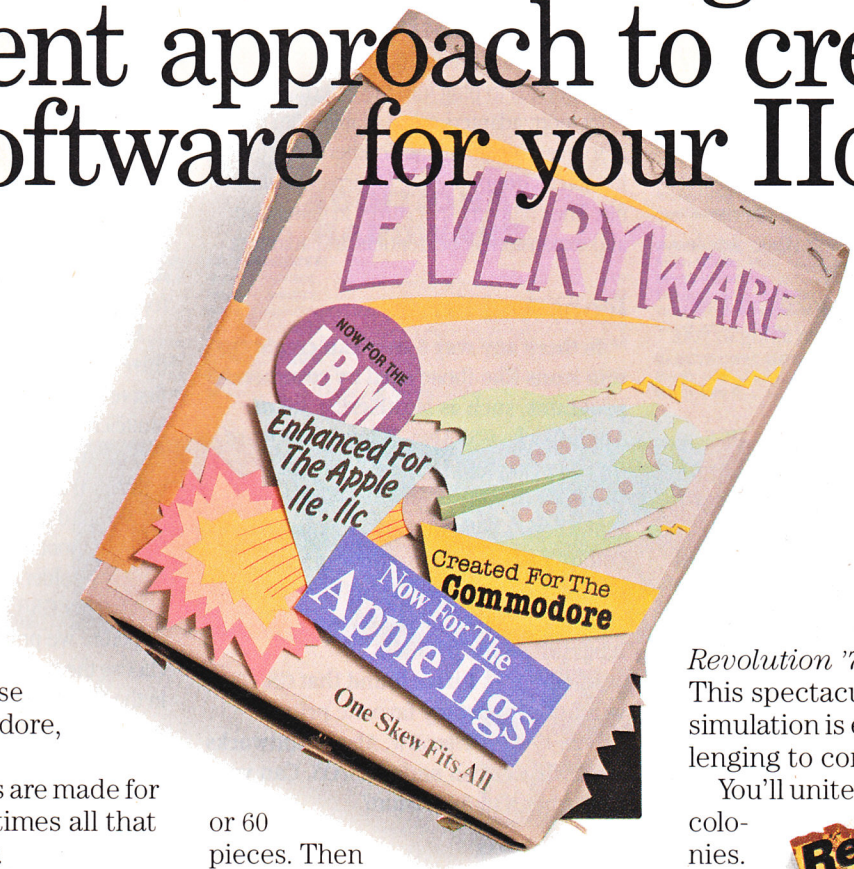
Charles M. Bueler
Hannibal Public Schools
Hannibal, MO

An old Franklin computer is compatible with an Apple II+, and it sounds like you have an older version of Daisy Professional that is not compatible with IIe or later computers.

We know of a version of Daisy Professional that is compatible with the IIe. It, too, was developed by Rainbow Computing.

Unfortunately, we had no more luck than you in trying to contact Rainbow. We did locate a Houston-based company called Rainbow Software, but there is no connection

We've taken a slightly different approach to creating software for your IIGS.



Most IIGS software is created for everyone else first–for IBM, Commodore, Apple IIe.

Then minor changes are made for the IIGS. In fact, sometimes all that changes is the sticker.

At Britannica we don't work that way. We start out by designing *on* the IIGS–*for* the IIGS.

That's why our software takes full advantage of your 4,000 colors, digitized sound, pull-down menus, GS/OS and, of course, your friendly mouse.

So isn't it time you give your IIGS the software it deserves–like these?



JIGSAW!
Awarded "Editor's Choice" in the December '88 edition of inCider. *JIGSAW!* was called "deceptively simple, yet maddeningly complex."

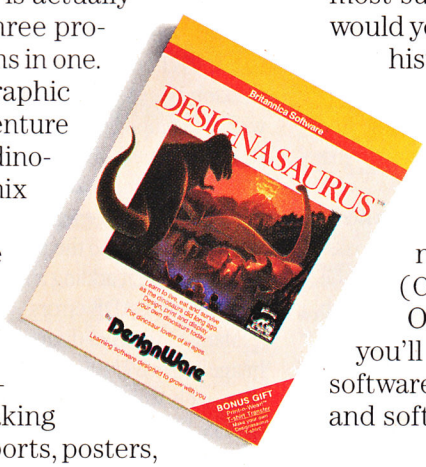
This wonderfully addicting electronic puzzle uses all 4,000 of your IIGS colors in its 24 images. Each image can be scrambled into 8, 15, 40 or 60 pieces. Then you see how fast you can point and click it back together.

Definitely captivating for anyone from 4 to 104.

Designasaurus.
Winner of the Best *Educational Program* award from the Software Publishers Association, this run-away hit is actually three programs in one.

It's a graphic survival adventure (*you're* the dinosaur). It's a mix and match game (create your own species). And it's a printing program for making dinosaur reports, posters, booklets –even T-shirts.

For dinosaur-lovers of all ages.



Revolution '76.
This spectacularly rich historic simulation is easy to learn. Yet challenging to conquer.

You'll unite colonies. Build armies. Make or break alliances. And pick leaders.



Could you have set the groundwork for one of the world's most successful nations? And how would you have changed America's history? Play *Revolution '76* and find out.

For time-travellers 14 and up.

Look for all three programs in software stores near you, or call 800/572-2272 (CA: 415/546-1866).

Once you try our software, you'll see the difference between software created for everyone else and software created just for you.

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between this firm and Rainbow Computing. If the company has gone out of business, there may be no way to update your program.

The error message you report does not point to any obvious fix. An error that implies a shortage of memory may seem incongruous in a computer with 10 times as much memory as the disk the program is on, but the message is coming from AppleSoft Basic. AppleSoft uses just 48K of memory.

If any reader knows how to contact Rainbow, we'll pass the information along to you.

Updating Your Pad

I recently purchased an Apple IIGS after years of satisfied use with an Apple II+. I also purchased a Koala Pad for my II+ years ago.

I am now seeking an adapter that will allow me to use the old Koala Pad on my IIGS. If you know where such an adapter could be purchased, I would greatly appreciate the information.

I have a TG Products Select-A-Port with the Koala Pad, two joysticks and paddles connected to the II+. I would like to connect the adapter to the Select-A-Port to allow me to use all of my old stuff on the IIGS. Is this possible?

George Sauer III
Circleville, OH

You may not need an adapter to use your Koala Pad or Select-A-Port on your IIGS. In addition to the 9-pin external game connector, the IIGS has an old style 16-pin connector inside its case. The connector is in the center of the main circuit board on the IIGS, not in the corner toward the rear of the board — as on the IIe and II+.

Many IIGS owners report that it's difficult to use the 16-pin game port on their computers. When Apple designed the IIGS, it was thinking more about reducing RF (radio frequency) interference from the computer than using the internal game port.

All the openings on the back of the IIGS are too small for a 16-pin connector to pass through. However, there is a small slit in the back of the IIGS' case, near each cover latch, that will allow a ribbon cable to be slipped into it while the cover is off the computer.

If the cable on your Select-A-Port is not a ribbon cable — or is too short to reach the center of the IIGS motherboard conveniently — you may be able to find a 16-pin extension cable at Radio Shack.

If you would prefer an adapter to allow your devices to plug into the external 9-pin game port, adapters are available from several sources, including the Southern California Research Group (SCRG), Moorpark, California. The company specializes in game-port and expansion-slot extenders and adapters.

Icons And Errors

Is there any way a user can create custom icons like those used by commercial programs, such as MultiScribe 3.0 or AppleWorks GS? Also, What is the word on the pesky 0911 error?

After I installed Applied Engineering's RamKeeper with two RAM cards, I couldn't work for more than 45 minutes before the 0911 showed up. I am now running two fans, and that seems to have solved the problem.

In addition, I have found that GS/OS will not support my favorite printer driver, ImageWriter.BW. Also, Paintworks Gold will not run under GS/OS. Can you get through to Activision?

Rich Bates
Lake Ridge, VA

We are aware of at least four editors that allow you to create custom icons for the IIGS Finder. All of them are shareware, so you may have to look around a bit to find one.

The best place to start would be local bulletin boards or a user group library. If you live near Washington, D.C., Washington Apple PI is a very large user group that is sure to have one or more icon editors in its library.

All of the national online services should also have icon editors in their libraries.

The 0911 error pops up when the Apple Desktop Bus (ADB) controller gets out of sync with the computer. Some IIGS systems seem to be more prone to this condition than others.

Adding memory, or other cards that draw more power and generate more heat, does seem to exacerbate the problem. Many users have found that adding a fan to the system helps prevent ADB errors.

Many of us were disappointed when the ImageWriter.BW printer driver Styleware supplied with MultiScribe GS did not work with GS/OS. We hated to lose the outstanding print quality that the driver provided.

But then we learned that it really wasn't GS/OS that ImageWriter.BW was incompatible with.

It takes *two* drivers to print. One driver is for the printer itself, and the other is for the interface that the printer is connected to.

The problem is that ImageWriter.BW does not work with the printer-port driver supplied on the GS/OS disk. The printer-port driver is the file in the SYSTEM/DRIVERS folder, which is simply named PRINTER.

Here's how we use the ImageWriter.BW driver with GS/OS. To make it available, we first re-named the printer-port driver from our MultiScribe disk PRINTER.BW. Then we copied both PRINTER.BW and the ImageWriter.BW driver to the SYSTEM/DRIVERS folder on our hard drive.

If you boot from a 3.5-inch disk, copy it to the same folder on the disk(s) you normally use to boot GS/OS.

Before we print, we make sure that we choose the printer and printer port together in the Choose Printer dialog box. The printer-port driver named PRINTER goes with the ImageWriter or ImageWriter.CL printer drivers, and PRINTER.BW goes with the ImageWriter.BW driver.

Many of Activision's programs have problems working with GS/OS. Fixes for most of them should be available by the time you read this. Activision plans to send a notice to each registered owner when updates are available.

Even though they are not fully compatible with GS/OS, most Activision programs, including Paintworks Gold, can be made to run satisfactorily under GS/OS. Removing all AppleTalk files from the GS/OS boot disk is enough in most cases to allow Paintworks Gold to run.

Sometimes this isn't enough, and desk accessories must be removed from the system before Paintworks Gold will run.

Our copy still crashes occasionally at the title screen when run under GS/OS. We have found that if we run it from a program selector that can purge memory before a program is launched (such as the new 16-bit version of ProSel), Paintworks Gold always works.

It is possible Paintworks Gold is sensitive to where it is located in memory or needs its memory available in a continuous block that's not available unless memory is purged.

Music Studio 2.0 is another Activision product with a fairly simple fix that allows it to run under GS/OS. Music Studio needs to

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Circle Reader Service Number 5

have a MIDI driver present to run, but it looks for the driver by name. Although the driver is available under GS/OS, its name is slightly different.

If you copy the APPLEMIDI driver from the SYSTEM/DRIVERS folder of the Music Studio disk to the SYSTEM/DRIVERS folder of your GS/OS boot disk, Music Studio should run under GS/OS.

To Protect And Defend

According to your software directory, Paintworks Plus is not copy protected. Yet when I tried to copy the disk, I received an I/O error.

Then I tried to copy each individual file. When booting the copy, I was asked for the master disk. If the program is copyable, Where did I go wrong? If not, please update your software directory.

David Reiner
Highland Park, IL

What's happening here is that Activision originally copy protected all of its IIGS software. Later it changed its policy and removed all protection from productivity software, including Paintworks Plus.

The type of copy protection used by Activision was the key disk system. The disk itself was made so the errors you received trying to copy it were part of the protection scheme.

You could copy the files to another disk or hard drive. When it was time to run the program, however, it would ask you to put the original disk in the drive to verify that you really owned the program.

Although the key disk system is one of the less objectionable methods of copy protection, it's still a nuisance. If you would like to upgrade to an unprotected version, Activision has a special address for this.

Part of what is required for the update is the product number from the back cover of your manual.

We managed to stump Activision's tech support when we mentioned that some of its software originally requested this number be sent in with the registration. Owners who complied with these instructions will not be able to provide the number again.

If you fall into this category, contact Activision for the proper procedure. Otherwise, cut out the product number from the back cover of the manual and send it, along with $14.50, to Paintworks Upgrade, PO Box 8123, San Francisco, California 94128.

You can upgrade to a non-copy protected version of Draw Plus or Writer's Choice Elite by using the same procedure. Just substitute the product name you are upgrading for Paintworks and contact the same address.

Click And Shout

I have the Finder Version 1.1. I would like to know why whenever I am using it, the 5.25-inch disk drive connected to the disk drive port (slot 6) blinks on and off. At the same time, there is an annoying clicking sound.

David Jan
Randolph, NJ

What you are experiencing is a more or less normal part of the Finder's operation. To determine whether a disk has been inserted or removed, the Finder periodically checks the drives.

An Apple 3.5 drive can be checked for a disk without activating the drive. A UniDisk 3.5 must be briefly activated to determine whether a disk is in the drive. When the drive is activated, the light on the drive will blink.

Under all versions of the Finder, there are separate icons for a 5.25-inch drive and for any disk in the drive. The extra icon for the drive exists because a 5.25-inch drive doesn't have the circuitry to check for the presence of a disk.

If a disk is inserted into a 5.25-inch drive, you have to click on the drive's icon before the drive activates to generate an icon for the disk.

Although it is possible your drive has the circuitry necessary to check for the presence of a disk, we are not aware of any 5.25-inch drives so equipped. We believe it's likely your drive is responding to the computer's drive polling signal by briefly activating.

Nevertheless, the drive is incapable of responding to the signal by signaling the presence or absence of a disk.

Different IIGS systems respond to the drive polling in various ways. We have heard some computers click loudly, while others remain dead silent. The clicking noise has been attributed to the IIGS' speaker and the switching power supply.

We can't tell you with any certainty which one might be generating the noise. But we can assure you that the noise is generally harmless to the computer (if not your sanity) and does not signal an imminent failure.

Compatible Apples

I would like to know if there is any way I can make my Macintosh compatible with my IIGS. Neither accepts the other's programs.

Matthew Holmes
Cream Ridge, NJ

There are a few things you can do to make the Macintosh and IIGS get along, but all of them are limited in one way or the other. There are simply too many differences in the design of each computer, including different microprocessors.

Still, it's not too difficult to exchange data between the two machines. The latest version of the Macintosh system software includes a program called Apple File Exchange that will allow a Macintosh to read and write 3.5-inch ProDOS disks.

You may want to investigate a program for the Macintosh called II In A Mac (Computer Applications, Inc., Raleigh, North Carolina) that allows a Mac to emulate an Apple IIe and run many IIe programs. The trade-off here will be speed.

Because of the overhead and inefficiencies of emulation, programs running under II In A Mac will be much slower than a IIe in executing Apple II software. Because it imitates only a IIe, II In A Mac cannot run any software written specifically for the IIGS.

More information about Apple File Exchange, II In A Mac and Mac.Transfer (Southeastern Software, New Orleans), another Apple II to Mac communications solution, is available in the "Apple To Apple" feature article appearing in the Spring 1989 issue of this magazine.

Computer Chess

Can you recommend a good, IIGS-specific chess game based on performance, graphics and speed?

Is there any software or hardware that permits the IIGS, or other members of the Apple II family, to receive fax or telex information and send it to the printer via modem?

Angela Furlow
Mulkeytown, IL

DISK ACCELERATOR

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If you're using an Apple computer, saving time is more than a priority...it's a necessity. Speed is critical, and nothing irritates you more than waiting for your disk drives to play catch-up.

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The Multi-Kache Card performs without taking up any system memory.

Applications which access your disk drives frequently, such as a large data base will demonstrate dramatic speed improvements. And the Multi-Kache Card's real cache memory can extend the life of your drives.

The Multi-Kache Card controls both 3.5 and 5.25 drives and runs at 8MHz.

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- The Multi-Kache Card can read an entire 3.5 disk from cache in 3.5 seconds
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- is compatible with all accelerators currently on the market
- is a SMARTPORT device that is 100% compatible with ProDOS 8/16, and GS/OS
- is compatible with Apple *II*+, *IIe*, and *IIGS*

The OKS Multi-Kache Card comes standard with 256K of cache memory and can be upgraded to a full 1 meg.

The Multi-Kache Card can control any combination of the following types of disk drives:

- The Apple Unidisk 3.5 Disk Drive
- The Apple GS 3.5 Disk Drive
- The Apple 5.25 Duodisk
- The older 5.25 Disk II Disk Drive
- The Apple 20SC SCSI Hard Disk Drive
- The Apple 5.25 Drive

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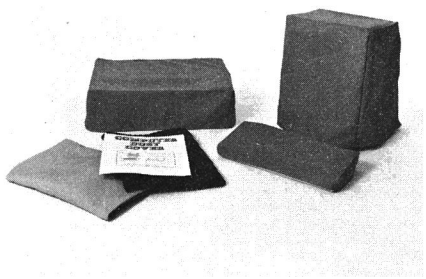
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Circle Reader Service Number 7

A chess game is easy to recommend, because there is only one that is specifically for the IIGS. The Fidelity Chessmaster 2100 from The Software Toolworks (Sherman Oaks, California) is the only one now.

The program plays a good game of chess and takes advantage of the IIGS' graphics. The first release of the program occasionally made illegal moves, but the most recent version seems to have resolved this problem.

There's another chess game on the horizon that may be interesting. Battle Chess, originally developed for the Amiga, is intriguing because it uses animation and sound.

We saw Battle Chess demonstrated on an Amiga on the "Computer Chronicles" show on Public Television. When one knight captures another, it walks up to the knight being captured and engages in a battle that is right out of "Monty Python and the Holy Grail."

It's great fun to see this in a demonstration, but the on-screen skirmishes may get old after a few games. The "extras" may interfere with actual game play.

As for fax and telex, it will take a combination of hardware and software to handle the job. The hardware will have to receive signals that are not the same as a regular modem, and the software will need to interpret what is received.

Apple has introduced the AppleFax Modem for the Macintosh, but the company has no software to allow any of the Apple II systems to use it. Perhaps this is because the Apple II is no longer perceived as a business computer by Apple.

There's nothing to stop an interested third-party developer from developing this software, however.

Lowdown On Spreadsheets

I am interested in purchasing a spreadsheet product for my IIGS. Could I get some information on the top IIGS spreadsheets currently available?

Chris Fleeman
Howell, MI

We know of three spreadsheets that can take advantage of the IIGS' features. One of them is the spreadsheet module in 8-bit AppleWorks (a.k.a., "AppleWorks classic").

While the module can use the extra memory of the IIGS for larger spreadsheets, it cannot really take advantage of any other features.

The AppleWorks spreadsheet is a nice medium-powered spreadsheet, for which there are lots of templates and some nice enhancements in the Beagle Bros. TimeOut series.

Another product that is IIGS-specific is the spreadsheet module within AppleWorks GS. The AppleWorks GS spreadsheet has almost all of the features of AppleWorks classic and adds several useful new ones, including logarithms, trigonometry and time functions.

It also uses the super-high-resolution IIGS desktop, thereby giving it formatting and display options unavailable in a text-based program. The desktop also makes it slower than AppleWorks classic.

The AppleWorks GS spreadsheet can import AppleWorks classic spreadsheets, so most of that vast library of templates should be available to it.

One drawback to AppleWorks GS is that it is rather poor at memory management. Empty spreadsheet cells take up memory in AppleWorks GS, but not in AppleWorks classic.

AppleWorks GS spreadsheets require two or more times the memory of AppleWorks classic spreadsheets, even without the empty cells requiring memory.

When all is taken into account, a modestly sized AppleWorks classic spreadsheet run under AppleWorks GS can take up so much memory that it fails to load and locks up the computer.

The third spreadsheet, VIP Professional, is different in that it is Lotus 1-2-3 compatible. This means there's an even larger library of templates for VIP.

VIP is a controversial spreadsheet, though. Some users regard it as a wonderful tool; others complain of bugs. If you have one foot in the MS-DOS world, VIP is the choice — because of its Lotus compatibility.

See the "Apple IIGS Hardware And Software Directory" for more information on each of these products. ■

— Larry Miller

Larry Miller, a programmer and consultant based in Indiana, is a SYSOP on Compuserve's Apple II and III Forum. His Compuserve I.D. is 76703,1031.

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A Potpourri Of Creativity Tools



Frequently, an educator depends upon a computer to reinforce basic math and verbal skills, or seeks its assistance as a remedial teaching device. When a computer is used for such tasks, little emphasis is placed on creativity. Children are expected to learn the information as quickly as possible.

In this issue, we examine three IIGS products that facilitate the creative process. Two of the products foster creativity in young children. The third is an authoring system that promotes creativity among teachers.

The *Oxford American Dictionary* defines creativity as having the ability to bring things into existence; showing imagination and originality, as well as routine skill.

For a computer to function as a truly creative support tool, it should perform transparently in the background, like a calculator. The Learning Company's Writing & Publishing Center, LEGO System's Lego TC Logo, and Techware Corporation's Tutor-Tech all promote use of the imagination and inventive thinking. Traditional drill and practice software does not.

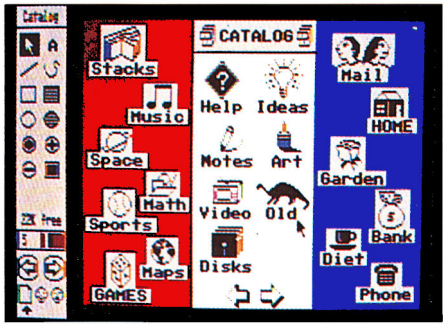
TCW&PC. At last there's a relatively sophisticated desktop publisher that's so easy to use even young children (ages 8 and up) will enjoy putting their thoughts on paper: The Children's Writing & Publishing Center. (For an in-depth review of this product, see the Spring 1989 issue of *The Apple IIGS Buyer's Guide.*)

TCW&PC combines word processing, page-layout and graphics capabilities. With the product, youngsters can produce illustrated book reports, research papers and class newsletters.

Children find word processors useful because they take the tedium out of writing. With a word processor, kids no longer have to rewrite drafts when they edit mistakes.

Once the text is saved to disk, it's simple to call up a file and make corrections. Instead of focusing their energies on writing neatly, children can concentrate on story details.

The computer consistently prints out a neat product. Because corrections can be done in a shorter period than it would take to rewrite a draft by hand, youngsters can use the extra time to relax and be creative.



Forget programming. Using the mouse and a creative imagination, both students and teachers can write and run their own Tutor-Tech courseware.

If an important learning objective is to promote language-arts skills, then TCW&PC goes one step farther. It gives youngsters the tools to enhance the written word. These tools include multiple fonts, type sizes, type styles, headings and clip art.

TCW&PC also allows multicolumn printing (two columns maximum). With an appropriate color ribbon, the program even lets kids generate hard copy in color.

TCW&PC eliminates the boredom many children experience when writing. The reason: It includes more than just a simplified word processor.

In addition to Delete, Cut and Paste functions for effortless corrections, would-be publishers can embellish their text by inserting pictures. The capability to mix text and graphics on a page makes writing more fun.

Other desktop publishing products may be useful in this regard. The Print Shop IIGS, however, does not leave much room on a page for printed words, and the page-layout options are limited.

An instructor may find TCW&PC useful as a starting point for a group writing project. There's nothing like a team effort to spark the imaginations of a room full of enterprising and energetic youngsters! TCW&PC can't teach students to be creative, but it will make them more willing to experiment, while developing their basic writing skills.

Lego TC Logo. Many observers comment on the similarities between Lego building bricks and the Logo programming language. Aside from almost identical sounding names, they both let children build things they care about, leaving lots of opportunity for creativity and exploration.

Both the building bricks and the programming language help develop ingenuity and thinking skills in young children.

With Lego TC Logo, youngsters can construct models out of Lego blocks, connect the models to an interface box hooked up to an Apple II, and issue Logo commands to control the movements of their Lego inventions.

When children "play" with Lego TC Logo, they learn math, science, physics and engineering. In the process of turning motors on and off, reversing motor direction, and experimenting with light and touch sensors, concepts such as fractions, torque, calibration, measurement, distance, rate and time become almost second nature.

Telling children why it's sometimes necessary to shift a car into second gear to make the car climb a steep hill teaches a fact without context. But assign students the task of building a car strong enough to reach the top of a sheer incline, and in no time they'll be experimenting with gears and gear ratios.

If you give students control over their environment, they'll learn lessons they will never forget.

The Lego TC Logo starter pack comes with its own interface box, a card for installation in slot 3 of an Apple IIGS or IIe, software, cables, one optosensor (sensitive to light), two touch sensors, a counting wheel and sufficient building components to fashion seven different projects.

The package also includes several well-written student guide books, complete with project ideas, and a reference guide with explanations and examples of all the Lego TC Logo commands. Also included is a *Quick Reference Guide* with a summary of the most frequently used commands.

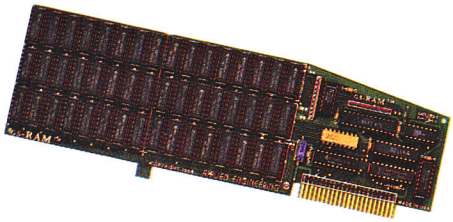
Students may construct traffic lights that flash green, yellow and red at timed intervals; a motorized car; a conveyor belt; a washing machine (simulating both the wash and spin cycles); start/stop gates; a merry-go-round; and a turtle. There are enough blocks to build only one working model at a time, however.

Because Lego TC Logo uses a variation of the LogoWriter programming language, a teacher may use the product as an exercise in Logo programming. Several special commands have been added to enable a computer to "talk" to the ports on the interface box.

Three good reasons to buy a memory card from Applied Engineering.

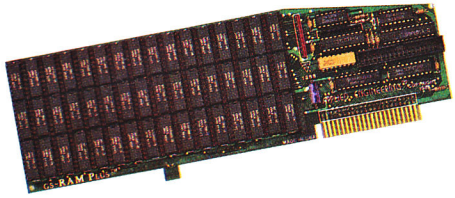
Applied Engineering makes three different memory cards for the IIGS because every IIGS owner is different. Each card was designed to suit specific needs:

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.



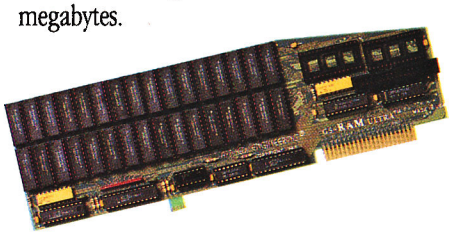
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1 MEG	$639
1.5 MEG	$919

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.



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2 MEG	$1,049
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	$239
512K	$399
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 application become available from Applied Engineering and others.

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It's also possible to use Lego TC Logo as a tool for developing math, physics and science skills; teaching engineering concepts such as feedback; or introducing youngsters to the fields of robotics and artificial intelligence.

Whatever the teaching objective, Lego TC Logo enables children to learn through informal creative play. The better children become at playing with this complex technology (presented in the guise of a toy), the more they will be motivated to explore their environment for concepts that give meaning to their brick constructions.

As Seymour Papert, the developer of Logo, points out, "When children build things that they care about, they learn that learning can be exciting."

Tutor-Tech. Tutor-Tech has amazing potential. Often compared with HyperCard (the software authoring system for the Macintosh), Tutor-Tech makes it possible to design original software complete with text, clip art, video clips, sound effects and speech capabilities — all on an Apple IIGS, IIe or IIc equipped with 128K.

With Tutor-Tech, you can generate computerized tests that incorporate a variety of question styles, such as fill in the blank, true-false or multiple choice. Alternatively, you may design simulations, interactive courseware and educational games.

If the idea of creating personalized software makes you nervous because you're not a programmer, relax. You don't have to be a hacker to produce electronic courseware.

Tutor-Tech includes all the necessary tools. You can even embellish your creation with pictures imported from MousePaint, The Print Shop and the Newsroom.

You'll need a mouse or a joystick to put your ideas on disk, but students may navigate through the software you construct by clicking on icons directly from the keyboard.

Tutor-Tech comes with a well-written User's Guide and four 5.25-inch disks. There's a Teacher Disk for authoring lessons (including some sample files with helpful tips and ideas), a Student Disk for presenting the lessons to students, a Grader Disk to keep track of student scores and similar concerns, plus a Samples Disk with lessons and clip art.

Because the disks are not copy protected, IIGS users can copy the Teacher, Sample and Grader files onto one 800K disk for convenient access.

The Teacher Disk offers a simulated Macintosh interface with pull-down menus, point-and-click mouse control, icons and dialog boxes. This interface simplifies the authoring system, because the commands are menu driven.

An educator can create software by typing

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and drawing directly on a "page," or screen. Pages are linked to other pages by adding "targets," or buttons.

A toolbox, which runs down the left side of the screen, includes tools for drawing lines, ovals, boxes and freehand. Teachers can draw hollow ovals and boxes or fill shapes with colors and patterns. There are tools for adding targets, selecting objects and inserting text. Text may appear on a page in one of four different fonts.

As a teacher builds lessons, he or she may add motivational and remedial pages. The former offers positive reinforcement for questions answered correctly. The latter makes it possible to ask follow-up questions, which will not affect a student's score. When a lesson is complete, it can be saved onto a student's disk, where it may be run but not modified.

Tutor-Tech gives a teacher the freedom to fashion personalized computer software. The program features a host of sophisticated design tools, but it is relatively simple to learn. Although an educator with a limited software budget might find the price a bit steep, the program will more than pay for itself if it is used regularly.

The IIGS offers plenty of opportunity for creativity, and each "construction set" reviewed here enables users to have fun. So take a chance; spend some time experimenting. You'll be amazed at what you can produce with a minimum of effort. ■

— Carol S. Holzberg, Ph.D.

Columnist Carol S. Holzberg is a Massachusetts-based anthropologist turned computer journalist. She writes for several computer publications and serves as a computer consultant to schools.

Products Mentioned

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

The Children's Writing & Publishing Center
The Learning Co.
Circle Reader Service Number 37

Lego TC Logo Starter Pack
LEGO Systems, Inc.
Circle Reader Service Number 38

Tutor-Tech (v2.3.2)
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Taming The Graphics Conversion Blues

Do any of these scenarios sound familiar? While working on your new IIGS-specific desktop publishing program, you realize that the picture you had planned to use to illustrate an article is in double-high-resolution. You can't load it because your new program only recognizes super-high-resolution.

Before you switched to a IIGS, you used the Newsroom or The Print Shop to fulfill all your desktop publishing needs. Now you wish you could use all those clip art disks with your IIGS-specific programs.

You have access to a Macintosh and would really like to see some of the same clip art available for your IIGS.

A friend in another city has a Commodore 128. She wants to send you some pictures via modem, but it won't do much good because your IIGS can't display them.

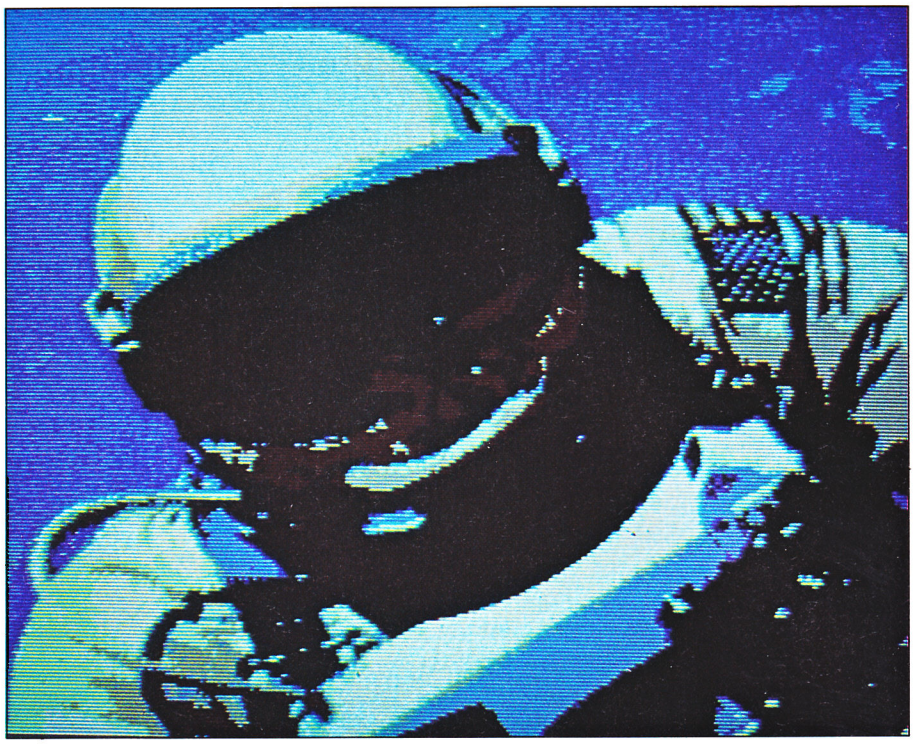
Don't Despair. There are special programs that make it easy to convert your images from one resolution or file type to another. It is even possible to convert images from one computer type to another.

The Graphic Exchange from Roger Wagner Publishing, Inc. offers an incredible number of choices for Apple-specific conversions. The system requirement is an Apple IIGS with 512K memory. If you want to convert MacPaint graphics, you will need 768K. The program is on a 3.5-inch disk and is not copy protected.

The interface for The Graphic Exchange is non-standard, but easy to master. Merely use the mouse or cursor keys to highlight an option, then press Return.

The left side of the main screen offers options such as Display Graphic, Standard Transfer, Scaled Transfer, Full Screen Transfer, Exchange Black and White, Clear Graphic, Restore Standard Palette, Set Background Color, Slide Show and Create Data Disk.

After selecting one of the options, the main screen lists all the resolution modes and picture types that can be loaded. These choices cover the full spectrum of resolution modes that can be created on a IIGS, such as low-resolution, high-resolution, double-high-resolution and super-high-resolution. If that weren't enough, Print Shop graphics in monochrome or color, Newsroom clip art or photos, and MacPaint images are also supported.



Virtually any IIGS image — including this astronaut captured with the ComputerEyes board — can be imported and exported to other programs.

Any of the picture types listed can be turned into any other picture type. Even though some of the conversions may not be visually acceptable, it is better to have the capability to at least try to make the conversions than to have limited options.

After conversion, it is also possible to save a picture in any of the resolution modes or file types that the program supports.

It is necessary to transfer Print Shop graphics to an intermediary disk. This is the reason for the Create a Data Disk option in the Main menu. The Create a Disk option does not format a disk. Instead it alters a formatted disk to enable it to receive either monochrome Print Shop graphics, Newsroom clip art or Newsroom photo files. The intermediary disk for Print Shop GS is a standard ProDOS formatted disk.

A minor inconvenience is that The Graphic Exchange will not load all super-high-resolution file types. It is capable of saving both packed and unpacked super-high-resolution pictures in a wide variety of file types. It seems odd that the load option is not as versatile.

A nice touch is the slide show option. Merely select a picture type and a volume or subdirectory and The Graphic Exchange will automatically load and display all of the pictures that match the file type specified. This is an easy way to view the contents of a disk.

Creative Conversions. If you find all the options of The Graphic Exchange overwhelming, then Graphics And Pictures Converter (GAP) from Big Red Computer Club might be an excellent alternative. The program is not copy protected and comes on a 5.25-inch disk. This program runs on 128K Apple II series computers, but only supports super-high-resolution conversions on the IIGS.

GAP will convert Print Shop graphics to high-resolution, double-high-resolution and super-high-resolution. It can also convert between high-resolution and double-high-resolution pictures. In addition, double-high-resolution pictures can be converted to super-high-resolution.

Here, too, Print Shop graphics must be moved to an intermediary disk.

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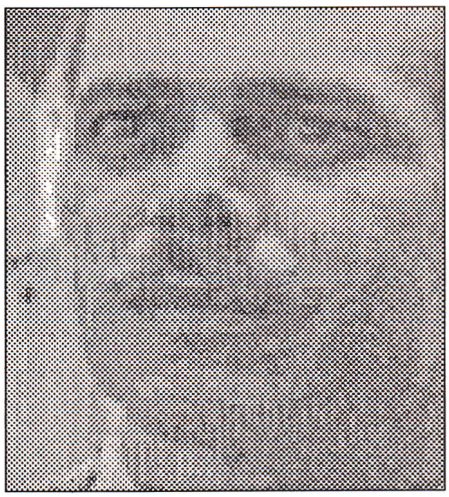
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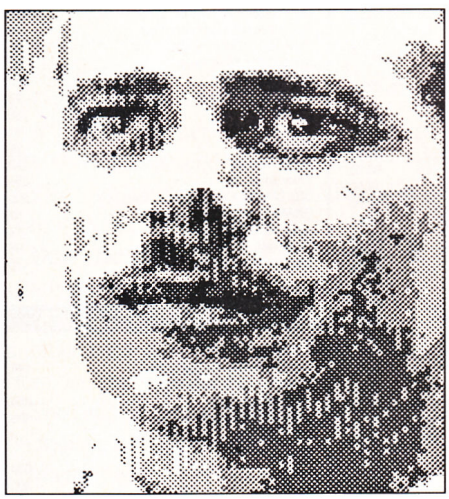
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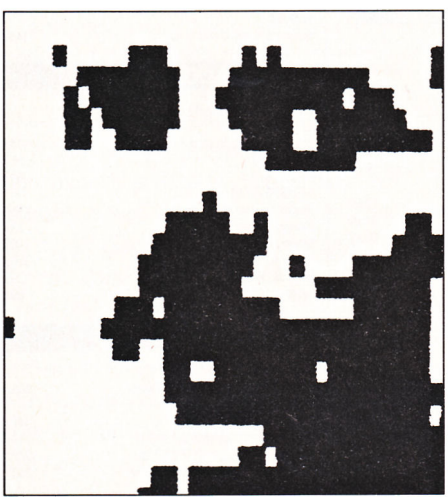
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Low contrast, super-high-resolution image output to the LaserWriter printer.



The same super-high-resolution picture printed with high contrast on the LaserWriter.



Another view of the same super-high-resolution image, this time converted to Print Shop format using The Graphic Exchange.

The Big Red Computer Club offers another conversion program, PS Lovers' Utility Set, which can be used to convert Print Shop borders, patterns and graphics. The conversion program is not copy protected and comes on a 3.5-inch disk. It can also convert Print Shop GS graphics to super-high-resolution.

ComputerEyes. We extended our search for conversion programs to include the System Software disk that comes with ComputerEyes GS. The program is usually used in conjunction with the ComputerEyes digitizer to capture video images.

It is possible to load a wide variety of file types into this program and convert them to other forms without using the ComputerEyes digitizer, though the program will not run without the ComputerEyes board installed. ComputerEyes System Software is not copy protected and comes on a 3.5-inch disk.

The program's file card interface is similar to the AppleWorks interface and is equally easy to use.

The ComputerEyes program decides first which conversions are appropriate. Not all conversions are supported by a direct route. Basically, it is possible to convert among high-resolution, double-high-resolution, super-high-resolution and Print Shop graphics.

After a picture is loaded, brightness, contrast and color can be altered. The image can also be converted to high contrast, mirrored, inverted, scrolled, reduced and enlarged. Even without using ComputerEyes to capture video images, the System Software displays powerful features.

Shareware Sources. SHRConvert 2.1 by Jason Harper is a shareware program that can be downloaded from a network such as Compuserve or The Source. The program will help you convert pictures that were created on another computer system into super-high-resolution pictures.

SHRConvert's interface with pull-down menus follows Apple's Human Interface guidelines and is easy to use. There is also extensive online help that lists information about the file types that the program supports and offers suggestions for downloading files.

SHRConvert 2.1 can convert pictures created on Atari ST, Commodore 64/128 or Macintosh computers. It can also convert universal file types such as GIF (Graphics Interchange Format) or RLE (Run Length Encoded).

Not only were we able to convert files that had been received through a modem, but we were also able to use a Mac II and Apple's File Transfer Utility to transfer a MacPaint file to a ProDOS disk, then use SHRConvert to convert the file into an ultra-high-resolution picture, a IIGS image with 640 by 200 pixels.

SHRConvert can transfer high-resolution, double-high-resolution and Print Shop images to super-high-resolution. There are no provisions to convert super-high-resolution to high-resolution or double-high-resolution, though.

Conversions from a low-resolution type to a high-resolution type will almost always be accurate in color and image quality. Conversions going the other direction will usually produce inferior results. Increasing the contrast in the original image can sometimes improve the results, regardless of the direction of the conversion.

In spite of the kind of conversion that you might need, there is probably a program available that can accomplish the task. ■

— Gary Ramey

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

Products Mentioned

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

ComputerEyes IIGS
Digital Vision, Inc.
Circle Reader Service Number 40

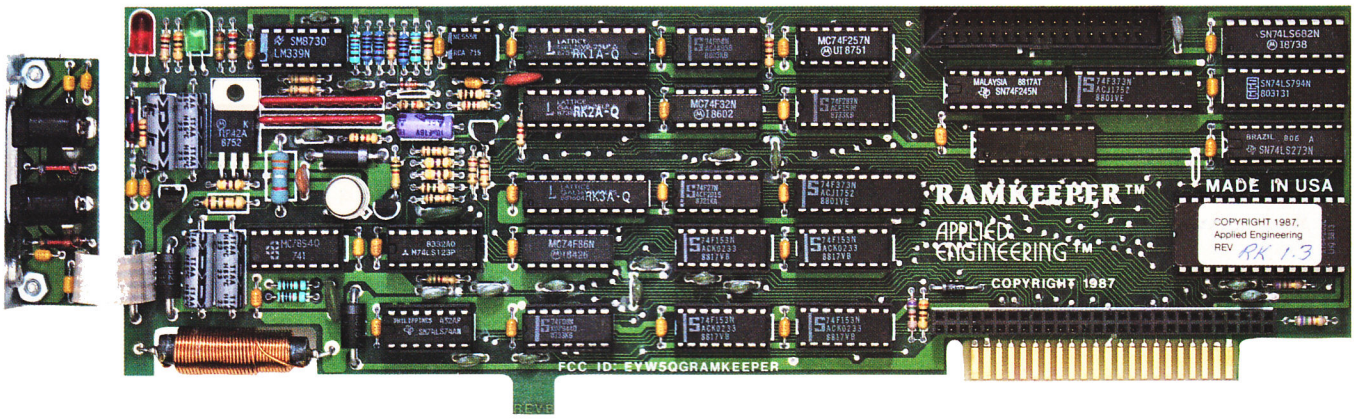
Graphics And Pictures Converter (GAP)
Big Red Computer Club
Circle Reader Service Number 41

The Graphic Exchange
Roger Wagner Publishing, Inc.
Circle Reader Service Number 42

Newsroom
Springboard Software, Inc.
Circle Reader Service Number 43

The Print Shop
Broderbund Software, Inc.
Circle Reader Service Number 44

RamKeeper.™ If not the first board you add to your IIGS



Certainly the second.

Chances are the first board you add to your computer will be for memory expansion. RamKeeper™ makes a smart second addition by performing *two important tasks:*

First, it gives you a sensible way to grow beyond the Apple memory expansion board that probably came with your IIGS. Apple's board has room for only 1 MEG of memory, and the new, integrated programs need a MEG just to boot.

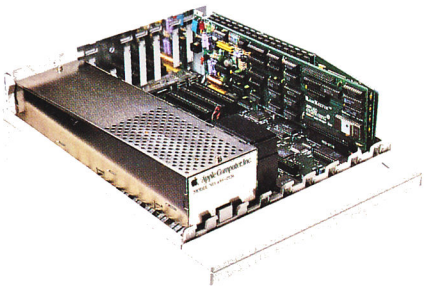
RamKeeper lets you add a second memory board to your memory expansion slot with a special "back pocket" connector. That way, you can use your 1 MEG Apple board and still expand beyond its 1 MEG limit. And RamKeeper "sees" the two boards as one, so all you'll notice is the increased memory.

Second, RamKeeper creates battery-backed Ram and ROM. Safely store your system software, often-used application programs and most-needed files on RamKeeper-enabled ROM. It's like an internal, electronic hard disk (up to 16 MEG!), but five times faster than an ordinary hard disk.

Turn your computer on and see the finder in 13 seconds, instead of several minutes.

Safe storage

RamKeeper powers up to two memory boards simultaneously, even when your computer is turned off. What's more, the stored programs are protected against power outages by the reliable Gel/Cell battery we include. Startup checksums are employed to verify that no data was lost



RamKeeper is easy to install and stores programs in an "instant on" electronic hard disk.

while the power was off. To protect the operating software against program crashes, we installed RamKeeper's controlling firmware in an EPROM.

You can even mix different brands of boards. For example, an Apple board with at least 512K of memory (based on 256K x 1 chips), and AE's (MEG-chip based) GS-RAM Plus™ or GS-RAM Ultra™ boards. And most all other brand and size combinations are also possible.

Advanced enough to be easy

We designed RamKeeper to be easy to use. Instructions are clear and most functions are automatic. For example, there's no need to manually configure if you add a second board, it's done automatically. The configuring is linear, so there's less chance of a program crash. And *you* decide how much memory to devote to ROM and to RAM—all without affecting your stored files.

Compare features:

RamKeeper includes a collection of important features like *disk caching* that tremendously accelerates access time to the 3.5 drive, running most applications up to *seven times faster.*

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The Music Machine

The IIGS may be the finest music computer ever designed for the mass market. All it takes to make it really sing is the right software. Just follow the bouncing ball . . .



One of the strongest features built into the Apple IIGS is the Ensoniq sound chip. This innocuous little silicon resident on your IIGS' motherboard is capable of an astounding range of sound-related functions, from duplicating the old Apple II "beep" to recreating an orchestral performance. With the right software, the Ensoniq chip can even speak English clearly.

With additional hardware, the Ensoniq is capable of digitally recording sounds from the outside world, a process called digitizing. These sounds can be stored on disk and later modified and played back.

The IIGS houses enormous potential in the field of music processing, and there is no purer form of creativity than music.

Music Explored

What is the best program for doing music on the IIGS? This frequently asked question is too ambiguous for a single, definitive answer. First, we must determine what is meant by "doing music."

There are several definitions of music, different aspects that need to be addressed. You might want to use the IIGS as a performance tool; as an accompanist to a soloist, to mimic one or more instruments in a band or to synthesize an entire band.

You might want to compose music and print a musical score and the individual instrumental parts. Or you might want to play music on an electronic instrument and have the IIGS record the performance for later playback, modification or printout.

And, of course, the IIGS makes an excellent educational tool if you wish to learn about any or all of the above!

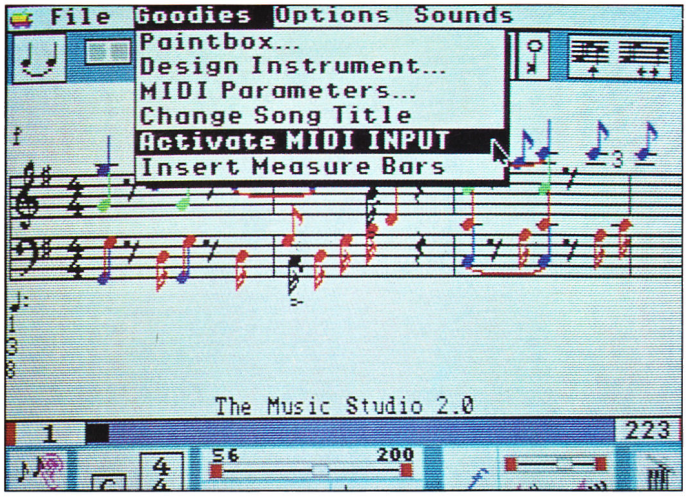
Several programs address these capabilities in different ways. We'll look at some of them, in sections devoted to each music specialty. Note that some packages appear in more than one section.

The Computer As A Performer

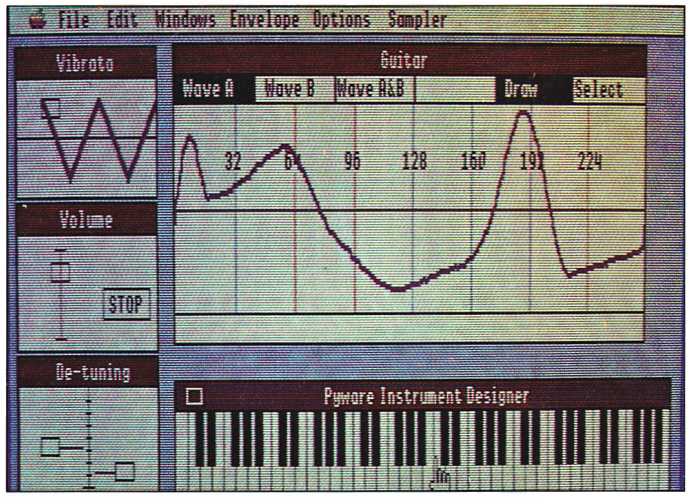
Within the performance category are packages that use the IIGS as an accompanist to a live player, as a playback machine or as one or more instruments in a band.

Instant Music. This program from Electronic Arts is a unique, low-cost package for composing music for playback. Eschewing the traditional notes-and-lines method of displaying music, Instant Music arranges information in a visual painted-on form.

Instant Music plays music continuously in a loop, repeating from the beginning when the end of a song is reached. While a song is playing, you can "jam" using the mouse. Using the mouse to select one of the four instruments being played causes the selected instrument to cease playing, except at your command.



The Music Studio 2.0 supports virtually any MIDI instrument combination.



Pyware Instrument Designer: Watch for a review of this brand new music product, from the maker of Pyware Music Writer, in the next issue of The Apple IIGS Buyer's Guide.

Pressing the mouse button during "jam" causes the instrument to play a computer-generated pattern. Vertical movement of the mouse selects high and low notes. The program supplies the notes, assuring that the notes played are within the guidelines of the current chord.

The Speaker Story

Let's face it: That tiny speaker built into the IIGS is not up to the task of producing high-quality sound.

To take advantage of the IIGS' sound capability, you must attach external speakers. Bose RoomMate speakers are Apple's speakers of choice, and they are a fine product. But lower-cost amplified speakers are available that will do the job.

Speakers with volume controls will cost more than speakers without, but it may be a worthwhile investment.

The IIGS can hook into almost any existing stereo amplifier and use its attached speakers; all it takes is the right cable. The IIGS has a Walkman-type plug in the back. You'll need a patch cord to connect that plug to the RCA-type phono plugs used by most home stereo systems.

If you don't have a stereo card in your IIGS, we recommend that you get a patch cord with a stereo plug on the Walkman end. This costs a little more than the mono kind, but it guarantees output on two lines.

This way, you can use both channels of a stereo amp. Also, when you add a stereo card later, you're already wired for it!

Instant Music assures you of perfect performances; it is not possible to play a "wrong" note. While this concept makes good music easy to play, it limits your creative input to selecting high or low notes.

Still, Instant Music is a fun package, and a variety of songs are available for it. Two supplementary song disks, Hot and Cool Jazz and It's Only Rock and Roll, include songs that sample music styles from several eras.

One of Instant Music's more interesting applications is as a backup band. A particular selection or chord progression can be set to play continuously, and you can pick up your "ax" and really jam. Here's where Instant Music does bring out your creative side.

Instant Music is copy protected, but it can be installed on a hard disk. The key disk method is used to confirm the presence of the original disk during start-up.

The Music Studio. This powerful, multipurpose program effectively exploits the IIGS' hardware capabilities. The Ensoniq sound chip can simultaneously produce 15 independent voices, and The Music Studio can assign a different instrument to each voice. Chords can contain up to 15 notes in any combination of the 15 instruments.

Four sets of 15 instruments, or voices, are included in the program, allowing songs to be played with sounds ranging from a symphony orchestra to a rock band.

A separate disk with additional songs and other support files is included. In addition, scores of user-contributed songs are available from public domain sources, such as commercial online networks and local user group libraries. (Activision, Inc. runs a bulletin-board system and has dozens of songs that can be downloaded for the cost of a telephone call. The number is 415-329-7684.)

Its user-supported growth capability is one of the program's greatest strengths. Over time, it grows!

The Music Studio uses different colors to represent notes played by different instruments. The intuitive display scrolls by in real time as the music plays, and you get a feel for how the look of the music relates to its sound.

A Paintbox mode, similar to the display in Instant Music, is also available. The program can display any composition in either the Paintbox mode or on the normal notes-and-staff screen.

You can modify the instruments provided or design the instruments to be used in the program. Some high-quality digitized instruments are included. They can be used in place of the multiple instrument sets.

The Music Studio plays music through up to 16 separate channels. The Musical Instrument Digital Interface (MIDI) parameters can be modified to support any MIDI instrument combination.

Up to three lines of lyrics can be added to songs, placed under the notes they match. As the notes scroll past on screen, the lyrics move with them.

Each instrument in The Music Studio can be assigned to one of four separate tracks. The tracks can be turned on or off, and only active tracks will be displayed and played. This technique, which allows you to view selected instruments, is useful for pieces that involve lots of notes in a small area.

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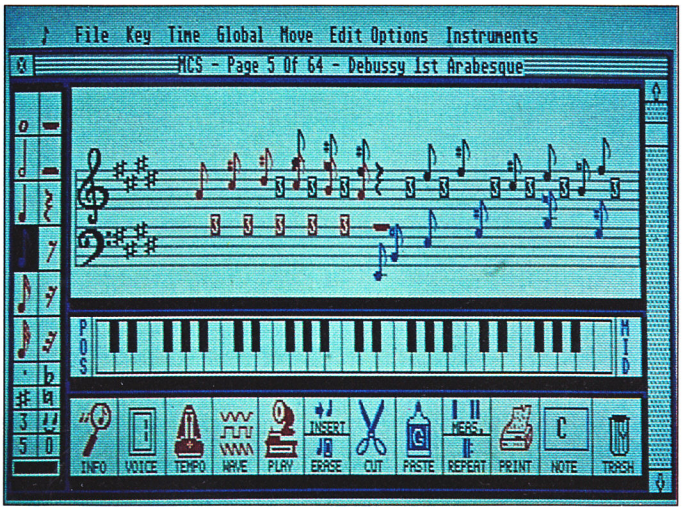
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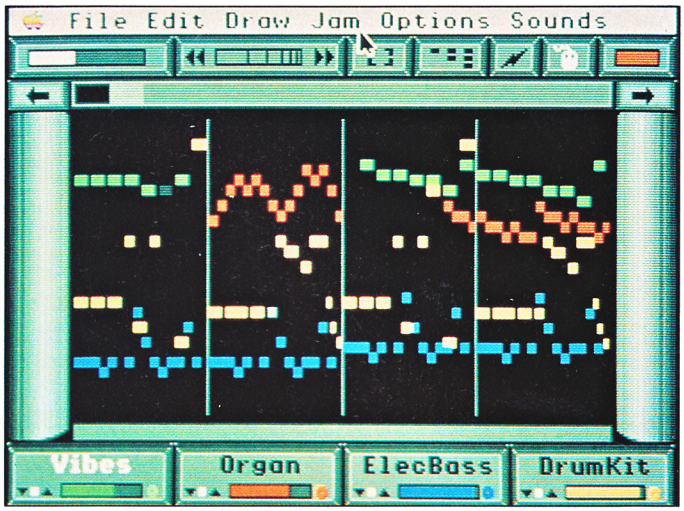
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Circle Reader Service Number 13



Music Construction Set: One of the first IIGS musical programs, and among the easiest to use.



Instant Music means you'll never have to play a wrong note.

An instrument or combination of instruments can be isolated and played separately from the others, which is a good analysis and editing aid.

Music Construction Set. The IIGS version of this classic application costs less than The Music Studio and is similar in function, but its capabilities are less. For instance, Music Construction Set (MCS) can only play two instruments at a time, though it can produce chords of up to 15 notes. MCS is easier to use than The Music Studio, however.

The instruments that come with the MCS are diverse and, for the most part, faithful to the instruments they portray. Included on the disk is a composition entitled "Leroy," featuring a banjo accompanied by a synthesizer. The song illustrates well the excellent sound produced by this program.

Like The Music Studio, MCS has a large number of user-contributed, public domain song files. Unlike The Music Studio, MCS comes on a copy protected disk and cannot be installed on a hard disk. The program also has no Quit command, so your computer has to be re-booted after each MCS session.

Diversi-Tune. In a class by itself, this program is designed to accept real-time MIDI input and play it back faithfully. Not being locked into particular tempos or sampling rates allows the feel of a live performance to come through in Playback mode.

More song disks are available for Diversi-Tune than any other package. These disks, available separately from the vendor, focus on various music styles; one disk is full of sing-along Christmas carols, another has Jewish songs. Other disks offer folk songs, patriotic songs, gospel songs and more.

The actual program disk includes samples from all the other song disks. Several Diversi-Tune songs are available in the public domain.

The most noteworthy of the commercial song disks is the one recorded live at the 1988 Boston AppleFest by jazz pianist Nathen Page. Ostensibly the first live performance ever recorded on a diskette, this collection of songs really shines. You almost believe that Mr. Page is in the room, performing for you alone.

Diversi-Tune will make you wish you had a pair of IIGS computers — one for playing music; another for everything else. The program is that good.

Diversi-Tune allows the real-time display of song lyrics, complete with a Mitch Miller-type bouncing ball to lead you through the words. This feature provides some fun times at family sing-alongs, especially during holiday seasons.

True to its name, Diversi-Tune's capabilities are truly diverse. You can select the way that music is displayed on screen; lyrics can be displayed in two font sizes, or a piano keyboard can be called up to show which keys are hit and even how hard.

If you are a die-hard number cruncher, you can watch actual MIDI values scroll by in real time. The program can even mimic a piano roll as a song plays, giving the impression that a player piano is at work.

Music Writer. This powerful composer's tool is not really designed to facilitate playback. Yet a separately available disk, the Pyware Instrument Designer, allows you to create instrument sounds. You can even import sounds from digitizing sampler cards into Music Writer to enhance the program's performance capability.

The Computer As A Recording Studio

Through a MIDI interface (see separate MIDI feature, this issue), the IIGS is capable of interfacing with the outside music world. One interface is available from Apple Computer, Inc.; others are available from third-party sources.

Thanks to the MIDI standard, the IIGS can send information to MIDI instruments, control the music emanating from electronic keyboards and use high-fidelity instrument sounds. Conversely, the IIGS can "listen" to such instruments and record music information for later playback and processing.

The Music Studio. A versatile MIDI package, The Music Studio is able to process incoming and outgoing MIDI information, opening many creative doors. For example, a pianist can perform on a MIDI-compatible keyboard, and The Music Studio will record the music and display it as notes on a staff. If desired, the display can be saved, edited and printed.

The music can be played back through the IIGS' sound port or to a MIDI instrument. Music created for one instrument can even be transformed to another instrument! Through MIDI, a guitarist can create piano music or a keyboard artist can play a trumpet.

Music Writer. This program is not a MIDI sequencer per se; that is, it's not specifically intended for driving an external MIDI keyboard. Music Writer is oriented toward

composition, not performance. It will record live MIDI input, however, which can be converted to notes displayed on a staff and processed into professional-quality sheet music.

Music Writer, from Pygraphics Corp., will play compositions using its own digitized instruments or through a MIDI instrument, which is not its strength or purpose. The feature is mainly a convenience to composers.

The program can be enhanced by a separately available disk, the Pyware MIDI Translator. This utility converts files from Music Writer's format to and from Apple standard MIDI files, so your compositions can be played by a MIDI sequencing program using MIDI instruments.

Diversi-Tune. Diversi-Tune is a flexible MIDI recording studio in its own right. The control display resembles a tape recorder, with Rewind and Fast Forward as well as Tempo controls. Diversi-Tune functions as a sound-on-sound recorder, allowing one track to be recorded over another with no loss of fidelity.

Up to 32 different tracks can be managed at a time and mixed and played back as desired. Unlike most MIDI processors, Diversi-Tune does not lock you into a certain tempo, quantizing notes to fit the computer's precise timing. With Diversi-Tune, your creativity shows through.

Diversi-Tune does not use Apple's standard interface, offering its own graphics display as a replacement. It takes a little time to get used to the display, but it is very intuitive for a musician.

Diversi-Tune can combine its recording and lyric display capabilities, which are very unique. With the program, you can add visible lyrics — and the bouncing ball — to existing recordings imported from compact discs or other media. The results can be recorded onto videotape to create real-time video recordings of your songs and lyrics.

Master Tracks Jr. This program is a powerful, 64-track professional MIDI recording studio. It is the only package we looked at that requires a MIDI interface. Then again, MIDI recording and sequencing are its purpose.

Master Tracks Jr. is similar to a high-powered tape recorder, but it can do things its analog counterpart cannot. For instance, once music is recorded, it can be edited discretely — one track at a time — to correct errors, alter timing or make desired changes. Editing is done with the full Cut, Copy and Paste capabilities of other IIGS programs.

Tracks can be mixed to create full compositions. Tracks can also be viewed together as they play. Markers can be set for recall of individual locations within the music for later analysis or modification.

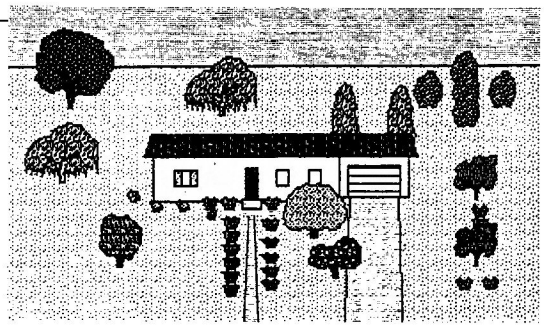
Changing position in the music is done the same way as it is on a tape deck. Fast Forward, Rewind and other tape-deck controls are displayed and function just like their real-world counterparts. Pause and Record controls are available, too, and detailed timing markers display position accurately.

Individual tracks can be set to loop, meaning they play over and over as the other tracks continue. This function allows a background pattern to be entered once and played continuously, aligned with the rest of the music. Up to 16 tracks can be recorded

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simultaneously. Once in memory, up to 64 tracks can be displayed and individually modified, played back or looped.

The recording, editing and mixing capabilities of Master Tracks Jr. make it a powerful studio package.

The Computer As A Composition Tool

A composer can use a computer to handle the tedious tasks involved with creating a musical piece, from accurate and clear placement of notes to drawing of the staves to actually creating the printed output to be used by live performers.

The composer can use the IIGS' playback capability to hear what a composition will sound like before it is played by an orchestra. Sheet music is generated only after the music reaches the state desired by the composer. As a result, errors are corrected before they are printed.

The Music Studio. This program is a good platform for composing music, especially pieces involving multiple instruments. Playback gives a realistic performance of a composition still in progress.

The mouse is used to place notes on a staff and to make other selections — measure bars, rests, different instruments and so on. Most common symbols and notations are available, but not all, by any means. The Music Studio is a fine package for writing short compositions, but it's not a tool for creating full symphonies.

Composers will like the program's powerful editing commands, including Cut and Paste, Copy, Move, Insert, Change Instruments, Transposition and more.

Any song can be printed out, but only in the form of a complete score. The printout matches what is displayed, but does not print in color. Printout of individual parts is not available.

Music Construction Set. MCS' composition capabilities are similar to those of The Music Studio. Again, you are confined to using only two instruments. The mouse is used to place notes and symbols on a staff, and editing functions, such as Cut, Copy and Paste, are available through menu items.

MCS has some features that The Music Studio doesn't have. For instance, it is possible to overlay notes from one measure on top of another, thereby merging the notes into one combined measure. Also, notes from one measure can directly replace the notes in another.

Music can only be printed out as a score.

Music Writer. This program is a composer's dream come true. Gone are the days of poring over lined paper, drawing and correcting notes by hand. Now the computer does the detail work, and the composer is free to create.

Music Writer is a professional-level composer's tool. Every conceivable notation and symbol that can appear on sheet music is available, and music can be printed out as a full conductor's score or in individual parts.

The program is available in three different editions, varying in price but not in operating

How They Compare

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

Publisher	Diversified Software Research	Electronic Courseware	Electronic Arts	Passport Designs, Inc.	Electronic Arts	Activision/ Mediagenic	Pygraphics Corp.
Software	**Diversi-Tune**	**Electronic Courseware**	**Instant Music**	**Master Tracks Jr.**	**Music Construction Set**	**The Music Studio**	**Music Writer**
Version	1.0	None	None	1.03	1.0	2.0	1.3
Memory Required	512K	48K	512K	768K	256K	768K	768K
Media	3.5	5.25	3.5	3.5	3.5	3.5	3.5
Operating System	P8	DOS 3.3	P16	GS/OS	P8	P16	P16
GS/OS Compatible	Y	N	Y	Y	Y	Y	Y
Copy Protected	N	Y	Y	N	Y	N	N
Tutorial Included	N	N	N	Y	N	Y	Y
On-Screen Help	Y (1)	Y	N	N	N	N	N
Tech. Support Number	N	Y	N	Y	N	Y	Y
Supports NDAs (New Desk Access.)	N	N	N	Y	N	N	Y
Supports CDAs (Classic Desk Access.)	N	Y	Y	Y	N	Y	Y
Hard Disk Installable	Y	N	Y (2)	Y	N	Y (3)	Y
Installation Instructions Included	N	N	N	Y	N	Y	Y
Requires MIDI	N	N	N	Y	N	N	N
Supports MIDI Record	Y	N	N	Y	N	Y	Y
Supports MIDI Playback	Y	Y	N	Y	Y	Y	Y
Prints Full Score	N	N	N	N	Y	Y	Y
Prints Individual Parts	N	N	N	N	N	N	Y
Reader Service Number	45	46	47	48	49	50	51

(1) Instructions on disk. (2) Requires master disk in a drive during start-up. (3) Requires extra undocumented steps for GS/OS compatibility.

features. The only difference is the number of staves that can be used at a time. The Home Version accommodates three staves; the Special Edition, six; the Professional Edition, 32.

Rehearsal markers; multimeasure rests; formatas; all the dynamics, articulations and tempos; and every possible clef and grouping symbol are present in the software. Groups of eighth (and shorter) notes can be combined into "beamed" sets. Tuples are not limited to triplets, but can be quintuplets, hexadecatuplets or whatever you need. In short, Music Writer permits the use of practically every known music symbol, marking and notation.

Lyrics and text notes can be placed anywhere the composer desires. An entire composition or any selected portion can be transposed from one key to another, even from a major key to a different minor key.

Music Writer is unbelievably flexible. You are not locked into putting certain symbols only in certain places. With Music Writer, you make the music look like you want it to look. Nothing is left out. This package is the premier composing tool for the Apple IIGS.

The Computer As An Educator

Because the Apple IIGS is so perfectly suited to education, the needs of the music student are well served. Let's take a look at the available software.

Music Studio. One of our favorite applications for this program is using it to turn the computer into an accompanist for a live performance. The IIGS plays accompaniment perfectly and is usually available on shorter notice than a human accompanist.

The Music Studio is an excellent practice tool for a student working on a contest solo. Able to play selected passages repeatedly and at varying tempos, the program's versatility turns the IIGS into a "teacher" that can be molded to fit the student's needs.

The program's compositional capability lets the student hear how combinations of notes sound, which encourages the student to use his or her creativity ability.

Music Construction Set. MCS has the same capabilities as The Music Studio in this regard, though with reduced instrument sets.

Music Writer. A superb compositional package, Music Writer includes a separate 5.25-inch disk and manual, which combined form a tutorial on basic music theory. This is a commendable addition to a powerful package.

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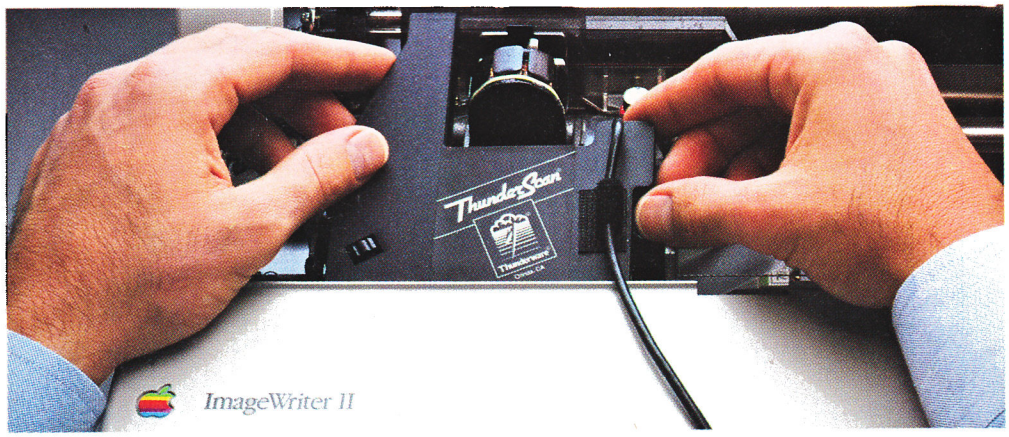
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Circle Reader Service Number 15

Instant Music. Despite its non-standard musical display, Instant Music is quite an educational tool for beginners and intermediate musicians alike. The supplementary music disks, Hot and Cool Jazz and It's Only Rock and Roll, come with booklets describing the theories behind the various chord progressions in the included songs.

Reading the manuals and playing the songs is a music theory education in itself.

Electronic Courseware Systems. ECS markets a series of music educational software for the entire Apple II line. The programs also work on the Apple IIGS, but the IIGS' speed must be set to Normal via the Control Panel before beginning the music lessons.

The lessons come on several 5.25-inch disks, and each disk must be booted separately. Each lesson leads a student through a series of musical demonstrations and tests, providing a quantitative score at the end of each test.

The ECS system is designed to be used in a classroom environment. Each disk tracks each student's progress by using a name and password scheme. An instructor can monitor the progress of each student.

We believe that the ECS software offers a fine programmed lesson plan for beginning musicians. One possible drawback: ECS uses a copy protection scheme based on a modified version of DOS 3.3. As a result, it is impossible to install the software on a hard disk.

Further, each disk's packaging contains a printed warning stating that any attempt to duplicate the disk, even for backup purposes, may result in damage.

Amazing Stories

We were pleasantly surprised to find the state of IIGS music software so sound (no pun intended). All the packages we looked at worked well in their own specialties, and some excelled in several areas.

The only red flag we noted with several programs involves copy protection schemes and hard disk incompatibilities. Like most IIGS users, we prefer software that is not copy protected and full hard disk compatibility.

Still, you must be aware of the capabilities of any music software you are considering for purchase. The Music Studio is our all-around favorite, for handling so much so well and for the tremendous volume of user-contributed music available for it.

For the composer, Music Writer is by far the most capable and the most powerful application. Every possible musical nuance is available, and the printout flexibility is unmatched by any other program. Beethoven and Mozart would have been thrilled to have this package.

For the professional performer who needs a multitrack MIDI recorder and mixer, Master Tracks Jr. fits the bill.

(Editor's Note: Just as this issue went to press, we learned that the "senior" version of Master Tracks, originally written for the Mac, is now available for the IIGS.)

Finally, for real-time recording and playback of MIDI performances, family sing-alongs and good, clean fun, Diversi-Tune must not be missed! ■

— Joe Walters, contributing editor

Adding It All Up

Next time somebody asks why you purchased an Apple IIGS, don't say anything. Just steer them toward your low-cost music and sound workstation, and let the computer "speak" for itself — in all its digital glory.

Thanks to its built-in Ensoniq sound chip, the IIGS can do some amazing things with sound — especially with the addition of a few affordable options — that are unmatched by any other home computer system.

At *The Apple IIGS Buyer's Guide*, we assembled the following music-and-sound system for just a few hundred dollars more than the cost of a standard IIGS, and the office hasn't been the same since.

• **Sonic Blaster,** $129 retail, Applied Engineering. Although any IIGS can make sound through its built-in speaker, you'll need an optional card to bring out that sound in stereo. While several stereo cards are available, Sonic Blaster offers both a playback system and an audio digitizer.

This means that you can play all that great IIGS music in stereo through suitable speakers and have fun digitizing your own tunes and sounds. Don't worry about complexity, either. If you know how to insert a plug into a jack, you know how to get Sonic Blaster up and running.

The software that comes with Sonic Blaster fully implements the IIGS graphics interface and is practically unlimited in its creative potential. Even the sample sound files — including the "Sorry, Dave" file, which re-creates the sympathetic voice of Hal, the deranged computer in the movie "2001: A Space Odyssey" — that come with Sonic Blaster are fun.

By the way, this product is aptly named. Don't be surprised if your upstairs neighbors wind up calling the police because of all the noise. (Yes, you can turn down the volume.)

• **Bose RoomMate Powered Speaker System,** $229 retail, Bose Corp. The IIGS isn't fussy about speakers, so this system may be a bit of a luxury. But look at what you get: great powered speakers (meaning you don't need a separate amplifier to make the IIGS really roar), Apple-platinum cases (color coordinated with your IIGS) and the Bose/Apple logos right on the grill.

Even if you get tired of listening to music on your IIGS — heaven forbid — you can use the speakers on your TV set or plug in a Sony Walkman and have a roomful of stereo sound.

• **Diversi-Tune** software, Diversified Software Research, $75 retail. When it comes to software, plenty of bargains abound. But because we're trying to keep costs down, Diversi-Tune is hard to beat.

For $75 you get a great digital playback machine, lots of prerecorded songs, and plenty of hands-on, make-your-own music potential — with or without MIDI.

What's it all cost? Try $433 for a music and sound system that a few years ago couldn't be had at any price.

— Paul Pinella

Additional Products Mentioned

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

Sonic Blaster

Applied Engineering

Circle Reader Service Number 70

Bose RoomMate Speakers

Bose Corp.

Circle Reader Service Number 71

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A Quick Primer On MIDI

The IIGS has plenty of musical potential right out of the box. But with the addition of an inexpensive MIDI interface, the IIGS becomes a formidable match for any MIDI machine.



When it comes to music and the Apple IIGS, the buzzword is MIDI. It's an open invitation for anyone to discover the freedom of music creativity — and to do so inexpensively and with little training.

MIDI stands for Musical Instrument Digital Interface and provides the interconnectivity between a computer and a musical instrument. The instruments are electronic; the language digital; and the limits are boundless.

The integration of a computer and a musical instrument via MIDI creates what is commonly known as a MIDI workstation. A simple workstation consists of a "MIDI'd" instrument (usually a synthesizer or electronic keyboard with a MIDI port), a computer for recording and storing MIDI data, and an amplifier/speaker assembly.

A workstation can be small, like the one described above, or a full-blown recording studio, complete with synthesizers, sequencers, recorders, or anything capable of MIDI input and output. No matter how elaborate the workstation, however, there is one common denominator — the computer.

The Apple IIGS is right at home as part of a MIDI workstation. With its built-in Ensoniq synthesizer chip, the IIGS is uniquely capable of playing a musical composition *without* having to rely on any other equipment. This feature is a boon to beginners and composers alike, as they can quickly put their music through test runs.

Its expansion slots make the IIGS a great MIDI machine. With the addition of a stereo board, sound digitizing board and extra MIDI boxes, such as the Apple MIDI Interface, a IIGS system can provide a great variety of configurations.

Increase Your Apple IIGS Buying Power



As an Apple IIGS owner, you know how useful your computer is. You also know that only one magazine — *The Apple IIGS Buyer's Guide* — concentrates exclusively on your machine.

Every issue of *The Apple IIGS Buyer's Guide* spotlights a range of products that exploit the IIGS' leading-edge technology. *The Apple IIGS Buyer's Guide* explores the incredible promise of the Apple IIGS with how-to features, practical reviews, new developments and exclusive interviews.

The Comprehensive Product Directory catalogs all Apple IIGS specific products currently marketed and is updated every quarter through direct correspondence with Apple IIGS developers.

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Apple IIGS
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The MIDI Controller

Most music programs allow the input of information through the use of MIDI. Therefore, a MIDI controller (a musical instrument with MIDI connections) should be part of the workstation. While guitar, drum and wind controllers are available, the most popular controller is a keyboard.

Basically, keyboards come in two general product lines: consumer and professional. The simple electronic keyboard, a consumer line commonly found in department stores and similar outlets, may or may not have MIDI. Consumer keyboards usually have preset sounds that cannot be changed. They also have auto-drum and chord accompaniments.

The more sophisticated keyboards in the professional category have MIDI and allow for sound design. If, for example, drum sounds are included, then you must determine their pattern.

A wide range of keyboard designs, using various technologies, is available in the professional line. The most popular designs are samplers and synthesizers.

Inexperienced users are, perhaps, best served by the consumer configuration.

Some MIDI'd electronic keyboards, such as the Yamaha PSS-480, are surprisingly inexpensive and can be found for under $200. This powerful little keyboard has 100 preset instruments, 100 preset percussion patterns and allows for five self-designed instruments to be added.

The drawbacks are keys that are one-half size and an octave range that is substantially less than a full keyboard's. While these drawbacks would be major problems for a professional keyboard player, a casual musician will not be so easily frustrated.

Professional keyboards or synthesizers have full-sized keys and the full five-octave range. An example of a professional keyboard is the Bose/Ensoniq Digital Piano (see sidebar).

As you becomes more familiar with the power of MIDI and what the IIGS offers, additional equipment may be obtained. Upgrading the keyboard to a totally self-contained MIDI workstation will provide flexibility and portability. Such keyboards allow all work developed

The Ensoniq Acoustic Wave Piano

What do you get when you combine the sound-creation qualities of Ensoniq — a company known for its professional, high-quality electronics keyboards and sound chips (like the one inside every Apple IIGS) — with the sound reproduction techniques of Bose, the speaker company?

To put it simply, you get a concert-class, digitized grand piano hidden inside a sleek, 105-pound black case.

Ensoniq teamed up with the sound experts at Bose and recently released the Acoustic Wave Piano (AWP-5000). For several days, the editorial staff at *The Apple IIGS Buyer's Guide* was able to test this instrument and see how well it works with the IIGS.

As can be expected from Ensoniq, the digitally stored piano tones are superb, accurately producing clear, brilliant piano tones throughout the 88-note range. The amplification and speaker system by Bose lives up to its reputation for producing undistorted sounds in the full-frequency spectrum.

This combination goes a step further by allowing the interaction and, more importantly, the emotion between the player and the instrument to come through.

The AWP-5000 features eight basic instruments, from a grand piano to a marimba. By splitting the keyboard, it allows a total of 23 different combinations.



Both the Acoustic Wave Piano and Apple IIGS have similar sound chips from Ensoniq.

The piano includes a 2,700-note recording memory. This can be used to digitally record about 10, four-part songs, according to Ensoniq. The possibilities provided by this capability are practically endless. You can, for example, record your piano lessons one day, and play them back for your teacher the next.

The MIDI (Musical Instrument Digital Interface) interface is standard with In, Out and Through ports. You can select any one of the 16 MIDI channels available for transmit/receive, though it takes a little time and familiarity to make the proper selections using the keyboard.

During our test, we were able to successfully work with several IIGS MIDI packages, including Diversi-Tune, The Music Studio 2.0 and Master Tracks Jr. All worked well.

The piano's key action is precise, providing very accurate velocity (volume) changes. Functionally, only one improvement could be made to this outstanding instrument — placing the velocity adjustment switch on the front panel, rather than on the back, which requires a musician to stand up and bend over the keyboard to access.

This switch should be closer to the fingertips.

The AWP-5000 is a professional instrument that's being marketed as a piano replacement. While the price tag (about $3,000) seems high in comparison with low-cost digital keyboards, it is comparable to what pianos typically cost.

And what piano has MIDI capability, an earphone jack (much appreciated by neighbors at night), weighs 100 pounds, offers several built-in instruments and — with the addition of an inexpensive Walkman — functions as a complete home stereo system?

For the professional, or any other discerning individual who demands the highest quality in a music instrument, this Bose/Ensoniq combination is hard to beat.

— Dennis Keppner

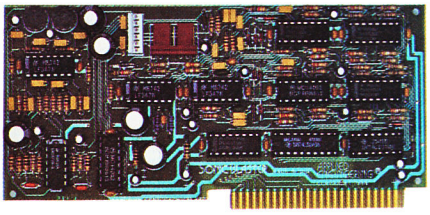


Sonic Blaster.™ It's why they put the "S" in IIGS.

Sonic Blaster™, the IIGS's first full-featured stereo digitizer, brings a new dimension to computing...the element of fun.

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 pallette of color.



Sonic Blaster's ultra-low-noise digital design is certified by the FCC.

Use your own equipment.

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 fades, cut, copy and paste with the Super Hi-Res software we include.

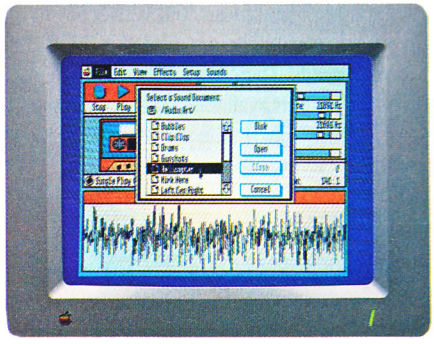
We designed Sonic Blaster to be complete. Here's a quick tour of part of the software screen:

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.



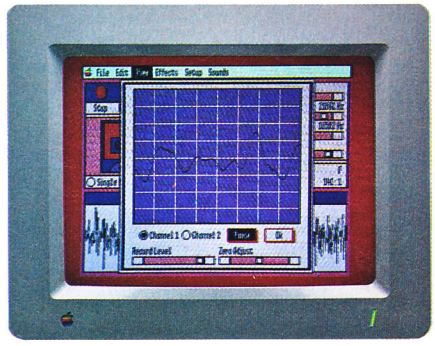
Seventeen sound effects to get you started. Add your own collection of sounds.

The Bars

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.

The Blocks

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



"See" the sound on the oscilloscope.

The Oscilloscope

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 **$129**

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and designed under IIGS software to be "dumped" into their internal computers.

The price of upgrading is becoming more reasonable as the technology develops.

Getting Started

The setup of a MIDI workstation is rather simple. Using the Apple MIDI Interface, you have one cable running to your printer or modem port and two from the interface to your MIDI instrument.

Unlike other computers, the IIGS is unique in that it does not require a MIDI instrument to allow you to compose, arrange and mix music. Everything can be done from the IIGS. Moreover, the performances you create will remain the same from one IIGS to the next.

Imagine doing your sequencing (arranging your music), but not needing the entourage of synthesizers, rack-mounted expander units and MIDI cables that other computers require. Troubleshooting is limited to a small amount of equipment.

A quick note about MIDI and how it works: Think of the MIDI interface as a musical modem. Information is sent and received in a set pattern that the computer or MIDI instrument can use.

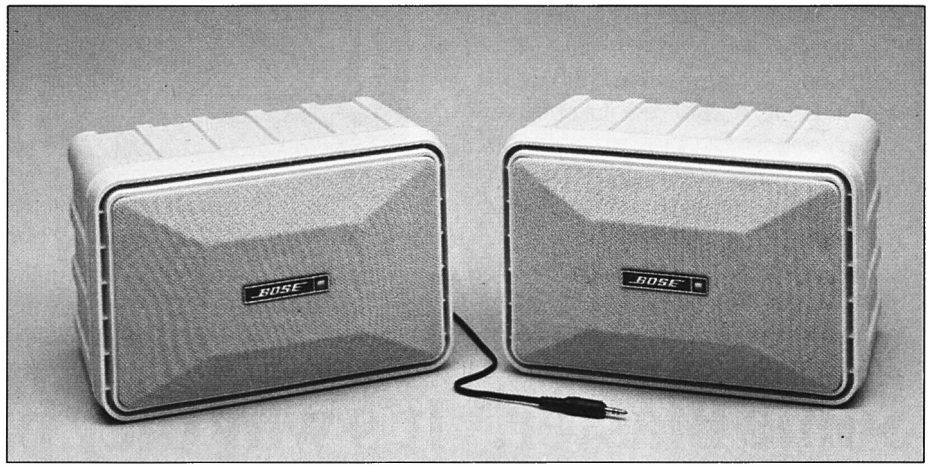
This data stream contains information about what channel the note is to be played on, how long it should be held, what type of instrument is to be used (in the case of preset instruments) and any special effects the note should have.

A MIDI channel is a way for the instrument and computer to differentiate between the various data streams; an example is one instrument, one channel.

A program such as Diversi-Tune from Diversified Software Research allows information to be sent or received on 32 channels, so, conceivably, 32 instruments can be used with it.

We should not forget the "G" in IIGS. The graphics representations of a musical score or the sounds themselves are enhanced by the IIGS' capability to display a wide range of colors. This representation aids you in quickly finding areas in your music that may need work; areas that are not as easy to hear as they are to see.

An example of this is volume, or velocity, in MIDI jargon. When working on an intricate piece of music, the velocity of the various instruments or the overall music can be critical. By seeing this graphically on screen, you can quickly diagnose any corrections that may be needed.



Serious music making on the IIGS requires a stereo card and stereo speakers, such as these Bose RoomMates.

Programs that allow you to achieve their musical goals range in both price and capabilities. Music Construction Set, though an older program that has not been updated, provides rudimentary MIDI capabilities and is considered a basic program for composing music.

One drawback: It has only MIDI out, and can only output MIDI information on one channel.

Music Studio from Activision is an excellent entry-level program for composing. The latest version, 2.0, has MIDI in/out on multiple channels and is relatively easy to use. The program offers both notational graphics and, using the music PaintBox, block graphics that represent the notes.

One step up from these programs is Music Writer from Pygraphics. Four versions with increasing capabilities are available, depending on your needs. There are a great many more notation options available, including timing, accents and styles. In the professional version, up to 32 staves are available for scoring.

Sequencing

Another aspect of composing music with MIDI is sequencing, the capability to work on small pieces of music or just one instrument at a time. Sequencing can be used to link small musical ideas together, but is more commonly thought of as a MIDI recorder — capturing and storing all of the information in the MIDI data stream.

All sequencers have the capability to "track," which allows you to build complicated layers of musical information. Timing is critical in sequencing, so a clock or counter to reflect exact positions in the music must be available.

Master Tracks Jr. from Passport Designs is a good example of a sequencing program. In it, music is represented as blocks of information on various channels.

In the past, creating music was the exclusive domain of gifted and talented artists. Technology now offers the same power and tools for the creative spirit in us all.

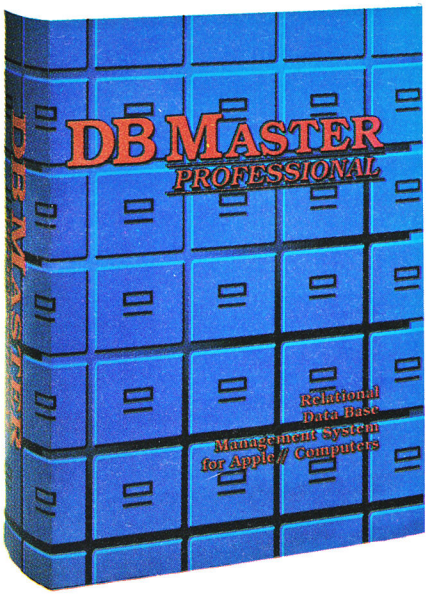
Inexpensive electronic instruments, a MIDI interface and easy-to-use IIGS programs open new creative doors to anyone who has ever whistled a tune or sung in the shower. ■

— *Dennis Keppner* and *Greg Dib*

Dennis Keppner currently works for the U.S. Coast Guard in Massachusetts. He is the music and sound activist for the Apple II user group of the Boston Computer Society and the AppleLink forum assistant for the Apple II Music and Sound Forum.

Greg Dib is an electronics music teacher in the Smithtown School System in New York. He has been involved in this field since 1970, when he, Professor Herbert Deutsch and Robert Moog set up one of the first electronics music studios at Hofstra University. Greg is also a forum consultant for AppleLink's Apple II Music and Sound Forum.

You can reach Dennis or Greg via electronic mail on AppleLink (AFA Dennis) and (ELECTMUSIC).



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- 200 fields/record
- 30 screen pages/record
- 250 characters/field
- Hard disk files—up to 10 Megabytes
- Floppy disk files—up to 50 disks

Field Types:
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- Numeric—3 types
- Dollar/cents, to $99,999,999,999,999.99
- Yes/No
- Date
- Add Date—date when record was added
- Edit Date—last date when record edited
- Add Time
- Edit Time
- User Defined—for phone & social security numbers, part #'s, etc.
- Label Only—useful for customizing screens

Computed Fields:
Date, numeric and dollar fields can be computed. Functions available:
+ - * / ^
= <> > < >= <=
AND OR NOT
INT ABS SGN
MIN MAX Current Date
Examples:
F10 = F7 + F8 + (.06 * F9)
F20 = MAX(F10,F11,F12,100)
F28 = .06 * (F30 = "PA") + .05 * (F30 = "CT")

Report Generator:
- print labels, columnar, forms-style and mail merge reports
- report width: 20–255 characters
- up to 255 lines/record
- up to 255 fields per report
- type free-form text anywhere on report layout
- labels up to 9 across
- set justification, print-styles, case conversion, number formatting, statistics, date formats, etc. field-by-field
- header and footer lines: separate lines of text (including normal and computed fields) at beginning/end of report, page, group of records, and/or column
- column subtotals and totals, page #'s, record #'s, & date or time report is printed can be printed anywhere on the page or in header and/or footer lines
- statistics: count total, average, min., max. & standard deviation
- complex computed field formulas, including calculations based on column totals and subtotals
- sort on up to 9 fields at a time; case sensitive/insensitive, ascending/descending
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- Apple //e (Enhanced, with extended 80 column card), //gs, //c, //c Plus or Laser 128
- NOT COPY PROTECTED. Can be installed on hard disk

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Of course, all of that power is useless if you can't figure out how to use it. Or if it gets in your way when you don't need it. That's why we go out of our way to make every function easy and convenient to use, list every command on your screen, and design our manuals for quick, easy reference.

And, since we're a small company, if you have a problem or question or want to suggest a new feature, you'll talk to the same people who design, write and test the DB Master programs.

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— Gregory Glau, *inCider Magazine,* March 1989

"This updated favorite makes your complex database jobs easier than ever to manage ... For the really big jobs, DB Master is the only way for Apple II database users to go."
— Charles Rubin, *A+ Magazine,* November 1988

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— Marc Apfelstadt, *Call A.P.P.L.E. Magazine,* Feb.'89

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— Philip Chien, *Apple IIGS Buyer's Guide,* Winter, '88

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☐ DB Master *Professional* ($295 + $5 S&H, $25 outside US and Canada)

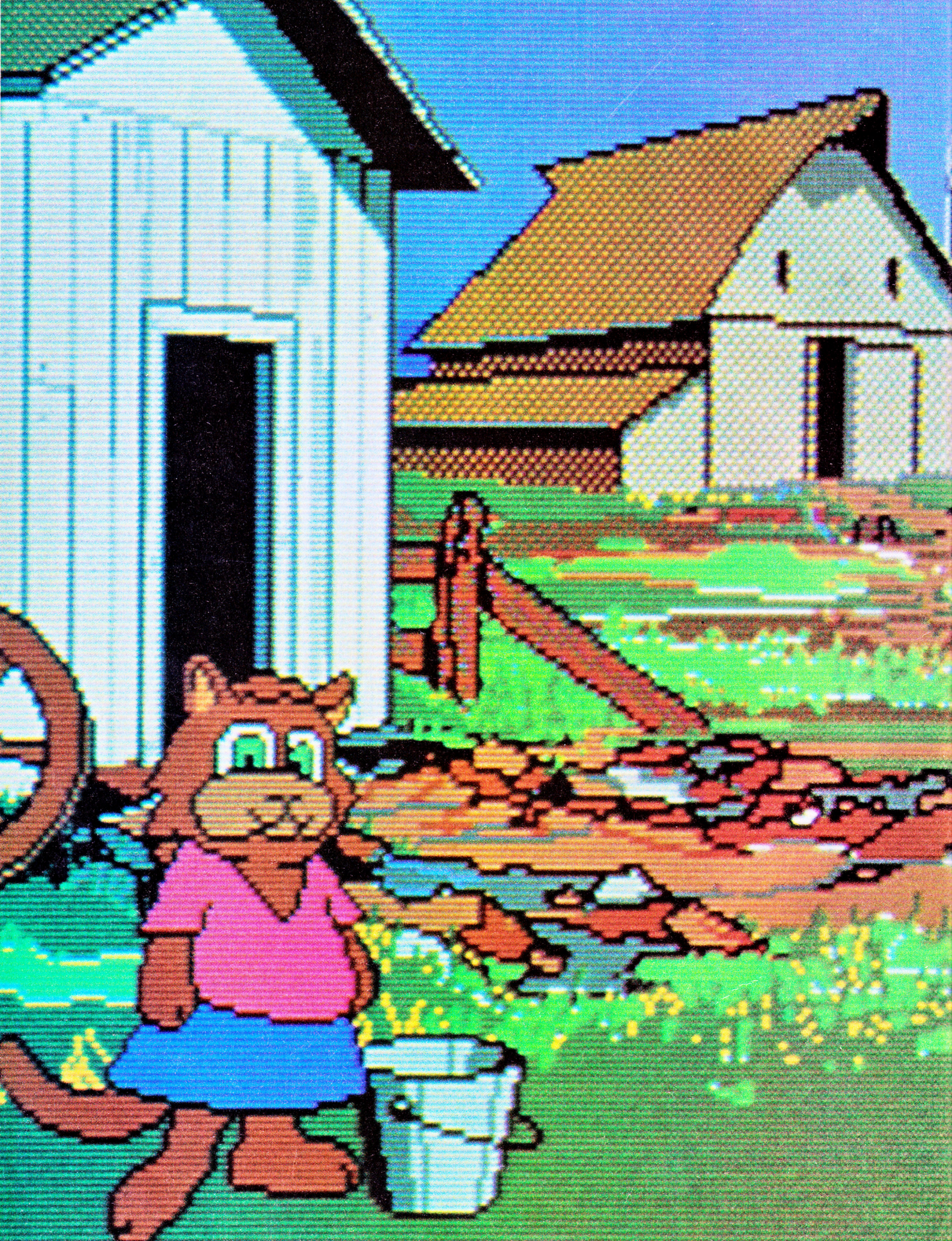
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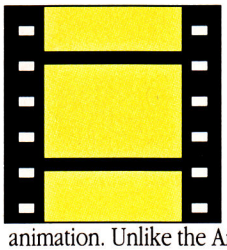
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Motion Pictures To Go

Three Animation Packages For The IIGS

A trio of animation applications that brings out the Walt Disney in us all. Which one is right for you?



Despite its high-fidelity sound and impressive super-high-resolution color graphics, the Apple IIGS is not an ideal system for computer animation. Unlike the Amiga and Atari computers, the IIGS has no special graphics coprocessor chips to manage "blitters" or "sprites" (dynamic objects moving on the screen).

(Editor's Note: Apple's newly announced Apple II Video Overlay Card can serve to level the playing field. Stay tuned to the next issue for a review.)

The IIGS' comparatively slow (2.8 megahertz) processor speed and sluggish disk access are a challenge for any programmer trying to create realistic animation effects.

Apple II programmers love challenges. For more than 10 years, game programmers have been refining techniques for animating monsters, explosions, athletes and bouncing balls, in color and with sound effects. The rest of us, who can't write assembly language code, could only gasp in awe.

This article looks at three different solutions to the problem of making pictures that move on your IIGS. Cartooners, from Electronic Arts, creates simple cartoons with prepackaged animal characters and props.

Broderbund's Fantavision IIGS is a conversion of a successful 8-bit Apple II program.

Art And Film Director from Epyx is a traditional frame animation tool, with complex commands and special effects. It includes a complete, separate paint program. Each program has a different variation of the standard Apple user interface and aims at a different market segment.

Movies "filmed" with Cartooners (left) feature ready-made animal actors that walk, fly and twirl.

Cartooners

Electronic Arts' credo is that software must be "fast, hot and deep." Fast means an absolute beginner can pick up the program and start to learn by exploration. Hot means the program provides a rich sensory and imaginative environment. Deep means the program has advanced features that gradually unfold as you gain experience. Cartooners scores a win on all three counts.

The package includes a Program disk (788K, including the GS/OS operating system) and an Art disk (778K of files). The product is not copy protected.

The documentation is sensitive to the needs of younger users. Along with a detailed 61-page user manual, written in a tutorial style, there is a 22-page cartoon-style leaflet that's written in rhyming verse. For example:

Click on any actor
Hold the mouse button down
Move the mouse and you will find
Your actor moves around!

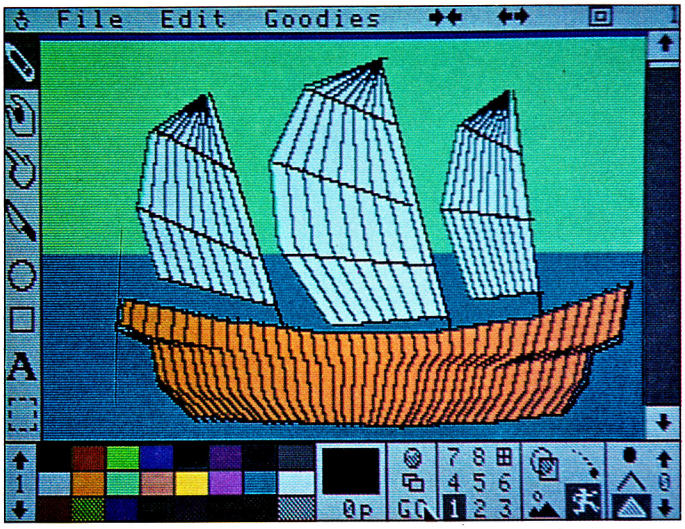
If you like the actor
And you want it in your show
Then move it anywhere you want
And let the button go!

But if you think that actor
Should not be in this scene
Then click and move the actor
And drop it off the screen.

The only thing we missed in the documentation was an illustrated "catalog" of all the actors, backgrounds and objects — they are split between two disks, and you have to hunt around to find the one you want.

To create a cartoon, you pick a scene, or background, select one or more actors, define their movements and record a series of frames. Scenes, actors and motions are selected from the menu bar at the top of the screen.

Cartooners has simple, logical controls that closely follow the Apple Human Interface



Fantavision IIGS users can set sail with a variety of graphics tools.



These mouse actors on the run were created in Art And Film Director.

guidelines. Recording is controlled by a panel of buttons at the bottom of the screen: Forward, Rewind, Play and Record — just like a videocassette recorder. A frame counter reads out the current frame, and a scroll bar indicates the relative position in the movie.

Pressing Repeat, then Play will cause your movie to recycle continuously. An Eraser button deletes the current frame, and a Speech Balloon button brings up an elaborate dialog box for editing text in various colors and styles.

Natural Acts

There are about 50 actors and props in Cartooners. Most of the animals can walk, fly and turn — the graphics are drawn in several positions that are alternated by the program. You can create new backgrounds and non-moving actors (as "brushes") in DeluxePaint II, but you cannot create your own characters or actions.

The ready-made actors include a Pig, Wolf, Rabbit, Mouse, Dog, Cat, Squirrel, Butterfly, Duck, Campfire, Explosion and some spooky Eyes. Props include trees, a skateboard, moon, Blimp, kite, lamp and a variety of hats.

An object can be placed on any of eight different Front/Back levels (occulting planes), so you can have a bird fly behind some trees and in front of others to create a three-dimensional illusion.

Cartooners provides a few sound effects and bouncy musical scores and it can import sound files created with Electronic Arts' Instant Music. You simply copy the music file into a Music folder and the required instruments into an Instruments folder. The music will appear on the appropriate Cartooners menu.

The program can print any frame in color or black and white. If you have the proper drivers, you can print to a LaserWriter or Epson, as well as a standard ImageWriter.

Movies (up to 2,000 frames) are saved in a very compact format, and we had no difficulty saving several short creations on a single 143K diskette. If you only have one 3.5-inch drive, this is good news.

Although a skilled artist using DeluxePaint could use Cartooners as a general-purpose animation engine, the product is most suitable for simple, creative stories that can be told with animal characters.

Cartooners is a fine elementary-level introduction to computer animation; it lacks the flexibility of the other products reviewed here, but it is much easier to learn and use.

Fantavision IIGS

Fantavision is an object-oriented animation program that uses a sophisticated special effect called tweening. You plot a series of points, which the computer connects to form objects.

If you draw a stick figure standing up in Frame 1, then re-draw the figure touching its toes in Frame 2, the program can run the sequence with up to 64 intermediate positions, so that the figure will appear to bend over and touch its toes.

If you create an object with a particular shape, then assign the same "object number" to a completely different shape on the next frame, tweening can smoothly transform a square into a circle — or a frog into a prince.

An object can consist of up to 64 points. You can have up to eight animated objects, as long as the total number of points does not exceed 64. A Rectangle, for example, takes up four points, while a Circle uses 16; a Dot only one.

An Object Status box displays the color and number of points in the current object. Objects can be solid or outlined in black or white. Lines can be joined or broken. Dots can be of nine different sizes.

There are six color palettes, each with 21 colors.

Fantavision combines a small number of basic tools with a sometimes bewildering variety of options, procedures and new concepts. The graphics tools include Draw, Grab Point, Insert Point, Delete Point, Make Circle, Make Rectangle, Text and a Capture box. There are four animation modes: Normal, Background, Trace and Transparency.

Special effects allow you to zoom, rotate, lean, flip or squash objects. By combining these effects, you can create a feeling of 3-D perspective.

Because of the concise way that objects can be described mathematically, Fantavision IIGS movies are almost unbelievably compact binary files. The sample movies on the Program disk range from about 2K to 6K in size. Nearly half the disk is blank, despite the large variety of samples.

Fantavision IIGS can use super-high-resolution screens from Paintworks Plus or DeluxePaint as backdrops. You can also simply select a solid background color.



Not all modems are created equal.

The right modem can change the way you use your computer. Modems allow you to step outside the limitations of your own hardware and software. But the degree to which you are benefitted by your modem is directly proportional to the quality of modem you select.

Not all modems are created equal. A new generation of 2400 baud modems, both internal and external, have appeared on the scene as of late. While Hayes AT compatibility and equivalent raw transmission speed can be expected, there are differences. Some are subtle. Others, quite significant.

Expensive features *and* low cost

Applied Engineering's entry into this market, the DataLink 2400,™ was designed to combine the features of expensive modems with the price of low-cost modems.

Frankly, some of the DataLink 2400's advantages are subtle. Like the ability of our firmware to intuitively accept commands in both upper and lower case, thus avoiding the nuisance of being ignored for forgetting to press the "shift" key.

Other advantages are more evident. Like the inclusion of sophisticated, genuinely useable communications software, something others offer as an expensive option.

Hardware considerations:

While most people just plug the DataLink 2400 in and go, advanced users will find a host of sophisticated features like the ability to select firmware defaults of baud rate, data format, parity and control interrupts. Other modems require a set of obscure commands when running from firmware or don't allow you to disable interrupts.

Our DataLink 2400 has two non-volatile ROMs for pre-setting and storing different configurations. It saves you the hassle of setting up configurations every time. We also included the ability to save phone numbers in non-volatile ROM, so you don't have to hunt for often-called numbers.

Some modems can't redirect hardware handshake lines even though most bulletin board software packages require these lines to be changeable - the DataLink 2400 can.

The software story.



We make sure you've got the right software. We include our own.

And the software we include *(OnLine 64** for the II+ and 64K IIe, *DataTerm* for the IIGS and IIe) comes thoroughly documented, *non-copy protected* on two 5.25" disks and one 3.5" disk, and positively loaded with features others don't have. Like VT52 terminal emulation, enabling you to address more bulletin boards and use them easier.

Our transfer protocols aren't limited to Xmodem. We include Xmodem, Ymodem, 4modem, ProDOS Xmodem and Turbo Xmodem. We also employ binary packing, squeezing and unsqueezing—techniques that divide, combine and compress files to save you time and long distance charges.

Some bulletin boards require different data formats. If you can't change formats you can't use them. Our software lets you change formats. Others don't.

More features:

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- Compatible with AppleLink, Point-to-Point, ASCII Express, Access II and others
- Compatible with Bell 103 and 212, European CCITT V.22 BIS, V.22 and V.21
- Two modular jacks with long cable
- Built-in capture buffer
- Adaptive equalization and descrambling
- PC Transporter compatibility
- Macro-making program
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**OnLine 64* and DataLink have most, but not all the features of *DataTerm* and DataLink 2400 respectively.

Circle Reader Service Number 20

Products Mentioned

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

Cartooners

Company: Electronic Arts
Target Audience: "Kids ages 6 to 12"
Memory Required: 1 MB
Drives: One or two 3.5-inch drives (short cartoons can be saved to a 5.25-inch drive)
Operating System: GS/OS
Copy Protection: No
Hard Copy: Supports printing on the ImageWriter II (color), LaserWriter, Epson LQ 1000 and Epson FX86e
Compatibility: Can import graphics from DeluxePaint II and sound files from Instant Music
List Price: $59.95
Circle Reader Service Number 52

Fantavision IIGS

Company: Broderbund Software, Inc.
Target Audience: "Ages 8 to Adult . . . entry-level animation explorers"
Memory Required: 256K
Drives: One or two 3.5-inch drives
Operating System: ProDOS 8
Copy Protection: Yes
Hard Copy: No printing capability. Unpack utility converts Fantavision IIGS screens into a format some paint programs accept
Compatibility: Provides a "Convert" utility to run movies created with the 8-bit Apple II version of Fantavision
List Price: $59.95
Circle Reader Service Number 53

Art And Film Director

Company: Epyx, Inc.
Target Audience: Adults
Memory Required: 768K
Drives: One or two 3.5-inch drives
Operating System: ProDOS 16
Copy Protection: No
Hard Copy: ImageWriter II (color) or LaserWriter
Compatibility: Imports graphics from DeluxePaint II, Paintworks Plus or Paintworks Gold
List Price: $79.95
Circle Reader Service Number 54

Sound can be added to any frame by simply selecting Sound and Stuff from the Goodies menu. A scrolling list of sound effects appears, along with controls for volume, pitch and balance. There is no documented way to import or edit sound effects created in other programs.

Fantavision IIGS is actually a ProDOS 8 program that takes advantage of the IIGS Toolbox for sound and graphics. Requiring only 256K of RAM, this program is the only choice if you don't have a memory card.

A utility program (written in Basic) is provided to convert movies created with the original version of Fantavision to run under Fantavision IIGS. Another utility "unpacks" the standard packed screens (file type $c0, auxtype 1) the program uses to save images. This allows you to import Fantavision IIGS screens into IIGS paint programs that require "unpacked" files.

Documentation includes an illustrated 72-page manual and a fold-out quick reference card. The manual is written with humor and clarity and is packed with hints and tips for making better movies.

Art And Film Director

Art And Film Director was designed and programmed by Caesar Studio, produced by Software and Video Arts, Inc. and licensed from NovoTrade Software Studios (Budapest; London; Los Altos). The program appears to be a conversion of a package originally developed for the Atari ST. It is extremely powerful and complex, requiring considerable study and practice to master.

The package includes three disks: Art Director, Film Director and Graphics. Although a second 3.5-inch drive or hard disk is not required, it is certainly recommended.

The graphics disk contains 37 files, including sample films, scenes, actors and "fonts" (these "fonts" are graphics screens with sets of large letters, not IIGS text fonts installable in your System folder). The sample films run in an endless loop and range from about 30K to 50K in size.

A handsome, 130-page spiral-bound manual, illustrated with screen shots, includes step-by-step tutorials and a detailed reference section, but lacks an index. We found some of the explanations hard to follow.

Art Director

Art Director is an unusual paint program. A small set of basic tools (pencil, brush, paint bucket, scissors, eraser, etc.) are complemented by a vast array of special effects and modifiers. These include Rescale, Stretch, Distort, Rotate, Bend, Bulge and Perspective, among many others.

The Drawing window shows only a portion of the total 320 by 200 pixel "canvas" available to paint on. You can zoom in with eight different levels of magnification, to work on individual pixels, and use up to 16 palettes per canvas to create elaborate color cycling effects. (Color cycling can create the illusion of motion by the carefully planned and timed shifting of colors.)

ArtShow, a small program included on the Art Director disk, creates self-running "slide shows" of all the paintings on any disk or folder. You can simply copy it to the disk or folder where your graphics reside.

Users familiar with other Apple II or Macintosh paint programs may find the feel of Art Director to be a bit odd or uncomfortable. The program often deviates from the expected Apple way of doing things. This is true of many programs converted from other computers — for example, DeluxePaint II — which was ported from the Amiga.

Although Art Director is a complete paint program in its own right, the idea behind the package is that the backgrounds and picture elements created will be used to build animations in Film Director.

Because Film Director can also directly import graphics from Paintworks Gold or DeluxePaint II, some artists may prefer to stick with their more familiar programs. In any case, Film Director is worth the price of the entire package.

Film Director

Film Director emulates the traditional Disney techniques of cel animation. A cel is a sheet of transparent film with artwork painted on it. Many cels would be stacked and arranged to make up one frame of animation. Then new cels, for all the moving objects, would be shuffled into the stack and the next frame would be shot.

Because a movie requires about 24 frames per second, this process has to be repeated 1,440 times for each minute of animation.

In Film Director, a cel can contain a stage or a backdrop, which is a pattern cut from

any part of a graphics paint file, a group of patterns or a polygon (a special type of geometric object drawn directly in Film Director).

A sequence of related cels (phases) can be defined as an "actor." When an actor is inserted into a film, the program will automatically paste the successive phases of the action into subsequent frames.

The program has a powerful tweening feature that can generate any number of intermediate frames when you specify the starting and final stages of an action.

Film Director toggles between two alternate menus: an Edit menu, which operates on frames and sequences, and a Design menu, which operates on patterns, polygons, groups, actors and stages. The various controls (or Toolboxes) are floating palettes that can be hidden or moved aside if they block part of a scene, but we often found ourselves wishing for a larger screen than the IIGS provides.

FilmShow is a separate program on the Film Director disk that lets you create self-running demo disks of your animations.

Both Art Director and Film Director offer an extensive list of keyboard shortcuts for experienced users. A quick reference card or an online help feature would have made this complex package a little easier for the beginner to use.

Evaluation

The three programs reviewed here represent a scale of increasing complexity and flexibility. Cartooners is easy to use, but restricted to a small set of ready-made parts and actions.

Fantavision is more difficult to learn and use, but offers a wide scope for creativity, within the limits imposed by eight moving objects totaling no more than 64 points.

Art And Film Director is perhaps the most complex IIGS program ever written — you have to hack your way through a dense thicket of tool sets, menus and dialog boxes — but the program has almost no limitations except your imagination.

One feature lacking from all of these programs is the capability to make professional transitions between scenes, such as fades, wipes and dissolves. These effects, unfortunately, are memory hungry and computationally intense, requiring at least the horsepower of a Macintosh.

Apple IIGS animation users have various needs. Some are simply interested in entertaining themselves or their friends (it's more fun to make TV than to watch it, and all of these programs provide basic instructions on how to record an animation onto videotape, using the composite video output of the IIGS).

Cartooners is a good choice for entertainment and education. This is especially true if you are a teacher, looking for a better way to demonstrate dynamic processes: the motion of planets or molecules, the maneuvers of dancers or armies, the growth of embryos or empires.

Fantavision is a good choice for simple educational animations. Perhaps you are artistically inclined, looking for ways to express feelings, perceptions or ideals of beauty in motion.

Finally, Art And Film Director is the best choice for you if you are a creative artist, who is impatient with artificial limitations, but has the discipline to master complex tools. ■

— Mike Markowitz, contributing editor

How They Compare

Cartooners



Performance: 7.5
Innovation: 8.0
Ease Of Use: 9.0
Documentation/ Support: 7.5
Value: 7.0
Overall: 7.8

Fantavision



Performance: 7.0
Innovation: 6.0
Ease Of Use: 8.0
Documentation/ Support: 7.0
Value: 9.0
Overall: 7.4

Art And Film Director



Performance: 7.0
Innovation: 7.5
Ease Of Use: 5.0
Documentation/ Support: 7.5
Value: 8.5
Overall: 7.1

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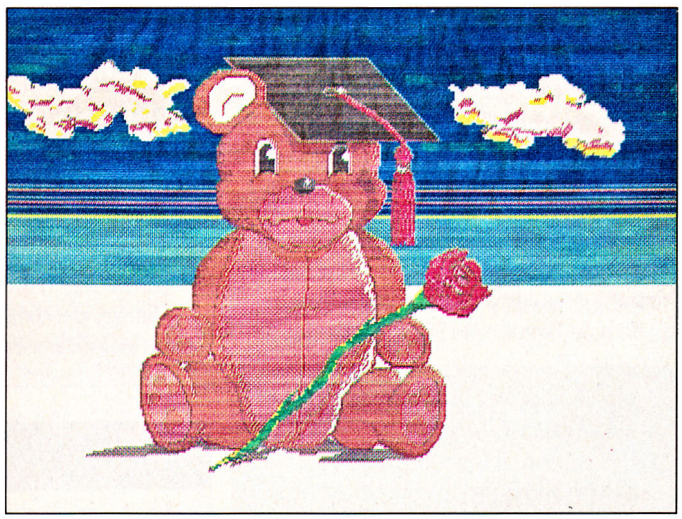
Circle Reader Service Number 29

Creative Colors And The ImageWriter II



Question: This super-high-resolution graphic looks great on the IIGS screen. But how will it look on paper?

Maximillian Anthony



Answer: The ImageWriter II struggles mightily to reproduce the screen, but, inevitably, color is lost in the translation to paper. Read on to discover how the pros keep color loss to a minimum.

The ImageWriter II is the printer of choice among thousands of IIGS users. Here's how to make sure your printer lives up to its full, and colorful, potential.



Expectations can run high when viewing your latest masterpiece on screen. Unfortunately, the printouts created by a dot matrix printer, such as the ImageWriter II, never match the vividness of the image seen on the monitor.

It is possible, though, to improve the appearance of printed work. The main thing to remember is that the image on the monitor and the image created by the printer are the results of two different mediums. What looks good for one medium may not look so good for the other.

An RGB monitor connected to an Apple IIGS can display 16 colors from a palette of 4,096, whereas an ImageWriter II is capable of only printing six pure colors, plus black. The six colors are yellow, red, blue, orange, green and purple.

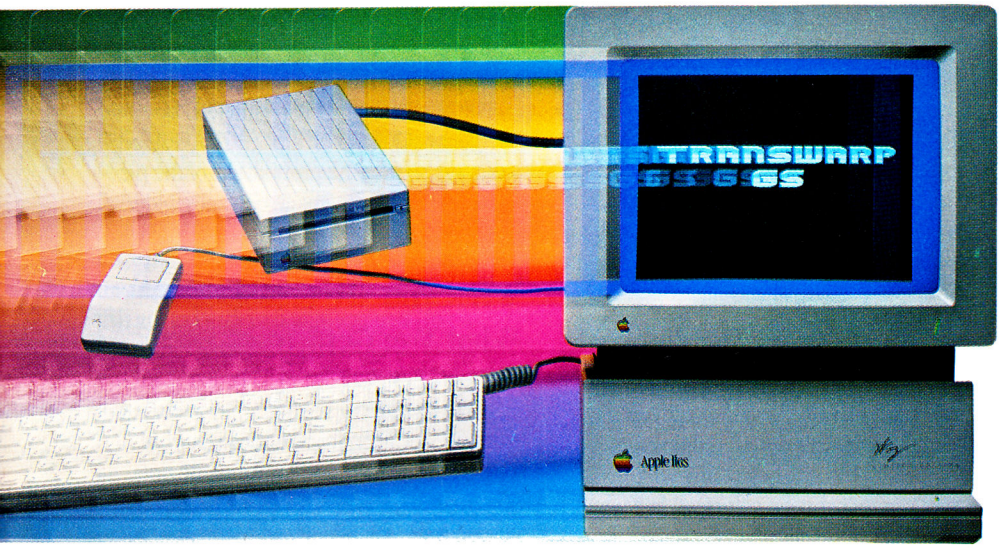
Other colors are produced by placing different colored dots next to one another. This process depends on your eyes to optically blend the colors together. The smaller the dots, the more convincing and subtle the illusion.

Although the ImageWriter printer is no match for the monitor in the color department, the potential resolution of the ImageWriter is actually much greater than the monitor. Unfortunately, this "potential" doesn't improve the resolution of bit mapped graphics when they actually print out.

The reason: The printer faithfully produces a reproduction of the screen, pixel by pixel, so it follows that the resolution will not be improved when printed out.

Print Driver Options

Every IIGS program with printing capability uses a print driver to convert the pixels on screen into information that a printer can use



The IIGS just got up to speed.

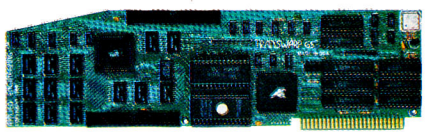
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Colorful Terms

Contrast. The relative relationship between light and dark values in a picture.

High Contrast. Describes a picture that has mostly light and dark values, with very few values in between.

Hue. The name of a color itself.

Intensity. The purity of a color. Can also be called brightness or chroma.

Low Contrast. Describes a picture that contains mostly middle-range values, with few light and dark values.

Value. The relative lightness or darkness of a color.

to create corresponding dots on a sheet of paper. Available options for the print driver allow you to specify the size paper being used, image size, print quality, ribbon type and orientation of an image.

For example, the paper sizes that can be selected are U.S. Letter, U.S. Legal, International Fanfold and A4 Letter.

Normal height is the default setting for most programs. This setting produces a printout that has basically the same proportions as the IIGS screen. Selecting Condensed produces a printout that is the same width as a Normal print, but half the height.

An image can also be reduced by selecting 50% Reduction. This option reduces the image in half by both height and width. Subtle differences between colors are lost when printing with this selection.

Printout quality is controlled by selecting Better Text, Better Color or Draft. Better Color is the default setting for most paint programs. It also gives the best saturation of colors and prints the screen, pixel by pixel, at 72 dots per inch.

Better Text offers better resolution, but does not interpret colors accurately. Draft quality does not appear to have any effect when printing bit mapped pictures.

The orientation of the picture can be either upright or sideways on a page. If you select sideways, expect the proportions of the picture to distort as the image becomes wider horizontally.

What You See Is Not What You Get

Extremely light values will be interpreted as white by the ImageWriter. Dark color values will have a tendency to be printed as black. Remember that because of the dots used to create color, small objects or thin lines may be obliterated and blended into surrounding colors.

The best rule of thumb is to produce high-contrast images that have contrast in all of the three attributes of color: hue, value and intensity. To achieve this, limit the number of

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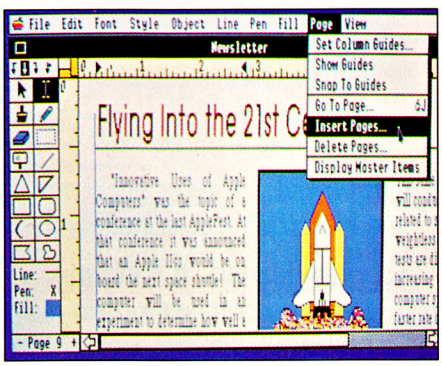
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values for a particular color. Three or four values are enough. Too many values and the results will be muddy.

If you have small objects on screen, they should be in a color that the ImageWriter II can actually print. Otherwise, the contours of the objects can be lost because of the dot pattern used to create the color.

A good quality 20 to 25 lb. paper will produce the best output. It doesn't matter whether the paper is friction or pin fed. Avoid papers that are too slick or highly textured. To preserve your work and prevent smudges, spray the finished prints lightly with a workable fixative, a chemical available in most art stores.

Getting excellent-quality color output from an ImageWriter II can be a chore, but it's worth the effort. Experiment with the printer options that your programs offer, then produce separate versions of images that take advantage of those options.

As a reward, you will be assured of quality prints from your ImageWriter II.

Programs That Print Color

Programs that use Apple's standard driver for the ImageWriter II all suffer from the same problems. Colors are not saturated and the subtle differences between colors are lost. Whitish streaks are also more likely to appear during the printing process.

DeluxePaint II, Paintworks Gold and Medley all rely on Apple's print driver.

816/Paint has a superior proprietary driver that usually does a better job of determining the differences between colors and values than Apple's standard driver. Color prints are also very saturated.

The special print driver included with TopDraw is excellent. One of TopDraw's most important features when printing color is its Darker option. This feature breathes new life into old ribbons. TopDraw is the easiest program to use if you want maximum control over the size and proportions of your printouts.

GraphicWriter 2.0 has the most unusual method of interpreting bit maps of any of the

(Continued on page 50)

Screen Shots Made Simple

The photographs of the screens used to illustrate this article were taken with Ektachrome daylight ASA 200 film. To duplicate these results in your home, follow these simple steps for taking screen shots:

1) Use a tripod to prevent camera movement.
2) Make certain that the camera is perfectly perpendicular to the center of the computer screen. Otherwise, distracting moire patterns can appear on the finished slide.
3) The monitor should be the only light source in the room. Otherwise, unwanted reflections will appear in the final photograph.
4) Set the shutter speed on a fourth of a second.
5) Take a meter reading from the screen and use this to select an F-stop.
6) Shoot the picture.

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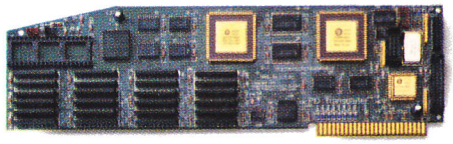
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You can use your Apple mouse. Or an IBM compatible serial mouse.

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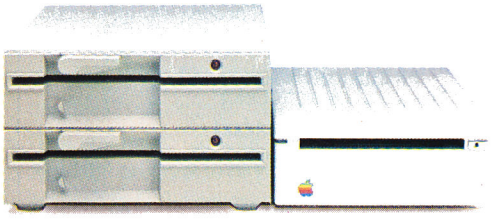
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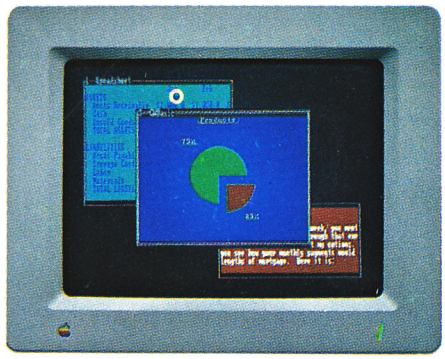
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Circle Reader Service Number 25

(Continued from page 47)

IIGS programs we have encountered. An image is broken up into a coarse dot pattern, and colors are intelligently assigned from GraphicWriter's standard palette. Loading a bit map does not change the colors in the standard palette.

The program also includes a proprietary print driver that enhances the resolution of text, but doesn't seem to do much for color or pictures.

Color Ribbons

A good, high-quality ribbon will make your images stand out. Apple-brand ribbons are good, but ribbons manufactured by the Ribbon Products Division of Pelikan, Inc., Franklin, Tennessee, 800-251-3365 (four-color ribbons retail for $15 each) are excellent. Generic, bargain-brand ribbons are really no bargain, because they fade quickly and are more susceptible to streaking.

Even a high-quality ribbon will only last for about 15 images. If your pictures are predominantly black, the image quality produced by a ribbon will begin to degrade even quicker.

To help increase the life of your ribbon, make a test print of your palette. This can be done easily by producing a special page that contains small areas of each color in the palette.

Don't forget to take out your color ribbon and replace it with a black ribbon when you are finished printing pictures. The black band on a color ribbon is the first to go. Using it to print out text will really cause it to fade quickly.

Unfortunately, the whitish streaks, which are characteristic of dot matrix printers, can even occur on the first or second printing with a new ribbon. The streaks occur when the seams connecting the ends of the ribbon pass the print head.

If you find yourself using a lot of ribbons, it might be time to invest in a re-inking system. It will then be possible to re-ink ribbons for a fraction of the original cost. Such systems are available for both black and color ribbons.

The Bottom Line

Before investing in printing accessories, hardware or software, be sure to examine the two images accompanying this article. The artwork has not been retouched in any way.

DeluxePaint II was used to create the picture of the bear; TopDraw was used to produce the final printout on an ImageWriter II. Similar images are produced every day by students enrolled in Advertising Design at the National Education Center in Phoenix, Arizona.

Computer Graphics instructors at this campus are Jeff Pettingill and Gary Ramey. ■

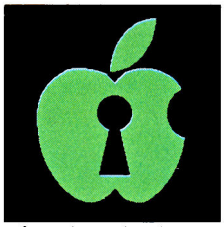
— Gary Ramey, contributing editor

Software Comparison Chart

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

ImageWriter II	Paintworks Gold	DeluxePaint II	816/Paint	TopDraw	TopDraw	GraphicWriter 2.0	Medley 1.1
Features	Standard Driver	Standard Driver	Special Driver	Standard Driver	Special Driver	Special Driver	Standard Driver
Normal	Default	Default	Default	Default	Default	Default	Default
Condensed	Yes	No	No	No	Yes	Yes	Yes
50% Reduction	Yes	No	No	No	Yes	Yes	Yes
No Gaps Between Pages	Yes	Yes	No	Yes	Yes	Yes	Yes
Portrait Orientation	Default	Default	Default	Default	Default	Default	Default
Landscape Orientation	No	Yes	No	Yes	Yes	Yes	Yes
Better Text	No	Yes	No	Yes	Yes	Yes	Yes
Better Color	No	Default	Default	Default	Default	Default	Default
Draft	Default	Yes	No	Yes	Yes	Yes	Yes
Darker	No	No	No	No	Yes	No	No
Select Color	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Automatic Paper Feed	Default	Default	Default	Default	Default	Default	Default
Manual Paper Feed	No	Yes	No	Yes	Yes	Yes	Yes
Page Range	No	Yes	No	Yes	Yes	Yes	Yes
Paper Size	Yes	Yes	No	Yes	Yes	Yes	Yes
Number Of Copies	No	Yes	No	Yes	Yes	Yes	Yes
Retains Color Of Original Picture When Importing Files	Yes	Yes	Yes	Yes	Yes	Assigns Color From Standard Palette	No
Reader Service Number	55	56	57	58	58	59	60

Getting Started



In this issue, we'll take a look at a few things you need to know to get started in AppleWorks GS. Because many users are previous owners of AppleWorks classic, we'll also look at some important differences between the two packages.

In the last issue, I said that you cannot use multiline headers and footers in AppleWorks GS. That was incorrect — the fact is, you can, as you will see. Sorry about that!

Slow Start. By now you've noticed the interminably long amount of time AppleWorks GS takes to start-up. There are steps you can take to reduce that time, however.

If you install AppleWorks GS on a hard disk or RAM disk, that will speed things up greatly. This program was clearly intended to be run from a large storage device.

If your budget does not allow a hard disk, remember that AppleWorks GS comes to you on diskettes formatted with a 2:1 interleave. Of course, you should be using a backup copy of the program, not the original disk. When you do make your backups, make sure that they are formatted with the correct interleave!

If you are using the platinum-colored Apple 3.5-inch Drive, you want that disk formatted with a 2:1 interleave. If you are using the older UniDisk 3.5-inch Drive, you'll want the disk formatted with 4:1 interleave instead.

This is very important. Using the incorrect interleave here will approximately double all disk access time. Conversely, correcting such an oversight will reduce all your disk access times by about half.

AppleWorks GS can install all or part of itself into memory at start-up. If you find yourself always using certain modules, then, by all means, configure the program to make those modules automatically load!

This is done by using the Configure command in the Apple menu. Doing this will add a little time to the start-up, but will free you from waiting during a session for the module to load.

And pay attention as your work habits develop. If you find yourself changing the modules you use most frequently, then go back and reconfigure the start-up routine. Mold the program to fit you; never change yourself to fit the program.

Differences. The most visually obvious difference between AppleWorks and AppleWorks GS is that AppleWorks GS uses the Apple standard graphics-based user interface, rather than the text-based standard used in AppleWorks.

Using this standard simplifies transition from one Apple-standard package to another. Indeed, consistency is the purpose of the standard — a user doesn't have to learn a whole new interface with every new package. Even the newest program immediately seems familiar and learning time is greatly reduced.

The new standard does add a few complications. Using the standard means that some of our old familiar AppleWorks Open-Apple commands have been altered.

Key Changes. Remember our old friend Open-Apple-Q, the command for quick changes to another file on the desktop? Well, if you forget yourself and invoke this command in AppleWorks GS, you've just commanded Quit. You change files by using the mouse in this program.

How about using Open-Apple-K to calculate the values in a spreadsheet? Whoops! That closes the document. Re-open the document and try the new Open-Apple-= instead.

Those two examples aren't so bad. You won't lose any of your changes, because the Apple standard here requires a dialog box to appear and this gives you a chance to change your mind before you lose any unsaved data.

If no changes were made to the documents, the worst that can happen is that you may have to re-load the files or re-start the program. Annoying, but not harmful.

Changes are also made to the arrow keys in the word processor module. Open-Apple, with the right or left arrow key, no longer moves the cursor forward or back one word; it moves the cursor to the beginning or end of the current line. Use the Option key instead to move left or right, one word at a time.

There are several other differences in commands. Open-Apple-S still saves a file and Open-Apple-1 through Open-Apple-9 still move you to proportional locations in your document.

Take some time during your next session to look at each of the pull-down menus in each module. You will see the Apple-command equivalents of the menu commands, and that will give you the new functions.

Tip Of The Month. Setting left and right margins in the word processor is a simple process. Simply use the mouse to slide the visual margin markers to the desired placement, as displayed on the ruler at the top of the screen.

Setting top and bottom margins is another matter entirely. The left and right margins are defined by a measure accurate to a fraction of an inch. However, the top and bottom margins are defined only as a number of blank printed lines.

Setting the top and bottom margins is done in the header and footer definitions. Enter four blank lines in the header, and a four-line top margin is established. The bottom margin is established similarly, in the footer. The Return key is used to enter blank lines.

How big is a blank line? That is defined by the size of the font selected when the blank lines are entered. Note: The header and footer can display fonts independent of the main document text, as well as each other.

We suggest using the Courier and Times 12-point fonts for this function, because they happen to have vertical spacing of exactly six lines per inch. The other fonts — including the default Geneva 12 point — do not. This way three blank lines make a half-inch margin, and six blank lines make a 1-inch margin.

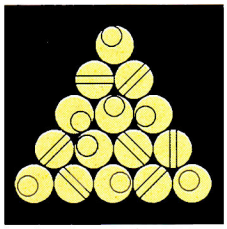
If higher than single spacing is in effect in the header or footer, the margin size will be proportionally lengthened. If you want text in a header, put the top margin blank lines before the text; in a footer, put them after the text. You will still need to put blank lines after the header and before the footer to separate them from the document text.

Experienced users of AppleWorks classic will be most comfortable setting the top margin to zero and bottom margin to 2 inches. Just in case, print a test page to make sure those invisible blank lines are located where you want them! ■

— Joe Walters

Joe Walters has been using, programming and writing about the Apple II since 1982. He lives in New Mexico and can be reached via electronic mail on Compuserve (72406,742).

Exploring Graphics Adventure Games



For entertainment and relaxation, you may find reading a good novel or watching a dramatic television program stimulating. The subject matter might be an intriguing mystery, a fantasy tale or an adventure of exploration and treasure hunting. Sometimes you may wonder if you could have solved that TV mystery yourself, or what it would be like to live in various fantasy worlds.

Wonder no more! With an adventure game on the Apple IIGS, you can do just that. As with many novels or TV scripts, the writers of good adventure games have to be creative to keep your attention. Creators of adventures incorporating great graphics and sound have to be even more creative, especially if they want to tap the full capabilities of the IIGS.

In any adventure game, a player assumes a role and actively participates in making decisions and then observes and experiences the results of the choices made. But we should not confuse graphics adventures with fantasy/role-playing games (FRP).

Both types involve role playing and using graphics and text to convey valuable information. The main difference is that FRP games are generally inspired by the board game Dungeons And Dragons. They weave an intricate plot that can take days or even weeks to fully explore and usually involve a complete cast of characters.

Graphics adventures, on the other hand, usually involve a single hero or heroine who goes out alone. The player-as-hero still has to move through many locations, obtain objects and figure out how to use them well.

Ready to go? First, let's look at the growing software selection available for the IIGS.

Dream Zone. Baudville's Dream Zone is a graphics adventure that lets you enter into a dream world filled with people, places, things and other assorted goodies. Many items can be picked up, examined, moved and used. You can talk to the people, travel to strange places and even tangle with the nightmare of bureaucracy.

Because this is a dream, some things don't work quite the way they should. Solving this adventure requires a good imagination.



No, you're not dreaming. In Dream Zone, the old-fashioned text adventure has given way to a netherworld filled with colorful characters that exploit IIGS graphics and sound.

Dream Zone makes extensive use of the mouse. The player clicks on the Display Line for a command and then clicks on an object in the picture area. Typing is occasionally required for special commands or words.

Because designers Jason Rubin and Andy Gavin developed all of their graphics and sounds primarily on the IIGS, Dream Zone takes full advantage of the IIGS' graphics and music capabilities.

Mindscape Over Matter. Mindscape has created a series of unique and intriguing graphics adventure games. Unlike other graphics adventures, nearly everything on the screen is an object that can be explored, opened or used. By using the mouse, you merely point to the thing you want and the computer recognizes it as a distinct object, not just a part of the picture.

If you see a trench coat, for example, you can drag it into your Inventory window by using the mouse. Then, if you click and open the coat, a new window will open and objects inside the coat's pocket can be examined. If there is a wallet, clicking on that will open another window revealing the contents.

While there is some text input required, you rely primarily on the visual images presented on the screen. The graphics are fairly good, and these games really set themselves apart by the use of animation and high-quality digitized sounds. Guns sound like guns, doors creak and thunder really thunders.

The first of the Mindscape series is Deja Vu: A Nightmare Comes True. In this game you wake up in a rest room with an awful hangover. Not only can't you remember how you got there, you don't even know who you are. To make matters worse, a murder has been committed, and the police think you did it. Did you? It's up to you to find the answers before the police get you.

The second is Uninvited, a classic haunted-house story. After crashing your car and losing track of your brother, you seek help at a nearby house. The next thing you know, you are up to your neck in ghosts and other strange things that make you glad this is only a game. The graphics are good, and the sounds are realistic enough to make the game downright scary.

3-D Quest Adventures. Sierra On-Line's contribution to 3-D adventures is the Quest series. Each game is a different high-resolution, multicolor, animated and fully three-dimensional graphics adventure.

Because of the high degree of animation, these games can easily be confused with cartoons. Nevertheless, they are really adventures, with story lines to follow, plots to unravel, places to explore, puzzles to solve and conclusions to reach.

Space Quest: The Sarien Encounter is the story of Roger Wilco, the star ship janitor who unwillingly becomes a hero after his ship is attacked and destroyed by aliens. His job is to find the Star Generator and get it out of the hands of the Sariens. A sequel to this adventure is now available.

In Space Quest II: Vohau's Revenge, Roger must save the world from being invaded by legions of cloned insurance salesmen.

Another is Police Quest. This is a 3-D graphics simulation of a police officer's job, with the ultimate aim of capturing the arch-criminal called "The Death Angel." You are a police officer who must give out tickets, fight the bad guys and fill out paperwork. You also have to follow normal police protocol and not just start blasting at suspects.

If you're looking for a good fairy-tale story, the King's Quest series is a good choice. There are four installments to this series. We'll provide a brief story line for each of them.

• King's Quest I: Quest For The Crown. A young knight named Graham is chosen by old King Edward to find three magical treasures that the King let slip from the kingdom. Sir Graham succeeds and becomes King Graham upon Edward's death.



Maybe the butler did it in Deja Vu.



Roger Wilco is the star ship janitor turned Captain Kirk clone in Space Quest: The Sarien Encounter.

• King's Quest II: Romancing The Throne. King Graham falls in love with a mysterious maiden named Valanice who is imprisoned in a tower. After overcoming many obstacles, he rescues her and they are married.

• King's Quest III: To Heir Is Human. A boy named Gwydion is held captive by a wicked wizard. The boy escapes and learns about his true identity. He then rescues his twin sister, Rosella, and they are re-united with their parents, King Graham and Queen Valanice.

• King's Quest IV: The Perils Of Rosella. This time it's Rosella who goes on a quest. She's after an enchanted fruit that will restore her aging father's health.

You don't have to play these games in sequence, but they're so entertaining that you'll want to try them all. With Sierra games, you use the mouse or the keypad for movement. You can't use the mouse to pick up

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"DIVERSI-TUNE makes your GS sound like a compact-disc player... **Teachers** will like the keyboard diagrams showing proper finger placement/Because of DIVERSI-TUNE, inCider's alive with the sound of Apple music. We hear that real musicians love it, too." – inCider Editors' Choice/Top Ten Star.

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objects — you must type in a command such as GET OBJECT. You move your character with the keypad, joystick or mouse.

Because these are 3-D adventures, you must walk around objects and not bump into them or try to walk through them. The background scenes often contain animated displays that move while the characters are moving.

Obviously, this is only a sample of what is available. But it does give you a good idea of what types of graphics adventures you can expect to find.

In many ways, each game is a challenge between the authors and you. You are trying to outwit the authors, and they are using all of their creative talents to outsmart and entertain you.

Lost? What if after many hours or even days of playing, you find that you just can't solve a particular puzzle or even finish the adventure game — do you have to give up? Not necessarily. Plenty of help is available from the publishers in the form of Hint books.

These books can be found in various software stores and are available directly from the publishers.

Online telecommunications services, such as Compuserve, Genie and The Source, are another good source of help. Most have several complete walk-throughs for many adventure games.

You can also post messages on public bulletin-board sections asking for help. Once your pleas go out, expect to get back plenty of clues from experienced adventurers. ■

— Peter Chin

Peter Chin, a computer consultant working with mini and personal computers for a business consulting firm in New York, can be reached via electronic mail on Compuserve (71076,606) or Genie (P.CHIN).

Products Mentioned

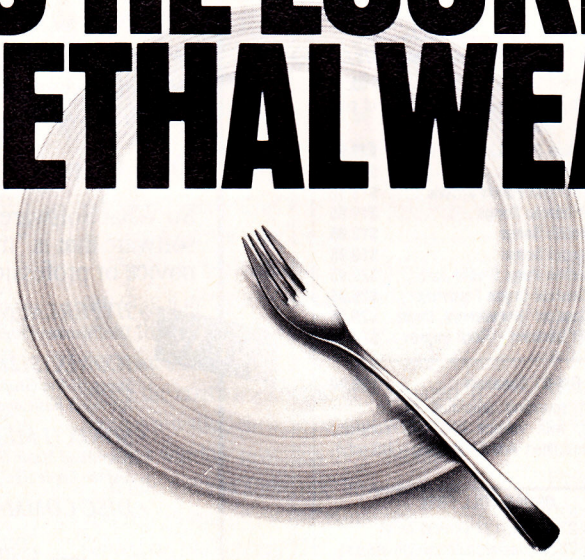
Additional company and product information is listed in the "Apple IIGS Hardware And Software Directory."

Dream Zone
Baudville, Inc.
Circle Reader Service Number 61

Mindscape Series
Mindscape, Inc.
Circle Reader Service Number 62

Quest Series
Sierra On-Line, Inc.
Circle Reader Service Number 63

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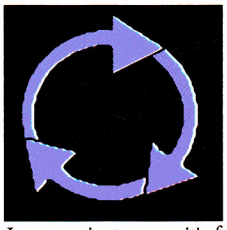


Before you take another bite, think about the fact that a diet high in cholesterol and fat can load your blood with cholesterol, which raises your chance of heart attack. In fact, more Americans may die by the fork than by any other weapon.

American Heart Association WE'RE FIGHTING FOR YOUR LIFE

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Inside The World Of Shareware



There's a lot of innovative, high-quality, software that you won't find on you dealer's shelves. This software is generally low cost. In some instances, it's free.

This software is not copy protected. In fact, users are actually encouraged to copy it and give it away.

These programs also carry the best warranty of all; namely, try before you buy! If you like it, pay the author a small fee. If you don't, simply delete the program from your disk or give it away.

This software is called "shareware," which is also referred to as personal domain or user-supported software. Shareware is copyrighted by the author, who retains all commercial rights.

Try Before You Buy. When you first run a shareware program, a notice generally appears, telling you that you can try the software for one to four weeks. If you like the program, a registration fee of $4 to $40 is to be mailed to the author.

In many cases, receipt of a registration fee ensures that you'll receive technical support for the product and be notified when updates are released. Many shareware authors send you a program manual upon receipt of the fee.

Since the early days of personal computers, public domain and "freeware" programs have proliferated. Software that falls into these categories is completely free, and you are not obligated to send the authors any money.

The main difference between public domain software and freeware is that freeware is copyrighted, public domain software is not. In either case, the author of the software encourages you to copy it and give it away.

Shareware, freeware and public domain software are available from a variety of sources, including online information networks, user groups, bulletin-board systems (BBs) and public domain mail order houses. The initial expense of acquiring the software is minimal. User groups charge for the disks or generally let you copy them for free, if you supply the disks. BBSs are mostly free.

Networks charge for time spent online. Mail order houses generally distribute the programs at cost, plus a few dollars.

A Quality Selection. Many excellent low-cost programs are available. There are computer-aided-design (CAD) programs, databases, games, word processors, utilities, telecommunications programs and more.

The purpose of this column is to help you find high-value software at low cost! As the system operator (SYSOP) of the Apple II Special Interest Group (APPLESIG) on The Source, I personally come in contact with literally thousands of programs. I'd like to introduce you to the best of the lot.

AutoGraf (also called AkroCAD) is an example of high-quality freeware. This program, written by Fred Mullen of the University of Akron, is designed as an introduction to the vocabulary, mechanics and procedures found in CAD programs.

The program comes with a 70-page manual, found on disk, that explains many CAD concepts and procedures. It also describes how every function of this ProDOS 8, menu-driven program works. Many say it's comparable to CAD programs costing hundreds of dollars.

SuperLathe, an exceptional CAD modeling program written by George Grant, is $4 shareware. The program produces both 2-D and 3-D designs on a IIGS.

SuperLathe runs under GS/OS and allows you to design a lathe on a linear plane. Because this was the first IIGS program that could create 3-D representations, the author has made available the TML Pascal source code.

Fun Fonts. Public domain fonts can be used by any IIGS program that uses fonts from the IIGS System Disk. This includes all IIGS programs that follow Apple's Human Interface Guidelines and virtually all IIGS word processing programs, desktop publishing programs, paint programs and more. There are hundreds of font families available.

Because many public domain fonts are compatible with Beagle Bros.' SuperFonts, they can be used with AppleWorks. And by using a public domain file-format changer, fonts can be converted easily for use with Publish It! and other programs. There are even fonts that can be used with AppleWorks GS' communications module to make the computer screen easier to read.

Some popular commercial programs are ideally suited for use with public domain add-ons. Broderbund's The Print Shop is a great example. Because the program comes with a built-in graphics editor, many thousands of graphics have been created by Print Shop users and placed in the public domain.

SHRConvert, by Jason Harper, is an indispensable $15 shareware program. Given the variety of different graphics "standards," it was once impossible for Apple users to use graphics created on other computer systems. Thanks to SHRConvert, this is no longer a problem.

SHRConvert can convert a number of different graphics into a format that can be easily loaded into IIGS paint programs, draw and desktop publishing packages.

Among the different formats SHRConvert works with are graphics generated by Atari ST, Commodore and Macintosh computers.

This program is a must for anyone interested in graphics!

Paint Your Wagon. Speaking of graphics, no IIGS system is complete without a paint program. With any paint program, you can create graphics from scratch or modify any of the thousands of public domain super-high-resolution graphics.

Cheap Paint, by Earl Gehr, is a $10 shareware program offering many of the features found on commercial products — and then some. Among Cheap Paint's many features is one that allow 256 different colors to be on screen at one time.

The examples mentioned are just a few of the thousands of high-quality public domain, freeware and shareware packages available. If you acquire some of these programs, remember that many hours of hard work went into creating them. If an author requests a shareware registration fee, you are morally obligated to remit that fee.

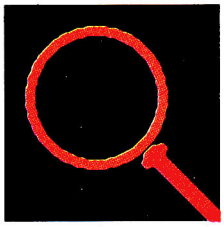
If we honor this unique method of distribution, we can expect to see a continuing proliferation of low-cost, high-quality software. ■

— Joe Kohn

The Apple IIGS Buyer's Guide *welcomes Joe Kohn as a new columnist. He can be reached via electronic mail on The Source (SIG035), and he welcomes your contributions of software for review in this column.*

TransWarp GS

High-Tech Hyperspace



"First Look" is a forum reserved for previews of new products that are about to ship.

Faster than a speeding bullet. More powerful than a charging locomotive. Able to leap tall operating systems in a single bound. It's the TransWarp GS accelerator from Applied Engineering!

If there's been a more anxiously awaited third-party product for the Apple II line in the last 10 years, we'd like to know what it is. From the beginning, the IIGS has been criticized for a perceived lack of speed. The TransWarp GS provides a worthy answer to that criticism.

Installation of our preproduction unit (Applied Engineering was just beginning to ship the product when this review was written) took very little time. The accompanying manual helps a lot, because it contains some of the clearest photos we've ever seen of a hardware installation process.

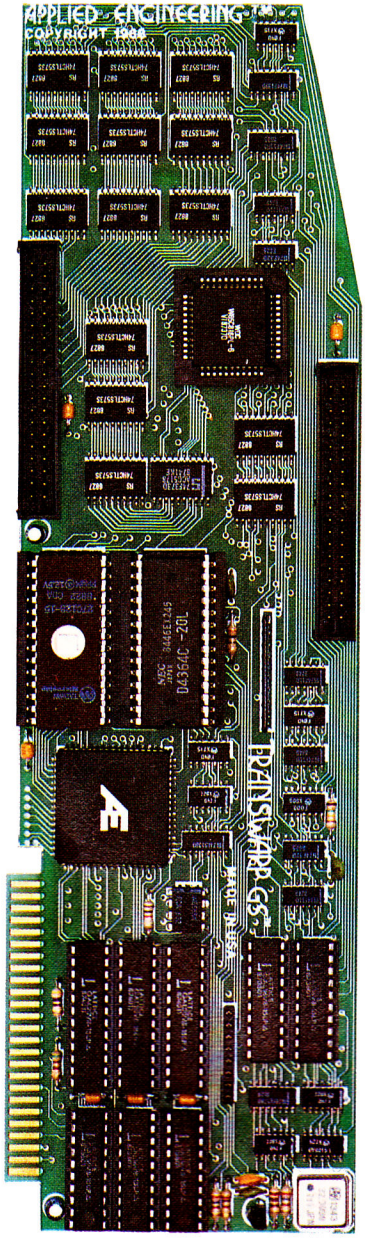
The instructions are equally clear and easy to follow. Once the board is installed, most users will have no further need of the manual. TransWarp is one of those products that does not require a lot of user involvement.

Installing the TransWarp GS is simple. The only tool needed is a small flathead screwdriver or a chip puller. Basically, you remove the IIGS' 65816 CPU chip from its socket, attach a ribbon cable to the TransWarp GS, plug the ribbon cable connector into the 65816 socket and plug the TransWarp GS into slot 3. That's it!

There's one minor thing not mentioned in the manual, though. If you have a board in slot 2, you'll have to temporarily remove it to get to the 65816 chip.

A red LED on the board glows whenever it is running at high speed. Removing the cover for a session and keeping an eye on the LED can be educational. Remember, always make sure the computer's power is off before you remove the cover.

When you turn on your IIGS, you'll be treated to a short but impressive sight-and-sound show. After that, the normal boot process takes place. You don't have to take any extra steps, such as prebooting special disks — the TransWarp GS is already on the job.



The 65816 chip on the TransWarp GS runs at 7 megahertz (MHz), compared to the IIGS' normal 2.6 MHz chip. Like accelerators for other computers, there are times when the chip must slow down temporarily to adjust to various system and software requirements. Overall, though, the accelerated IIGS operates at about twice its normal speed.

With the TransWarp GS installed, programs such as AppleWorks GS take on a whole new life. Text scrolls quickly, windows are updated instantly and those infuriating delays in between every printed line are all but eliminated.

The Finder moves with surprising speed as it opens, closes, re-sizes and moves windows around the screen. Paint programs use far less time to accomplish even the most complex tasks. And AppleWorks Classic "flies like the wind."

It's particularly fun to boot GS/OS from a RAM disk. It goes from Reset to ProSel 16 (a popular program launcher) in under seven seconds!

Although its ads say that TransWarp GS can fit in slots 3 or 4, the manual mentions only slot 3. We could not get the board into slot 4 without stretching the ribbon cable more than we wanted. But the product fits quite comfortably in slot 3, and it does not override the function of that slot. This means that you do not have to give up your 80-column display.

We ran several popular packages using the TransWarp GS, and they all worked without exception. Most of the packages showed significant speed gains, and none gave even a hint of incompatibility with the board.

When you first start up your IIGS, the TransWarp GS installs a Classic Desk Accessory (CDA) in the Desk Accessory menu, which is accessed by simultaneously pressing the Control, Apple and Esc keys. The CDA, which resembles the IIGS' Control Panel, allows you to manually set the machine's speed at 7 MHz, the IIGS' normal 2.6 MHz speed or 1 MHz — for compatibility with older Apple software.

A self-test can be invoked and run once or set to run continuously. An "About TransWarp GS" item gives you some information about the board's designers and the availability of tech support.

The CDA also lets you configure some of the board's default values. You can disable the start-up sound and graphics display, if you wish, and turn interrupts on or off, depending on your use of timing-critical applications, such as AppleTalk networking software.

TransWarp GS seems almost magical in its uncanny knack for "knowing" when things should *not* be sped up. Real-time games often suffer from acceleration, becoming literally unplayable at higher speeds. And yet, with TransWarp GS, games such as Mean 18 and Tetris function normally, with no special action from the user.

Basically, that means you can forget TransWarp GS is there and run your favorite programs as always. The blocks in Tetris fall at normal speed, but filled lines clear out faster. Screen changes are quick, too.

Mean 18 is similarly enhanced — the swing of the golf club and flight of the golf ball occur normally, but those time-consuming screen wipes are accelerated greatly. More of your time is spent playing than waiting.

Not all games blend in so smoothly, however. Bounce-It! and Dungeon Master are examples of games that have all their functions accelerated. Bounce-It!, in particular, has to be run at normal IIGS speed to be playable, unless you are really in the mood for a challenge!

Sounds come out unchanged. Music programs such as The Music Studio and Diversi-Tune were tested, and they always worked. Response times to commands in Music Studio are noticeably improved.

Access to slots and ports takes place at slower speed. So even though your telecommunications program will function more rapidly, it will communicate with the outside world normally.

Our test system was a preproduction board running in a 2.75 MB Apple IIGS. The memory included 1.5 MB on an Applied Engineering GS-RAM board and another 1 MB on a Checkmate MultiRam GS board. The two memory boards were attached to a Checkmate MemorySaver, which manages the two boards as one block of memory and allows the use of part of this memory as a ROM Disk.

The TransWarp GS took all this hardware in stride, and operations from anywhere in memory — /ROM, /RAM5 or system RAM — were all accelerated with no difficulty.

Programmers will be pleased to know that TransWarp GS installs a "jump table" to subroutines that makes program control of the board simple. All pertinent information about the board and its operation is available to programmers. The board's current state can be read, stored and changed to fit the needs of the moment, then restored to original condition when the current program is finished.

Also, a program can "ask" the TransWarp GS how many speeds are available and what the maximum speed is; this implies the manufacturer's intention to enhance the board as faster 65816s become available.

With a list price of $399, the TransWarp GS board is a major investment, costing somewhere between 1 MB of memory and a hard disk drive. Nonetheless, it could become a must-have item for serious IIGS users.

The board represents a major step toward turning the IIGS into the machine we wanted all along. Applied Engineering is to be congratulated for producing this fine piece of work. ■

— Joe Walters

Product: TransWarp GS
Price: $399 retail
Company: Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060
Requirements: Apple IIGS
Warranty: One year

Circle Reader Service Number 64

Informal Benchmarks

All times are in seconds, unless otherwise noted.

	Apple IIGS With TransWarp (7 MHz)	Apple IIGS (2.6 MHz)
Cold boot GS/OS to ProSel-16 from ROM disk with hard disk online	13.02	18.68
Compile 1,300-line program with AC/BASIC, all files in /RAM5	25.44	47.56
Print one page of an AppleWorks GS word processor document, single spaced, using a 12-pt. font	4 min., 46 sec.	9 min., 38 sec.
Scroll one page in the above document	5.36	11.26
Recalculate a 1,000-cell AppleWorks GS spreadsheet	12.08	26.05

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GREATER SAVINGS!

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- ☐ **GS87** ICONED: Design, edit, and color your own icons (SHAREWARE) **$9**
- ☐ **GS27** BOUNCE-IT!: IIgs adaptation of Little BrickOut game (SHAREWARE), plus Submarine, Simon Sez, etc. . . **$9**
- ☐ **GS85** CONTROL PANEL NDA: Get to the Control Panel from the Apple menu, plus 20 other DA's **$9**
- ☐ **GS58** F1 RACE: Formula One racing game (SHAREWARE). . . **$9**
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- ☐ **GS61,62** 200+ holiday color and b/w graphics, fonts & borders for use w/Print Shop™ (2 DISK SET) **$18**

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- ☐ **GS29** 20 DA's: Send type to printer after carriage return . . **$9**

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- ☐ **GS15** Blackjack and Othello. Need 512K RAM. **$9**
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- ☐ **GS7,GS8,GS9*** Lots of pics: Santa, Enterprise, MaxHeadroom, Moonlighting, etc. (3 DISK SET) **$27**
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- ☐ **GS63** CheapPaint—a commercial-like color graphics program (768K RAM required) ★***Best Seller*** . . . **$9**
- ☐ ***NEW*** **GS83** Mickey Mouse graphics calendar **$9**
- ☐ ***NEW*** **GS84** Super Hi Res pictures: make your IIGS come alive with 3200 colors on screen at once. See the lost city of Atlantis and much more **$9**

★ Required to print, i.e. PDE GS63, PaintWorks Gold, or Deluxe Paint II.

Music / Sounds
- ☐ **GS16,GS17** Digitized sounds for Startups and Sys beeps: Pee Wee Herman, 3 Stooges etc. (2 DISK SET) . . . **$18**
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Utilities
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Circle Reader Service Number 21

Sider Turbo Drives With Tape Backup

For Maximum Storage

Ratings For The D4T:



Performance: 9.5
Innovation: 8.0
Ease Of Use: 10.0
Documentation/Support: 9.0
Value: 9.5
Overall: 9.2

We're never happy with our computers. We always want more speed and capacity. The Sider D4 Turbo hard disk, one of the subjects of this review, works to fulfill both requirements by supplying a full 40 megabytes (MB) of storage and fast access time: 28 milliseconds (ms).

Another drive that we reviewed, the Sider D9 Turbo, comes with even more storage capacity (90 MB) and is faster still (18ms). Meanwhile, First Class Peripherals recently announced the D7 Turbo hard drive, a model that ranks in between the D4T and D9T. The D7 Turbo runs at 29ms.

The D4T is divided into two 20 MB ProDOS partitions. The 90 MB D9T comes with two 32 MB partitions and one 24 MB partition. There is currently no way for a user to change the size or number of the partitions.

Before the advent of GS/OS, ProDOS of either the 8- or 16-bit variety always had a two-volumes-per-slot limit. This boundary, combined with the 32 MB limit on volume size, tended to limit hard drives for the Apple II to 64 MB.

Because GS/OS does away with the two-volumes-per-slot limitation by replacing the concept of slots and drives with device numbers, there is no problem accessing all three partitions (volumes) under GS/OS.

We used the Sider drives with beta versions of GS/OS drivers that should be available by the time you read this review. There was no documentation ready for the drivers, but not much is needed, and they performed flawlessly. It is the drivers that make both drives incredibly fast. Each Sider has its own driver, which will not work on other Sider models or other hard drives.

The D4T runs about twice as fast with a GS/OS driver, and the D9T is more than twice as fast after installing the GS/OS driver. In practical terms, a Sider with a GS/OS driver loads most programs several seconds faster than normal — and is more than a minute faster at loading AppleWorks GS than a Sider without a GS/OS driver.

First Class Peripherals came up with an ingenious way to access the D9T's third partition under ProDOS 8. Software supplied with the D9T places the third volume of the drive in slot 2, much as the Smartport on the IIGS does with 3.5-inch disks or RAM or ROM disks.

It's not a perfect solution, however. It can't make the volume appear in slot 2 if the Smartport has already moved a volume to that slot.

A volume usually gets moved to slot 2 by the Smartport when there's a RAM disk present. Because the D9T is so fast, there's little incentive to maintain a RAM disk.

Booting with our usual set of fonts and desk accessories took a little more than 30 seconds with the D9T. When we copied everything to /RAM5 and re-booted, it took 26 seconds.

Loading all of AppleWorks GS took only 1:35 (1 minute, 35 seconds) from the D9T, or 1:22 from /RAM5. That's not much difference, compared to the three to 10 times speed improvement /RAM5 usually shows.

The Siders came formatted and ready to run, so setting them up was a snap. We had to put the card in a slot, run the cable from the drive to the card, plug the drive in and turn it on.

Also, the D4T and D9T come with ProSel installed. ProSel is a complete set of disk utilities, including one of the fastest program launchers around, a utility to repair damaged disk directories, a hard disk optimizer, disk copy, backup and restore programs, and lots more.

The SiderFile utility that comes with the drives, which is a customized version of another ProSel utility, is a complete file handler that allows a user to format or catalog a volume and perform many other file routines.

The IIGS versions of the D4T and D9T come with GS/OS set up to boot into the ProSel program selector, so they are ready to run 8- or 16-bit programs right out of the box.

Although the D4T and D9T are SCSI (Small Computer System Interface) hard drives, the interface card, or host adapter, is not an SCSI interface. Thus the drives could be run from an Apple SCSI interface, but they would lose the speed they gain from the GS/OS drivers. The drivers work only with the First Class Peripherals card.

The drives come with excellent backup and restore utilities, which are part of ProSel. A 20 MB volume needs 25 diskettes to back it up, however, and a 40 MB volume needs 40.

The sheer drudgery of doing the disk swaps necessary to back up the hard drive is enough to discourage making those necessary backups.

We also received, for testing, a Sider T6 tape backup system. This unit makes it so easy to back up a hard drive, there's no excuse for not doing so.

The procedure is as simple as popping a tape cassette into the tape drive, running the SiderFile program and selecting the Backup Volume to Tape menu selection. From there we simply tell the system which volume to back up and wait for the process to finish. It takes almost 40 minutes to back up a full 32 MB volume.

The T6 tape drive daisy chains from a Sider hard drive, so installing it is not much more than a matter of running a cable between the hard drive and the tape drive and plugging in the tape drive.

If you don't have a Sider hard drive, the T6 comes with an interface card for stand-alone use. The tape can be used to back up any ProDOS volume, including floppies and RAM or ROM disks, as well as hard drives.

If you're in the market for a high-performance hard drive, especially under GS/OS, the Sider Turbo drives deserve a hard look. Their performance is outstanding and they come with the software you need to take advantage of their performance.

If you value your time or convenience, the T6 tape drive should be considered as a solution for backing up your data. Using a tape backup system with a large hard drive makes good sense.

First Class Peripherals also makes a unit, called the C96, that is a combination of the T6 and D9T. ■

— Larry Miller

Products: D4T hard drive; D9T hard drive; T6 tape drive
Prices: $995 retail; D4T
$1,695 retail; D9T
$895 retail; T6
Company: First Class Peripherals; 3579 Hwy. 50 E.; Carson City, NV 89701; 800-982-3232
Requirements: Apple IIGS with ROM 01, to use GS/OS with native drivers; Apple IIe

Circle Reader Service Number 65

Arkanoid GS

Take Aim On Aliens



Performance: 9.0
Innovation: 9.0
Ease Of Use: 9.0
Documentation/Support: 7.0
Value: 9.0
Overall: 8.6

One of the best things about the Apple IIGS is that when your work for the day is finished, you can reward yourself by playing a great arcade game. In the comfort of your own home and without spending a fortune in quarters, you can play Arkanoid GS.

According to a local teenage expert — who immediately recognized the sound — this version of Arkanoid is even better than the original arcade game. That's not surprising, given that Taito Software, Inc. also made the arcade game.

Arkanoid GS delivers outstanding graphics and sound. Use a stereo card, if you have one, to enhance the satisfying sound effects, such as a "beep," which echos when you eliminate a game piece, and a "splat," which you hear when you hit an alien.

You may play the game alone, take turns with a second person or play against yourself!

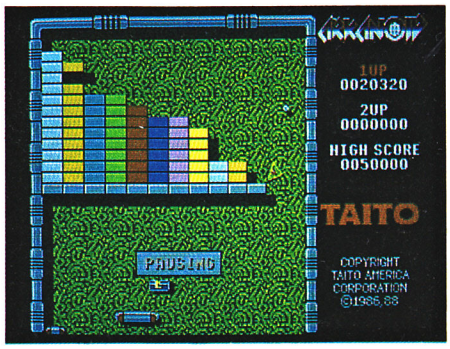
If you have ever seen Breakout or Bounce-It!, you have a good idea what Arkanoid is like. Arkanoid GS is more intricate, however. It has 33 levels. Although each round in the game is different, the rounds are not necessarily more difficult than the last.

For those of you who don't know, here, briefly, is the story about the intergalactic carrier Arkanoid: The crew escapes in a "Vaus" (the game's paddle, controlled by the mouse) and must fight for its freedom. Barriers (bricks) in each level are arranged in a variety of combinations. The object of the game is to eliminate the barriers by hitting them with an energy ball that bounces off the Vaus.

Some energy blocks cannot be removed, and gray ones must be hit more than once.

Once destroyed, some of the colored blocks release a capsule. Each type of capsule has a different color and a letter, which makes it easy to know what will happen when you capture a particular capsule.

Destroying one of the capsule-containing blocks, besides adding 1,000 points to your score, has an added benefit. Depending on



As the barriers fall by the wayside, Arkanoid's action intensifies.

the captured capsule, you can advance to the next level, catch the ball and move it before firing, divide the ball into thirds (especially helpful in certain areas), double the width of the paddle, get another Vaus, arm yourself with a laser to shoot energy blocks and aliens, or slow down the action.

As you change levels, you receive an extra 10,000 points and an additional Vaus at the 20,000- , 60,000- and 100,000-point levels. At the 120,000-point level, a new Vaus appears every 60,000 points. A single energy block is worth between 50 and 120 points, depending on the color.

The "aliens" that float around the screen are absolutely beautiful and almost three dimensional. As the aliens emanate from the top of the screen, the top row of blocks may prevent access until a "hole" is made to let them through.

When you hit an alien, you are awarded 1,000 points, but the resulting deflection may send your ball in the wrong direction. You can also destroy an alien by bumping it with the Vaus.

Unlike Shanghai and Tetris, and other addicting games that preceded this one, physical skill (i.e., good hand-eye coordination) is the key element in achieving high scores. The only luck element involved is the order in which the energy capsules fall. The manual's warning to "Look sharp and keep alert!" is good advice.

If your hand-eye coordination is not that great, you may be frustrated by the fact that this game does not allow any cheating. There are public domain Classic Desk Accessories (CDAs) that solve this problem, however. These can be found on online networks, such as Compuserve and The Source, or through user groups.

One of the CDAs lets you go from level to level until you reach the level where you want to begin, scoring 10,000 points each time you increase a level. Another CDA lets you choose the starting level or move to the next one, pick the type of Vaus and even use unlimited paddles.

Although the accompanying manual does not tell you how to do it, the program can be copied to a hard drive. A key disk copy protection scheme is used, so the original program disk must be in the 3.5-inch drive when the program boots up.

Arkanoid GS can be run from the Finder, or other program selectors, and comes with GS/OS on the disk. There are no pull-down menus, so you cannot run New Desk Accessories (NDAs) from it.

There are a few other minor options that you may find helpful. The sound volume can be increased or decreased, or the sound may be turned off completely. Although the latter option detracts from the fun of playing the game, it might be appreciated by co-workers if you are taking a break while on the job. You can re-start the game or exit to your program selector, if started that way.

The IIGS is a rather high-priced game machine, but Arkanoid GS is the kind of game that justifies a super-high-resolution monitor and a stereo card. If you like color, this game will knock your socks off. Arkanoid GS will keep you busy for many happy and challenging hours.

— Merry Perry

Product: Arkanoid GS
Price: $34.95 retail
Company: Taito Software, Inc.;
267 W. Esplanade; North Vancouver, B.C., Canada V7M 1A5; 604-984-3344
Requirements: Apple IIGS; 512K
Circle Reader Service Number 66

DB Master Professional

A Relational Powerhouse



Performance: 9.5
Innovation: 9.0
Ease Of Use: 8.0
Documentation/Support: 9.0
Value: 8.5
Overall: 8.8

Anyone who thinks the Apple II is not powerful enough for business must see DB Master Professional to be convinced otherwise. Programmer

Barney Stone is aware of the machine's capabilities and fully exploits them with this outstanding relational database manager.

DB Master Professional not only is the most powerful database for the Apple II, but it can easily compete with its MS-DOS counterparts.

One of the amazing things about this program is that it only requires 128K of memory and two 5.25-inch floppies or one 3.5-inch drive. It runs much more efficiently with a hard drive and/or a large RAM disk, however, and that is one of the reasons it works so well on the IIGS.

You can take advantage of the extra memory that most IIGS-specific programs require by creating a large RAM disk and running the program from there, or by copying your data to the RAM disk.

Because DB Master Professional's data files are disk (as opposed to RAM) based, they can be extremely large — up to 10 megabytes (MB). Although this results in slower access time than a more limited RAM-based database, the program is still very fast.

DB Master Professional is an integrated package. The built-in word processor may not be everything you ever wanted (it limits you to two-page documents), but it makes short work of merging text and data.

There is no spreadsheet per se, but the available math functions should cover most of what you need to calculate. It is relatively easy to set up the formulas, because all the field names and their numbers in the program appear on screen for reference.

The program's learning curve is somewhat steep, not because DB Master is difficult to use — it isn't — but simply because of its power and flexibility. To take advantage of all its features, completing the program's extensive tutorial is time well spent.

The most difficult part of creating a database is not setting it up, but deciding exactly what you want to include — and how to include it. The program's Dynamic Prompting (a system of changing prompts to show what keys are appropriate for the current functions) is a tremendous help in knowing what to do at any given time.

However, a printed quick reference card, showing all the keys used in the program, would also be helpful.

The commands are mnemonic, which makes them easy to remember, but the Help key is a little unusual. Pressing Control-T (for Tutor) tells you where in the manual to look for the information about a particular function. This process can be somewhat inconvenient, but it is one way to keep the program within its 128K range.

The tutorial and reference manual thoroughly explains each of the main menu functions. Another manual, which contains more than 300 pages, is a glossary, arranged alphabetically with entries for each of the words, phrases, commands and options used in the program.

Who needs a package with this much power? Anyone who keeps lists and needs to manipulate them in a variety of ways. So does anyone who wants to print more than one label across a page. As does anyone who needs up to 200 fields (categories) of information or more than one line per field, and anyone who has outgrown the limitations of other database packages and likes the speed of a text-based program.

Also, anyone who wants to keep certain information hidden from other users will like DB Master Professional. So will anyone who wants to make data entry practically foolproof, with required fields and information that must fall within a certain range (validation rules).

Most importantly, anyone who needs to transfer information from one file or list to another with ease will need the power of DB Master Professional.

The capability to import data from or export data to another file saves time and energy in data entry. DB Master Professional can also do this. In short, there is little in the way of database management that the program cannot do.

There are several ProDOS functions that can be handled from within the program. These functions can be used to re-name, delete and so on without exiting to ProDOS. There is also an extra utility that allows you to set up your own printer drivers.

Flexibility is the key word. For instance, field names can appear on screen in inverse or regular text, or not at all.

Label fields do not allow data entry, but can be used to dress up the screen or make it unnecessary to show each field name. This capability is helpful if you are setting up information in a column. You can do the same thing in a report and take advantage of your printer's capabilities, such as boldfacing or underlining the fields or information that you want emphasized.

When printing a report or browsing through records, you can show statistics, including the total, average, and minimum and maximum on numeric and dollar/cents fields. Master report formats consist of Layout, Select, Sort and Printer subformats.

Being able to search for information in a column is a unique and helpful feature. Instead of entering search criteria for each field, an entire column can be checked for the pertinent information.

The Receipts feature allows you to print a report at the time you add or display a record. This can be useful if you want to print an invoice or an address on an envelope.

You can change the order in which the cursor moves from field to field, including all over the screen and with a tab field, even from one screen to the next. You can also create user-defined fields for such things as Social Security numbers or phone numbers.

Time and date math can be used to figure out how much a paycheck will be, how long it has been since a payment was received or even someone's age. Eight different field types are available.

Global search and replace is another time saver. You can even use programs such as MagnaCharta from Third Wave Technology to chart your data, if a visual presentation may make the data easier to understand.

Our enthusiasm for the program and its extensive features overpowers our complaints. For example, the Things You Can Do With DB Master list would be easier to use if page numbers were listed with the Glossary entry reference. And although there are 11 date formats for entering data and another eight formats for reports, there are none for MON-DD-YY. We find there are times when the year is unnecessary or unknown, such as a birthday. Still, you must include it.

When installing the program, it automatically loads into the root directory. This is fine, if you will be running it from a RAM disk (which is what the installation program was written for), but on a hard drive you may prefer to place it in a subdirectory. The manual neglects to mention this point.

For a program of this complexity, DB Master Professional is amazingly bug free. If there is a problem, pressing Control-Reset allows you to exit back to the Main menu, and it is unlikely that you will lose any data.

DB Master Professional does not take advantage of special IIGS features, such as graphics and sound. But living without the mouse and super-high-resolution graphics may be a good trade-off for the power that you will receive.

There are a number of shortcuts built into DB Master that save both time and effort. For instance, you can use the built-in calculator in a field that does not have a formula, but where you still need a calculation.

The tab fields make it possible to zip through data entry by skipping to the most frequently used fields. And by typing Control-W (for "When") in a date field, the current date is inserted with just one keystroke. The program lacks built-in macros, but this is easily solved with add-ons such as Diversi-Key or MacroMate.

Setting up your database requires careful planning and is the only difficult part of using the program. It may take you several tries to get the database exactly the way you want it, even if you are converting files from another program.

The program can take files directly from AppleWorks or text files, but you must first set up the database to receive them. You can also convert files from older versions of DB Master, of course.

Will DB Master Professional fulfill all your database needs? AppleWorks, DB Master Version 5 and ProFiler are sufficient for many users, although none of them are as powerful or sophisticated as DB Master Professional. Those users with more simple needs may also want to investigate several IIGS-specific databases that use a graphical interface.

Users who may be uncertain whether they need the power offered by this program may send for the demo. Once they have tried the demo, they will know if the program meets their database requirements.

If you are running a business, DB Master Professional may be the only program you will ever want. For home use, it may be more than you really need, but it is unlikely that you will ever outgrow it. That factor alone may make it a worthwhile investment.

DB Master Professional is the epitome of the "Apple II forever" theme and is one of the most powerful packages available for any computer.

(Editor's Note: At the May 1989 AppleFest in Boston, Stone Edge Technologies plans to announce DB Master Developer's Pak, a program for creating custom applications based on DB Master.)

— Merry Perry

Product: DB Master Professional
Price: $295 retail; DB Master Professional $179 retail; DB Master Version 5 $10 retail; demo
Company: Stone Edge Technologies, Inc.; PO Box 3200; Maple Glen, PA 19002; 215-641-1825
Requirements: Apple IIGS; other Apple II models; one 3.5-inch drive or two 5.25-inch drives; ProDOS hard disk recommended
Circle Reader Service Number 67

Database Comparison Chart

Features And Limits	DB Master Professional	ProFiler 4.0	AppleWorks	AppleWorks GS
Fields Per Record	200	250	30	255
Characters Per Field	250	1,650	76	65 (1)
Maximum File Size	10 MB (2)	65,000 (3)	1,350 (4)	1,100+ (5)
Passwords (Hidden Fields)	Yes	No	No	No
Required Fields	Yes	No	No	No
Field Validation Rules	Yes	No	No	No
Global Search And Replace	Yes	Yes	No	Yes
Computed Values In Records	Yes	Yes	No	Yes
Computed Values Per Report	50	31/250 (6)	3	Unlimited
Data Calculations	Yes	No	No	Yes
Field Types	13 (7)	5 (8)	3 (9)	7 (10)
Graphics Fields	No	Yes	No	Yes
Built-In Macros	No (11)	Up To 5	No (11)	No (11)
Reports Per File	255	Unlimited	8	Unlimited
Extra Text In Reports	Yes	Yes	No	Yes
Print Fields In Variable Print Styles	Yes	No	No	Yes
Multiple Across Mailing Labels	Yes	Yes	No	No
Retain Reports When Adding Fields	Yes	Yes	No	Yes
Automatic Date And Time Stamping	Yes	No (12)	No (12)	Yes
Directly Reads AppleWorks Files	Yes (13)	Yes	Yes	Yes (14)
Mouse Controlled	No	Yes	No (11)	Yes
Standard Interface	No	Yes	Yes	Yes
Relational	Yes	No (15)	No	No

(1) Limited only by memory with static text fields.
(2) Limited by 50 disks.
(3) 65,000 records, 8 MB file.
(4) More records with memory expansion and appropriate software.
(5) With a six-field file and 1.2 MB, actually determined by amount of memory.
(6) 31 for a columnar report. Number of fields determines free-form limit.
(7) Text, 3 numeric, $/cents, yes/no, 3 date, 2 time, user-defined, label.
(8) Text, formula (calculated, can be dollar), link, launch, graphic.
(9) Text, date, time.
(10) Text, numeric, date, time, static text, picture, label.
(11) Available with third-party add-ons.
(12) Easily done with macros.
(13) File must first be created to accept information; field names will be matched.
(14) Label fields must be added after conversion.
(15) Link fields allow cutting and pasting of information from other files through the Clipboard.

GeoPublish

Desktop Publishing For GEOS



Performance: 7.0
Innovation: 8.0
Ease Of Use: 6.0
Documentation/Support: 6.0
Value: 8.0
Overall: 7.0

Developing and writing quality software is not an envious task. A programmer must constantly balance powerful features with ease of use.

GeoPublish is a powerful program for desktop publishing, but be prepared to spend many hours with the manuals and the program itself. Even if you are familiar with the conventions used by GEOS, the Graphics Environment Operating System for GeoPublish, be prepared to do a lot of reading. We found ourselves constantly referring to the manuals, which contain more than 600 pages.

GEOS uses a graphics interface similar to the standard Apple IIGS interface. The system is basically compatible with ProDOS. GEOS can read ProDOS disks, but ProDOS has problems with some GEOS file types. We recommend that you keep your ProDOS and GEOS disks separate.

Only four drives or ProDOS volumes can be online at a time. Contrary to what is stated in the manual, four drives daisy chained to the IIGS Smartport are all recognized by GEOS. If your computer has more than four volumes or drives online, however, you will have to decide which drives you are most likely to need. Extra drives must be disconnected or turned off.

Documents in GeoPublish are created in layers. Each layer is produced by a different Graphics mode. Because GeoPublish does not take advantage of extra memory, expect it to take a while to move from mode to mode because of disk access.

The Master Page mode is used to set guidelines and place elements that are to repeat on each page. It is possible to create both left and right master pages. The Page Layout mode is where regions are defined for text and graphics. The Overlay Graphics mode is used to add borders, headlines and titles.

GeoPublish really shines when it comes to its extensive set of object-oriented drawing tools. Included are Object Select, Group Select, Special Text, Closed Spline, Open Spline, Ellipse, Line, Connected Line, Polygon, Rectangle, Attributes, Redraw, Delete, Move-to-Front and Move-to-Back tools.

The Scrap tool is used to cut, copy and paste object scraps and photo scraps.

The Special Text tool is well implemented and easy to use. You can create high-quality text that runs across or up and down a page. Text can also appear as transparent or opaque in any of 32 patterns. Point sizes for Special Text can vary from four to 192 points. Even the largest type can look excellent because of mega fonts and smoothing.

Mega fonts are special font files that contain information describing the shape of each character in a font. Smoothing helps to get rid of the "jaggies" that usually appear when large point sizes are selected for type.

You can use GeoPublish's built-in editor to enter text or import GeoWrite (a word processing package from the same vendor as GeoPublish) files directly. The capability to specify spacing between lines and characters is absent, however.

Time, date and page numbers can be inserted automatically into a document.

ImageWriter output looks great because of the mega fonts, which can be used for headlines, and the capability to smooth bit maps. Smoothing actually does help remove the jaggies from both bit maps and text.

GeoPublish cannot be used with the AppleTalk network. Therefore, a LaserWriter must be connected directly. We were unable to get GeoPublish to output to a LaserWriter Plus via the IIGS printer port, however. According to Berkeley Softworks, GeoPublish requires a serial interface card, even on the IIGS.

GeoPublish comes with many desk accessories. These include a Photo Manager and Text Manager for keeping track of often-used pictures and text.

The Graphics Grabber utility allows you to import images from The Print Shop, PrintMaster Plus, Newsroom and Dazzle Draw. Only Dazzle Draw sections can be imported, however, not entire pictures. Another utility, Text Grabber, turns AppleWorks, MultiScribe and WordPerfect documents into GeoWrite documents.

GeoPublish's greatest strength is also its weakness. The depth of its features makes the program difficult to learn and use. It suffers most from having too many desk accessories, utilities and specialized file types. An online help menu would be a welcome edition.

If you can get past the program's foreign and intricate nature, you will find a powerful page-layout program that has many unique and effective features.

— Gary Ramey

Product: GeoPublish
Price: $99 retail
Company: Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883
Requirements: Apple IIGS; other Apple II models; 128K; GEOS
Circle Reader Service Number 68

Micol Advanced BASIC

AppleSoft Compatible, And More



Performance: 8.0
Innovation: 8.0
Ease Of Use: 7.0
Documentation/Support: 7.0
Value: 7.0
Overall: 7.4

Trying to program on the IIGS can be a frustrating experience for someone who has only been exposed to Basic. Sure, AppleSoft Basic is in the computer's ROM, as always. But AppleSoft hasn't changed in 10 years, so it cannot use any of the IIGS' advanced features. In addition, AppleSoft is an interpreted language, meaning that programs run relatively slow. On the other hand, Micol Advanced BASIC is used for writing compiled applications, which generally run much faster.

Micol Advanced BASIC can help relieve the frustrations of AppleSoft by providing a language that is mostly AppleSoft compatible, yet can use huge amounts of memory for data, display super-high-resolution graphics and take advantage of the IIGS' increased speed and sound capabilities.

Micol Advanced BASIC boots into a Command Shell that is similar to what you encounter in AppleSoft. From the Command Shell, you can catalog disks, run advanced Basic programs and perform most of the other functions you can do in AppleSoft. The program also includes additional tools for use with the compiler.

The editor is where you actually write programs. Because Micol's editor uses plain text files, you can compose and edit source files in Micol or any other editor of your choice. Still, the inconvenience of switching between an external editor and Micol Advanced BASIC is probably greater than the effort required in learning Micol's editor.

The Micol editor isn't that hard to learn. It is a full-screen editor that uses many of the AppleWorks commands. The editor scrolls horizontally to accept program lines up to 255 characters wide.

One minor point: The Command Shell's treatment of the Delete key takes some getting use to. In most programs, one expects the Delete key, when pressed, to erase the character to the left of the cursor. The Command Shell deletes the character under the cursor.

Fortunately, in the editor, typing Apple-Delete toggles between Micol's Delete mode and the method used by most other Apple programs. Micol Systems is considering adding the toggle capability to the Command Shell as well.

The manual for Micol Advanced BASIC is written with the AppleSoft programmer in mind. Although enough information is presented in the manual for every command, in many cases the manual presumes a familiarity with AppleSoft. While an experienced AppleSoft programmer can breeze through the program, a beginner may want access to additional AppleSoft manuals.

Both the user's manual and software emphasize the benefits of structured programming, a technique promoted by "modern" programming languages such as C and Pascal. As a result, some AppleSoft programmers may feel restricted by the structure imposed by Micol Advanced BASIC.

We feel otherwise. Although we like AppleSoft, we find the structured environment available in Micol Advanced BASIC actually frees us to create programs that are difficult to write under the less-structured AppleSoft.

We wanted to see how compatible Micol Advanced BASIC is with AppleSoft, so we tried following the instructions in the manual for converting a program from AppleSoft. First, we converted a moderate-size AppleSoft program into a text file and then loaded it into the Micol editor.

After we made the suggested changes, we next tried to compile the program. The compiler repeatedly flagged the PRINT statements as being in error.

We then remembered reading that items in a PRINT statement must be separated with a semicolon. For example, the following statement is legal in AppleSoft:

```
PRINT "The answer is "B
```

In Micro Advanced BASIC, however, there must be a semicolon between the second quotation mark and the "B." Once we made the change to the PRINT statements, our program compiled and ran perfectly.

Of course, the program didn't do anything more than before the conversion. But it did run well as a compiled (rather than interpreted) program.

There is one difference between AppleSoft and Micol Advanced BASIC that will not prevent a program from compiling, but could give unexpected results. Micol Advanced BASIC uses the HGR and HGR2 commands to turn on the IIGS' super-high-resolution graphics, rather than the older high-resolution graphics. This means that plain high-resolution graphics cannot be displayed by Micol Advanced BASIC.

Because the super-high-resolution screen has more dots per line, graphics plotted as high-resolution graphics under AppleSoft will not use the full screen and will be off center to the left a little.

Nevertheless, we like the way Micol Advanced BASIC makes super-high-resolution graphics easily accessible. We had no difficulty drawing shapes on the super-high-resolution screen.

Sounds are easy to generate with Advanced BASIC programs, too. We found it easy to modify the sample sound routines in the manual to produce the sounds we liked. It didn't take much experimentation with the NOISE command, for example, to generate a range of satisfactory sounds.

Apple Computer, Inc. calls programs designed to run from a controlling program "shell applications" and gives them the file type $B5. Most programs that provide catalog listings will show the $B5 file type as an EXE file.

Programs compiled under Micol Advanced BASIC are called EXE files, but are given the file type $F2, which Apple designates as a user-defined file type.

Micol's Shell catalogs $F2 files as EXE files and $B5 files as $B5. Micol EXE files are not the same as GS/OS EXE files. Care should be taken not to confuse the two.

By running a program called MAKE.SA under the Micol Shell, you can turn your Micol EXE file into a stand-alone GS/OS program that can be executed from the Finder or other GS/OS program selector.

It's also possible to turn a Micol EXE file into a classic desk accessory (CDA) by running a program called MAKE.CDA under the Micol Shell. Turning an EXE file into either an S16 file or CDA increases its size substantially.

The classic "Hello World" program, for example, was only 119 bytes long as a Micol Shell program, but was a whopping 82K in size after being converted to either S16 or CDA. The size increase is because of the large run-time library that must be combined with the file to make it run outside the Micol environment.

While the large run-time library isn't much of a problem for an S16 file, it is a bigger disadvantage for a CDA, where it will take up the extra memory all the time.

Support from Micol Systems is very good. We purchased Advanced BASIC last September and received a free program update in a few weeks. Getting a free update isn't what impressed us — we received the update even though we forgot to send in the registration card! When we called Micol Systems to ask some questions about Advanced BASIC, the author of the software answered the phone.

What's missing in Micol Advanced BASIC is support for easily writing desktop-style programs that use the mouse. Micol Systems is working on adding these features to Advanced BASIC. The company hopes to have them ready by the time you read this review.

If you're an AppleSoft programmer looking for a good way to create programs for the IIGS, Micol Advanced BASIC may be just the programming tool you need. ■

— Larry Miller

Product: Micol Advanced BASIC
Price: $145.95 retail
Company: Micol Systems, Inc.; 9 Lynch Rd.; Willowdale, Ontario Canada M2J 2V6; 416-495-6864
Requirements: Apple IIGS with ROM Version 01; 768K RAM
Circle Reader Service Number 69

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 that the others because they are appearing for the first time.

In order 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 electronics version of the Apple IIGS Hardware And Software Directory can be found on The Source. Type Applesig at any system prompt for additional information.

Accessories

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

Anti-Glare Screen MFM12
Anti-glare screen featuring a fine crosshatch weave
Apple IIGS.
$23.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Apple IconTroller
Keyboard mounted joystick
Apple IIGS; other Apple II models.
$49.99 retail
Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

Apple IIGS Armor
Security system
Apple IIGS.
$165.95 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
Apple IIGS.
$22.95 retail
Computer Covers Unlimited; 7969 Engineer Rd., Ste. 113; San Diego, CA 92111; 619-277-0622

Apple IIGS Soft Keyboard Protector
Clear, precision-molded keyboard protector
Apple IIGS.
$29.95 retail
Computer Covers Unlimited; 7969 Engineer Rd., Ste. 113; San Diego, CA 92111; 619-277-0622

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; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

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 Expressions Imprinted Mouse Pads
Customized with school seals and business logos
Apple IIGS; mouse.
$9.50 each; 12 pieces
$6.90 each; 72 pieces
$4.70 each; 144 pieces
Quantity discounts available
Computer Expressions; 3833 Chestnut St.; Philadelphia, PA 19104; 800-443-8278

Desktop Printer Stands
Modular, adjustable desktop printer stands available in beige (PRT-1B) or gray (PRT-1G)
$13.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Dilly Dolly Computer Cart
Two-wheel portable cart
Apple IIGS; other Apple II models.
$185 retail
The Dilly Dolly Co.; 2957 Mariposa Dr.; Burlingame, CA 94010; 415-697-9272

Disk Drive Cleaner Model DSK156
3.5-inch disk drive cleaner
Apple IIGS; disk drive.
$8.99 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

The DisKeeper
Organization product that stores 3.5-inch disks in a three-ring binder
$6.95 retail; three pages

Accessories

$19.95 retail; binder with five pages
Cobar, Inc.; 301 Highland Rd.; Cheltenham, PA 19012; 215-379-2440

DSM802 And DSM804
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; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

■ The Incliner
Adjustable, portable computer cart

The Incliner is an adjustable, portable computer cart designed for use with Apple computers. It adjusts height and depth simultaneously, allowing a user to move from upright seating to lounge furniture. It is perfectly suited for an Apple IIGS, ImageWriter and associated peripherals. The Incliner is hand-crafted from solid oak with chrome and black hardware. The keypad and mouse pad are easily reversible for left- or right-handed configurations. The Incliner also includes a storable paper tray for catching printouts and a three-line surge suppressor.
$699 retail

Jenston Mfg.; PO Box 34074; San Antonio, TX 78265; 512-653-0414

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

Extra Long ADB Keyboard Cable
8-foot replacement keyboard cable
Apple IIGS.
$39.95 retail
Kensington Microware 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

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

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

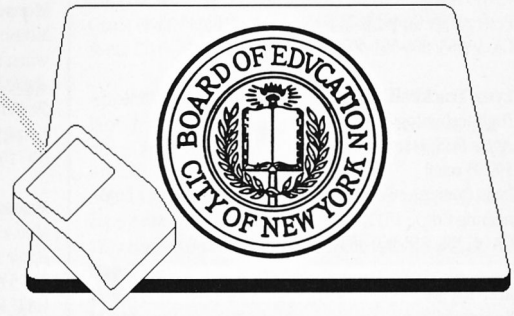
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Circle Reader Service Number 30

Accessories

Keyboard/Computer Vacuum Model MV5
Portable vacuum featuring a high-power motor and including brush/nozzle attachments
Apple IIGS.
$18.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

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-lok" 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

■ LaserKleen
Laser printer cleaning and maintenance system

LaserKleen is a cleaning and maintenance kit for all types of laser printers. The system uses a specially formulated non-corrosive cleaning solution (CS-85) that cleans transfer guides, corona wires and paper feed guides when used with the 20 double-ended cleaning wands. PerfectDuster, an inert gas, is used to clean paper dust and toner residue from the cabinet and paper trays. Case and Cabinet Cleaner is included for use with 50 non-residual wipes. Also included are 25 gloves.
$39.95 retail
PerfectData Corp.; 1825 Surveyor Ave.; Simi Valley, CA 93063; 805-581-4000

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

Mac-Kit 3A
Security kit
Apple IIGS or 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.
$28.95 retail; Mach I
$34.95 retail; Mach I Plus
CH Products; 1225 Stone Dr.; San Marcos, CA 92069; 619-744-8546

Mach II And Mach III Joysticks
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 15206-5295; 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; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

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

MousePouch
Mouse container that carries eight 3.5-inch disks
Apple IIGS.
$5.95 retail
H&H Enterprises; 4069 Renate; Las Vegas, NV 89103; 702-876-6292

Mousetrap
Copy stand; storage space
Apple IIGS; mouse.
$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

The Mousetrap Jr. serves almost the same function as the Mousetrap. The Mousetrap Jr. is slightly smaller in size — the base is 11-inches wide by 9-inches deep and stands 3.5-inches high. It also comes without the storage unit. The Mousetrap Jr., like the Mousetrap, has an adjustable document stand (8.5 by 11 inches) that swivels and fits nicely over a mouse pad.
$19.95 retail
Gered Corp.; 2401 NE Cornell Rd., Ste. 125; Hillsboro, OR 97124; 503-591-8658

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

■ Mouspad
Mouse pads

Mouspads are natural foam-rubber pads that sit on the desk alongside the IIGS. A user rolls the mouse on this pad for greater comfort, speed, accuracy and less skipping of cursor movement. The pad also reduces mouse wear, keeps its insides clean and protects the desktop finish. Mouspads are available in a variety of sizes and colors.
$7.95 to $9.95 retail
Moustrak, Inc.; 930 Dowdell Ln.; St. Helena, CA 94574; 707-963-8179 or 800-221-6687

RamStar Group 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
$39.50 retail; Body Shield Apron
RamStar Group, Inc.; 5996 Paradise Point Dr.; Miami, FL 33157; 305-233-1991 or 800-327-2303

Sta-Blk Ribbon Cartridge For ImageWriter I And II
Re-inking ribbon cartridge
ImageWriter I or II.
$39.95 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.
$26.99 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 15206-5295; 412-661-2629

System Saver IIGS
Power control center offering four outlets, surge suppression, noise filtering and a whisper-quiet cooling fan
Apple IIGS.
$99.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Accessories

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 pinpoint precision and two mouse buttons
Apple IIGS.
$169.95 retail
Kensington Microware 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
Apple IIGS.
$29.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Universal Security Kit
Physical security system for the IIGS
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
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 94903-2101; 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 or 714-963-3392

■ **SpectraGraphix 256**
Super-high-resolution access and development tool for Applesoft Basic
Apple IIGS; 512K; ProDos 8; not copy protected.

SpectraGraphix 256 allows users to access the super-high-resolution screen, colors and animations from Applesoft Basic using 35 added commands.

Features include: plot points and lines on both 320 by 200 and 640 by 200 modes; draw up to 256 colors at the same time; mix 640 and 320 modes; print and draw shapes using any of the seven powerful modes; create fast animation using simple commands; and more. The program also includes a shape editor that lets users draw and edit shapes and store them on disk, and a palette editor that allows users to edit and save palettes for use with other programs.
$69 retail
Lynx Software Products; 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 94903-2101; 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; ProDOS 16; not copy protected.
$59 retail
Knowledgeware; PO Box 2292; Paso Robles, CA 93447; 805-238-5233

Video Shop
Allows text additions to videotape productions; for use in the home, schools and cable companies
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$19.99 retail
Jagware; PO Box 41; Orange City, IA 51041; 712-737-4531

Viva Presents!
Interactive video authoring system
Apple IIGS; videodisc player; 512K; ProDOS 16; not copy protected.
$99 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 And Donruss Baseball Cards
Hobby software
Apple IIGS; other Apple II computers; AppleWorks; 128K; ProDOS 8; not copy protected.
$19.95 retail
$6 retail; updates
Pop-Fly Software, Division of Product Control, Inc.; 345-B N. McLean Blvd.; S. Elgin, IL 60177; 312-741-5915

Agent Organizer Program
Insurance templates
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$69.95 retail
Info-Med; PO Box 24412; Jacksonville, FL 32241-4412; 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; 415-962-8946

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 (Version 3.0 available end of May, 1989)
$1,414 retail; AppleWorks 10-pack
$1,616 retail; AppleWorks/Network
(For AppleWorks upgrade information call 800-544-8554)
Claris Corp.; 5201 Patrick Henry Dr.; PO Box 58168; Santa Clara, CA 95052; 415-962-8946

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

AppleWorks

Graphic Edge
Creates color charts and graphs within AppleWorks spreadsheets
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$89 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

The Kula Index
A series of AppleWorks database files, which allow 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.
$6.95 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
Apple IIGS; other Apple II models; 80 column card; 128K; ProDOS 8; copy protected.
$119.95 retail
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
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
Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.
$19.95 retail
Pop-Fly Software, Division of Product Control, Inc.; 345-B N. McLean Blvd.; S. Elgin, IL 60177; 312-741-5915

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 number 2886)
Tab Books, Inc.; Blue Ridge Summit, PA 17294-0850; 800-233-1128 or 800-822-8138

Advanced AppleWorks — 2nd Edition
Insight into AppleWorks
$17.95 retail (book number 3048)
Tab Books, Inc.; Blue Ridge Summit, PA 17294-0850; 800-233-1128 or 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

Apple 16 provides an up-to-the-minute account of Apple technology and a comprehensive overview of both hardware and software available for the Apple IIGS. The book discusses the history of the 65816 chip, expanding the Apple IIe to 16 bits, memory expansion to 8 MB, daisy chaining disk drives, CD-ROM drive, laser graphics, animation, word processing, AppleWorks, setting up the IIGS, ProDOS 16, telephone communications, add-ons and add-ins, desktop publishing, database and accounting, languages, video, stereo, music composition, AppleTalk and network, graphics, spreadsheets, the mouse, educational programs and more.
$24.95 retail
The Archives; 1259 El Camino Real, Ste. 188; Menlo Park, CA 94025; 415-326-6997

■ **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

Using the Apple Care Manual as a guide, Apple II owners can perform preventive maintenance, troubleshoot malfunctions and make simple repairs themselves, with no experience required. Each chapter explains how to diagnose a specific part of the system: keyboard, disk drive, monitor, interface cables, accessories, modems and more. Self-diagnostic program listings are provided that do all the work of ferreting out the source of system malfunctions, and readers are even taught how to write and integrate their own diagnostic programs for accessories they add on later.
$17.95 retail; paperback
Tab Books, Inc.; Blue Ridge Summit, PA 17294-0850; 800-233-1128 or 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., M/S 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 Hardware Reference
Provides an extensive description of the mechanisms and internal operations of an Apple IIGS
$24.95 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 for book
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
Osborne/McGraw-Hill; 2600 Tenth St.; Berkeley, CA 94710; 415-548-2805 or 800-227-0900

Apple IIGS Toolbox Reference Update
Update to the two-volume Apple IIGS Toolbox Reference
$30 retail
APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

Apple IIGS Toolbox Reference, Vols. I And II
Toolbox description book in two volumes
$26.95 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

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

Books And Publications

$14.95 retail; paperback
Tab Books, Inc.; Blue Ridge Summit, PA 17294-0850; 800-233-1128 or 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., M/S 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 LQ 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
Tab Books, Inc.; Blue Ridge Summit, PA 17294-0850; 800-233-1128 or 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

Public Domain Catalog
Public domain software catalog
Apple IIGS; other Apple II models; 512K; ProDOS 8 or ProDOS 16; not copy protected.
$7.50 each; disk
Catalog free on request
Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

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

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.
$195 retail; each module
$95 retail; System Manager
$495 retail; complete system bundle (includes all except Payroll)
Manzanita Software Systems; One Sierra Gate Plaza, Ste. 200-A; Roseville, CA 95678; 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
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Darad IIe
Database and report generator that features search mode, edit mode and print mode
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 33116-4933; 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

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 92286-2080; 619-365-9718

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

List Plus
Database and report generator for business or personal records, mailing lists, labels and more
Apple IIGS; 768K; ProDOS 16; not copy protected.
$99.95 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 92286-2080; 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

Profiler 4.0
Flexible database management system; uses both a textual and mouse-based interface
Apple IIGS; other Apple II models; hard disk drive recommended; 128K; ProDOS 8; not copy protected.
$129 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Business Productivity

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

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

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; 512K; ProDOS 16; not copy protected.
$75 retail
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49508; 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.
$39.95 retail; Award Maker Plus
$24.95 retail; Sports Award Library
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49508; 616-698-0888

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
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Cartooners
Cartoon studio for children 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; 768K; ProDOS 16; not copy protected.
$89.95 retail
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Design Your Own Home, Interiors
Allows users to design room interiors with color, patterns, shapes and furnishings
Apple IIGS; 1MB; 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; 1MB; ProDOS 16; not copy protected.
$89.95 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; 768K or more; ProDOS 16; not copy protected.
$29.95 each retail
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Draw Plus
Drawing program for use with Paintworks Plus, Writer's Choice Elite and Clip Art Gallery
Apple IIGS; 512K; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

■ **Hometown, U.S.A.**
Creativity and learning program
Apple IIGS; paint program; not copy protected.
Hometown, U.S.A. allows users to design and produce miniature buildings on their Apple IIGS. Fifteen basic building types are included, which can be loaded into a paint program and then customized with windows, doors, signs, etc. The finished product is then printed out on a dot matrix printer for assembly into a three-dimensional model.
Hometown, U.S.A. is designed to be used by individuals to produce models of the various buildings for decoration or various other purposes. It can be used by parents with small children as a play activity to increase creativity, and by teachers for a variety of classroom purposes to provide additional interests in the study of a community or for book reports and other projects.
$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 8 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; ProDOS 16; 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; ProDOS 16; not copy protected.
$99.95 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; ProDOS 16; not copy protected.
$79.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Creative

Postcards
Creative paint and print product for making postcards, invitations and more
Apple IIGS; Paintworks Plus; 512K; ProDOS 16; not copy protected.
$29.95 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 to let 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 94903-2101; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

■ **Slide Shop**
Desktop presentation program for schools
Apple IIGS; 128K; ProDOS 8; copy protected.

Slide Shop allows users to create screens on the computer and then write a script that tells the program how to arrange the screens. Screens can be produced using the "Creating Slides" function with any combination of the program's fonts, clip art, borders, backgrounds and templates and/or a complete set of drawing tools. Standard single high-resolution graphics from other programs can also be used as screens or backgrounds, and "music clips" from the program's sound library can be added to any screen to develop a complete multimedia presentation.

More than 40 special-effect transitions are available and animation can be produced by stringing screens together with "flicker" transitions. The program function gives users a choice between "automatic" and "manual" presentation after the script is completed. When stored on a separate disk, the result is a self-running multimedia presentation with no program disk needed to run the show.
$69.95 retail; net to educators
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Top Draw
Object-oriented drawing program
Apple IIGS; color monitor; 512K; ProDOS 16; not copy protected.
$89.95 retail
Claris Corp.; 5201 Patrick Henry Dr.; PO Box 58168; Santa Clara, CA 95052; 415-962-8946

Desk Accessories

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; 407-365-4714

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: notepad; calculator; printer manager; envelope labeler; ASCII chart; screen print; cut and paste; appointment calendar; disk manager; communications manager and macro manager
Apple IIGS; 512K; GS/OS; not copy protected.
$39.95 retail
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

GS Calendar DA
Installs a calendar on start-up disks
Apple IIGS; 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

■ **Initialize 3.5" Disks Disk Initializer**
Lets users initialize 3.5- and 5.25-inch data disks from within other programs
Apple IIGS; GS/OS; not copy protected.

Initialize 3.5" Disks Disk Initializer is a desk accessory that lets users create (initialize) 3.5- and 5.25-inch data disks from within any program. It eliminates the time-consuming process of stopping a currently running program, loading another disk-initializing program and starting the original program again. Initialize 3.5" Disks Disk Initializer is compatible with AppleWorks GS, Paintworks Gold and any other program that can operate with the GS/OS operating system.
$12.50 retail
Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 904-576-9415 or 800-627-3836

Pinpoint Desktop Accessories
Includes appointment calender, calculator, communications window, telephone dialer, graph merge, notepad, quick label and typewriter
Apple IIGS; other Apple II models; two disk drives; AppleWorks 1.3 or later version or selected ProDOS applications; extended memory card recommended; 128K; ProDOS 8; not copy protected.
$89 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Pinpoint Starter Pak
Combines Pinpoint Desktop Accessories, Spell 816 and KeyPlayer macro keys onto one disk
Apple IIGS; 512K; ProDOS 8; not copy protected.
$149 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Softswitch
Desk accessory that allows users to switch among several applications loaded into RAM
Apple IIGS; 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 IIGS; The Desktop Manager; 512K; GS/OS; not copy protected.
$39.95 retail
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

TDM Toolkit
Contains information needed to create a user's own desk accessories that work under The Desktop Manager
Apple IIGS; The Desktop Manager; APW assembler; 512K; GS/OS; not copy protected.
$39.95 retail
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

Desktop Communications

ASCII Express
Advanced telecommunications program that supports data transfer speeds up to 9,600 baud
Apple IIGS; other Apple II models; modem; 64K; ProDOS 8; not copy protected.
$129.95 retail
United Software Industries; 8399 Topanga Canyon Blvd., Ste. 200; Canoga Park, CA 91304; 818-887-5800 or 800-332-7244

Burple
Hardware/software attachment for the Apple IIGS that allows the micro to communicate with Burroughs mainframe computers using the Burroughs "poll select" protocol
Apple IIGS; DOS 3.3; not copy protected.
$495 retail
Midwest Data Source, Inc.; 1615 Burney Ave.; Cincinnati, OH 45230; 513-231-2023

Let's Talk
Electronic mail and simultaneous bulletin board system
Apple IIGS; other Apple II models; Hayes AT compatible modem; 512K; ProDOS 8; not copy protected.
$179 retail
$795 retail; File server license
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Mac.Transfer
Transfers data back and forth from Apple II and IBM PC computers to the Macintosh or Apple IIGS
Apple IIGS; other computer; cables or modem; 256K; ProDOS 8; not copy protected.
$80 retail; Mac.Transfer
$22 retail; cables
Southeastern Software; 7743 Briarwood Dr.; New Orleans, LA 70128; 504-246-8438

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

Desktop Communications

Apple IIGS; other Apple II models; modem; 128K; ProDOS 8; not copy protected.
$119.95 retail
United Software Industries; 8399 Topanga Canyon Blvd., Ste. 200; Canoga Park, CA 91304; 818-887-5800 or 800-332-7244

Point-To-Point
Versatile telecommunications program
Apple IIGS; other Apple II models; two disk drives; extended memory card recommended; 128K; ProDOS 8; not copy protected.
$129 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Proterm
Telecommunications program featuring scroll-back buffer for capturing text on screen
Apple IIGS; other Apple II models; 128K.
$129 retail
Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 602-966-5802 or 800-325-7347

Teleworks Plus
IIGS-specific telecommunications program
Apple IIGS; 512K; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Desktop Publishing

FingerPrint Slide-Show
Desktop presentation and computer slide-show software
Apple IIGS; FingerPrint GSi Version II; 256K; ProDOS 16; 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 IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
$24.95 retail; Font Disk 1
$24.95 retail; Font Disk 2
Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44111; 216-671-8991

■ GeoPublish
Graphically oriented desktop publishing
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

GeoPublish provides an easy-to-use graphics environment to create eye-catching documents, including newsletters, proposals, letters, cards, fliers, invitations, posters and more.

Key features include: full-featured WYSIWYG word processor; the ability to import graphics; library of 24 style sheets and layouts; import text with formatting intact from AppleWorks, WordPerfect, MultiScribe and others; a free library of clip art; full-page and zoom display modes; on-screen rulers for exact placement of text and graphics; the ability to scale graphics to any size with smoothing patterns or transparent effects; includes LaserWriter printer driver and support for 25 of the most popular dot matrix printers; and more.
$99.95 retail
Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883

■ Graph It!
High-impact presentation graphics
Apple IIGS; other Apple II models; printer; 128K; ProDOS 8; not copy protected.

Graph It! is a professional-level data graphing program. With one keystroke, Graph It! converts numerical data (entered directly into the program or imported from any spreadsheet or database program in standard ASCII format) into sophisticated graphs and charts.

Features include: a Macintosh user interface; data importing; chart and graph exporting; 12 different graph formats; eight built-in layout tools; double-high-resolution screens; five built-in print options; and premium-quality printouts.
$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 IIGS; 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
IIGS-specific desktop publisher with combination page layout, graphics and word processing
Apple IIGS; 512K; GS/OS; not copy protected.
$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 that are 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 63132-0579; 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 94903-2101; 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 94903-2101; 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, layout and print documents

Desktop Publishing

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, Inc.; 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, Inc.; 7808 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3915

■ **SuperPrint**
Curriculum-based printing program
Apple IIGS; 128K; ProDOS 8; copy protected.
SuperPrint is a classroom publishing program that includes super-sized curriculum-based graphics. Features include: lets a user print graphics more than 4 feet tall; graphics can be reproduced with remarkable detail; displays on screen exactly what will be printed; lets users place graphics and text anywhere desired; and offers specially designed graphics packs and student activities with a wide variety of applications for a user's curriculum.
$59.95 retail; net to educators
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Education

Ant Farm
Helps students examine assumptions using trial and error
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.
Atlas Explorer includes detailed on-screen maps showing all continents, countries and major cities in the world. Internal political boundaries are shown for China, the U.S.S.R., Canada, Mexico, the United States and the United Kingdom. The program presents information on each country's population, currency, language, capital, size and major cities. Users can choose to view a tutorial on any country and test themselves on identifying locations of countries or cities, or on general facts about countries. Several features for parents or teachers are also included.
$49.95 retail
$100 retail; Lab Pack
Springboard Software, Inc.; 7808 Creekridge 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; copy protected.
Grizzly Bears introduces players to the world of the grizzly bear, the largest land carnivore in North America. Through a series of four interactive stories, players learn about the bear's habits and the human activities that have brought the bear close to extinction. By playing the part of a park ranger, research biologist or natural resource developer, a player searches for creative solutions to the conflicts between man and the bear.
$59.95 retail
Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

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

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
$79.95 retail; school edition
$139.95 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.
Classroom Jeopardy is designed to stimulate students' interest levels. Patterned after the TV game show, six categories of five questions are displayed on screen. The "last correct questioner" chooses a category and an amount. The answer is displayed in large letters for the entire class to see. All answers are supplied by an instructor prior to playing. The program is ideal for science, history, English, foreign languages or any subject where an "answer and question" format is possible.
$29.95 retail
DEC Software; 5307 Lynnwood Dr.; West Lafayette, IN 47906

Computer Mad Libs
Strategic word and party game using SmoothTalker
Apple IIGS; 768K; ProDOS 16; not copy protected.
$19.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Conquering Decimals (+,-)
Mathematics; grades 4 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Conquering Fractions (+,-)
Mathematics; grades 5 through 8
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Coordinate Math
Teaches graphing points in a Cartesian coordinate system for grades 4 through 12
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

CSL Marks
Grading software for teachers
Apple IIGS; 128K; ProDOS 8; not copy protected.
$75 retail; individual teacher license
$250 retail; school site license
Chancery Software, Ltd.; 500-1168 Hamilton St.; Vancouver, BC, Canada V6B 2S2; 800-663-8831

Curious George Goes Shopping
Learning adventure
Apple IIGS; 64K; ProDOS 8; copy protected.
$24.95 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Curious George In Outer Space
Explores comparison skills
IIGS; 64K; ProDOS 8; copy protected.
$24.95 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

Curious George Visits The Library
Explores position concepts
Apple IIGS; 64K; ProDOS 8; copy protected.
$24.95 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 800-527-4747

■ **Cyberlearn**
Teaching system
Apple IIGS; 256K; ProDOS 8; not copy protected.
Cyberlearn replaces repetitive classroom or home study drills with effective cognition training. Teachers can quickly fill in templates with their own specialized curriculums. Cyberlearn automatically creates effective, free-running courseware.
Cyberlearn teaches new information to all students regardless of their age or level of ability. The system automatically focuses on each student's individual needs and encourages learning by providing only positive feedback. Cyberlearn is compatible with all existing textbooks and classroom curriculums and functions in 33 foreign languages with subjects such as vocabulary, reading, history, chemistry, mathematics and calculus.
Cyberlearn includes an optional record keeping system that tracks each student's progress.
$295 retail; site license
Cyberlearn, Inc.; 20863 Stevens Creek Blvd., Ste. 330; Cupertino, CA 95014; 408-248-9000

Education

Dataflo Math Duo
First Math, an introduction to number concepts and more; Flash Math, tutorials 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
Word Scrambler; series of blank spaces that, when filled, reveal the correct word; and 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 55126-8097; 612-481-3500

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; 345 4th St.; San Francisco, CA 94107; 415-546-1866

■ Dinosaur Days
Graphic writing program
Apple IIGS; printer optional; Echo II synthesizer optional; 128K; ProDOS 16; copy protected.

With Dinosaur Days, users enter the prehistoric world of dinosaurs on a two-disk journey that includes both a fact-filled graphic database and a dinosaur graphic writing program. Using the database, users can click on a picture of a stegasaurous and open a fact-filled window that can be read or printed out for future reference. Next, using hundreds of prehistoric parts, users can create realistic or fanciful creatures. By using the full-page text processor, users can create stories, reports, poems and books.
$49.95 retail
Learning Lab Publishing/Pelican Software; 21000 Nordhoff St.; Chatsworth, CA 91311; 818-341-9611, 800-247-4641 or 800-222-7026 in CA

■ Dinosaurs
Introduces preschool children to the skills of matching, classification, directionality, precounting and prereading
Apple IIGS; 512K; GS/OS; copy protected.

Dinosaurs transports prehistoric animals into modern times and introduces preschoolers to computer literacy. Bright colors and animation encourage children to begin exploring the world of learning. Five different games introduce the skills of matching, classification, directionality, precounting and prereading. All players are positively rewarded with dinosaur responses and no child ever loses.
$49.95 retail
Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

■ DiscoverCAD II And DiscoverCAD Courseware
Teaches students the fundamentals of computer-aided design
Apple IIGS; other Apple II models; 128K; Applesoft Pascal 1.3; copy protected.

DiscoverCAD II is an entry-level CAD program that allows users to create architectural floor plans, electronic schematics and machine drawings using symbol tables, and specify the scale of those symbols to make them appear in any size desired. Besides the normal use of original DiscoverCAD features, such as draw text and grids, zoom or pan, auto-dimension, 128 layers, print and plot, other DiscoverCAD II features include draw diameter dimension, draw rectangle, zoom screen, zoom window and erase window.

DiscoverCAD Courseware is a fully integrated 10 chapter, 180-page CAD workbook that teaches students the fundamentals of CAD in general and the specifics of DiscoverCAD in particular. It is designed for an entry-level CAD course in Jr. and Sr. high school and college.
$325 retail; DiscoverCAD II
$12.95 retail; DiscoverCAD Courseware
$335 retail; Discover CAD II and one copy of DiscoverCAD Courseware, student worksheets and instructor's guide
Hearlihy & 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.

DLM Math Fluency Program is designed for children in special and remedial education who need a systematic build up of ability prior to customary drill and practice activities. Students are introduced to one to three math facts at a time. They practice these facts until they have achieved mastery and then they can enjoy game play to reinforce these facts. The program pretests students on their current math-fact knowledge and individualizes the content by prescribing specific facts for practice.
$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
Educational game where students compete to answer questions from selected categories
Apple IIGS; 512K; ProDOS 16; 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 for children ages 4 to 7
Apple IIGS; other Apple II models; color monitor recommended; 64K; DOS 3.3; Echo IIb board optional; copy protected.
$49.99 retail
Mindplay; 3130 N. Dodge Blvd.; Tucson, AZ 85716; 602-322-6365

■ Educational Activities
Educational programs for pre-K to adult
Apple IIGS; 48K, 64K or 128K; DOS 3.3; copy protected.

Educational Activities provides a variety of programs for ages pre-K to adult. Topics include reading, writing, science, math, social studies, language arts, special education, business education and more.
$63 to $950 retail
Educational Activities, Inc.; 1937 Grand Ave.; Baldwin, NY 11510; 516-223-4666 or 800-645-3739

Electric Crayon Deluxe — Dinosaurs Are Forever
Teaches dinosaur evolution
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$29.95 retail
Polarware, Inc.; 1055 Paramount Pkwy., Ste. A; Batavia, IL 60510; 312-232-1984

Electric Crayon Deluxe — Holidays And Seasons
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
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

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 55126-8097; 612-481-3500

ESC System
Integrated learning system that features a comprehensive K through 8 reading, writing and mathematics software curriculum; works in an AppleShare environment
Apple IIGS; 1.25 MB per workstation; GS/OS; not copy protected.
Call for pricing
Education Systems Corp.; 6170 Cornerstone Ct. E; San Diego, CA 92121; 619-587-0087

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; copy protected.

Education

$75 retail; academic
$39.95 retail; home version (available from William K. Bradford Publishing Co.; 800-421-2009 or 617-862-2570)
D.C. Heath and Co.; 2700 N. Richardt Ave.; Indianapolis, IN 46219; 800-334-3284

■ 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.

The Explore-A-Story Classics allows teachers to share time-honored classic tales with their students in a variety of ways. Colorful graphics give children easy access to three program options. The program accommodates a wide range of reading styles and abilities through an intriguing selection of program options.

Teachers can read these tales aloud as they appear on screen accompanied by entertaining, animated illustrations. Students can move characters and objects in the story scenes or design new story scenes of their own. They can also write original, animated stories using their own words and a large selection of characters, props and backgrounds from a story.
$75 each retail; Stone Soup, The Three Little Pigs or The Princess and The Pea
William K. Bradford Publishing Co.; 594 Marrett Rd.; Lexington, MA 02173; 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; copy protected.
$75 retail; academic
$39.95 retail; home version (available from William K. Bradford Publishing Co.; 800-421-2009 or 617-862-2570)
D.C. Heath and Co.; 2700 N. Richardt Ave.; Indianapolis, IN 46219; 800-334-3284

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 each program (512K preferred); ProDOS 16; not copy protected.
$195 retail; File-Talk
$195 retail; Word-Talk
Access Unlimited-Speech Enterprises; 9039 Katy Freeway, Ste. 414; Houston, TX 77024; 713-461-0006

First Letters And Words
Alphabet learning program with talking narrator for children ages 3 through 6
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

First Shapes
Basic geometric shapes recognition program; ages 3 through 8
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

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 33257-0756; 305-233-4666

Fraction Practice Unlimited
Develop fraction skills for children in grades 4 through 6
Apple IIGS; other Apple II models; 128K; CDOS; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

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 55126-8097; 612-481-3500

■ The Game Show
Develops vocabulary, logical thinking and deductive reasoning skills for grades 3 to 8
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

In The Game Show, flashing lights and cheering teammates set the scene, challenging questions set the pace, and, when the curtain comes up, a user is the star. The popular quiz show format and the animated color graphics make the program entertaining as it develops vocabulary, logical thinking and deductive reasoning skills. Forty curriculum topics are included on math, science, language/vocabulary and social studies.
$39.95 retail
Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

■ The Geometric Presupposer
Explores introductory topics in geometry
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

The Geometric Presupposer can be used to guide a student's exploration of introductory topics in geometry. This set of activities covers a wide range of topics, problem types and difficulty levels. Sections focus on discovering geometric relationships, exploring definitions and properties of triangles and quadrilaterals, creating constructions, verifying statements and making conjectures.
$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 94903-2101; 415-492-3500, 415-492-3200 (dealers only) or 800-521-6263

Gertrude's Secrets
Builds basic thinking and problem-solving abilities for children ages 4 to 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$39.95 retail; home version
$59.95 retail; academic (includes backup disk, teacher's guide, online and offline student activities)
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Gradebook Plus ProDOS Edition
Teachers' student management program
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$59.95 retail; individual version
$199.95 retail; school site license
E.M.A. Software; PO Box 339; Los Altos, CA 94023; 415-969-4679

Heath Reading Program's 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; copy protected.
$75 retail; academic
D.C. Heath and Co.; 2700 N. Richardt Ave.; Indianapolis, IN 46219; 800-334-3284

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

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

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.
$59.95 retail; Home Edition

Education

$179.95 retail; Classroom Edition with 10 disks
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Information Laboratory Software: Chemistry IIGS
Research database
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
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
Apple IIGS; 512K; OS/GS; 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

Joshua's Reading Machine
Reading program for ages 4 to 7
Apple IIGS; other Apple II models; color monitor; 128K; ProDOS 8; not copy protected.
$39.95 retail
$79.95 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

■ **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.

Keep Your Balance! is a problem-solving program in which students use deductive reasoning to solve balance equations. By adding, subtracting and substituting different objects of equal value, students can balance a pan scale. The program teaches the skills of substitution, estimation, generalizing, finding alternate solutions and writing an equation. Three levels of difficulty are included.
$65 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

KidsTime II
Letter-recognition, keyboard skills and introductory music programs for 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
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

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

■ **Linkword Language Series**
Foreign language tutorials
Apple IIGS; 512K; ProDOS 16; not copy protected.

The Linkword Language Series consists of eight different courses (Spanish, French, German, Russian, Italian, Greek, Dutch and Portuguese). Each program introduces a user to more than 400 vocabulary words, grammar, gender and sentence structure. Each program comes with an audiotape to help with pronunciation. The Linkword Languages are based on mental imagery, the linking of foreign words to acoustically similar English words.
$29.95 each course retail
Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield, NY 14526; 800-828-6573

Logo Plus
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 retail; site license
Terrapin, Inc.; 376 Washington St.; Malden, MA 02148; 617-322-4800

Magic Spells
Sharpen spelling skills for children ages 6 to 12
Apple IIGS; other Apple II models; 128K; 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

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
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.

Master Gradebook Plus automates a teacher's task of recording, calculating and averaging students' grades. Using spreadsheet technology, scores are easily entered into the computer. A window-menu design allows a user to have complete instructions displayed at all times. The program records up to 60 scores for 200 students. Along with typical gradebook functions, there are several innovative options, including variable weighted scores, missing assignment reports, progress report generator and more. Total user control of grades is built into the program structure.
$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.
$39.95 retail
$129.95 retail; school lab pack (contains five disks)
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)
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 8; copy protected.
$46 retail
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; 128K; ProDOS 8; copy protected.

Education

$39.95 retail; home edition
$59.95 retail; academic edition
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Math Word Problems
Provides practice at analyzing and solving math word problems for children ages 8 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49.95 retail
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
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

MathTalk Fractions
Talking notebook featuring decimals, fractions and percents
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

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

Miner's Cave
Physical Science; grades 4 through 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

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.; Barrington Office Mall; PO Box D; Barrington, NH 03825; 603-664-5811

Money Works
Teaches money recognition, counting and more; grades 1 through 4
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

■ **Monsters And Make Believe Plus**
Graphic writing program
Apple IIGS; printer optional; Echo II synthesizer optional; 128K; ProDOS 8; copy protected.

With Monsters And Make Believe Plus, users can bring thousands of magical characters to life by mixing and matching a huge variety of body parts. Using the full-screen text processor, children of all ages can write monster myths to accompany their monster creations. Both monsters and myths can be stored in a monster museum and retrieved from a work disk.
$49.95 retail
Learning Lab Publishing/Pelican Software; 21000 Nordhoff St.; Chatsworth, CA 91311; 818-341-9611, 800-247-4641 or 800-222-7026 in CA

More Teasers From Tobbs
Decimal and fractions practice for grades 5 through 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.

Mr. Py And I is an educational learning series that teaches children about numbers, music, letters, spelling and dinosaurs in the form of five computer coloring books. Children can choose and color any of these subjects on screen with any of the 64 different colors offered. They can print out the subject in color (if a user's ImageWriter has color capability) or simply print the subject out and color it in by hand. Children can also see and hear a musical slide show of any of the five subjects in Mr. Py And I.
$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 through 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

Mystery Objects
Physical Science; grades 4 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

The New Talking Stickybear Alphabet
Talking upper and lowercase letter recognition for children ages 3 to 6
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Newbery Adventures
Adventure series
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

Numeric Concept And Memory Skills
Used with individuals (ages 6 to adult) who have head injuries and learning disabilities, stroke, mental retardation or for early learning
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$395 retail; includes seven programs
Network Services; 1915 Huguenot Rd.; Richmond, VA 23235; 804-379-2253

Once Upon A Time...
Desktop publishing program for ages 6 to 12
Apple IIGS; color monitor; 512K; GS/OS; not copy g8protected.
$39.95 retail
$79.95 retail; academic
Compu-Teach Corp.; 78 Olive St.; New Haven, CT 06511; 203-777-7738 or 800-448-3224

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 55126-8097; 612-481-3500

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; copy protected.
$124.95 each retail; consumer
$99.95 each retail; academic
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

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

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
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Education

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 '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)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

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
$139.95 retail; lab pack
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Reading And Me
Prepares children ages 4 through 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)
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
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; 64K; ProDOS 8; copy protected.

Reading Magic Library is a series of animated computer storybooks in which parents and children read together and then decide what happens next in the story.

Jack And The Beanstalk is a whimsical re-telling of the fairy tale classic. The story is set in the future and on another planet. Jack and his mother are so poor they must sell their family pet, Robocow. But instead of money, Jack is given magic beans. From that point on, Jack's adventure is up to the parents and their children.

Flodd, The Bad Guy is a fable about an ill-tempered chap who's making life tough for young King Alex and his dog, Ollie. Parents and their children will help King Alex wrestle with his sudden dilemma: how best to use his three wishes from his magic lamp to stop the meanest guy you ever met.
$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
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 48083; 313-528-1950

■ **Revolution '76**
Historical simulation
Apple IIGS; 768K; GS/OS.

Revolution '76 engages a player in the American colonists' struggle for independence from 1773 to 1783. It allows a player to select generals, unite colonies, build armies and make or break alliances. A player's overall objective is to compel the British to acknowledge defeat. A player will face the greatest challenge in securing an army and gaining enough success to persuade the French to enter the battle. If a player can avoid surrendering and bring in the French, the colonists will then be in a position to obtain victory over the British.
$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

Rocky's Boots
Develops logical thinking and problem-solving skills for ages 9 and up
Apple IIGS; other Apple II models; color monitor; 128K; ProDOS 8; copy protected.
$49.95 retail; home edition
$69.95 retail; school edition
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Scorekeeper 3.0
Grade book management system
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protection limited.
$79.95 retail
Stokes Publishing Company; 1125 Robin Way, Ste. C; Sunnyvale, CA 94087; 408-736-4637

Sesame Street Series
Introduce 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
MicroIllusions; 17408 Chatsworth St.; Grenada 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; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

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

Speller Bee
Incorporates talking notebook and graphics to improve spelling skills; for children ages 5 through 13
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Spellevator
Spelling; grades 1 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

■ **Stars And Planets**
Provides five to six educational games that reinforce particular learning skills; ages 2 1/2 to 6
Apple IIGS; 512K; GS/OS; copy protected.

Stars And Planets addresses the specific educational needs of children ages 2 1/2 to 6. Space is used as a

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theme to help motivate children to learn the skills of pre-reading, prewriting, sequencing, counting and matching shapes, colors and sizes.
$49.95 retail
Advanced Ideas; 2902 San Pablo Ave.; Berkeley, CA 94702; 415-526-9100

Stickybear Math
Basic addition and subtraction; ages 6 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
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 for ages 7 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
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; ages 3 to 6
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
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; ages 3 to 6
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
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
Apple IIGS; other Apple II models; ProDOS 8; copy protected.
$49.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Reading
Builds word and reading skills; ages 5 to 8
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
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; ages 7 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49.95 retail
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; ages 3 to 6
Apple IIGS; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Spellgrabber
Builds spelling and vocabulary skills; ages 6 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49.95 retail
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 skills to children ages 6 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49.95 retail
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
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49.95 retail
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 for children ages 7 and up; rewards correct answers with animation
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

■ **Success With Writing**
Four-module program that guides students through the writing process
Apple IIGS; printer optional; 128K; ProDOS 8; copy protected.

Success With Writing is designed to help students in grades 7 through 12 master every stage of the writing process with four flexible modules: Prewrite, Arrange/Outline, Compose/Draft and Evaluate/Edit/Revise.

Other features include: Notepad Function, which is a window that allows students to refer to Prewrite notes and Arrange/Outlines as they draft and revise their compositions; the ability to transfer files from one module to another; the ability to create customized activities to match a specific curriculum or writing assignment; full compatibility for transferring completed outlines or text to popular word processors; and a comprehensive 176-page Student Activity Book with at-the-desk and at-the-computer lessons.
$79.95 retail; net to educator
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

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 4 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; copy protected.
$87.45 retail; consumer
$69.95 retail; academic
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

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
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
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Talking Text Libraries
Synthesized speech that reads stories aloud for young readers
Apple IIGS; other Apple II models; Echo IIb board; 128K; ProDOS 8; copy protected.
$74.95 each retail; 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)
$59.95 each retail; net to educators
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Talking Text Spelling
Talking spelling tutor
Apple IIGS; other Apple II models; Echo IIb board; 128K; ProDOS 8; copy protected.
$99.95 retail; (without board) for grade specific core package
$99.95 retail; Echo board
$124.95 retail; net to educators
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Talking Text Writer
Combines word processing with the Echo board from Street Electronics
Apple IIGS; Echo, Cricket or PC2 speech synthesizer board; 512K; ProDOS; copy protected.
$149.95 retail; net to educators
$129.95 retail; Echo board

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$99.95 retail; Echo board net to educators
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

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; 128K; 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.

In Ticket To London, you arrive at Victoria Station for a 10-day holiday in London. Upon arrival, you realize that you have lost your return home ticket. You can earn the ticket back by discovering the name of a famous Brit. To do this, you must brush up on your English history, literature, culture and phrases. Answering questions correctly is the only way to gain clues to identify the mystery person. Searching will take you to pubs, Harrod's, Buckingham Palace and even high tea.
$39.95 retail
Blue Lion Software; 90 Sherman St.; Cambridge, MA 02140; 617-876-2500

■ **Ticket To Paris**
Adventure that teaches French and social studies; ages 12 to adult
Apple IIGS; 512K; ProDOS 16; copy protected.

In Ticket To Paris, you are on your way to Paris in search of a missing cousin who refuses to leave the City of Light, but is needed at home. It is your job to find him and convince him to pack his bags. You must follow up on clues that take you to various landmarks, cafes and museums. At each locale, you are quizzed about French culture, language, history, art and more.
$39.95 retail
Blue Lion Software; 90 Sherman St.; Cambridge, MA 02140; 617-876-2500

■ **Ticket To Spain**
Adventure that teaches Spanish, social studies, art and literature; ages 12 to adult
Apple IIGS; 512K; ProDOS 16; copy protected.

In Ticket To Spain, an heirloom has been left to you in Spain. You must prove yourself worthy of your Spanish ancestry to claim the heirloom by fulfilling eight tasks. The mission takes you to museums, bullfights, cafes and beaches. You must master the language, currency and customs, as well as answer questions about Spain and its history.
$39.95 retail
Blue Lion Software; 90 Sherman St.; Cambridge, MA 02140; 617-876-2500

■ **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.

In Ticket To The National Parks, users take a trip across the country and explore 36 National Parks. Users can visit the natural wonders and learn to identify wildlife, plants, trees and constellations while in search of items hidden at each park.
$44.95 retail
Blue Lion Software; 90 Sherman St.; Cambridge, MA 02140; 617-876-2500

■ **Ticket To Washington, D.C.**
Adventure that teaches social studies, art and literature; ages 10 to adult
Apple IIGS; 512K; ProDOS 16; copy protected.

In Ticket To Washington, D.C., you are an investigative traveler on a special mission. Your task is to discover the identity of 12 famous Americans from the past or present. To do this, you must follow clues located around the city. There are more than 40 locations in all, and a user must be prepared for quizzes about government, art, history and presidential trivia.
$44.95 retail
Blue Lion Software; 90 Sherman St.; Cambridge, MA 02140; 617-876-2500

■ **Tiger's Tales**
Interactive adventure stories; grades K to 2
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Tiger's Tales is a series of interactive stories about the exciting and funny adventures of a mischievous cat named Tiger. Designed for beginning readers, this program uses a problem-solving approach to reading comprehension. After reading the text on each colorful screen, students must take action based on the instructions they've read. Tiger's Tales helps students develop comprehension and vocabulary skills. A picture-to-word matching section at the beginning of every story prepares students for the story that follows.
$65 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

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 55126-8097; 612-481-3500

■ **Touch 'N Write**
Penmanship practice; grades K to 3
Apple IIGS; other Apple II models; Touch Window; 64K; ProDOS 8; copy protected.

Touch 'N Write is a complete 23-lesson curriculum based on the Palmer Method of manuscript handwriting. Designed for use with the Touch Window, a portable touch screen that easily attaches to the monitor, children can practice forming letters right on the computer screen. Using their fingers or the special pen included with the Touch Window, children first learn to duplicate basic letter strokes. Next they trace and then "finger-paint" letters in colors chosen from their own on-screen paint set.
$75 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Tutor-Tech 2.2
Apple IIGS hypermedia tool for educators featuring a toolbox of writing and drawing tools, text fonts, various buttons similar to HyperCard 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 32715-1085; 407-695-9000

■ **Typing Teacher**
Typing tutor
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

Typing Teacher is a teaching aid for beginning typists and those who already know how to type. Featuring fast key response time, this versatile program makes it possible to type at speeds of more than 350 words per minute. There are 16 lessons, starting with the home row for the left hand. Lessons have color-coded keyboard drills that show a user which finger to use and will even flash the key to help a user find it quickly. Timed practices for each lesson improve speed, accuracy and confidence.

Also included is a Typing Reference Guide, which outlines the rules for punctuation and spacing, lists the two-letter state abbreviations, describes and gives examples of block and indented letter forms and provides other helpful typing tips.
$29.95 retail
Future Age Computers; 3 McCrary Dr. SW; Rome, GA 30161; 404-235-4948

Typing Tutor IV
Customized keyboard instruction
Apple IIGS; RGB color monitor recommended; 512K; ProDOS 16; not copy protected.
$44.95 retail
Simon and Schuster Software; 1 Gulf & Western Plaza, 14th Fl.; New York, NY 10023; 800-624-0023 or 800-624-0024 in NJ

Vocabulary Development
Increases vocabularies and strengthens reading skills; for ages 8 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

■ **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.

In Where In The World Is Carmen Sandiego?, players are introduced to world geography in an exciting game situation. Carmen and her band of thieves are on a

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worldwide crime spree, stealing priceless national treasures of the world. Using the crime computer at the Acme Detective Agency, players gather the facts before embarking on an international chase through world capitals. To decipher clues, players can look up facts in The World Almanac.
$44.95 retail
$54.95 retail; School Editions
$109.95 retail; Lab Packs
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 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.
In Winker's World Of Patterns, students are challenged to use inference to determine the missing part of a pattern. The patterns presented involve colors, numbers and words, and the levels of play range from very simple to very complex. Teachers can also customize the levels of play to build activities around familiar words or student names.
$65 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Wood Car Rally
Physical Science; grades 4 through 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Word Attack Plus
Teaches students 700 new words and their definitions; for grades 4 through 12
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$49.95 retail
$149.95 retail; school lab pack (contains five disks)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

■ World GeoGraph
Social studies for students; grade 6 to adult
Apple IIGS; two 3.5-inch drives preferred; color monitor; 768K; GS/OS; copy protected.
World GeoGraph is a discovery learning tool with "living map" capabilities. Its database is closely linked to the maps so that students can use the maps to manipulate the database and vice versa. Database information can be viewed either textually or graphically. By pointing and clicking the mouse, students gain access to a wealth of information about 177 nations around the world. A variety of easy-to-use commands encourage students to compare nations and observe economic, demographic and cultural patterns.
$139 retail; includes illustrated user's guide
$19 retail; comprehensive classroom guide
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Writer Rabbit
Builds reading comprehension and writing skills for ages 7 to 10
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$49.95 retail; home edition
$69.95 retail; school edition
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.
Writer's Helper Stage II is designed to help students improve their writing. Nineteen activities help students find a writing topic, explore that topic, develop material about that topic and then organize the information into a coherent composition. Eighteen revision aids guide students to revise their writing as the program makes suggestions.
Students choose the activities they need and teachers guide them by assigning activities and customizing menus and activities. The Instructor's Manual provides numerous example assignments and teaching tips for all student levels.
$120 retail
$240 retail; Educator Pack with six disks
Conduit; The University of Iowa; Oakdale Campus; Iowa City, IA 52242; 319-335-4100

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 55126-8097; 612-481-3500

Entertainment

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

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

■ Arkanoid
Arcade action in which users must deflect an energy sphere and eliminate 33 complex, intricate barriers
Apple IIGS; 512K; GS/OS; copy protected.
The intergalactic carrier Arkanoid is transporting the last survivors of the planet Earth through the outer reaches of the galaxy. There they encounter DOH, a complex being of incredible power. As the Arkanoid falls prey to his attack, the crew escapes in the "VAUS" and vanishes into a dimension of living energy. There is only one route to freedom: the destruction of DOH.
$34.95 retail
Taito Software, Inc.; 206 - 267 W. Esplanade; N. Vancouver, BC, Canada V7M 1A5; 604-984-3344 or 800-663-8067

The Bard's Tale
Medieval adventure; goal is to halt the evil magic spell spread by the wizard Mangar the Lionhearted
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
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.
Battle Chess is an animated chess game using medieval figures to combat with each other for positioning on the field. Each piece has its own unique attack when confronted with a foe. The program features digitized sound effects and an opening library of 30,000 moves.
$49.95 retail
Interplay Productions; 1575 Corporate Dr.; Costa Mesa, CA 92626; 714-549-2411 (technical support) or 800-227-6900 (orders)

BattleTech
Computer role-playing game full of animation
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Beyond Zork
Adventure into the Great Underground Empire
Apple IIGS; 512K; ProDOS 16; not copy protected.
$44.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Black Jack Academy
Card game on disk
Apple IIGS; 512K; ProDOS 16; not copy protected.
$39.95 retail
MicroIllusions; 17408 Chatsworth St.; Grenada Hills, CA 91344; 818-360-3715 or 800-522-2041

■ Bridge 6.0
Bridge-playing program
Apple IIGS; 512K; ProDOS 16; not copy protected.
Bridge will bid and play out a bridge hand, recognize Blackwood and Stayman conventions, replay interesting hands and deal an opening hand if requested. Features include: complete graphic representation of all hands, minimum point count for an opening hand can be specified up to 25 points, a card can be taken back after being played, the last trick can be reviewed, bidding takes into account partial game scores and more.

Entertainment

$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.
In Captain Blood, a player's mission is to search the galaxy and interrogate aliens to track down the five clones that are draining his or her energy force. If a player succeeds, the beautiful and beguiling Torka beckons, as does a whole new adventure; the program re-creates the galaxy each time a user plays.
$44.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

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

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.
Crossword Creator is designed for anyone who wants to create crossword puzzles. A window-menu design allows even a novice computer user to make crossword puzzles simply and quickly. The puzzle and instructions are displayed constantly on the screen during the puzzle development. Storage, retrieval, correction and printing of puzzles are a keystroke away at all times. An answer key for any puzzle is also available.
$29.95 retail
DEC Software; 5307 Lynnwood Dr.; West Lafayette, IN 47906

■ **Dark Castle**
Adventure
Apple IIGS; supports SuperSonic Card; 512K; GS/OS; copy protected.
Accept the challenge to defeat the ominous Black Knight of the Dark Castle. All four castle doors lead a player through 14 rooms of terror, each guarded by flying monkeys, venomous rats, bats and even a fire-breathing dragon. Slay the Black Knight and become a hero; fail and become history.
$39.95 retail
Three-Sixty Pacific, Inc.; 2105 S. Bascom Ave., Ste. 290; Campbell, CA 95008; 408-879-9144

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; 312-480-7667

Deja Vu: A Nightmare Comes True
Murder mystery
Apple IIGS; RGB monitor; 768K; ProDOS 16; copy protected.
$19.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Destroyer
Action and simulation game involving a Navy destroyer
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

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.; Grenada Hills, CA 91344; 818-360-3715 or 800-522-2041

Dream Zone
Graphic adventure game with stereo sound
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49508; 616-698-0888

■ **The Duel: Test Drive II**
Driving simulation
Apple IIGS; 512K; ProDOS 16; copy protected.
The Duel: Test Drive II pits two of the fastest production cars ever built in a head-to-head road race — the Ferrari F40 against the Porsche 959. Drivers will blast down roads filled with detailed scenery, as well as general hazards.
Two optional accessories provide The Duel drivers with additional cars to race and more scenery to experience. The Supercars provide Test Drive II owners with the newest production car models. California Challenge enters drivers in an adventurous seven-leg road race down the scenic coast of California.
$44.95 retail
$19.95 each retail; California Challenger scenery disk or Supercars car disk
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Famous Course Volume II
Three golf courses for 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 Course Volume III & IV
Six golf course simulations for 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

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; copy protected.
$29.95 retail
MicroIllusions; 17408 Chatsworth St.; Grenada Hills, CA 91344; 818-360-3715 or 800-522-2041

■ **Flintstones**
Prehistoric adventures
Apple IIGS; ROM 1.1; 768K; ProDOS 16; not copy protected.
Step into the prehistoric shoes of Fred Flintstone as you fall into one hilarious adventure after another. This game stresses comedy, fun and the sense of "being" in the cartoon. Features include: true cartoon look, "TV set" interface with changeable channels, several arcade sequences, multiple adventures, full cast of characters and all the prehistoric trappings you expect.
Available July 1989
MicroIllusions; 17408 Chatsworth St.; Grenada Hills, CA 91344; 818-360-3715 or 800-522-2041

Garfield Trivia Game
Mind-teasing questions about the world's favorite fat cat
Apple IIGS; printer; 64K; ProDOS 8; copy protected.
$24.95 retail
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; 312-480-7667

Entertainment

■ GrailQuest
Interactive graphic adventure
Apple IIGS; 512K; ProDOS 16; not copy protected.
GrailQuest is an interactive graphic adventure that takes a user back to the age of chivalry in King Arthur's Court. The program features interactive, digitized graphics, sound and the ability to use either the keyboard or mouse for command entry.
$29.95 retail; available June 1989
Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield, NY 14526; 800-828-6573

Hacker II: The Doomsday Papers
Strategic adventure to save the world
Apple IIGS; 512K; ProDOS 16; copy protected.
$19.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

HardBall!
Baseball simulation
Apple IIGS; keyboard, joystick or mouse; 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.
In Hostage, a user controls a six-person strike team assigned to rescue the embassy hostages from terrorists. A unique interface allows a user to instantly change perspective. Quick thinking determines which rescuer to maneuver when and whether the hostages survive. Varying skill levels and time limits provide unlimited play opportunities.
$39.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Hunt For Red October
Submarine combat simulation based on Tom Clancy's best-selling novel
Apple IIGS; 768K; ProDOS 16; copy protected.
$49.95 retail
The Software Toolworks; 19808 Nordhoff Pl.; Chatsworth, CA 91311; 818-885-9000

Jigsaw! The Ultimate Electronic Puzzle
Puzzle game
Apple IIGS; color monitor; 768K; ProDOS.
$39.95 retail; includes 20 image disks
$19.95 retail; additional image disks
Britannica Software; 345 4th St.; San Francisco, CA 94107; 415-546-1866

Journey
Game featuring new genre of interactive storytelling: Role-Play Chronicle
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

King Of Chicago
Struggle for power
Apple IIGS; 768K; ProDOS 16; copy protected.
$49.95 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 journey 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; 209-683-6858

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; 209-683-6858

The Last Ninja
Action/adventure martial arts game
Apple IIGS; 512K; ProDOS 16; copy protected.
$44.95 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; 209-683-6858

■ Mad Match
Visual perception game
Apple IIGS; 512K; GS/OS; not copy protected.
Mad Match helps kids and adults see more, notice more and react faster. Featuring exciting graphics, upbeat music and sounds, Mad Match challenges players to pick the two in each set that match. Children play the Beginner set while the rest of the family plays Eagle Eye. On each level, sets get more and more challenging as play goes on. Players beat the clock by matching pairs. And, if time runs out, Mad Match presents a different set of images to try again.
$39.95 retail
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49508; 616-698-0888

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.
The Mines Of Moria is a self-contained text adventure. Along your path are subtly placed clues, hidden in the descriptions or locations or on the very walls themselves. As you go further into the mountains in an attempt to escape the mines, you become more confused. It takes only a few hours to find the door to the outside, but you don't seem to have the key. Back into the sinister mines you go.
Mines of Moria II is the sequel to Mines of Moria, which takes place in an all new location in the evil mines far beneath the Earth.
$24.95 each retail
DAR Systems International; PO Box 16-4933; Miami, FL 33116-4933; 305-529-3572

Mini-Putt
Miniature golf simulation
Apple IIGS; mouse; 512K; ProDOS 16; copy protected.
$39.95 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 Gooseland"; 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; 209-683-6858

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. I; Foster City, CA 94404; 415-349-8765

■ Neuromancer
Role-playing adventure
Apple IIGS; 512K; ProDOS 8; not copy protected.
Neuromancer places you in the run-down world of Chiba City where you must explore and meet up with your fellow hackers. As a cowboy, you tap your consciousness into Cyberspace, an electronic universe that ties together all other computer networks. Players can plug skill chips into the sockets in their heads to invade other systems. Each database in Cyberspace uses different defenses and breaking into a system guarantees a confrontation with glittering ICE (Intrusive Countermeasure Electronics) and various AIs (Artificial Intelligence).
$44.95 retail
Interplay Productions; 1575 Corporate Dr.; Costa Mesa, CA 92626; 714-549-2411 (technical support) or 800-227-6900 (orders)

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; 312-480-7667

Pirates! IIGS
17th century Spanish adventure on and around the Caribbean Sea
Apple IIGS; 256K; ProDOS 8; copy protected.

Entertainment

$44.95 retail
MicroProse Software, Inc.; 180 Lakefront Dr.; Hunt Valley, MD 21030; 301-771-1151

Police Quest
3-D animated adventure featuring Sonny Bonds' attempt to stop the flood of illegal drugs into his community
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; 209-683-6858

Quarterstaff
Fantasy role-playing
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Questron II
Sequel to Questron
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Strategic Simulations, Inc.; 1046 N. Rengstorff Ave.; Mountain View, CA 94043; 415-964-1353

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 33116-4933; 305-529-3572

Roadwar 2000
Futuristic war game
Apple IIGS; 512K; ProDOS 16; not copy protected.
$44.95 retail
Strategic Simulations, Inc.; 1046 N. Rengstorff Ave.; Mountain View, CA 94043; 415-964-1353

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 in four mysteries
Apple IIGS; ROM 1.1; 768K; ProDOS 16; not copy protected.

Join Scooby, Shaggy, Freddy, Velma and Daphne as they try to solve four exciting mysteries. All on one disk, the gang will hunt down clues and culprits in The Mystery of the Aztec Sea God, Ski Village and Dayman's Haunted Mansion. Features include: raised three-dimensional perspective, several special arcade sequences, two difficulty levels, fully explorable countryside and city landmarks, overview map and more.
Available July 1989
MicroIllusions; 17408 Chatsworth St.; Grenada 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. I; 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 protected.
$49.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Shanghai
Derived from an ancient oriental game called Mah Jongg
Apple IIGS; 512K; ProDOS 16; copy protected.
$19.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Shogun
An interactive tale of intrigue
Apple IIGS; 512K; ProDOS 16; not copy protected.
$59.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

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 Valley, MD 21030; 301-771-1151

Sinbad And The Throne Of The Falcon
Epic seafaring quest in a search for the Caliph
Apple IIGS; 768K; ProDOS 16; copy protected.
$49.95 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; 209-683-6858

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; 209-683-6858

Star Saga: One
An interstellar, interactive, role-playing space opera set 800 years in the future
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

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
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

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; 312-480-7667

■ **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.

Entertainment

Sword Of Sodan takes you on a desperate quest to gain control of the Northern Kingdoms from Zoras the Necromancer, the evil sorcerer who slew your father the King and began an unbridled reign of terror throughout the land. Horrifying beings protect Zoras, roaming the corridors and courtyards of Craggamoor Castle. You control the movement as you leap, fight and think your way past graveyard spirits, giant scorpions, deadly pitfalls and more. Armed only with your grandfather's enchanted sword — the Sword of Sodan — you are the realm's last hope for peace.
$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 Division 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; 209-683-6858

■ **Ticket To Hollywood**
Hollywood trivia; ages 15 to adult
Apple IIGS; 512K; ProDOS 16; copy protected.
In Ticket To Hollywood, you take a trip through time and explore 80 exciting years of movie history. There are 25 mysteries to solve. You must track down the director to gather clues and quiz him about your favorite stars and movies. To obtain hints about his whereabouts, you must answer questions about movies, stars and Hollywood trivia.
$39.95 retail
Blue Lion Software; 90 Sherman St.; Cambridge, MA 02140; 617-876-2500

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 33116-4933; 305-529-3572

Uninvited
Supernatural graphic adventure
Apple IIGS; RGB monitor; 768K; ProDOS 16; copy protected.
$49.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

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

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

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

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.
In Zoom!, the star player is Zoomer, a smiling creature that zooms around his three-dimensional space home of Zoomland. As he moves around the board, he fills in lines that eventually close boxes. During the adventure, a player must be quick and agile enough to avoid the luscious lips and all of the other obstacles out to stop Zoomer dead in his tracks.
$29.95 retail
Discovery Software International, Inc.; 163 Conduit St.; Annapolis, MD 21401; 301-268-9877

Zork Zero
Interactive fiction game
Apple IIGS; 512K; ProDOS 16; not copy protected.
$59.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Hardware And Peripherals

Apollo PC Presenters For Apple IIGS
Allows users to display large-screen presentations; no special software required
Model PC-9600 requires the PC-9685 Apple IIGS interface.
$1,369 retail; PC-9100GS (add-on)
$2,189 retail; PC-9600 (add-on)
$220 retail; PC-9685 interface
$2,318 retail; PC-9601 (add-on)
$1,709 retail; PC-9250GS (built-in)
$2,583 retail; PC-9296 (built-in)
$2,498 retail; PC-9350GS (built-in and portable)
$3,250 retail; PC-9396 (built-in and portable)
$199 retail; PC-9670 Wireless Remote for PC-9600, 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

Hardware And Peripherals

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 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

Audio Animator
MIDI device, stereo digitizer and stereo playback machine combined; includes software and external connector box
Apple IIGS; 768K; GS/OS; software not copy protected.
$239 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

CommLink 2400
Full-featured 2,400/1,200/300-baud Hayes-compatible external modem
Apple IIGS; RS-232 serial cable.
$249.95 retail
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

ComputerEyes IIGS
Color video digitizer that captures images for use in popular desktop publishing and paint programs
Apple IIGS; video source; 512K; ProDOS 8; software not copy protected.
$249.95 retail
Digital Vision, Inc.; 66 Eastern Ave.; 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; not copy protected.
$129.95 retail; ComputerEyes/2
$19.95 retail; ComputerEyes/2 GS Support Package
Digital Vision, Inc.; 66 Eastern Ave.; Dedham, MA 02026; 617-329-5400

Conserver
Surge suppressing unit providing six AC outlets, surge protection and a fan
Apple IIGS.
$149.95 retail
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

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.
$799 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 or 800-727-5544

Data Display A200SC
LCD display panel that projects computer images via an overhead projector
Apple IIGS; included software is not copy protected.
$1,499 retail
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

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

DCA1000
Six outlet strip with surge suppressors and phone/modem protection
Apple IIGS.
$59.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Deluxe Power Console-Plus Surge Suppressor An Noise Filter
Surge suppressor and noise filter
Apple IIGS.
$125.95 retail
Kalglo Electronics Co., Inc.; 6584 Ruch Rd.; E. Allen Township; Bethlehem, PA 18017-9359; 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; not copy protected.
$59.95 retail; Digitizer
$189.95 retail; Digitizer Professional
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

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; not copy protected.
$129.95 retail
Street Electronics Corp.; 6420 Via Real; Carpinteria, CA 93013; 805-684-4593

Epic Mini Pro And Classic Pro
External and internal modems that operate at 300/1,200/2,400-baud rates
Apple IIGS.
$244 retail; Mini Pro external (includes ProTerm software and cable)
$244 retail; Classic Pro internal (includes ProTerm software)
Epic Technology, Inc.; 5680 Stewart Ave.; Fremont, CA 94538; 415-683-0932 or 800-634-9992

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 II
Screen dump graphic utility card
Apple IIGS; printer.
$129 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
External SCSI hard disk drive; contains FX System Software on 3.5-inch disk
Apple IIGS; SCSI board.

Hardware And Peripherals

$999 retail; FX/20
$30 retail; conversion kit
GCC Technologies, Inc.; 580 Winter St.; Waltham, MA 02154; 617-890-0880

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 0K to 4 MB of memory expansion
Apple IIGS.
$59 retail; OK
$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.
$139 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.
GS-RAM Ultra uses 256K by four memory chips and gives users the flexibility to expand in small 256K increments with the ability to grow to a massive 4 MB of total memory on board. A 2 MB piggyback option is available for up to 6 MB of memory. GS-RAM Ultra contains ROM sockets that are designed to allow future applications to be easily accessible, without booting from a disk.
$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; not copy protected.
$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
$63 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

Inner Drive
Internal hard disk drives
Apple IIGS; IIe.
$499 retail; 20 MB
$650 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.
Call for pricing
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.
$139.50 retail
Koala Technologies/A Pentron Company; 269 Mt. Hermon Rd.; Scotts Valley, CA 95066; 408-438-0946

Line-Saver Uninterruptible Power Systems (UPS)
Provide emergency power when the utility power fails or is unstable
Apple IIGS; other Apple II models.
$549 retail; starting price
Kalglo Electronics Co., Inc.; 6584 Ruch Rd.; E. Allen Township; Bethlehem, PA 18017-9359; 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; 312-584-2300, 800-634-2800 or 800-356-6540

Master Piece Remote
Two-part power center (outlet strip and remote control) with five outlets and surge, noise and modem protection
Apple IIGS.
$199.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Meirick Stand-By UPS Systems
Standby, 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.
$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; Disk II controller card or Smartport.
The MP6 increases storage capacity over standard 5.25-inch drives by 230 percent. It is completely compatible with the Apple II series of computers and runs all Apple software in all operating systems using standard, readily available 5.25-inch disks.
MP6 extended-capacity disks are compatible with and will operate in any other standard Apple drive up to that drive's normal work area, without affecting the drive function or the files stored on the disk in the extended work area. Without user intervention, the MP6 automatically recognizes disks formatted for normal or extended capacity and will operate normally in either mode.
$159.95 retail
Micro-Peripherals Engineering; 1720 Lockmoor Blvd.; Jackson, MI 49201; 800-443-6697

MultiRam GS
Extended memory board adding from 256K to 2 MB of memory
Apple IIGS; 256K.
$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

■ OCS 2-40
Stereo amplifier
Apple IIGS.
The OCS 2-40 is a 40 watt (80 watt peak) stereo amplifier. It features a volume level control, an EQ button, an input jack for headphones (mini), two speaker

Hardware And Peripherals

output RCA jacks for a user's own speakers or OCS supplied JBL Control I studio monitor speakers, a power button, a Normal/Stereo button, hookup cables and the Apple platinum look.
$179 retail
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.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

On-Board
Extended memory board that provides up to 4 MB of memory
Apple IIGS.
$149.95 retail; 0K
$449.95 retail; 1,024K
$749.95 retail; 2,048K
$1,349.95 retail; 4,096K
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

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

Passport MIDI Interface With Drum Sync (Plug-In Card)
Provides industry standard MIDI In, MIDI Out and drum out connections
Apple IIGS.
$129.95 retail
Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

Passport MIDI Interface With Tape Sync (Plug-In Card)
Provides industry standard MIDI In, MIDI Out, drum out and tape sync connections
Apple IIGS.
$199.95 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; software not copy protected.
$679 retail; PC Transporter with 768K
$259 retail; 5.25-inch 360K Drive
$389 retail; Dual-Drive 5.25-inch 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; software not copy protected.
$169 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Power Director Model 25
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

Power Saver Plus
Standby power supply
Apple IIGS.
$649.95 retail; Power Saver Plus Model U4
$749.95 retail; Power Saver Plus Model U5
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

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

PowerLine
Three surge suppressors
Apple IIGS.
$14.95 retail; PowerLine One Model S1
$29.95 retail; PowerLine Four Model S4A
$49.95 retail; PowerLine Strip Model S10
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; 1024 Hamilton Ct.; Menlo Park, CA 94025; 415-321-8977

ProGrappler
Parallel printer interface
Apple IIGS; Apple IIe.
$119 retail
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

ProModem 1200A/2
Hayes-compatible 300/1,200-baud internal modem with built-in ROM software that supports 80 columns and all modem functions
Apple IIGS; communications software; 64K; software not copy protected.
$129 retail
Prometheus Products, Inc.; 7225 SW Bonita; Tigard, OR 97223; 503-624-0571

ProModem 2400A
Internal modem
Apple IIGS; other Apple II models; communications software; 64K; software not copy protected.
$179 retail
Prometheus Products, Inc.; 7225 SW Bonita; Tigard, OR 97223; 503-624-0571

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; software not copy protected.
$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; not copy protected.
$299.95 retail
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 subsystem
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)
$1,299 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; 3579 Hwy. 50 E; Carson City, NV 89701; 800-982-3232

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

Hardware And Peripherals

Apple IIGS; 512K; GS/OS; included software is not copy protected.
$129 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

SoundAce 2.0
Audio digitizer that uses powerful Mac-like software to record and edit sounds
Apple IIGS; 768K; GS/OS; not copy protected.
$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; 1024 Hamilton Ct.; Menlo Park, CA 94025; 415-321-8977

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; not copy protected.
$59.95 retail
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

■ **TeleSpiker**
Surge suppressor/power line filter
Apple IIGS.
TeleSpiker is a surge suppressor/power line filter with integral protection for RJ-45/RJ-11 modular telephone jacks. It is specially engineered to meet the protection needs of fax machines, modems, electronic telephones and other devices using modular jacks.
The first model, the Mini-T, is a compact, two-outlet plug-in system complete with a modular extension cord. It features full series/parallel load-bearing filtering for maximum EMI/RFI protection.
$85.95 retail
Kalglo Electronics Co., Inc.; 6584 Ruch Rd.; E. Allen Township; Bethlehem, PA 18017-9359; 215-837-0700 or 800-524-0400

ThunderScan
Replaces an ImageWriter's ribbon cartridge with a digitizing scanning cartridge
Apple IIGS; 64K; ProDOS 8; software not copy protected.
$219 retail
Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94563; 415-254-6581

TransWarp GS
Accelerator card
Apple IIGS.
$399 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

■ **Æ 3.5 Drive**
External 3.5-inch drive
Apple IIGS.
The Æ 3.5 Drive is an external 3.5-inch drive compatible with the Apple IIGS, IIe and PC Transporter TransDrive. It stores 800K of data on a single 3.5-inch disk and offers 100 percent Apple 3.5 Drive compatibility. The Æ 3.5 Drive connects directly to the IIGS external drive port and contains a pass-through port so that an additional drive can be daisy chained to the first drive. The drive supports both electronic and push-button manual disk eject and comes with a full one-year parts and labor warranty.
Call for pricing; available June 1989
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Music

A Guide To Computer Music
Introductory resource about musical electronics
$16.95 retail
Sound Management; PO Box 3053; Peabody, MA 01961; 508-531-6192 or 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 48331-3236; 313-553-9460

ECS Music Training Programs
Family of music training products
Apple IIGS; 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

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.
Instant Synthesizer turns a IIGS into a sampling synthesizer. It gives users a four-voice synthesizer, a programmable rhythm machine and a sound editor. Users can edit instruments as they play, use sampling cards to capture live sounds and turn the sounds into instruments. It supports MIDI input and output, uses SMUS and ASIF files and works with most stereo and sound sampling cards.
$79.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Master Tracks Jr. For IIGS
Personal MIDI recording studio that provides tools for composing, recording and editing music with a graphical interface
Apple IIGS; MIDI interface; MIDI equipped instrument; 756K; 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.
Master Tracks Pro is a MIDI recording and editing package. Its five main modules provide 64 tracks of real-time and step-time input, graphical song editing, graphical step and MIDI data editing, a system exclusive librarian and keyboard control mapper, all in one package. Master Tracks Pro features full SMPTE implementation via MIDI time code, multiple channel and track recording, 32 MIDI channel capability and controller chasing.
$395 retail
Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

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

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

The Music Studio 2.0
Music creation program with pull-down menus, music paintbox and more
Apple IIGS; 512K; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

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; ProDOS 16; not copy protected.
$175 retail
Music Systems for Learning, Inc.; 311 E. 38th St., Ste. 20C; New York, NY 10016; 212-661-6096

Music

Pyware Instrument Designer
Sound wave designer
Apple IIGS; synthesizer and printer optional; 512K; ProDOS 16; not copy protected.
$129 retail
Pygraphics Corp.; PO Box 639; Grapevine, TX 76501; 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
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 or 714-963-3392

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

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.

Q-System II is a fully automatic queueing and spooling printer sharing network. Up to eight computers may be connected to one printer. Users will be able to send print jobs at their convenience, even simultaneously, and immediately proceed with their next project. Meanwhile, the Q-System II will spool the incoming print jobs into the internal buffer (from 256K to 4 MB) and print the information when the printer becomes available. Because the system is external, it will use the IIGS' built-in printer port to allow simple installation.

$495 retail; 256K (available June 1989)
Sequential Systems, Inc.; 1200 Diamond Cir., Ste. M-2; Lafayette, CO 80026; 303-666-4549

Online Databases

AppleLink - Personal Edition
Allows users to access Apple-specific and general online information and resources
Apple IIGS; other Apple II models; one disk drive.
$35 retail; includes software, user's guide, first year's subscription and the monthly AppleLink Update magazine
$35 retail; annual subscription fee
$6 retail; per hour (6 p.m. to 7 a.m. weekdays and all day on weekends)
$15 retail; per hour (prime time use)
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

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.
$39.95 retail; Subscription Kit
CompuServe Information Service; PO Box 20212; Columbus, OH 43220; 614-457-0802 (in Ohio and 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

The Source/Applesig
Telecomputing network; includes Apple II forum (Applesig); only place one can electronically access *The Apple IIGS Buyer's Guide* database, in which this database version is more extensive than the magazine version
Apple IIGS; other Apple II models; 64K system and a ProDOS terminal program is necessary to download software from Applesig's library; modem; communications software.
$29.95 retail; one-time membership dues
$6 per hour; 300-baud on evenings and weekends
$7.80 per hour; 1,200-baud on evenings and weekends
$9 per hour; 2,400-baud on evenings and weekends
The Source; 1616 Anderson Rd.; McLean, VA 22102; 703-821-6666 (membership), 703-734-7500 (business office) or 800-336-3366

Other Software

Apple IIGS Software Library
Total of 87 disks of public domain software and shareware
Apple IIGS; 512K; ProDOS 16; not copy protected.
$9 each retail
$39.95 retail; The Best of GS (six-disk set containing DAs, utilities, games, graphics and fonts)
Write or call for free catalog
P.D.E.; 2074C Walsh Ave., Dept. 71; Santa Clara, CA 95050; 408-496-0624 or 800-331-8125

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.

UpTime, The Disk Monthly is a monthly disk publication that provides Apple IIGS users with feature articles, reviews, news and a collection of 10 entertaining new programs each month. UpTime's monthly programs include home management and finance, utilities, graphics, games, adventures, educational programs and more.

$9.95 per issue retail
Viking Technologies, Inc.; 6 John Clarke Rd.; Newport, RI 02840; 401-847-2455

Personal Productivity

Address Master
Integrated name and address database
Apple IIGS; printer optional; 512K; ProDOS 16; not copy protected.
$39.95 introductory retail; available July 1989
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; 128K; ProDOS 8.
$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.
Family Matters is a comprehensive household and family information organizer. Five information categories are included: Family Matters tracks medical records, education and employment records and general information for each family member; Household keeps a history of the home, including repair records and insurance information; Financial contains everything from credit card information to the location of stock certificates; Vehicles covers identification and license numbers, repair records and insurance information; and Pets contains breeding, medical and general information.
$49.95 retail
Springboard Software, Inc.; 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.
$250 retail; free demo available
ESHA Research; PO Box 13028; Salem, OR 97309; 503-585-6242

Genealogical Data Base System (GDBS)
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 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

Nutriplan
Diet and nutritional advice
Apple IIGS; printer optional; 128K; ProDOS 8 and DOS 3.3; not copy protected.
$75 retail
Micromedx Computer Software Corp.; 187 Gardiners Ave.; Levittown, NY 11756; 516-579-6392

Personal Accountant 2.0
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.
$49.95 retail
Intuit, Inc.; 540 University Ave.; Palo Alto, CA 94301; 415-322-0573

TaxView
Tax preparation and planning
Apple IIGS; 512K; ProDOS 16; two 2.5-inch disk drives or hard disk drive; not copy protected.
$119 retail
Softview, Inc.; 4820 Adohr Ln., Ste. F; Camarillo, CA 93010; 805-388-2626 or 800-662-6829

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; 407-365-4714

AC/Basic Compiler
Basic compiler
Apple IIGS; 512K; ProDOS 16; not copy protected.
$125 retail
Absoft Corp.; 2781 Bond St.; Auburn Hills, MI 48057; 313-853-0050

Apple IIGS Debugger
Machine-level debugger
Apple IIGS; 512K; ProDOS 16; not copy protected.
$25 retail
APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

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., M/S 33G; Cupertino, CA 95014; 800-282-2732

Apple IIGS Source Code Sampler, Volume I
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., M/S 33G; Cupertino, CA 95014; 800-282-2732

Apple IIGS System Software (GS/OS) Version 4.0
Increases speed and performance of Apple IIGS
Apple IIGS; 512K.
$39 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

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., M/S 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., M/S 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.
Call-Box is a multilanguage toolbox programming system that offers a lifetime opportunity to IIGS users, novice, Basic and professionally skilled high-level language programmers who want to take advantage of the Apple IIGS' Toolbox functions.
$125 retail; available June 1989
So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298 or 714-963-3392

Copy II Plus 8.3
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 with IBM PC software
Apple IIGS; 128K; ProDOS 8; not copy protected.
$79.95 retail
SoftSpoken Co.; PO Box 97623; Raleigh, NC 27624; 919-878-7725

Programming And Utilities

■ 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.

Directory Labeler II offers users a convenient way to document the directory contents of Apple ProDOS programs and data disks on peel-off labels that can be affixed directly to the disks. Two label styles are supported. The "standard" style includes a user-defined title, the current date, ProDOS volume name and all files contained in the disk directory. Files can be sorted by name, type and date created or date modified. The "custom" style includes a user-defined title and eight additional lines for use on the 3.5-inch format.
$24.95 retail
Sourceware; 6899 S. Yukon Ct.; Littleton, CO 80123; 303-933-9148

Disc Commander
ProDOS disk editor
Apple IIGS; two 3.5-inch 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 or 714-963-3392

Disk Util II
Backs up copy protected software
Apple IIGS; 3.5-inch disk drive; 512K; ProDOS 16; 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 48331-3236; 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.

EasyDrive brings speed and manageability to a hard disk by bridging the gap between it and the computer. EasyDrive easily installs itself onto a user's hard disk and then goes to work installing a user's programs. When the programs are installed, a user chooses the application they want from the EasyDrive menu. Running programs, removing programs, backing up, restoring, indexing, copying, moving files and dozens of other functions are performed on screen.
$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
KADO Systems; PO Box 1115; Pflugerville, TX 78660; 512-990-2390

File Utilities I
Shell utilities for APW/ORCA programming environments
Apple IIGS; APW or ORCA development system; GS/OS; not copy protected.
$34.95 retail
360 MicroSystems; PO Box 1192; Oviedo, FL 32765; 407-365-4714

Graphic Environment Operating System (GEOS)
Operating system that brings a Macintosh-like graphic interface to all Apple II computers
Apple IIGS; other Apple II models; 128K; not copy protected.
$69.95 retail
Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883

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
Paint/animation program that also converts images into assembly or C source code
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 extended memory boards
Apple IIGS; extended memory card; 512K; ProDOS 8; not copy protected.
$19.95 retail
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

■ GSBug And Debugging Tools V4.0B1
Machine language debugger
Apple IIGS; 512K; GS/OS; not copy protected.

GSBug allows users to step through their code; save a trace history to a file on disk; define and insert break points into their code; define and use memory protection windows; and view the debugger's Master display.

Also included with GSBug are the Loader Dumper, which lets users see where in memory the System Loader has loaded each segment of a program and gives users information about the various tables and variables that the loader uses; Memory Mangler, which lets users execute a variety of Memory Manager routines and provides lists of the memory blocks that are in use, purged and disposed by the Memory Manager; and Scrambler, which helps users find out if their application has incorrectly dereferenced a memory handle by not having first locked the handle. Also included is GS/OS Exerciser, which lets users "exercise" GS/OS by practicing its calls from the keyboard.
$30 retail
APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 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.

HyperLaunch is launcher/program switcher for the Apple IIGS. Features include: the ability to launch any program on any floppy or hard disk with a click of the mouse; 16 fully programmable launch buttons; built-in Smart Scan feature automatically checks and reports errors during button programming; loads ProDOS 16, ProDOS 8, Basic or Binary programs; scrollable launch window provides full access to any disk/folder; designate any program as the system power-up application; switch system speeds or Startup on the fly; built-in installation program automatically installs a copy of HyperLaunch on any ProDOS 16 startup disk; automatically ejects all floppies and parks the heads of hard disk drives when HyperLaunch's ShutDown button is selected; and more.
$49.95 retail
So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298 or 714-963-3392

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

II/6502 System
6502 in-circuit cross-development system; uses Apple IIGS/IIe as host computer to cross-develop software for any 6502-based computer
Apple IIGS; IIe; ProDOS 8 and DOS 3.3; 128K; not copy protected.
$427 retail; II/6502 System
$219 retail; Baby II/6502 System
Parallax, Inc.; 6200 Desimone Ln., #69A; Citrus Heights, CA 95621; 916-721-8217

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 90025-4656; 213-470-4663

LifeGuard
File recovery software for files deleted under ProDOS 8 and ProDOS 16
Apple IIGS; 256K; ProDOS 16 and GS/OS; not copy protected.
$29.95 retail
MicroSparc, Inc.; 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

Logo Writer Software
Integrates word processing and graphics in the Logo programming environment

Programming And Utilities

Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$450 retail; site license (intermediate and primary)
$299 retail; primary lab pack
$299 retail; intermediate lab pack
$169 retail; primary 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); 1000 Roche Blvd., 9th Fl.; Vaudreuil, Quebec, Canada J7V 6B3; 514-455-5636 or 800-321-5646

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); 1000 Roche Blvd., 9th Fl.; Vaudreuil, Quebec, Canada J7V 6B3; 514-455-5636 or 800-321-5646

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.

Menu Maker combines three binary files with an illustrative editor routine to allow users to design custom pull-down menus that respond to mouse action and key presses. Menu Maker menus can select and run any program that can be run from the IIGS keyboard. Because the menus are run under Applesoft Basic, they are easily understood and modified by even beginning IIGS users.
$20 retail
So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298 or 714-963-3392

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
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.
$89.95 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 system assembler; cross-development C compiler; cross-development system Pascal compiler
Apple IIGS; 2 MB; MPW IIGS Tools requires MPW 2.0.2 or later; MPW IIGS Assembler requires MPW 2.0.2 or later and MPW IIGS Tools; MPW IIGS C requires MPW 2.0.2 or later and MPW IIGS Tools; MPW IIGS Pascal requires MPW 2.0.2 or later and MPW IIGS Tools; not copy protected.
$50 retail; MPW IIGS Tools V1.0
$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., M/S 33G; Cupertino, CA 95014; 800-282-2732

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 each; 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.
$249.95 retail
Pecan Software Systems, Inc.; 1410 39th St.; Brooklyn, NY 11218; 718-851-3100 or 800-637-3226

■ **RamUp 4.0**
Organizes and speeds up RAM disks
Apple IIGS; Applied Engineering or Checkmate RAM card; 128K; ProDOS 8; not copy protected.

RamUp is a software interface for organizing and speeding up a user's RAM disk. With RamUp, users can load their favorite ProDOS application programs onto a RAM disk and switch quickly and easily between applications. RamUp also provides status information and partitioning to help a user manage RAM-disk storage space, can auto-load files to a user's RAM disk from floppies and can backup/restore a user's RAM disk to floppies.
$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.

Screen Thief lets a user capture and save to disk any super-high-resolution screen image that is on a IIGS monitor. It also has a slide show program and a handy utility for configuring slide shows.
$20 retail
So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298 or 714-963-3392

TML Basic V.2.0
Full-featured 16-bit Basic compiler
Apple IIGS; 512K; 768K recommended; ProDOS 16; not copy protected.
$125 retail; TML Basic
$69 retail; TML Speech Toolkit
TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

TML Pascal Family V.2.0
Complete Pascal programming environment
Apple IIGS; extended memory board recommended; 512K; 768K recommended; ProDOS 16; not copy protected.
$125 retail; TML Pascal
$125 retail; TML Pascal APW
$49 retail; The Source Code Library
$69 retail; TML Speech Toolkit
TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

UniDOS Plus
Formats 3.5-inch disks in Apple's DOS 3.3
Apple IIGS; 64K; DOS 3.3; not copy protected.
$39.95 retail
MicroSparc, Inc.; 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.
$59.95 retail
Random House, Inc.; 400 Hahn Rd.; Westminster, MD 21157; 800-638-6460

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
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$99.95 retail
$79.95 retail; academic
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

The Character Family
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

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 writing 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; 512K; GS/OS; not copy protected.
$179 retail
WordPerfect Corp.; 1555 N. Technology Way; Orem, UT 84057; 801-225-5000

Writer's Choice Elite
Graphics/text word processor for use with Paintworks Plus, Draw Plus, Clip Art Gallery and more
Apple IIGS; 512K; 1 MB recommended; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500



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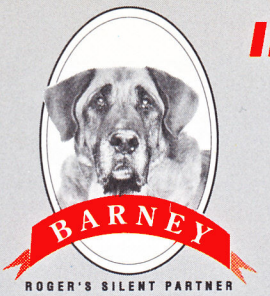
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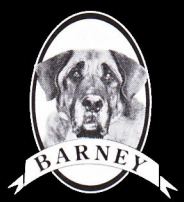
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