Apple IIGS

The Buyer's Guide

A Redgate Publication
Spring 1988 $2.95 U.S.



Special Productivity Issue:

Word Processing For The Apple IIGS

Make Way For Desktop Accessories

Hard Disk Drives Reviewed

Two For Taxes

More Than 200 Apple IIGS Product Descriptions

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Now Apple speaks IBM. Three times faster than IBM.

Introducing PC Transporter.™ The Apple® II expansion board that lets you run MS®-DOS programs.

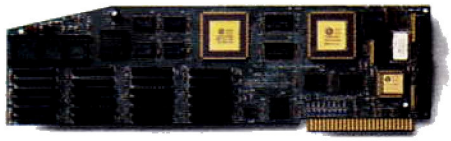
Now your Apple II can run over 10,000 programs you could never use before. Like Lotus® 1-2-3.® MultiMate.® dBASE III PLUS.® Even Flight Simulator.®

With PC Transporter, MS-DOS programs run on your Apple II like they do on IBM® PC's or compatibles. With one important difference. PC Transporter runs most of those programs *three times faster* than an IBM PC/XT.®

Plus, to speed through number-crunching tasks, you can use our optional 8087-2 math co-processor chip. It plugs into a socket on the PC Transporter.

Less expensive than an IBM clone.

Sure, a stripped-down IBM



clone costs about the same as the PC Transporter. But the peripherals it takes to get the clone up and running make the clone cost about three times what our American-made card costs.

You don't have to buy new hardware to use PC Transporter.

Works with the hardware you already own.

With PC Transporter, MS-DOS programs see your Apple hardware as IBM hardware. You can use the same hardware you have now.

With IBM software, your Apple hardware works just like IBM hardware. Including your drives, monitors, printers, printer cards, clock cards and serial clocks.

You can use your IIe® or IIGS™ keyboard with IBM software. Or use our optional IBM-style keyboard (required for the II Plus).

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

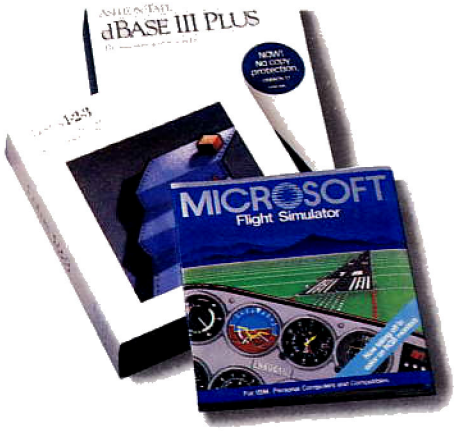
Plenty of power.

PC Transporter gives you as much as 640K of user RAM and 128K of system RAM in the IBM mode.

PC Transporter also is an Apple expansion card, adding up to 768K of extra RAM in the Apple mode. The Apple expansion alone is a $300 value.

Easy to install.

You can install PC Transporter in about 15 minutes, even if you've never added an expansion board. You don't need special tools. Simply plug it into an Apple expansion slot (1 through 7 except 3), connect a few cables and a disk drive, and go!



PC Transporter taps into the world's largest software library. Now your Apple can run most of the IBM software you use at work. And it opens a new world of communications programs, games and bulletin boards.

A universal disk drive controller.

PC Transporter supports 3.5″ and 5.25″ MS-DOS and ProDOS formatted diskettes. You'll shift instantly between Apple ProDOS and IBM MS-DOS.

You'll need our versatile 5.25″ 360K drive system to run IBM applications from 5.25″ floppy disks. Use your Apple 5.25″ drive for Apple 5.25″ disks.

An Apple Disk 3.5 Drive will support the new 3.5″disks whether they're IBM MS-DOS formatted or Apple ProDOS formatted. The PC Transporter acts like an Apple Disk 3.5 Drive disk controller for IIGS, IIe, and II Plus users.

PC Transporter supports up to 5 drives in a number of combinations.

For example, you can connect a 5.25 Applied Engineering 360K dual-drive system directly to the card. Then plug two daisy-chained Apple 3.5 Drives (not the Apple UniDisk 3.5) to the dual-drive system. For a fifth drive, use a ProDOS file as an IBM hard disk.

PC Transporter controls Apple and IBM compatible disk drives. It supports 3.5″ and 5.25″ MS-DOS and ProDOS formatted diskettes.



Versatile data storage.

PC Transporter reads MS-DOS and translates it into Apple native ProDOS. You can store IBM programs and data on any ProDOS storage device including the Apple 3.5 Drive, Apple UniDisk™ 3.5, Apple 5.25″ drive, SCSI or ProDOS compatible hard drives. (You can use the Apple UniDisk 3.5 with its own controller card for storing programs and data, but not for directly booting an IBM formatted disk.)

You can even use our 360K PC compatible drive for ProDOS storage and a 143K Apple 5.25″ drive for MS-DOS storage.

Make your Apple speak IBM.

PC Transporter memory choices.

RAM in Apple mode:	RAM in IBM mode:	Price:
384K	**256K**	**$489.00**
512K	**384K**	**529.00**
640K	**512K**	**569.00**
768K	**640K**	**609.00**

Note: The IBM mode is 128K less because the PC Transporter uses 128K for system memory.

IIGS Installation Kit	**49.00**
IIe/II Plus Installation Kit	**39.00**
PC Transporter Accessories	
5.25″ IBM Format 360K Drive Systems	
Single-Drive System	**269.00**
Dual-Drive System	**399.00**
Half-Height Drive (add to Single-Drive system to make Dual-Drive)	**135.00**
IBM-Style Keyboard (required for Apple II Plus. Requires IBM Keyboard Cable.)	**139.00**
IBM Keyboard Cable	**34.00**
Sony RGB Monitor	**499.00**
Analog RGB Cable (for use with Sony monitor)	**39.00**
Digital RGB Cable (for use with Sony monitor)	**39.00**
Digital RGB Adapter	**24.00**
ColorSwitch (included with IIGS Installation Kit)	**44.00**
128K ZIP	**40.00**
PC Transporter Memory Expansion Chip Set	**per set**
8087-2 Math Co-processor Chip	**229.00**
Heavy Duty Power Supply (IIe and II Plus only)	**69.00**

See your dealer or call or send check or money order to Applied Engineering. MasterCard, VISA and COD welcome. Texas residents add 7% sales tax.



PC Transporter produces better IBM graphics than IBM. Analog is sharper than digital. So with an analog RGB monitor, PC Transporter's CGA graphics and text are superior to IBM's digital display — even while running IBM software!

And, you can also use an Apple composite monitor in IBM text or graphics mode.

Created by Apple's original designers.

The brains behind PC Transporter were also behind your Apple II.

The PC Transporter design team includes the former project managers for the creation of the Apple IIe and IIc. The co-designer of the Apple II disk controller. And the first full-time Apple programmer and author of the ProDOS operating system.

So you know the PC Transporter and your Apple were made for each other.

Support and service from the leader in Apple add-ons.

Applied Engineering sells more Apple peripheral boards than anyone else — including Apple Computer. So you know we'll be around after the sale.

PC Transporter comes with a 15-day money back guarantee. If you're not fully satisfied after using it, return it for a full refund. PC Transporter also comes with a 1-year warranty.

How to get your PC Transporter today.

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The Apple enhancement experts.

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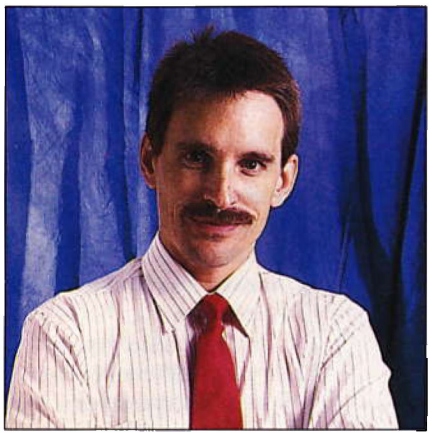
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Tune In, Turn On, Link Up



With money being a limited resource, it's not easy for Apple IIGS owners to decide what accessories to buy after their computers first come home. If you've got a little extra cash on hand and are looking for a good return on your investment, let me make a suggestion: communications.

The tools you'll need to put your IIGS in touch with literally millions of other computer users worldwide are simple enough. A modem, communications software and appropriate cables will do nicely, as will access to a telephone line. Virtually any external 1,200- or 2,400-baud modem will work, and more IIGS-compatible internal modems are produced all the time. As for IIGS-compatible communications software, turn to this issue's "Apple IIGS Hardware And Software Directory" for inspiration.

I can hear some of you now. "I just bought an Apple IIGS to access all the graphics and sound hardware I've been reading about in your magazine. Now you tell me to go out and buy a modem so I can watch black-and-white characters flow across my screen? Maybe I should have saved a few bucks and bought a used VT100 terminal at at garage sale."

I'll admit it doesn't take an Apple IIGS to tie into the world of on-line communications, but that really isn't the point. Through local bulletin boards and Apple II special interest groups, found on services such as Compuserve, Genie and The Source, a IIGS user can meet scores of other IIGS owners. Collectively, they represent a potent knowledge resource not obtainable in any other way. Post a query on just about any IIGS subject, and I can practically guarantee several answers will be waiting the next day.

Besides the helpful dialogue available to IIGS users, most on-line services and bulletin boards offer a database of public domain software. Once you get the hang of it, it's easy to download dozens of public domain programs, all free except for the connect costs. For those of you yet to experience this magic, be forewarned. The thrill of electronically receiving a program over the phone can be addicting.

Communications adds an important dimension to home computing, but it is becoming indispensable to business. Here at *The Apple IIGS Buyer's Guide*, for example, nearly all the editorial input from contributing editors arrives by electronic mail. This extends deadlines up to the last minute, facilitates communications between writers and editors and helps us save on overnight delivery services. (Fear not, Federal Express. Our sales force sends out enough copies of the magazine to more than make up for the difference.)

We believe in communications. After all, that's what this magazine is all about. To keep the interchange between readers and editors flowing, we're starting a new column in this issue called "IIGS Address." We hope to answer as many reader questions as possible. You can either send us your inquiries the old fashioned way or use E-mail on Compuserve and The Source.

Speaking of The Source, we're placing the "Apple IIGS Hardware And Software Directory" on-line as this issue goes to press. The fine-tuning remains to be worked out, but we're working closely with the AppleSig's sponsor, Joe Kohn, to make the electronic information available in ways that are impossible on the printed page. Stay linked for more information. ■

— Paul Pinella, Editor-In-Chief

The Apple IIGS Buyer's Guide

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Address all inquiries to "IIGS Address," c/o *The Apple IIGS Buyer's Guide*, Redgate Communications Corp., 660 Beachland Blvd., Vero Beach, FL 32963. Questions may also be sent via electronic mail on The Source (CPA211) or Compuserve (71625,567). Individual responses cannot be guaranteed.



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

1) How do you select the reviews and features that appear in *The Apple IIGS Buyer's Guide*?

For a software product to be reviewed, it must fit the following qualifications:

a) While certain products may work on other Apple II computers, all products we review must be fully IIGS compatible. If a product requires a specific configuration (such as set speed to slow and columns to 40), that information must be clearly stated in its documentation.

b) Products must be available on 3.5-inch disks. Because all IIGS owners do not have 5.25-inch drives, we believe software developers must take the initiative to either supply their products on 3.5-inch disks from the start or make their products available on 3.5-inch disks at a reasonable cost.

c) Products must be either available or — at the very least — in the final stages prior to production. We don't review "vaporware."

2) I'm a programmer who wants to market my programs. How can I contact Apple and how can I become a developer?

Apple Computer, Inc. originally established its Developer Services department to help programmers interested in marketing Macintosh products. The scope of the department was later expanded to include the Apple II series.

Technical data, special utilities and up-to-date information on hardware and software, which average users would find confusing, is available to help you develop and market your programs or hardware.

When you sign a developer agreement with Apple, you pay a nominal paperwork fee to distribute the company's system software with your programs. Even if you are not a developer, you must license Apple's software products (ProDOS, BASIC.SYSTEM, etc.) to distribute them with your programs. There's no fee for becoming a developer, and it's worth considering if you want to sell your programs.

For more details, write to Apple at: Developer Relations, Apple Computer, Inc., 20525 Mariani Ave., Cupertino CA 95014. If you've written a program that's ready to sell or are considering selling one, ask for a developer application.

3) I have an Apple IIe with 128K and I use AppleWorks to keep track of my mailing list. Because AppleWorks' database has a 6,350 record limit, I've run out of space. How can I solve this problem? Can I purchase more memory? Will I have to upgrade to an Apple IIGS or a new version of AppleWorks?

How do you feel about a 22,600 record limit? With some modified versions of AppleWorks, you can keep track of more than 22,000 items in your database file. Several different companies sell memory expansion cards for the IIe that they claim will expand AppleWorks' desktop.

Your question correctly addresses the problem — record limits. While most AppleWorks expanders do expand AppleWorks' desktop size (when you boot AppleWorks, it indicates more memory available on your desktop), they don't resolve the software's internal limitations, including the number of records you can have in the database.

Applied Engineering's Super AppleWorks Desktop Expander is an exception. It upgrades AppleWorks' internal limits to 22,600 records in database mode (the same number of lines in word processing mode). Furthermore, the company's AppleWorks expansion programs are designed to work with its Ramworks and Ramfactor cards on the Apple IIe, the ZRAM series on the IIc and the GS-RAM series on the IIGS.

AppleWorks expanders are also available from other companies for use with their memory boards. Check to see that these expanders actually expand AppleWorks' internal limitations, however, not just the size of the desktop.

4) What's the difference between ProDOS 8 and ProDOS 16? Are they compatible?

ProDOS 8 is the standard Apple ProDOS. It has been renamed to avoid confusion with ProDOS 16, which is the new standard operating system for the Apple IIGS.

ProDOS 8 will work on any Apple II with at least 64K of RAM, including the IIGS. ProDOS 16, designed to work with the IIGS, has more powerful capabilities because it's designed around the 65816 microprocessor. Because the same file structure is used, a file created with one version of ProDOS is compatible with the other version.

Programmers must decide to write their software in ProDOS 8 — making their applications compatible with all Apple II computers — or to use ProDOS 16 and tap the greater memory of the Apple IIGS.

From a user's point of view, the different versions of ProDOS make little difference. If you save an AppleWorks word processing file (a ProDOS 8 program), it can be loaded into MouseWrite (a ProDOS 8 program) or Multiscribe GS 3.0 (a ProDOS 16 program). All you have to worry about is having enough memory and the correct type of computer.

5) How do I start using modems and telecommunications? How can I use my Apple to keep in contact with other users through electronic bulletin board systems (BBSs) and on-line databases?

Just purchase a modem — with the proper connector cables — and a communications program for your Apple. In many cases, one package will include everything you need: interface card and modem, modular phone cord, communications program and a start-up kit to connect you to a variety of pay services.

Many modems and terminal programs come with special start-up discount offers for major on-line services, including stock market information, airline schedules and general-purpose databases such as The Source and Compuserve.

These services charge for their information, typically on an hourly basis. Local BBSs, though, are usually free. Their owners often operate them as a hobby or as a way to attract customers to a business, such as a computer store.

The best way to find a local BBS number is to ask at a local computer store or user-group meeting. Once you find one BBS, you may find other systems posted on-line or by sending electronic messages to users on the newfound system.

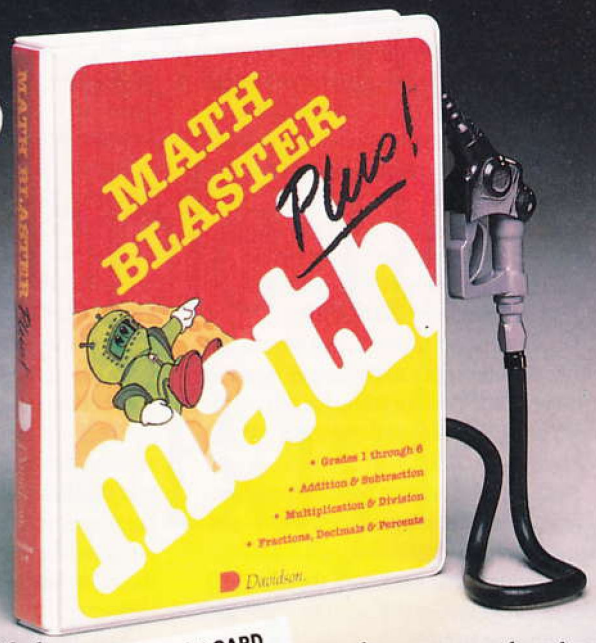
Another excellent source for BBS listings is *Computer Shopper*, a monthly newspaper-like magazine oriented toward technical users and hobbyists. One of its monthly features is a nationwide listing of local BBS phone numbers.

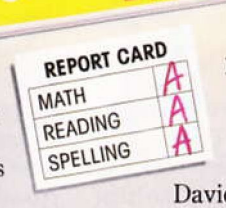
6) What is public domain software? How can I get some? Is it really free?

Public domain software is software that the author or owner has decided to distribute without royalties or other payments. Generally, the author or owner has decided it isn't practical to attempt to market or sup-

HIGH GRADE FUEL.

NEW





Davidson's new Math Blaster Plus is the highest octane math software program you can buy for your kids. Built by teachers to grow with kids—from addition and subtraction to multiplication, division, fractions, decimals, and percents.

Math Blaster Plus pumps in confidence and motivation, prints out Certificates of Excellence, and improves kids' grades from 1st grade through 6th.

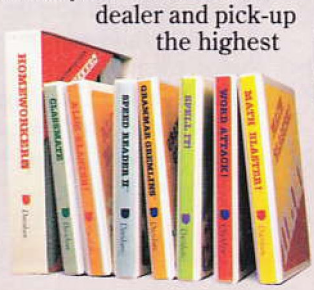
With four motivating learning activities, exciting graphics and color, and a new action-packed arcade-style game, Math Blaster Plus makes learning fun. And, it has new pull-down menus that are easy to use with keyboard or mouse.

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(GS 3/88)

Davidson.

Reader Circle Number 2

port a program, or is experimenting with a preliminary version of a program intended for market at a future date.

Programmers are often encouraged to donate such programs to user-group libraries, which the user groups then trade with other user groups.

Other sources of public domain software include programs designed under government contracts or university projects where no copyright is attached, programs specifically written for the public domain and, occasionally, programs distributed as advertisements to attract interest in another program.

Due to the variety of sources and wide range of programmers involved, public domain software ranges from extremely crude and troublesome to excellent.

Documentation showing you how to use public domain applications ranges from nonexistent to self-documenting. Usually, it is much less detailed than that accompanying commercial products.

Not all public domain packages are free. Many "shareware" programs are distributed through public domain channels with the understanding that users — if they like and use the programs — will send payment to the author or authors.

7) How can I find out if I have the latest system disk and ROM in my IIGS?

As of December 1987, the latest version of Apple's System Disk is version 3.1. The latest system ROM is version 2.0. You should check with your local Apple dealer or user group every couple months to determine if newer versions have been released.

Confusingly, System ROM 2.0 shows "System ROM 01" on screen when you first turn on your IIGS. Don't worry, that's the way computer programmers count. The original System ROM (1.0) is number 00 and the 2.0 ROM is number 01.Your original Apple System disk has a version number printed on its label.

If you have an earlier version, an authorized Apple dealer can upgrade your system ROM and re-copy your system disk with the latest version.

8) Can I read IBM disks on my IIGS without investing in an expensive hardware solution?

Yes. There are several different ways. The best solution is hardware, however.

The PC Transporter card from Applied Engineering (reviewed in the Winter '87 issue of *The Apple IIGS Buyer's Guide*) converts your Apple 3.5 drive into an IBM-compatible 3.5-inch drive — as well as an Apple-compatible unit. You can also purchase IBM-compatible 5.25-inch drives that work with the PC Transporter.

Other companies sell disk controller cards for the Apple that support IBM-compatible disk drives. With the proper software, your drive can transfer data back and forth between Apple and IBM formats.

But you asked for an inexpensive, non-hardware-based solution. If you have an Apple IIGS and an IBM within close proximity of each other, you can purchase a hookup cable that connects the two computers together via their communications ports. You can then use a communications program that runs on each computer to transfer data between the machines.

There is a limitation to any data-transfer method between IBMs and Apple IIs. Apples and IBMs use different operating systems, languages and hardware. Program files designed for one computer won't work on the other unless properly translated and converted.

Text files (word processing documents, data files, etc.) can be transferred without any problems. Intermachine formats (such as an Apple spreadsheet program that reads Lotus 1-2-3 files) help simplify the procedure.

9) I have an Apple IIc with a 16-color (digital) RGB (red, green, blue) monitor and I use the Video 7 RGB interface. Despite its fewer colors, I would like to use this monitor with an Apple IIGS. Is this practical?

Possibly. Some RGB monitors can be attached directly to an Apple IIGS with the proper adapter cables. You don't need your Video 7 adapter box (the box that converts an Apple IIc's video output into RGB video) because the IIGS produces its own RGB video.

The trouble is the IIGS' 4,096-color RGB output is different from the eight- or 16-color RGB video used by most other computers. Even if you can use your monitor with the IIGS, you won't be able to use most IIGS programs. That's because they're designed to work with 4,096-color RGB monitors.

There are RGB monitors that work in both digital and analog modes. With the proper cables, these monitors can be used with the IIGS and other computers.

10) Where can I find a local Apple user group?

Check with your local Apple dealer. Most dealers have good relationships with local user groups and will be glad to tell you when and where a group near you meets. The group may even meet at the dealer's store.

Another good source for user-group information is schools and libraries. If you can't find a local group, call Apple at 800-538-9696. The company keeps a list of groups and supports those groups with newsletters and information.

11) How can I make backup copies of copy-protected programs I've purchased for my IIGS?

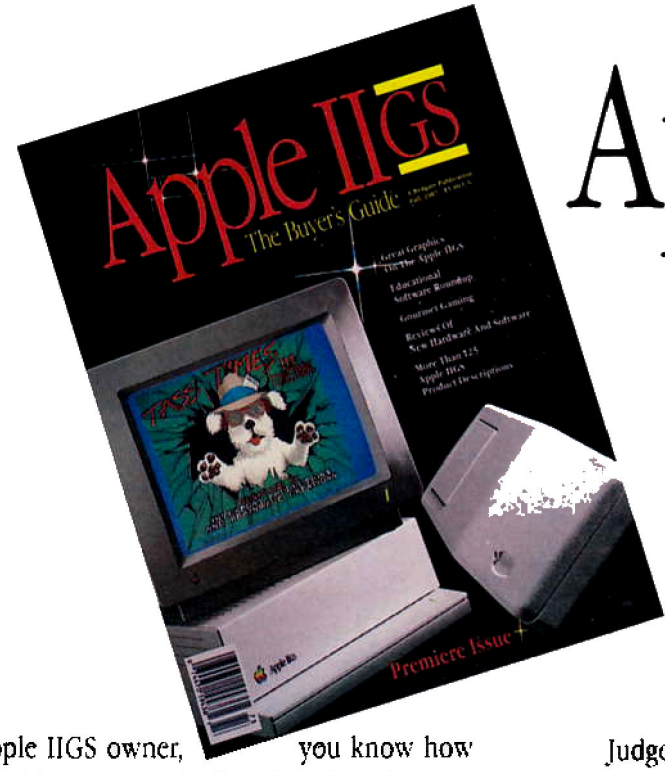
It depends on the product. Many software products are copyable, and you shouldn't have any problems making backup copies. For companies that still insist on copy protecting their products, backup disks are usually supplied.

Whenever we review products for *The Apple IIGS Buyer's Guide*, we try to note whether a product is copy protected and what a company charges for backup or replacement copies.

There are bit-copy programs available that copy some copy-protected disks. We've never found bit copiers useful, however. Whenever a company selling a bit copier announces it will copy a certain program, the company that made the program comes out with a new copy-protection scheme the bit copier can't copy.

Fortunately, most major software developers have decided to either do away with copy protection or use a copy-protection method that is as friendly as possible to users. ■

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Apple IIGS
The Buyer's Guide

The Gang

Comparing Word Processors For The Apple IIGS

Are you still divided between text- and graphics-based word processors? This comparison among four different approaches to word processing should make it easier to decide which is best for you.



Word processing has made dramatic strides since the Apple IIe's standardized 80-column capability was introduced in 1983. Since the advent of the Apple IIGS, however, word processing has made quantum leaps. The sophisticated word processing programs available for the Apple IIGS make it possible to perform document magic undreamed of in 1983.

Current word processors can produce documents of amazing variety. Using pull-down menus and ruler-based formatting, a user can produce multicolored documents that are sprinkled with a variety of fonts, type styles, type sizes and pictures.

Some programs even allow a user to create pictures within documents, though most applications only support importing images from programs such as Top Draw and Paintworks Plus.

Choosing a word processor is not an easy task. Although many features are available, no word processor has them all. This article examines four of the best packages currently available for the IIGS. Armed with the infor-



Of Four

mation provided here, we hope you'll be able to chose the one that best suits your needs.

Text And Graphics

Two distinctly different types of word processing systems are available: text-based and graphics-based. It's important to understand the differences between them.

Text-based programs use the IIGS' built-in text mode, from which ROM-based characters are instantly available for screen display. This gives text-based word processors a distinct advantage in terms of speed.

With graphics-based programs, both characters and pictures have to be drawn individually on screen. Because this bit-mapped drawing process takes longer, graphics-based programs operate significantly slower than text-based programs.

Another distinction is what text-based and graphics-based word processing programs are capable of displaying on screen. Text-based word processors can only display alphanumeric characters and certain symbols. They cannot display pictures or special effects on screen.

Text-based word processors can often issue the printer control codes needed to print any of the fonts, font sizes, type styles and colored text an attached printer is capable of producing.

Text that has been selected for special effects usually appears highlighted or surrounded by control symbols. Text-based word processors rarely offer what-you-see-is-what-you-get screen displays. When they do, rest assured that no special effects are involved.

The Magic Of Graphics

With graphics-based word processors, just about anything can be displayed on screen. Although these word processors issue control codes that determine what an attached printer prints, a user doesn't have to think about that.

How They Compare

	Multiscribe GS	Writer's Choice Elite	GraphicWriter	MouseWrite
Copy Protection:	Key Disk	N	Y; Backup Included	N
Spell Checker:	80,000 wd	N	N	61,000 wd
Thesaurus:	Y	N	N	N
Customized Dict.:	Y	N	N	Y
Suggest Spelling:	Y	N	N	Y
Minimum Memory:	512K	512K	512K	256K
Import Graphics:	Y	Y	Y	N
Create Graphics:	Y	N	Y	N
Number Of Colors Available:	4,096	6	48	6 (Printed Only)
Color Text:	Y	Red/Black	Y	N (Printed Only)
Background Color:	Y	Y	N	N
Reads AppleWorks Files Directly:	Y	N	N	Y
Ruler-Base Formatting:	Y	Y	Y	Margins/Tabs Only
Strike-Through Style:	N	Y	N	N
Open Document Windows:	8	16	1	12 w/RAM Disk
Glossary (Macro) Functions:	N	N	N	Y
Mark Words Capability:	N	N	N	Y
Mail Merge:	N	N	N	Y
Multicolumn:	N	N	Y	N
Color Separation:	N	N	Y	N
LaserWriter Compatible:	Y	Y	Y	Y
Word Count:	N	N	N	Y

Selecting "italics" causes a word to appear in italics on screen. Likewise, selecting "red" causes a word to appear in red on a color screen. When placing a picture in text, the picture appears exactly where you put it, both on screen and on paper.

Early graphics-based programs for the IIGS were decidedly slow, but the newest ones have improved speed. That is not to say they come close to matching the speed of text-based programs. They don't.

With long documents that contain pictures or several different type styles, graphics-based programs can perform very slowly. In general, the longer and more complicated a document is, the more slowly a graphics-based program can be expected to update the screen display.

Screen-display speed is not the only consideration, however. Text-based programs also load and print more rapidly than graphics-based programs. In fact, the text-based processor we examined loaded from a cold boot in under 30 seconds. The three graphics-based programs we saw each took two minutes — give or take a few seconds — to boot from the Apple Program Launcher or the desktop.

Query Yourself

Before selecting a word processor, it's a good idea to examine what you want to do first. An important question to ask is, Who will use it? Will the program have one user, or will your family be involved?

A power word processor that satisfies the needs of a busy secretary would probably be too much program for a third-grader. Graphics displays and on-screen fonts and type styles are easier for children to work with than text-based formatting commands.

Another question to consider is the kind of word processing tasks you anticipate. If a program will be used for typing business letters, long reports or a master's thesis, a text-based program offers the required speed and keyboard flexibility.

The capability to print in color is certainly eye-catching, and certain graphics-based programs can do remarkable things when paired with a color printer such as an ImageWriter II. But do you really need a color printer? If so, What kinds of color graphics are you likely to want?

If your documents must be copied and handed out to a number of people, the ability to print in color diminishes in importance. Most photocopy machines cannot reproduce the kinds of color graphics that can be generated by a color printer.

If your audience is limited, color may be more important. After all, it's more fun to send grandma a letter written in several colors or to impress a teacher with a report containing colored illustrations.



Text-based word processors such as MouseWrite hold an undeniable speed advantage over their graphics-based cousins.

One On One

We looked at four word processors for the Apple IIGS: MouseWrite, Multiscribe GS, Writer's Choice Elite and GraphicWriter. Each package offers its own unique combination of features.

In the descriptions that follow, we describe the features that differentiate each of our chosen word processors from one another.

First, it's worthwhile to point out similarities. All of the programs mentioned above offer pull-down menus and dialogue boxes. All offer text editing with cut, copy and paste capabilities. All have the capability to create headers and footers and to print a variety of fonts and type styles.

All of the programs also have ruler-based formatting, at least for margins and tabs. All offer single, double and triple line spacing and four justification options: right, centered, left and fill. In addition, all of the programs offer search and replace capabilities and are LaserWriter compatible.

The four packages share another characteristic: all are basically good products. None is perfect, however. We've noted annoying or otherwise bothersome characteristics in the individual descriptions that follow. To their credit, we found that all four programs perform as advertised. We didn't find any disabling bugs.

If you match the features these programs offer with what you need, we think any one of them will serve you well.

MouseWrite (Version 2.6.8.b) By Roger Wagner Publishing, Inc.

MouseWrite is the only text-based word processor considered here. It's also the only product that will work on earlier Apple II models and the Apple IIGS. The package contains a single 3.5-inch disk, which holds the entire IIGS program, and three 5.25-inch disks, which hold the IIe/IIc version.

Note that a user cannot use the software on a IIGS and a IIe simultaneously. The purchaser is licensed to operate the program on only one computer at a time.

As a text-based word processor, MouseWrite is fast. When compared to the graphics-based programs in our group, it seems to operate at lightning speed. Its screen display is instantaneous, and we were amazed at its printing speed.

The features offered by MouseWrite include the ability to print — but not display on screen — a number of fonts and type styles. These selections may be chosen from pull-down menus or by separate keystrokes. It's also possible to select already-typed text and change its font, style or size. Font and style selections are signaled on screen by a diamond-shaped marker.

MouseWrite has no graphics capabilities, and pictures may not be included in documents. The program supports color printing, however. Choosing a color — from a choice of blue, green, orange, purple, red or yellow — in the color menu instructs a color-capable printer to print the selected text in that color.

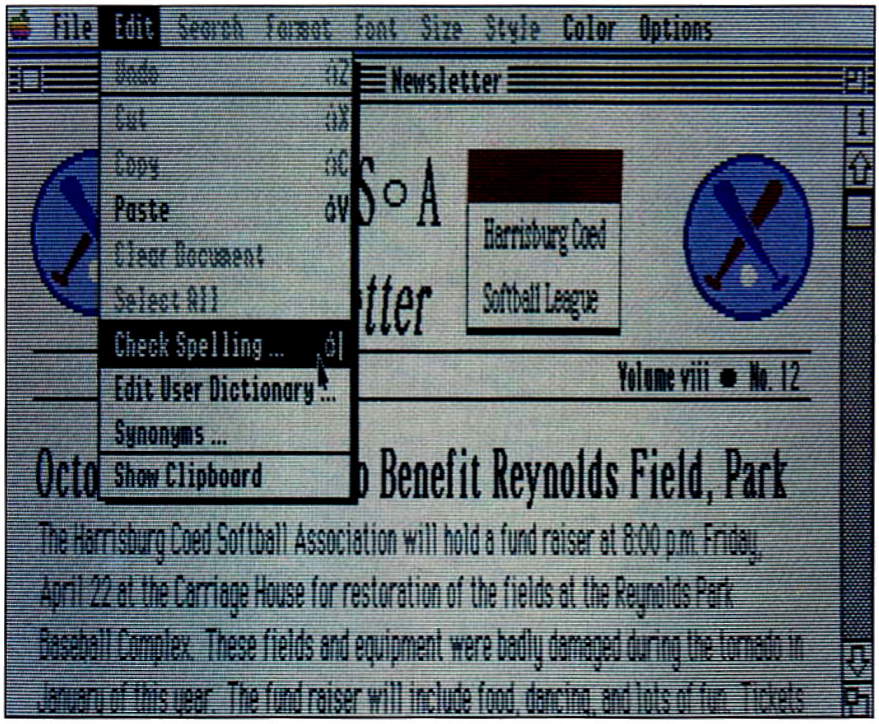
MouseWrite also features an interactive spelling checker with a 61,000-word dictionary. Words in a document that the checker doesn't recognize are highlighted. Up to 10 alternate spellings may be suggested for a flagged word.

When a word is highlighted, a user has the option of ignoring it, changing it, deleting it or marking it for later attention. The word can also be added to the program's custom dictionary so it won't be flagged in later searches.

MouseWrite works with a RAM disk previously defined in the Control Panel. If the RAM disk is large enough, an expanded desktop may be set up that allows a user to open as many as 12 documents on screen at a time, while holding the spelling checker's dictionary in memory.

While MouseWrite works with the standard 256K IIGS memory, a memory expansion card of at least 256K is required for the expanded desktop. Also, loading the spell checker into RAM requires at least 384K in an expansion card.

MouseWrite offers a number of other powerful word processing features. It has a mail-merge capability that can add new sections to a specifically designated place in a letter or complete form letters with information from a list file. The list file might be set up in MouseWrite or an AppleWorks database file may be used.



An 80,000-word spelling checker and thesaurus help set Multiscribe GS apart from its competitors.

The program can also stop in the middle of a letter during the merge/printing process and allow a user to add a personalized note from the keyboard.

MouseWrite also provides a glossary capability. From this file, a user may call up words or paragraphs of information with a single keystroke. Because the glossary recognizes commands, it takes on a kind of macro-creation capability that can be used to perform a number of functions with a single keystroke.

When used with a modem, MouseWrite's communications feature can be used to send and receive text files over phone lines. This function includes a phone list and automatic dial capabilities, but it does not function as terminal emulation software. Therefore, it will probably not meet all your communications needs.

One of MouseWrite's features should be of particular interest to teachers and writers. The "About MouseWrite" selection from the Apple menu brings up a dialogue box containing information about the current document, including a line count, word count and an estimation of the reading level of the document.

The readability information, based on the Frye Graph and Flesch Index, shows the approximate grade-level reading ability required to understand the document. This analysis may be performed on an entire document or any portion of text selected prior to choosing "About MouseWrite."

Short Course On Graphics

Before continuing with the description of the three graphics-based word processors, let's look at the two types of graphics that can be produced on the IIGS: bit-mapped and object-oriented. Though both types may be used to produce complex and beautiful images, they differ in how they are used and how they behave.

Bit-mapped graphics programs produce images in the form of dots on the screen. An example of a bit-mapped program is Paintworks Plus. A clue to the fact that a graphics program is bit-mapped is the word "paint" in its name.

Illustrations in bit-mapped programs are constructed by using tools and shapes to draw on screen. Because shapes are made up of dots put together in a certain pattern, a rectangle may be drawn, for example, and a portion of it erased to obtain the desired effect.

In contrast, object-oriented graphics programs work by placing objects on a screen. An example of an object-oriented program is Top Draw. A clue to the fact that a graphics program is object-oriented is the word "draw" in its name.

Drawings in object-oriented programs are constructed by combining or layering shapes. A rectangle that looks like a rectangle created in a bit-mapped program may be drawn, but it behaves quite differently.

The object-oriented rectangle exists as an object and must maintain certain basic qualities. It may be edited or resized, but it must remain a four-sided figure. No portion of it may be erased. It is possible, however, to hide an unwanted portion of an object by placing that portion behind another object.

Because the two types of graphics programs behave so differently, they cannot normally be combined.

Multiscribe GS (Version 3.0) By StyleWare, Inc.

Multiscribe GS supports both text and graphics within the same document. Graphics may be imported to a document with the Load Picture command, which can handle either bit-mapped or object-oriented images.

Imported bit-mapped graphics may be cropped, but not otherwise edited. Object-oriented graphics may not be cropped. All graphics may be resized, though we found this a bit tricky to do in a document with text.

Once graphics were added to a document, the screen display slowed considerably. Scrolling a screen-size image was time-consuming. The picture had to be reformed on screen each time the position changed even slightly.

Graphics are memory eaters, making it easy to run out of memory when including several graphics in a document running on a IIGS with 512K of memory.

If there isn't enough memory remaining in RAM to allow graphics to be loaded into a document, Multiscribe GS provides a disk-based memory management system that allows the temporary storage of graphics on a disk. This disk file is treated as if it were in RAM.

This safety feature also prevents loss of data in the event of a power failure.

Multiscribe GS has its own object-oriented drawing capabilities, but they are somewhat limited. With the Draw menu selection, a user can create pictures with lines, circles, rectangles and rounded rectangles. Objects may be line shapes or filled, and a selection of line widths is available.

After each item is drawn on screen, a menu choice or command-key sequence must be given before another object can be drawn. The Draw Again menu selection allows another use of the previous choice. Draw must be selected again to switch tools. With patience, one can create many interesting effects.

Graphics may be used between lines of text or placed behind text for a background effect.

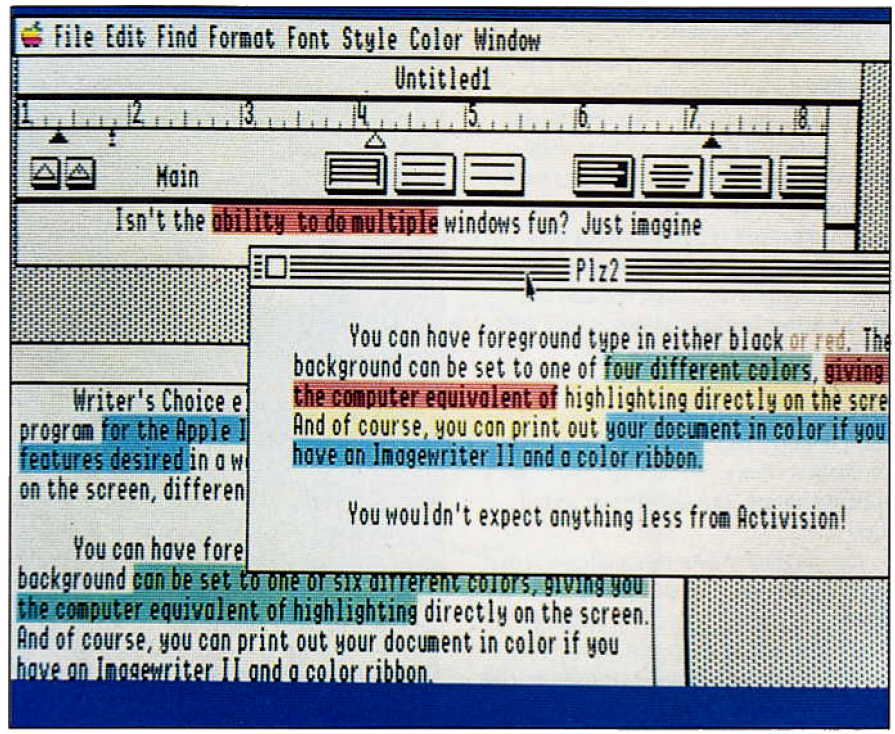
Text in Multiscribe GS may appear in any of 11 fonts. The Style menu includes bold, underline, outline, shadow, italics, and superscript and subscript styles. Because the program is graphics based, special effects appear on screen as they will appear in print.

The program supports font sizes from six to 48 points. In addition, a utility disk is included that contains additional sizes, which may be added to the system folder to provide missing font sizes.

Text may be typed on screen in, literally, any of the 4,096 colors available on the IIGS. In addition to the 16 colors (including black and white) in its Color menu, Multiscribe GS provides a color editor that allows a user to mix colors to any shade desired. Once created, these colors may be used for both text and graphics.

One of the best features of Multiscribe GS is its spelling checker. With it, a user can check the spelling of all words in a document. The spelling checker includes an 80,000-word dictionary. As errors are located, a dialogue box appears that allows the user to ignore the word, ask for a suggested spelling or correct and replace the word. It is also possible to add words to the dictionary.

It is important to place the cursor at the beginning of a document before starting a search, however, or some spelling errors are likely to be missed. That's because Multiscribe GS' spelling checker searches from the current cursor position to the end of a document.



Writer's Choice Elite may lack bells and whistles, but it's got some features not found elsewhere — including the ability to "name" rulers.

In addition to spelling errors, the spelling checker also flags double words (and and) and certain capitalization errors.

Multiscribe GS is the only word processor considered here that has a thesaurus. Selecting a word in the text and choosing Synonym from the Edit menu brings up a dialogue box that shows a definition for the selected word and a number of possible synonyms.

It's possible to automatically replace the original word with one of the synonyms in the list by selecting the synonym desired and clicking Replace.

For systems with only one 3.5-inch drive, using the spelling checker or thesaurus requires swapping from the Multiscribe GS program disk to the utilities disk and back. The files required are not stored in RAM.

Writer's Choice Elite
By Activision, Inc.

Like Multiscribe GS, Writer's Choice Elite can import either bit-mapped or object-oriented drawings. While there are some differences, the font and style capabilities of the two programs are very similar.

Writer's Choice Elite provides 13 different fonts, each of which is available in point sizes from six to 32 points. The styles available include plain, bold, italic, underline and outline.

In Writer's Choice Elite, text may appear on screen in either black or red.

Writer's Choice Elite also offers a selection for setting colored backgrounds for text that is unlike either of the other two graphics-based programs we considered. A background color of white, red, yellow, green, blue or black may be selected to form a background for any portion of text — letter by letter, if desired.

Writer's Choice Elite's use of color is also different when importing graphics. The program can only display four colors, not counting black and white, so the colors shown on screen will almost certainly be different than those of the source image.

This problem only applies to the screen display. When printed, colors return to their original hues.

Importing a graphic requires using the Copy Image command from the Edit menu. A dialogue box appears asking for information concerning where the picture is stored

on the disk drives. Once this is specified, the picture is displayed in a window on screen.

Before it may be copied into the document, a user must draw a box around the exact portion of the picture that is to be placed into a document. We like this method because it provides the ability to control exactly what will appear in a document.

Once in a document, pictures act like separate paragraphs. Although text may be placed before or after pictures, it may not be placed on either side of a picture.

Even though Writer's Choice Elite seems to be the "plain vanilla" of the word processors presented here, for some users it may be the best choice. We also like two of its special features: crossed-out text and local rulers.

The program's Color menu offers a "cross" selection that allows text to be typed on screen and printed with a red, black or white line running through it. This feature is useful for anyone who must type documents that show all changes made to them.

A new version of a contract or a script may, for easy comparison, show previous crossed-out text next to the new wording. This feature is a real timesaver for someone who might otherwise have to draw lines by hand through the old text.

In Writer's Choice Elite, rulers may be given names. The first ruler at the top of a page is called the main ruler. Other rulers may be given the designation "local."

A local ruler only affects the text of the paragraph following it, not the remainder of a document. This feature is especially handy for placing indented, single-spaced quotations in a document. Instead of inserting another ruler after a quotation, all that's needed to revert to the earlier format is to strike the carriage return for the next paragraph.

GraphicWriter (Version 2.0) By DataPak Software, Inc.

The difference between GraphicWriter and the other three word processors we've examined is evident as soon as the program is loaded. A palette of tools, shapes and colors appears at the bottom of the screen.

GraphicWriter is the only one of the three that offers the capability to create both bit-mapped and object-oriented graphics in a document.

While it's possible to boot the program and begin typing — as with any other word processor — GraphicWriter offers a number



GraphicWriter's page-layout features approach desktop publishing.

of page-layout features that are especially useful in desktop publishing.

Among these features, GraphicWriter offers the capability to divide text into two, three or four columns on a page. Further, it has the capability to set aside "regions" on a page where such items as headlines, illustrations or special messages may be placed.

Regions in GraphicWriter may be of two types: object or canvas. An object region may hold text or objects drawn with the object tools in the palette. A canvas region may only hold a bit-mapped drawing.

Though the various shape tools may be used in either a canvas or an object region, they function differently depending on where they are. An arc may be erased from a circle in a canvas region, for example, but not in an object region. The pencil, paintbrush, eraser and selecting marquee are exclusively bit-mapped tools and may only be used in a canvas region.

Any object, drawing or text may appear in any of the colors from the 48-color palette at the bottom of the screen. While this provides a great deal of flexibility, when we began to type in color, the line we typed developed an annoying flicker.

It is possible to avoid this by typing your text in black and then setting another color for the text. We also noticed that, depending on the color we selected, portions of letters were sometimes lost in the screen display.

In addition to typing text and creating graphics, GraphicWriter supports the importing of text-only documents and screen-formatted pictures from such sources as Paintworks Plus.

In GraphicWriter, text placed in columns flows automatically from one column to another. Continuation markers provide the ability to both break text exactly where desired and specify where it will continue.

We particularly like the Show Full Page option, which provides a way to see all elements on a page before printing your document. Although most text is unreadable in this window, it may be moved around on the page.

GraphicWriter also has a scrapbook where illustrations may be stored.

We noticed some bothersome idiosyncrasies with GraphicWriter, however. As is characteristic with graphics-based programs, the more complicated a document, the more time it takes to refresh the screen after any action. With GraphicWriter, this trait extends annoyingly to the insertion of text.

Text typed at the end of a document goes in smoothly, but typing text in the middle of a document causes the flicker mentioned previously, even when the color is set to black. Also, it takes so long for newly typed text to appear on screen that it is hard to type without making errors.

Disappointingly, GraphicWriter does not support the cursor arrow keys.

For those interested in producing camera-ready publications, GraphicWriter has a color-key feature that allows printing in separate color registrations. A user can specify that all red items be printed on a separate page, blue items on another page and green items on another.

With a separate page for each color, it's possible for a print shop to produce a multi-color final document from all-black LaserWriter output.

The Buyer's Choice

What if you can't decide between these four word processors? What if you need the speed of MouseWrite, the thesaurus of Multiscribe GS, the cross-out capability of Writer's Choice Elite and the columnar formatting of GraphicWriter? Well, you could wait until someone introduces a word processing package with all those features or invest in more than one word processor. ■

— Gail Hodgkiss, contributing editor

Making The Upgrade

Any Apple IIe can be upgraded to an Apple IIGS, but does it pay to take the plunge? Read on.

When Apple Computer, Inc. designed the Apple IIGS, it didn't forget about its existing Apple owners. Before the IIGS was finalized, Apple engineers attempted to design an upgrade kit that would permit owners of the Apple IIe, IIc, III — and even the Apple II and II+ — to upgrade their machines to IIGS-compatible computers.

While technically possible, it turned out that the conversion would not be cost-effective for most early Apples. For an early Apple II to be upgraded, the only parts that would remain the same would be the case and power supply, and the cost would be equivalent to the purchase of a new IIGS.

The engineers were, however, able to make an upgrade kit for the Apple IIe that is less expensive than purchasing a newIIGS.

All you have to do to upgrade your Apple IIe to a IIGS work-alike is purchase one of the IIGS upgrade kits from your local dealer. The dealer will install the kit for you — possibly while you wait — and you can carry home a computer that is the electrical equivalent of a brand-new Apple IIGS.

Inside The Kit

The upgrade kit consists of a new motherboard (the electronics that make up your Apple) and a new back panel for the case (to accommodate the new connectors). The kit uses your IIe's existing case, power supply, keyboard and accessories.

The upgrade kit does not include the detachable keyboard, mouse or system disk, which contains the IIGS Finder and other utilities, but they can all be purchased separately.

Because the IIGS kit includes two serial ports, an 80-column display, mouse interface, clock, disk controller card and RGB (red, green, blue) video port, any existing hardware you may have already purchased will not be needed after the upgrade.

Some accessories, including exotic interface cards (accelerator boards, multislot boards and cards that fit in a IIe's AUX slot), are not compatible and won't work in your upgraded IIGS, either.

As far as memory is concerned, the IIGS' 256K is the equivalent of a 128K Apple IIe. If you want more memory (highly desirable with most IIGS programs), you will have to purchase a IIGS-compatible memory expansion board. See the hardware section in the directory of this issue for suggestions.

Other IIe accessories will work with the IIGS — although some won't — as will accessories specifically designed for use on the IIGS. You should be primarily concerned with how to use your existing monitor, disk drives and printers.

Composite black-and-white monitors (monochrome) work fine with the IIGS. Most IIGS programs are designed to use color graphics, however. Composite color monitors also work fine, but they usually can't provide a good 80-column display or a combined display of graphics and text.

If you have an RGB monitor on your IIe, it is probably an eight- or 16-color monitor, which won't display the IIGS' 4,096 colors. Although your monitor will probably work, it won't work as well as a standard IIGS monitor.

More On Drives

Your current 5.25-inch drives will work with the IIGS' Smartport if they have the correct connectors. The Smartport uses a DB-19 connector, standard on most recent Apple drives, including the DuoDrive and UniDisk 5.25.

Earlier Apple drives, such as the Apple Disk II and most third-party drives, use cables with 20-pin connectors. If you have a UniDisk 3.5 on your IIe (the 3.5-inch drive in the white case), it will work fine on the IIGS with most programs.

Some extremely technical programs — most notably, disk-cache techniques and some types of copy-protection schemes — will only work with the Apple 3.5 drive (also known as the IIGS drive). Although the UniDisk 3.5 and Apple 3.5 drives look alike, they are electrically different. While both work with the IIGS' Smartport, you may encounter problems with some programs if you have a UniDisk 3.5.

Your printer will cause the least problems, assuming you have an Apple printer. Most IIGS-specific programs are designed specifically to use Apple ImageWriter or LaserWriter printers. If you already have an ImageWriter or ImageWriter-compatible printer (a printer that uses the ImageWriter's control codes and commands), it will work fine with the IIGS. If not, you'll have to check to see if programs support your printer before you buy them.

Of the major IIGS paint programs, for example, only 816/Paint by Baudville supports printers other than the ImageWriter.

There will be one minor change you'll have to make to attach any printer to your IIGS. The IIGS' built-in serial ports use the new sub-8 connectors, not the DB-25 connector your IIe's serial card probably uses.

Problems getting monitors, disk drives and printers to work on an upgraded Apple IIe all have solutions. With a little bit of work and money, you can make all these devices compatible with the IIGS.

Monitors

Monochrome and color composite monitors can be attached directly to the IIGS' video port. Some users prefer to use two monitors at a time on their IIGS computers:

Is The Upgrade Cost-Effective?

What will it cost to upgrade your Apple IIe to a IIGS? The cost will vary in every case, depending on how much hardware you have in your IIe, what hardware you have that's compatible with the IIGS and what capabilities you want for your IIGS.

For the following upgrades, we'll assume you want at least the following minimum system: a IIGS with a 1 MB RAM card, one 3.5-inch drive, a 5.25-inch drive, a color RGB monitor and an ImageWriter printer. Desirable options would include an Apple Mouse and the Apple IIGS System Diskette.

Assuming you purchased your IIe as a standard configuration with a 3.5-inch drive and an ImageWriter II printer, here's how the upgrade breaks down by cost (what you have to purchase to make your machine a reasonable IIGS):

Your system before the upgrade:
- Apple IIe with 128K (64K extended 80-column card)
- DuoDrive (two 5.25-inch disk drives) with controller card
- UniDisk 3.5 drive with controller card
- Monitor (any monochrome monitor)
- ImageWriter II printer with an Apple Super Serial card

Other possible accessories, which become redundant with the IIGS upgrade, include a IIe mouse, clock, extended AUX slot, memory board (Ramworks, MultiRAM IIe, Legend E card) and so forth.

Other highly recommended upgrade components include the following (all prices are retail):

- IIe to IIGS upgrade kit (required) $499
- Sub-8 to sub-8 cable (for ImageWriter II) $29.95
- Extended memory board with 1 MB RAM $300 (approx.)

At this point, your IIGS work-alike consists of the following:
- Main unit
- Monochrome monitor (the one from your IIe)
- ImageWriter printer (the one from your IIe)
- 1 MB extended memory
- One 3.5-inch disk drive compatible with most programs
- Two 5.25-inch disk drives (DuoDrive)

A few recommended extra options to purchase include:

Apple ADB Mouse or Kensington Turbo Mouse	$149
IIGS System Disk	$30
Analog RGB monitor	$300

Other options you may want to include:

Apple 3.5 disk drive	$399
Detachable keyboard	$129

Naturally, your current IIe system may have more or less hardware than the items described above, and that will affect the totals. In this case, depending on how many extras you choose to purchase, your final cost for the upgrade will be between $800 and $1,700.

a monochrome monitor for text work and a color composite monitor or television set for graphics. If you already have both monitors, this could be an inexpensive — though not ideal — solution.

Some RGB monitors operate in two modes: digital (eight or 16 color) and analog (4,096 color). You may have purchased your RGB monitor — for use with a digital RGB board on your IIe — without realizing it's also an analog monitor that's compatible with the IIGS. If that's the case, an inexpensive hookup cable will make your RGB monitor compatible with the IIGS.

Most RGB monitors are digital only and, therefore, incompatible (or barely usable) with the IIGS. If you have one of these monitors, the best alternative is to purchase a IIGS-compatible analog RGB monitor. Fortunately, there are inexpensive (under $300) RGB monitors compatible with the IIGS available.

The Cable Conversion

If you have an early Disk II with a 20-pin connector, there's a simple solution for IIGS compatibility. Most dealers sell accessory cables that convert a 5.25-inch drive's 20-pin cable to a 19-pin cable. These adapters, originally intended for the Apple IIc, work fine with the IIGS.

You can only attach one 5.25-inch drive to the IIGS in this way, but that should be adequate for most purposes. That's what I have on my setup. In fact, this article was saved to a nine-year-old Disk II!

If you have a UniDisk 3.5, throw away the controller card and attach the drive directly to the IIGS' Smartport. There are a couple programs and utilities that only work with the Apple 3.5 drive, of course, but such programs are rare.

If a copy-protection scheme causes a problem, a polite phone call or letter to the software publisher usually uncovers a solution. It's likely the publisher, upon receiving complaints from other UniDisk 3.5 users, has revised the copy-protection scheme (or even removed it all together) to make the software compatible with the UniDisk 3.5.

In any case, attach the UniDisk 3.5 (if you have one) directly to the IIGS' Smartport connector and attach 5.25-inch drives to the back of the UniDisk.

Retooling The Printer

A serial printer can be connected directly to the IIGS' printer port with the proper adapter cable, available from most dealers. If you have a parallel printer you want to use, simply take your IIe's original printer card and put it into slot one on the IIGS. Most parallel printer cards are compatible.

An upgraded IIGS work-alike will act like a IIGS, and almost all IIGS programs and accessories will work. You will, however, encounter certain incompatibilities that come with the Apple IIGS territory. About 5 percent of all Apple IIe/IIc software and hardware products are incompatible with the IIGS for one reason or another.

Some of these problems may be simple to solve (such as, you have to update the version of ProDOS on your programs to make the clock work properly). Others require upgrades to your software or new hardware accessories.

Here Comes Cortland

An upgraded IIe is often referred to as a "Cortland" — one of the internal code names for the IIGS when it was developed. Early software and hardware developers were seeded with IIGS motherboards that were placed into existing IIe computers. These kits were almost identical to present IIGS upgrade kits.

One major difference between your Cortland and a real IIGS is the lack of a detached keyboard and numeric keypad.

Your Cortland is compatible with the ADB (Apple Desktop Bus) keyboard designed for the IIGS and the enhanced ADB keyboards designed for the new Macintoshes, but they aren't necessary. A few products only work with an external keyboard, but most developers make sure their products work across the Apple II family line.

In another case study, an Apple IIe setup consists of the following:

An Apple IIe with an 80-column card and 1 MB of RAM

A dual-port parallel serial card (such as the Videx PSIO)

A 16-color RGB monitor

Two Disk II diskette drives

An Epson MX-80 printer

In this case, you will need the following to upgrade your IIe to a IIGS:

The IIGS upgrade kit

Either a new parallel card for the Epson (because the PSIO card isn't compatible with the IIGS) or a new printer

At least one Apple 3.5-inch disk drive

An extended memory board compatible with the IIGS

A new monitor, either monochrome or analog RGB

An adapter cable for one of your Disk II drives

Left over from your IIe system after this upgrade would be your PSIO card, your RGB interface and monitor, your enhanced memory board with all its memory, one of the Disk II drives and your printer — as much as $1,000 or more in hardware that won't be used in your IIGS upgrade.

Because most of your current IIe accessories aren't compatible with the IIGS, you will have plenty of extra accessories. More importantly, you will have to purchase replacements.

In this rather unusual case, the upgrade will cost you at least as much as purchasing a complete IIGS system, because practically none of your current peripherals are compatible with the IIGS. If you happen to have this or a similar setup, you will probably be better off purchasing a brand new IIGS.

Your Cortland will be more than 99 percent compatible with a normal Apple IIGS. The rare incompatibilities can be attributed to the difference in the shape of the IIe and IIGS cases. For example, IIGS fans won't work, a computer stand for the IIGS won't fit, etc.

A few other hardware accessories, such as CheckMate's MemorySaver (see the Winter '87 issue of *The Apple IIGS Buyer's Guide* for a review), won't fit in the IIe's case and, therefore, won't work with your Cortland.

Must Buys

Once you get your Cortland, should you purchase the mouse, detachable keyboard or system disk? The mouse, absolutely. Most programs designed specifically for the IIGS are designed around the IIGS' mouse. If you already have a mouse on your IIe, it will work on the IIGS — but only for some programs.

IIGS programs are designed to work with the ADB mouse, which plugs into the keyboard. The question is not whether you should purchase a mouse, but which mouse?

You can purchase the Apple ADB Mouse — the same mouse sold for the IIGS, Macintosh SE and Mac II — or you can purchase a third-party optical mouse or trackball. Because you'll be purchasing the mouse (or other pointer) as your primary menu selector, you should choose the device you're comfortable with.

Should you also purchase the Apple System Disk? Possibly. Apple sells the disk and a program manual. None of the programs are absolutely necessary to operate your IIGS, however.

The Apple System Disk includes a Mac Finder-like menu selection program, a fast copy utility and the utilities necessary to operate AppleTalk, fancy fonts for your printer and other system tools. Most purchased programs that require any of the above will come with all of these utilities anyway.

A better choice than purchasing the system disk would be to purchase a utility program that comes with all of Apple's system utilities.

Should you buy the ADB detached keyboard? Most people use detached keyboards because they like placing the keyboards in their laps while typing. If you like the idea of a detached keyboard, check out any of the enhanced Apple keyboards designed for the Macintosh SE and Mac II.

From Personal Experience

What do I use for my own personal system? I was able to inexpensively obtain an extra IIe computer. I used that for my IIGS upgrade.

By doing so, I was able to keep my Apple IIe for use as a second computer and for using programs and accessories that won't work on the IIGS. For my IIe-to-IIGS upgrade, I added the IIGS upgrade kit, along with a UniDisk 3.5 drive, my original Apple Disk II drive — with a IIc adapter cable — and a large extended memory board.

Cables are attached from the Apple to my ImageWriter printer and my modem. An RGB monitor was purchased separately. It doubles as an extra monitor for my videocassette recorder.

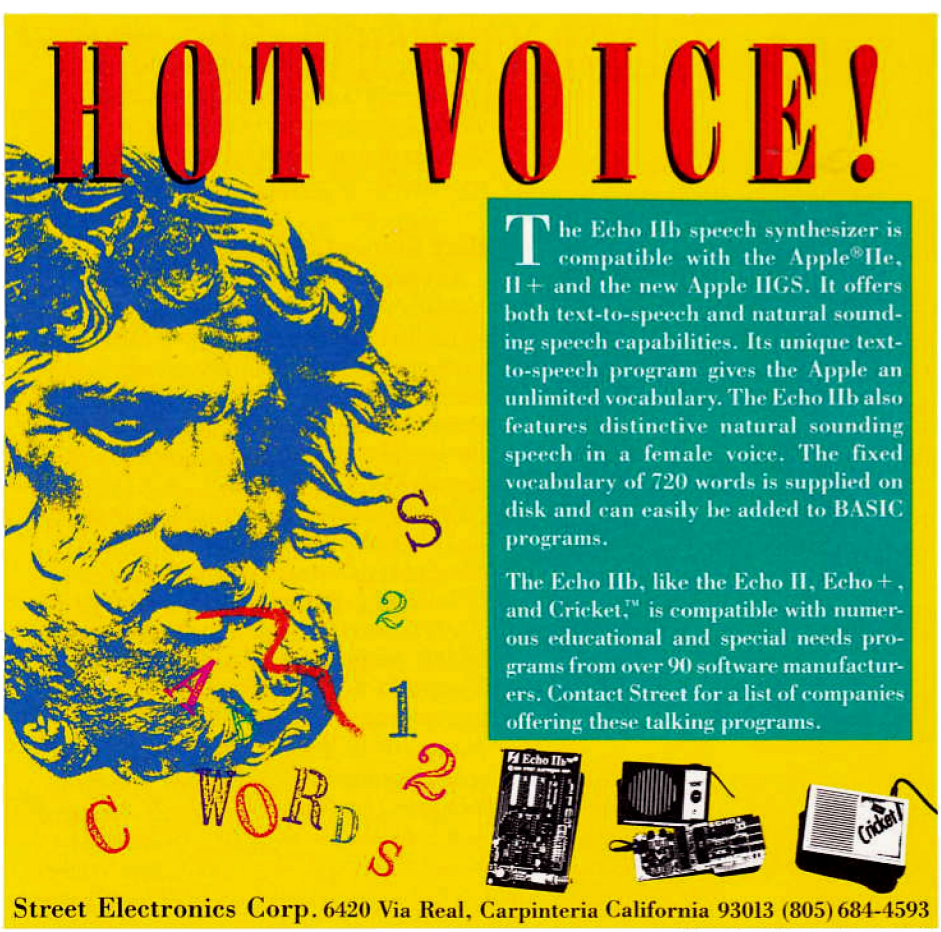
I quickly found programs that required a mouse, so I decided to get a Turbo Mouse ADB from Kensington Microware Ltd. for about the same price as a regular mouse.

By using extra parts from my junk box, used hardware from a variety of sources and by justifying the purchase of a monitor as "usable as a television set," I was able to keep the retail price of my new computer under $1,000.

What You Get

The IIGS upgrade will give you many more capabilities than your current Apple IIe, including enhanced graphics and sound. You will be able to run more applications and use all the new programs that won't work on your Apple IIe. Your upgraded IIe will still look like a IIe on the outside, but it will have the power and capabilities of a IIGS under the hood. ■

— Philip Chien, contributing editor



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Make Way For The DAs

The Apple IIGS' design opens a whole new market for desktop accessory suppliers. Here's a look at the early contenders.

For years, Apple II owners have had to sit by enviously while their counterparts with IBMs and Macintoshes acquired libraries of desk accessories (DAs) — utility programs that quietly stay in the background while major applications are running, ready to pop up at a keystroke or mouse click and do useful jobs.

Unlike competing computers, the Apple II offered no way to add calculators, calendars, phone dialers, notepads and other useful goodies to any and all programs.

There was one commercially successful DA program for the Apple, Pinpoint, but it had to be patched separately into selected programs with which it could work, mainly AppleWorks. Its accessories couldn't be summoned when using unpatched programs.

A few other software packages — including MouseWrite, MouseDesk and Multiscribe (IIe) — came with built-in pop-up accessories, but these only worked while running those particular programs.

But Apple designed the IIGS from the ground up to support two types of universal desk accessories: Classic Desk Accessories (CDAs), which can be run from almost any program by using a few keystrokes; and New Desk Accessories (NDAs), which can be summoned by a mouse click from programs that use the standard pull-down menu bar.

Authors of public domain software and commercial publishers are starting to grind out CDAs and NDAs for IIGS owners. One of the first and most comprehensive packages being planned is DeskWorks, soon to be released by StyleWare, Inc., maker of Multiscribe GS and Top Draw.

Meanwhile, the folks at Pinpoint Publishing have adapted their program-specific Pinpoint accessory package to the IIGS.

On Three, Inc., a company specializing in products for the defunct Apple III, has jumped in with a IIGS desk accessory product, The Desktop Manager, which is universal — like CDAs and NDAs — but departs from Apple's new standard and works a bit like Pinpoint.

Here is a rundown on each of these packages.

Pinpoint
By Pinpoint Publishing

Pinpoint, the venerable granddaddy of Apple II desk accessory programs, is mainly used to "patch" AppleWorks to provide pop-up accessories. A software patch is a routine, usually supplied on disk, that actually modifies the code of the original program so it takes on additional functions.

Pinpoint hasn't been rewritten for the IIGS, but it was repackaged. A special bundling of three Pinpoint products, priced at $149, has been dubbed the "Pinpoint Starter Pak for the Apple IIGS." The program, accessory and installation/tutorial files included in the package have been placed on 3.5-inch disks, along with the IIGS system files. A brief new guide that tells how to set the software up on a IIGS has been included.

Though it carries the IIGS label — and worked fine for us on our IIGS — Pinpoint doesn't take advantage of the IIGS' desk accessory capabilities. Unlike standard Classic or New Desk Accessories, it can't be installed once in the system files of a ProDOS 16 disk and thereafter be used by any program on the disk or hard disk.

Instead, Pinpoint remains limited to whatever program you specially patch to use it. For most people, that means AppleWorks. Pinpoint is capable of being patched into a few other programs, including AppleWriter, the IIe version of WordPerfect and such Pinpoint Publishing products as Point-to-Point, ProFiler 3.0 and others. The majority of people use it with AppleWorks, however, and its manuals are written with that assumption in mind.

We tested the IIGS-oriented package with AppleWorks. It performed well, but the results could differ when Pinpoint is used with other programs.

Installation is easy. It can be done using two menu-driven utilities, both provided on the 3.5-inch disks. (By the way, the disks were apparently prepared before the advent of the latest IIGS system files. They don't include the Finder, but its predecessor, the Desktop.)

Using Guided Installation, you create a new AppleWorks 3.5-inch program disk that contains Pinpoint accessories. With the slightly more cumbersome Custom Installation utility, you can patch AppleWorks where it resides: on a hard disk or in a special subdirectory. Custom Installation is required if you're installing Pinpoint into a program other than AppleWorks.

Once installed, Pinpoint adds eight basic pop-up accessories to AppleWorks that are present whenever you boot the patched version of AppleWorks. These accessories are: an appointment calendar, notepad, communications program, calculator, phone dialer,

Desk Accessories And The IIGS

Apple has established standards for two types of universal desk accessories for the IIGS. One type, called New Desk Accessories (or NDAs), can be found in a menu under the colored Apple icon on the top menu bar of ProDOS 16 programs using the standard IIGS interface.

You just pull down the Apple menu by clicking with the mouse and select the one you want. NDAs operate on the desktop in a separate on-screen window. They can be kept open and ready for use while you continue to work in another window on your main program application.

The second type can be invoked by nearly all programs, whether they use the mouse-driven, pull-down menu system or not. For that reason, it's called a Classic Desk Accessory, or CDA.

To use CDAs, you just press three keys: Apple-Control-Escape, as you would to reach the IIGS' Control Panel. If you have CDAs residing in your system, pressing these keys doesn't merely produce the standard menu of Control Panel, Alternate Display Mode and Quit. In addition, you'll have a list of desk accessory choices you can activate with the arrow keys and Return key.

Unlike NDAs, these CDAs usually take over your screen while operating and return you to the CDA menu — rather than directly to your program — when you quit them. Their great virtue is that they can be used from almost any ProDOS program, including those written before the IIGS came out.

The only catch is that, even if you only need ProDOS 8 to run your program, you must set up your disks to boot first into ProDOS 16, then into ProDOS 8, if you want CDAs available for use.

As long as a disk boots into ProDOS 16 first, either to run a ProDOS 16 program (like Paintworks Plus) or a ProDOS 8 program (like AppleWorks), the IIGS will look in a special subdirectory — called /SYSTEM/DESK.ACCS — and load into memory on bootup any desk accessories it finds there. These accessories can then be called up from RAM at any time by using specified keystrokes or mouse action.

If you obtain public domain desk accessories or buy the commercial packages, you can just copy them into the DESK.ACCS subdirectory on any of your disks and they'll be loaded into memory, ready for use, on bootup. Both NDAs and CDAs reside in this DESK.ACCS subdirectory on your IIGS disks, but they're different file types. ProDOS can tell them apart and put them in their proper place. All you have to do is copy whatever you like into the subdirectory.

Apple IIGS owners can also make use of desk accessories that don't cling to these new Apple standards. Some packages that depend on patching particular programs (especially AppleWorks) and use their own commands and pop-up menus — such as Pinpoint and Beagle Brothers' new TimeOut series — work on the IIGS as well as older Apple IIs.

Then there is The Desktop Manager, which is for the IIGS only and is universal. It uses its own user interface and commands. These non-Apple-standard systems are often as powerful as standard DAs, but they can't be expanded by adding new accessories from other sources to the DESK.ACCS directory.

IIGS owners can obtain public domain CDAs and NDAs, free or at little cost, from user groups or on-line telecommunications services. They include simple clocks, calendars, notepads, utilities to save screens to disk and more. There are also in the public domain various programming aids, such as desk accessories, that show how much memory is being used, tell what tool versions are on your disk or help convert keyboard characters into hexadecimal form.

Commercial vendors offering desk accessory packages generally try to go well beyond what's available in the public domain.

envelope labeler, typewriter and a utility for merging pictures into an AppleWorks file.

There are two added accessories that Pinpoint Publishing normally sells as extra modules: a pop-up spelling checker and KeyPlayer, a macro program that permits common multiple commands — or frequently used text or numbers — to be entered with a couple of keystrokes.

To invoke these accessories, you press Option-P. A menu appears on screen, and you pick the option you want. You can set up Pinpoint to load the accessories into RAM on bootup. It can also load any data the accessories may need, such as dictionary and appointment files.

If the accessories are in RAM, Pinpoint works very quickly. If they must be fetched from a disk, the program can appear quite slow, especially if the disk being accessed is not a hard drive.

The appointment calendar shows the current month in a large format and highlights the current date. It also presents the past month and the next two months in smaller type. For any date in the main window, a list of appointments can be summoned and/or printed.

The calculator is simple and straightforward, though its results can't be pasted into documents.

The labeler permits you to highlight an address in a letter and then print it on an envelope.

The typewriter turns the IIGS into a line-by-line writing device. Each line entered is displayed on screen, then printed as an electronic typewriter would by hitting Return.

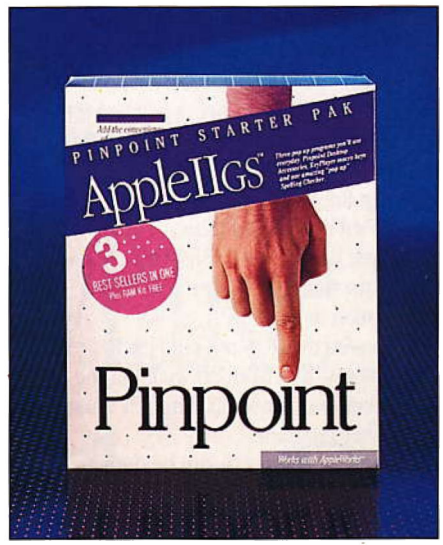
The dialer will find a phone number in any document and dial it via your modem. If you have a phone on the same line, you can lift the receiver and be connected.

Notepad provides a pop-up mini word processor.

One of the best features of Pinpoint is its pop-up communications program. It's basic and doesn't allow macros or fancy footwork, but it lets you transmit or receive files without leaving AppleWorks.

Graphmerge permits the merging of pictures into AppleWorks documents. It is cumbersome and only works with double high-resolution files — such as those produced by IIe/IIc paint programs like Dazzle Draw — not the new IIGS graphics programs.

The Spelling Checker is handy, allowing you to check spelling without leaving



Pinpoint enhances AppleWorks with an appointment calendar, notepad, communications and more.

AppleWorks. It can be slow on a long document, however, especially if its dictionary files aren't in RAM.

This checker is best for checking individual words or paragraphs, not entire files. It can't compete with speedier stand-alone spell checkers, including Pinpoint Publishing's own separately sold Document Checker.

KeyPlayer is a sophisticated macro program that has a menu-driven approach, which makes it easy for novices to write original macros that can speed up their work. One drawback, however, is that KeyPlayer — unlike competing AppleWorks macro packages — isn't perennially present as you work.

KeyPlayer must be selected first from the Pinpoint menu. While it's in use, other Pinpoint functions can't be used (the same is true of the Spelling Checker).

Pinpoint is still a first-rate program, and IIGS owners whose main use of their computers is AppleWorks may find it's all they'll ever need. The manuals and support are very good (though you must pay for the latter after 30 days), and Pinpoint Publishing produces an interesting newsletter for registered owners.

Pinpoint faces tough competition in the IIGS era, however. Users may turn to desk accessory packages — such as the ones reviewed here — that can be used from many programs, including AppleWorks, without patching. Even in the AppleWorks-only market, Pinpoint is being challenged strongly by Beagle Brothers' impressive new TimeOut series of desk accessories.

Still, the people at Pinpoint Publishing are flexible and innovative. They're bound to develop new twists that will benefit IIGS owners.

DeskWorks By StyleWare

By the time you read this — or soon thereafter — StyleWare should be marketing a $59.95 package of New Desk Accessories called DeskWorks. We reviewed a prerelease version of DeskWorks and found it impressive. DeskWorks includes a dozen desk accessories, available from any ProDOS 16 program (not just StyleWare products) featuring the standard IIGS pull-down menu interface.

Unlike Pinpoint, this package is specifically designed for the IIGS. Following Apple's new standards, it promises to be a sophisticated and powerful asset to IIGS owners.

For starters, there's an accessory we hadn't seen before for the Apple II: a phone filer. This tool presents a scrollable stack of alphabetically arranged note cards, including names, addresses, phone numbers and notes on each person or business you care to list. Phone filer will search through the cards for any word or part of a word.

Right out of the box, the phone filer function can replace your Rolodex. With the addition of a piece of add-on hardware (called HyperDialer), which StyleWare is currently planning to sell for about $15, the phone filer will eventually allow a IIGS to dial any phone number you select by clicking the mouse.

DeskWorks also includes a powerful, universal macro accessory called KeyMac. StyleWare says KeyMac will permit users to create and use macros that will automate many popular ProDOS 16 programs. These macros can either allow the entry of common phrases (such as your name and address) with a couple of keystrokes or allow the combination of common program commands in a two-stroke macro.

Then there's an appointment calendar, which shows the current month or any month from 1935 through 2034. For any date on which you click, an appointment list appears that you can fill out. Thereafter, days for which you've added appointments are boldfaced on the calendar display. The

Comparison Chart

	DeskWorks	Pinpoint	The Desktop Manager
No. of Accessories	12	10	8
Type of Accessories	NDA	Non-standard	Non-standard
Supports Most Programs	Y	N	Y
Requires Patching	N	Y	N
Price	$59.95	$149	$89.95*
Calculator	Y	Y	Y
Notepad	Y	Y	Y
Calendar	Y	Y	Y
Appointments	Y	Y	Y
Spelling Checker	N	Y	N
Communications	N	Y	*
File Management	N	N	*
Typewriter	N	Y	N
Merge Pictures	Y	Y	N
Clock	Y	N	N
Alarm Clock	Y	N	N
Screen Blanker	Y	N	N
Game	Y	N	N
ASCII Chart	N	N	Y
Macros	Y	Y	N
Dialer	N	Y	N
Phone File/Dialer**	Y	N	N
Envelope Labeler	N	Y	Y
Supports Mouse	Y	N	N

* Separate, extra-cost modules give The Desktop Manager added capabilities.Communications Manager costs $49.95 extra; Disk Manager $39.95 extra.

** Requires extra-cost hardware to dial phone calls.

calendar does not beep or otherwise remind you of appointments you've entered.

There's also Scrapbook, which makes it easy to collect and edit favorite "scraps" of text and graphics that can be called up from a special disk directory for pasting into documents later via the IIGS' built-in clipboard (on applications that support the clipboard and the mixture of text and graphics).

DeskWorks also features a scientific calculator that will do normal arithmetic and a host of complex math functions, which will probably be beyond most users' needs or abilities. The program will do equations with up to 14 nested sets of parentheses, can store separately up to 10 variables or small programs, can record formulas, use scientific notation, do logarithms, trigonometry, convert between radians and degrees, and more.

Fortunately, it will also add up your latest series of parking fines or help balance your checkbook. Results of calculations can be pasted into documents in your main application.

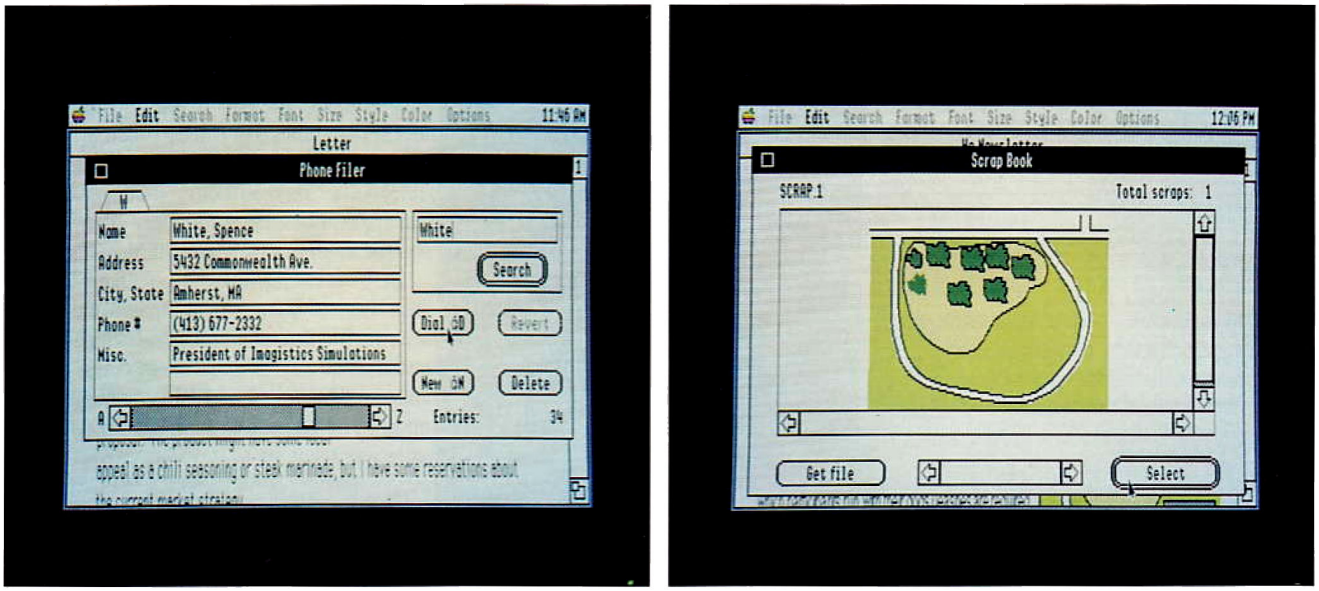
There's also a notepad that can contain up to eight separate and very brief notes, which is useful for quick reminders and the like.

If you like clocks, you'll love DeskWorks. It sports three different timepieces. One is a standard time display similar to that available in the public domain or bundled with many IIGS programs. There's also an alarm clock that gives off a piercing sound no matter what you're doing. Finally, there's a menu clock that places a constant time display on the top menu bar on programs using the standard IIGS screen interface.

DeskWorks also features an accessory that blanks the monitor screen after a period of inactivity you can specify. Then there are two fairly frivolous accessories: one that makes the Apple icon on your menu bar swirl around, and one that activates a game called Enigma.

A really nice, unusual feature of DeskWorks is that many of its accessories can be shrunk to little icons and kept out on the desktop while you work on your main programs.

The DeskWorks accessories are well designed and easy to use, featuring the standard IIGS window setup with mouse control of scroll bars. Several allow users to cut and paste text among them, or between them and application programs, using the built-in IIGS system clipboard.



Designed specifically for the Apple IIGS, DeskWorks includes a dozen desk accessories that all use windows, mouse control and scroll bars.

You can add as many or as few of these accessories as you like to ProDOS 16 programs that use the standard interface by choosing which ones to copy into the DESK.ACCS subdirectory. Different ones can go on different disks. (One of the accessories, MENU CLOCK, goes in the SYSTEM.SETUP subdirectory instead.)

There is one important caveat about DeskWorks. Unlike the other programs we reviewed, this product was still in final development at the time of this writing. There were still a few bugs and incompatibilities.

For instance, the menu clock can block menu features in some programs or show up in pictures you save from some paint programs. Problems also occur using DeskWorks accessories in ProDOS 16 programs after running a ProDOS 8 program selector. StyleWare is going through the normal process of ferreting out these flaws and is expected to have a clean product by the time it's released.

If these few glitches get cleaned up, DeskWorks promises to add real power and versatility to many IIGS programs.

The Desktop Manager
By On Three, Inc.

While Pinpoint uses its own system and only enhances AppleWorks and other programs it patches (and DeskWorks uses Apple's system and will work on a wide variety of new IIGS software), The Desktop Manager (TDM) is sort of a hybrid.

Like DeskWorks, it is designed to work on many different programs for the IIGS, as long as you first boot into ProDOS 16. But like Pinpoint, it uses its own system, deviating from Apple's new standards. And also like Pinpoint, it is text based and can't share a IIGS graphics screen with activities in standard windows.

On Three, Inc., the company that developed TDM, is a long-established maker of Apple III products that is trying to break into the Apple II market. The company adapted TDM from an Apple III desk accessory product it markets. In doing so, it deliberately decided to largely ignore Apple's two built-in methods for establishing desk accessories on the IIGS.

TDM can be summoned from the CDA menu, but the program is intended to be invoked by using its own "hot keys" (Option-Escape are the defaults). Certain functions are lost if you treat it as a CDA.

The program installs its own system for running accessories on your disks. You can have both TDM desk accessories and standard accessories in your system, but TDM is really a parallel system — an alternative to Apple's standard.

The TDM accessories are sophisticated and capable. But they have a IIe/IIc feel to them, even though they only run on the IIGS. They are all text and — at least in the initial release we tested — didn't support the mouse (mouse support may be added). Editing commands don't follow IIGS convention, though they borrow heavily from AppleWorks. In addition, the accessories must be loaded from disk, except for a 74K core of shared code.

TDM was compatible with all major applications we tried. But you can't use the IIGS control panel, hit Control-Reset or reboot with a PR command while it's active. And, in ProDOS 16 graphics-based programs, the TDM accessories can't share the desktop screen with application windows. They shift to their own screens to work.

Because TDM follows its own system — not Apple's — you can't add TDM accessories by just copying CDAs and NDAs to the DESK.ACCS subdirectory. But the program installs itself quickly and smoothly. It places a special TDM loader file in the SYSTEM.SETUP subdirectory and a TDM directory on your disk to hold the accessories.

The same Installer adds new accessories when you buy extras. You do *not* have to patch individual programs, as in Pinpoint. Each ProDOS 16 disk, or hard disk volume, need carry only one installation of TDM for it to be available from any application once the disk is booted.

The $89.95 TDM starter package includes a calculator, appointment calendar, notepad, envelope labeler, printer manager, clipboard,

screen saver and dump, and ASCII chart. Some of these can be directly accessed without entering the menu. They are at least as powerful as any accessories we've seen.

TDM's notepad is a full-featured miniature word processor, able to accommodate 245 notes of 59 lines each. The appointment calendar allows lengthy, detailed memos for each day. It will suddenly surface on screen no matter what you're doing to remind you of your appointments.

The printer manager lets you customize your printouts. The program will print or save images of text screens as disk files. It also saves graphics screens to disk.

TDM's calculator, while also overly complex, can display a tape on screen or on a printer. With it, figures can be cut out and pasted into documents.

The envelope labeler, like Pinpoint's, works adequately to snatch an address from a letter and print it on an envelope. There's a clipboard for cutting and pasting among applications. On Three has also thrown in an ASCII chart — an appendage of questionable use for all but techies.

There's a separately sold TDM communications accessory that provides a pop-up telecommunications program ($49.95). Like Pinpoint's, in any compatible program. As is Pinpoint's communications program, it's a basic tool and doesn't allow macros.

Another separate package is the TDM Disk Manager ($39.95), which permits users to do catalogs, copy files and disks, and do most other Filer-type operations without having to leave their main applications. The only problem here is that TDM uses an odd syntax for identifying slots and drives: S6,D1 becomes ".D61." Output to screen, normally referred to as "slot 3," becomes ".CONSOLE."

To put these three TDM packages together would cost about $180. Using them efficiently would take some getting used to. But the main package delivers what it promises. For those who like TDM's style and don't fear deviating from the norm, TDM is worth a look.

Summing Up

Desk accessories are rapidly becoming an important part of any IIGS owner's repertoire. The three packages covered here all deliver value. Choosing between them largely depends on how much you use AppleWorks vs. other programs; how much you prefer the mouse-drive, scroll-bar, window interface; and which mix of accessories you need. ■

— *Walter S. Mossberg*

The author is a reporter in the Washington Bureau of The Wall Street Journal *and a member of Washington Apple Pi.*

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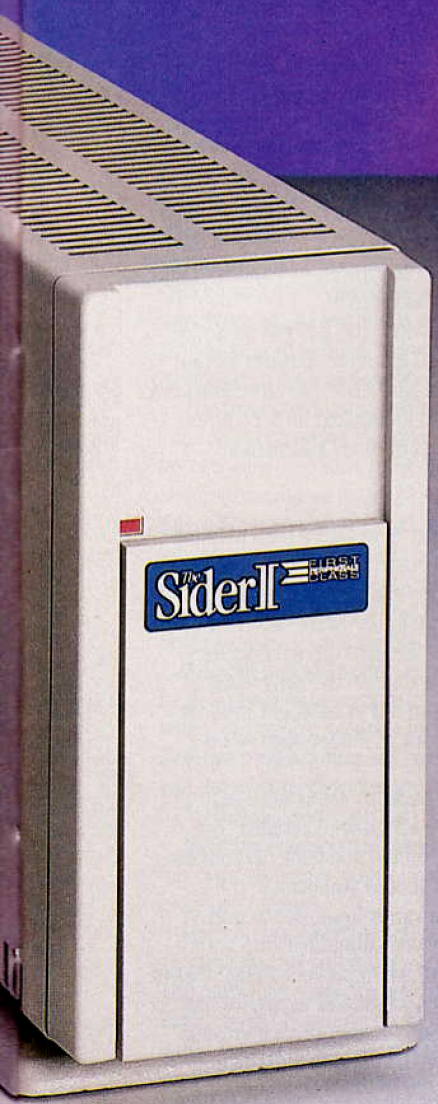
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Reader Circle Number 4


HYPERDRIVE
FX/20
40SC

Three Hard Drives For The IIGS

A hard disk drive adds a lot of convenience to an already great computer. Is there one right for you?



In the early days of microcomputers, a hard drive was an exotic, high-cost accessory that only the largest businesses could afford. Very few users needed to store 5 million characters or more, and even fewer users could afford the $5,000 — or greater — price tags.

Times have changed though, and prices have come down. Today, a 40 MB drive can be purchased for about $1,000. Most serious computer users, and many casual users, now consider their hard drives a necessity, rather than a luxury or an option.

Hard drives are popular because they're much faster, more reliable and store more data than floppy disks. Instead of juggling dozens of different floppies with your programs or data, all you have to do is turn on your hard drive and choose your program from a menu.

Hard drives are actually metal disks, as opposed to the flexible plastic material used in floppies. The term hard drive is accurate, because the media doesn't bend like a floppy diskette. In addition, hard drives spin much faster than floppies, resulting in much quicker data retrieval. A hard drive typically accesses data five to 10 times faster than a floppy drive.

Enter The IIGS

Several types of hard drives are available for the Apple IIGS, along with many different types of interfaces and physical packages. It may seem confusing at first. Yet a close look shows that most hard drives are fairly similar in design, and many are built using the same interfacing standards.

SASI (pronounced "sassy") stands for Shugart Associates System Interface. Shugart Associates is one of the oldest — and biggest — manufacturers of hard drives. The SASI interface is very popular, and many disk interface cards are available that use it.

SASI would have become the world standard for interfacing hard disk drives had it not been for one minor problem: the "not-invented-here" syndrome. The fact that SASI was invented by a particular manufacturer has made other manufactures accept it only begrudgingly in some cases — and not at all in others.

SCSI (pronounced scuzzy) solves the SASI/Shugart problem. SCSI stands for Small Computer System Interface. It's an enhanced interface standard that isn't specifically owned or designed by one company. Consequently, it has gained more acceptance in the computer industry. Apple Computer, Inc. helped SCSI become a true

standard by including a built-in SCSI interface with every Macintosh Plus, SE and II sold.

If you want to purchase a SCSI hard drive for the Mac, all you have to do is plug the drive in. If you want to purchase a hard drive with another interface, you have to spend more money for an interface card or purchase an adapter that converts your drive into a SCSI drive. Consequently, almost all drives designed for the Macintosh have a built-in SCSI interface.

For the Apple II, Apple Computer sells an inexpensive SCSI interface card. It's an extra cost option, not a built-in interface. Consequently, there are several different types of hard drives available for the Apple II and many different interfaces, although the SCSI interface is the most popular.

If you use a Macintosh along with your Apple IIGS, you may wish to consider a SCSI drive for your Apple, just to keep the equipment as similar as possible. For the most part, you shouldn't worry about the type of interface that your hard drive uses.

The physical package your hard drive comes in is much more important. Does the drive work only with your computer or does it interface with more than one computer at the same time (a shared drive or a networked unit)?

Naturally, multiuser hard drives are more expensive and complicated. They are available if you need them. For the purpose of this article, however, we'll review drives that are designed for a single-user setup.

Most current hard drives for the Apple IIGS are external drives. They have their own boxes with a power supply, interface card and drive assembly. These boxes typically attach to the Apple through an interface cable and require their own plug outlet for power.

It's quite possible, though, that a manufacturer may come out with an internal hard drive for the IIGS. Such a drive might replace your IIGS' current power supply and include a heavy-duty power supply that would run both the IIGS and the hard drive mechanism.

Times Have Changed

Five years ago the 5 MB hard drive was standard. A 20 MB drive was only used by users with massive amounts of data. Today, most hard drives for microcomputers are available in 10, 20 and 40 MB models, with larger sizes and other in-between sizes available, although less popular.

Because early versions of ProDOS only support up to 32 MB of storage, drives larger than this can cause software storage problems. If you purchase a hard drive that stores more than 32 MB, there are several solutions around this ProDOS limitation. With the latest version of ProDOS 16, for example, the 32 MB barrier has been broken. Just make sure all of your programs can access more than 32 MB of data.

Hard Drives Vs. Floppies

What are the major differences between hard and floppy disk drives. Consider the following. With floppy drives, the read/write head touches the disk surface, and the spinning disk media will eventually wear down the read/write head. In addition, the head is exposed to potential contamination from dirt on the disk media or in the air.

Hard drive disk heads, on the other hand, never touch the media. They float on a cushion of air just above the disk surface. Because the hard drive box is sealed, very little dust or other contamination ever touches either the disk media or the read/write head.

Also, floppies typically have two write surfaces: the top and bottom. Many hard drives consist of several disks stacked together with multiple read/write heads. Naturally, this allows for more data storage in a small package.

Because hard disk drives are sealed within a case, you can't easily swap disks like you can with floppies. The unremovable media makes periodic hard drive backups an absolute necessity.

While hard drives are much more reliable than floppies, and their protective cases much less likely to be damaged by accident, one little mistake — whether a failure in the mechanism, a power problem or a human error — can accidentally destroy many months of valuable data.

Unfortunately, some programs aren't compatible with large hard drives. Another solution is to use a partition program. Your Apple dealer has a program that electrically splits a 40 MB drive into two 20 MB partitions. As far as your Apple IIGS and ProDOS are concerned, you have two 20 MB drives (each one naturally smaller than the 32 MB ProDOS limit), not one 40 MB drive.

A variation on the partition method available with several drives is to assign a portion of your hard drive to another operating system. Apple IIs have used four different types of disk operating systems — DOS 3.3, Pascal, CP/M and ProDOS — and some hard drive manufacturers support the older Apple operating systems.

All you have to do is assign portions of your hard drive to separate operating systems for programs you may have that use those operating systems.

A 20 MB drive, or partition, holds about 5,000 pages of text, which is about 25 filled 3.5-inch diskettes. In other terms, you can put about 30 to 40 typical IIGS applications onto a 20 MB hard drive.

If you're a writer, you can put an entire novel onto a 20 MB drive. Besides storing applications, a hard drive can store any kind of data files, including text files, pictures, accounting data or other information.

Back It Up

Because hard drives store such massive amounts of important data, considerable time and money can be lost if the hard drive is damaged due to hardware failure or user error. Because the hard drive media isn't removable, the data on the drive *must* be backed up — stored in another form that can be read back in if necessary — on a regular basis.

Hard drive backups are as necessary as a safety net is to a high-wire aerialist. The question isn't should you back up your data, it's how often should you back it up?

The answer varies from user to user. A general rule is you should back up your drive often enough to prevent a large loss of data. To put it into simpler terms, it's time to back up the data on your drive if erasing the drive would result in the loss of a day's work.

There are several different backup techniques for hard drives. With a tape backup unit, an entire hard drive can be backed up at the rate of 1 MB a minute. A 40 MB drive

can be backed up in under an hour with a tape backup unit, making it perfect for end-of-the-day system backups.

The problem with a tape backup device is that it's fairly expensive, and there aren't many tape units available for the Apple II series.

Backing up your data onto floppy diskettes is certainly the least expensive option. After all, you already own a floppy drive and don't need to purchase extra hardware. The trouble with floppy backups is time and inconvenience.

It takes 25 or more 3.5-inch floppies to back up a 20 MB hard drive (and more than an hour of disk swapping). Because this is such a nuisance, many people can't be bothered with performing periodic backups or forget to do it. That's dangerous.

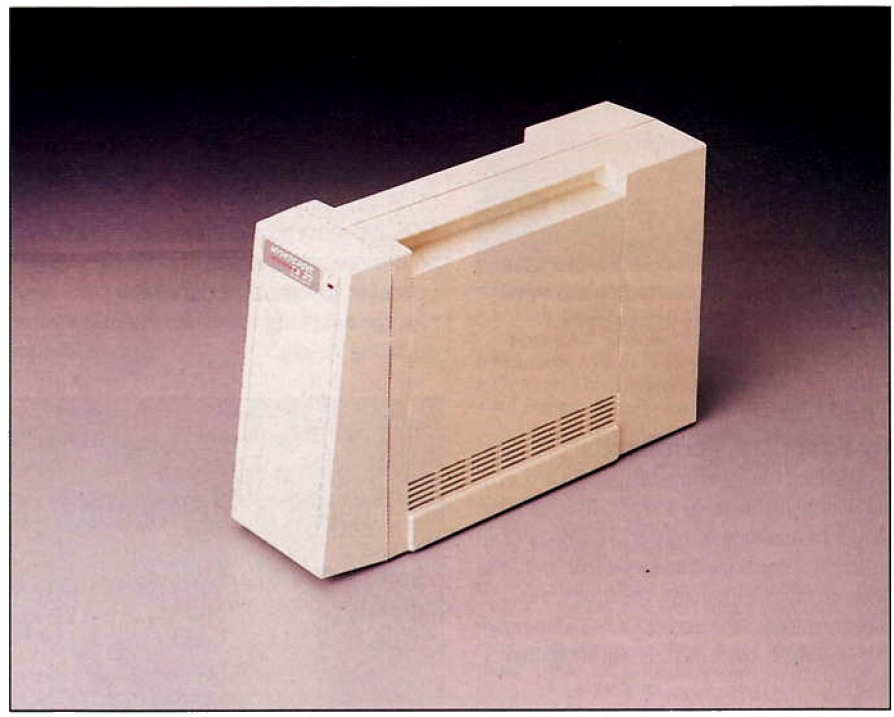
For anyone to regularly use a backup device, it must be simple and relatively quick. One floppy backup method is to back up only the files that have been changed since the last backup. Files that haven't been changed (and presumably are already backed up on diskettes) are ignored. The advantage to this method is only a small portion of a hard drive has to be backed up in any given backup session.

The trouble with this method is that the accidental erasure of an entire hard drive takes a long time to recover. First, you must restore the original backup of your hard drive. Then you must go through each backup and restore each set of changes. The end result is a hard drive identical to the time you last backed it up. It may take several hours of work to accomplish this, however.

Another method many users choose is to back up only data sections of a hard drive, while leaving the program sections alone. Because program sections rarely change — and the original diskettes are hopefully nearby — this method does have some merit.

Backups may seem complicated at first, but once you get used to them, they're simple to accomplish.

Hard drives, like other electronic devices, are designed for full power-on applications. The most likely time for any electronic device to fail is when you turn it on or shut it off. As long as you have a reliable power supply (not attached to a wall switch — where it's likely somebody will shut it off — or in an area with unreliable power), leave your hard drive on 24 hours a day.



Perhaps best known for its Macintosh products, General Computer Corp. also sells its HyperDrive FX/20 for the Apple II family.

By the way, again assuming you have a reliable power source, you should also leave your Apple on constantly, although the monitor should be shut off to prevent burning in the screen.

Hard drives may seem complicated, but they're really as easy to use as other computer accessories. Here's a closer look at three hard drives for the Apple II family. Any of them will operate on an Apple II+, IIe or IIGS. Apple IIc users will have to purchase custom drives designed for their computers.

Hard Disk 20SC
By Apple Computer, Inc.

Apple Computer's own hard drives for the Apple II family are actually Macintosh-compatible SCSI drives. Apple developed a SCSI interface card for the Apple II family that plugs into any empty slot. This card connects your Apple IIGS' electronics to the SCSI drive.

The Apple SCSI card includes a built-in program that lets your SCSI device boot when you turn on your Apple. It also makes SCSI devices automatically compatible with ProDOS.

As long as your SCSI interface card is in a slot higher than any other disk drive (usually slot 7) and your SCSI drive is turned on before your Apple, your SCSI drive will automatically boot when you turn on your Apple. The drive also performs a warm boot by hitting the Ctrl-Command-Reset keys together.

Apple's two models are the 20SC and the 40SC. Besides the obvious difference in storage capacity (20 MB and 40 MB), the two units are otherwise identical. The backs of the units have two SCSI connectors that let you attach more than on SCSI device to your system. Other possible SCSI devices include more hard drives, tape backup units, input scanners and, potentially, any other block input/output (I/O) storage or data device.

A small indicator window has a number showing where the SCSI device number is set. SCSI devices are numbered from 1 to 7. When you first boot a SCSI system, the highest number SCSI device is activated first. Each SCSI device on your system has a separate number. The indicator wheel lets you change your SCSI number, if you have two devices that came from the factory with the same number.

The Apple SCSI drives we tested operate fine and they're fairly quiet. One major disadvantage is that the drives are fairly bulky and take up a lot of desk space.

Apple also sells a streaming-tape backup device that will back up a 20 MB drive in under 20 minutes. Unfortunately, the software that controls the device is only available for the Macintosh. Apple hasn't announced any plans to make it compatible with the Apple II series yet.

Until Apple, or some other company, decides to write an Apple II driver program for the tape streamer, many Apple II owners will probably settle for using floppies for backups.

The Sider
By First Class Peripherals

The First Class Peripherals Sider hard drive is available in 20 and 40 MB sizes. The drives have a long history and a variety of different compatible interface cards and software changes. Originally, the drives were designed to use the earlier DOS 3.3 operating system. Today's models still show their roots.

One major feature makes First Class' products stand out from every other company's. First Class prefers to sell directly to users through mail orders from its Nevada headquarters. As a result, First Class Sider drives are less expensive than comparable units.

Sider's disk software has gone through many changes. It's still based on the old DOS 3.3 operating system, however.

Although, technically, there are only four Apple operating systems — DOS 3.3, Apple Pascal, CP/M and ProDOS — there are several different permutations and versions of each operating system — most notably CP/M, where there's little standardization between different cards.

CP/M is rather dated, and it's unlikely you'll ever need to use it. Even so, it's nice to know it's there if you need it.

The issue of four operating systems makes it somewhat confusing and complicated to install the Sider. Once it is configured, it's difficult to reconfigure. To reconfigure the sider, you must download all your information to floppies, reformat the hard drive, reconfigure your drive with your new partitions, reinstall all of the operating systems and reload all of your files from the floppies.

It pays to be careful when setting up this drive. Unfortunately, the lack of local technical support makes it fairly difficult for a novice computer user to install the Sider.

Ironically, while the Sider supports three different versions of Pascal, five versions of CP/M, four variations of DOS 3.3 and ProDOS, it doesn't provide any documentation on how to use the Apple IIGS ProDOS 16 operating system. All of the ProDOS examples given concern the earlier ProDOS 8 operating system.

Products Mentioned

Product: Apple Hard Disk 20SC
Price: $1,379 retail; 20 MB
$2,079 retail; 40 MB
$129 retail; Apple II SCSI Card
Company: Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010
Utilities Supplied: Apple System diskette with Finder desktop utility
Warranty: 90 days, extended warranty available

Product: HyperDrive FX/20
Price: $1,029 retail; 20 MB drive with the Apple II adapter package. Requires Apple SCSI card
Company: General Computer Corp.; 215 First St.; Cambridge, MA 02142; 617-492-5500
Utilities Supplied: A backup program (written by Apple and available elsewhere); a utility to change the drive's SCSI number
Warranty: 90 days, extended warranty available

Product: Sider 20
Price: $695 retail; 20MB
$995 retail; 40MB
Company: First Class Peripherals; 3579 Hwy. 50 E; Carson City, NV 89701; 800-538-1307 or 702-883-4000 in Nevada
Utilities Supplied: ProDOS, DOS 3.3, CP/M and Pascal support. Four double-sided 5.25-inch diskettes
Warranty: One year

Fortunately, ProDOS 16 uses an identical file structure to the original ProDOS 8 software, and we didn't have any problems using the Sider's ProDOS storage areas for IIGS 16-bit applications.

Even if you decide you only want to use one operating system when setting up the Sider — for example, ProDOS — the supplied software on 5.25-inch diskettes dictates that parts of the disk will still be dedicated to the other three systems.

The Sider installation software sets up a minimum size volume for each operating system. In addition, the drive splits the ProDOS section into two half-sized volumes, limiting the maximum size of any ProDOS file. For a 20 MB Sider totally dedicated to ProDOS or ProDOS 16 applications, the system can set up two 9 MB ProDOS volumes.

One good feature to the Sider series is that a tape backup device is available. The B-Sider unit is available either by itself or combined with a 40 MB Sider. Standard data cassettes that store 20 MB each are used for storage. To back up an entire 40 MB Sider, all you have to do is use two data cassettes.

Because Siders are sold only by First Class Peripherals, the company has to provide all technical support and repairs through its Carson City facility. Defective units have to be shipped to First Class for repair, and the company is currently quoting three weeks for repair, including round-trip shipping time.

Direct mail-order sales aren't the only reason why the Siders are less expensive. The Sider's internal circuitry consists of one mechanism, a combined controller card/hard drive. While a single-piece mechanism does make the First Class drive less expensive than comparable hard drives, it could also make the drive harder to repair.

As of this writing, First Class charges a flat $250, plus $15 shipping, handling and processing charges, for all out-of-warranty repairs.

HyperDrive FX/20 By General Computer Corp.

General Computer's HyperDrive FX/20 is actually the company's smaller hard drive. General Computer states in its fliers, "Unlike most other SCSI drives for the Macintosh, the HyperDrive FX comes with an array of sophisticated utility programs."

Those utilities include a backup utility, a security program that prevents users from accessing your files, unless you've given them a password, and spoolers for the Apple LaserWriter and ImageWriter. Those utilities as provided free to all Macintosh users.

Apple II family users, on the other hand, pay an extra $30 for a utility diskette, which comes in both 3.5-inch and 5.25-inch formats. It includes a backup program written by Apple (also available through your Apple dealer), a format/verify utility (which you can also perform through any standard ProDOS file utility, such as Filer, Finder, Sys Util, etc.) and a program that changes the HyperDrive's device number.

The only utility we found useful is the device number selector. Unlike the Apple drive, which uses a rotary switch to select device numbers, the HyperDrive uses a program. That program is only needed if you need to change the HyperDrive's device number.

There's one confusing point to the installation kit. It doesn't actually hook up the HyperDrive FX to your Apple. Besides the HyperDrive, you have to purchase the Apple SCSI interface card — the same card that works with Apple's hard drives — from your local Apple Dealer.

Unfortunately, many dealers only purchase enough SCSI cards to sell with the Apple hard drives that they stock. They may be unwilling to break up a set. If you want to use the HyperDrive — or any other SCSI drive that requires the Apple SCSI card — make sure you have a good supply source for the Apple SCSI card before you commit to the drive.

General Computer has a simple solution to Apple's 32 MB ProDOS limitation. The company will not sell its FX/40 Macintosh drive for use with an Apple II computer. Because the company only sells or supports the use of its 20 MB drive on the Apple II, it has effectively bypassed the problem.

If you absolutely have to have 40 MB of storage, you can always buy two FX/20 drives.

The SCSI Connection

The General Computer example makes a point. Most Macintosh-compatible SCSI hard drives will also work on an Apple II with the Apple SCSI card.

The Apple ProDOS system utilities can be used to format the Macintosh drive in Apple II format. Once you copy over your system utilities, most former Macintosh drives will operate on your IIGS. The only exceptions are specific Macintosh utilities (such as spoolers, backup devices and other hard disk utilities) that won't work on the Apple II series.

Because most SCSI drives come with few utilities anyway, this won't be much of a problem. If you can find an inexpensive Macintosh SCSI hard drive, it may be worth looking into for your Apple II.

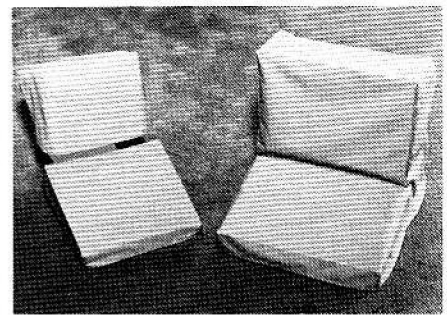
Besides the three Apple hard drives reviewed, there are a variety of drives available and others that are either in development or the planning stage.

ProAPP is redesigning its power supply, and we could not get its drive in time for this article. Another drive, from Chinook Technologies, is in its final testing stage. It will be reviewed in a future issue.

By then we may be reviewing an inexpensive internal drive for the Apple IIGS. You never know. ■

—Philip Chien, contributing editor

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10-53	Mac External Drive (800K)	5.00
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10-46	Mac Plus Keyboard	6.95
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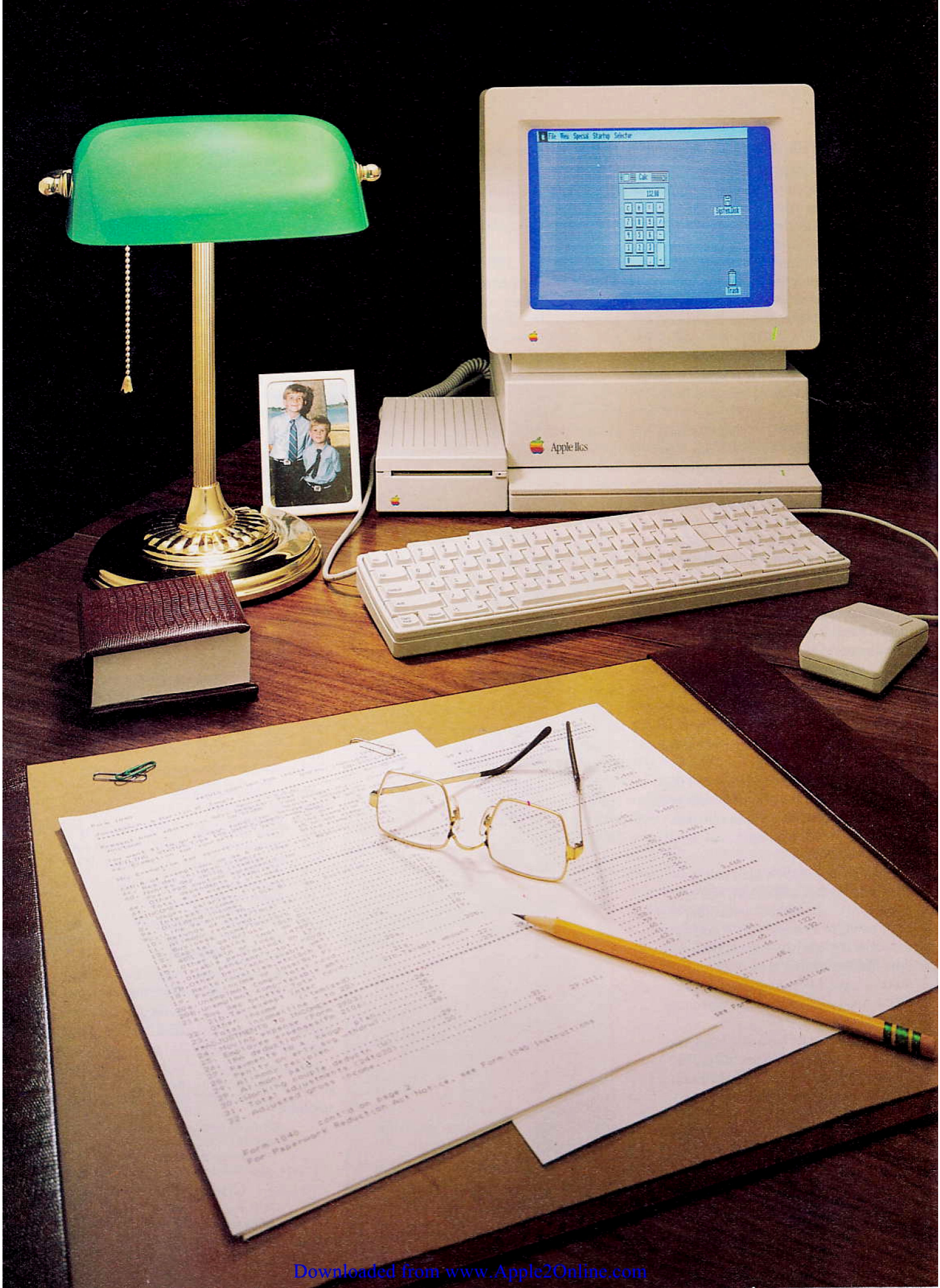
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Two For Taxes

Now may be the best time to bring in your Apple IIGS for a consultation. Read this article first, however, to determine which tax preparation program is best for you.

It's not long into the year, but soon every taxpayer in the United States will receive a New Year's greeting from Uncle Sam — his or her own Form 1040 or 1040A . Happy New Year!

We all know the drill. First, comes the struggle to get your pertinent paperwork in order. Then there are the long, lonely nights with a calculator adding up columns of numbers. Finally, comes the tedious job of completing the tax forms and schedules. This traditional "Tax Payer Ritual" is performed in millions of American homes every year.

Undoubtedly, many of you have considered using your Apple IIGS computers to help prepare your taxes. Well, one of the oldest programs available for the Apple computer family is a tax preparation system from HowardSoft called Tax Preparer. This program is unchallenged as the granddaddy of Apple tax software. It's also the oldest continuously updated tax system for any personal computer.

Wherever there is a monarch — such as Tax Preparer — there are upstarts who think they can do things better, faster or more efficiently. 1040Works-X is such a product. Written as an AppleWorks template, 1040Works-X is a customized spreadsheet designed for preparing taxes.

The Two Approaches

The first thing you notice when comparing the two programs is their documentation. Tax Preparer comes in a thick, padded imitation-leather binder. 1040Works-X's manual consists of a series of photocopied pages that have been stapled together.

The price difference between the two programs accounts for the aesthetics of the documentation, among other things. Tax Preparer retails for $250, plus $75 for yearly updates. 1040Works-X sells for far less — $27.95, plus $22.50 for yearly updates.

If you're not an experienced computer user, you'll find Tax Preparer's documentation easier to use and more comprehensive. It includes screen shots and step-by-step

instructions that walk you through the program and the Internal Revenue Service (IRS) forms and schedules. 1040Works-X's manual also uses a step-by-step approach, but does not provide any screen examples.

To help you get started, 1040Works-X includes a tutorial template designed to familiarize you with entering and calculating data. Tax Preparer doesn't offer a tutorial. Instead, a sample tax return is included for study purposes. Tax Preparer's documentation also spends a great deal of time walking you through major program tasks.

The operation of the two programs is radically different. As an AppleWorks template, 1040Works-X looks, acts and feels just like AppleWorks. You navigate through the program just like AppleWorks, using normal AppleWorks commands for moving, recalculating and the like.

Logic is built into the program to handle the passing of data from schedule to schedule, as well as consolidating and printing tasks. 1040Works-X maximizes AppleWorks' ability to pass data. You don't have to make repetitive entries.

To make using 1040Works-X even easier, macros have been developed for such macro-generation programs as AutoWorks, MacroWorks, Super MacroWorks and KeyPlayer. The macros provide menus and control your movement through the program. Using them is strongly suggested.

Tax Preparer handles like a finely balanced tool. It does what it was designed to do exceptionally well, but it shouldn't be used to do anything else, such as a home budgeting system. This is in contrast to 1040Works-X, where you can add to or change as much as you like.

The best way to understand the design differences between the two programs is to work through each one. First, let's use 1040Works-X.

1040Works-X By Personal Financial Services

Starting up 1040Works-X is simple. The program's documentation instructs you to format a few blank disks for storing the results of your work. Once done, you boot up AppleWorks and then load 1040Works-X by adding it to your desktop and retrieving it from the current disk.

1040Works-X uses two sets of forms, or on-screen worksheets. One set is made up of scratch sheets, where you enter your data and do whatever calculations you want. The other set includes worksheets that will con-

Schedules And Forms

Schedules Supported	1040Works-X	Tax Preparer
Form 1040	Yes	Yes
Form 1040 — ES	No	Yes
Schedule A — Itemized Deductions	Yes	Yes
Schedule B — Interest and Dividend Income	Yes	Yes
Schedule C — Profit or (Loss) from Business or Profession	Yes	Yes
Schedule D — Capital Gains and Losses	Yes	Yes
Schedule E — Supplemental Income Schedule	Yes	Yes
Schedule F — Farm Income and Expenses	Yes	Yes
Schedule G — Income Averaging	Yes	Yes
Schedule R — Credit for the Elderly and Disabled	Yes	Yes
Schedule S — Social Security Self-Employment Tax	Yes	Yes
Schedule W — Deduction for a Married Couple when Both Work	Yes	Yes

Forms Supported	1040Works-X	Tax Preparer
Form 2106 — Employee Business Expenses	Yes	Yes
Form 2119 — Sale or Exchange of Principal Residence	Yes	Yes
Form 2210 — Underpayment of Estimated Tax by Individuals	No	Yes
Form 2441 — Credit for Child and Dependent Care	Yes	Yes
Form 3468 — Computation of Investment Tax Credit	No	Yes
Form 3800 — General Business Credit	No	Yes
Form 3903 — Moving Expense Adjustment	Yes	Yes
Form 4562 — Depreciation and Amortization	Yes	Yes
Form 4797 — Gains and Losses from Sales or Exchanges	Yes	Yes
Form 6251 — Alternative Minimum Tax	Yes	Yes
Form 6252 — Installment Sale Income	No	Yes

tain your final data, which will be used to print the forms you will send to the IRS.

1040Works-X comes with a small pack of green bar-graph paper for you to use to print your return. The IRS allows taxpayers to file facsimile returns that conform to its standards, so you don't have to copy a return generated by 1040Works-X onto an IRS form.

If you make even one format change to your IRS forms in 1040Works-X, be careful. The IRS can refuse to accept your return. While not easy to do when tinkering with the program, you may inadvertently make a change. Again, be very careful. Scrutiny from the IRS is something nobody wants.

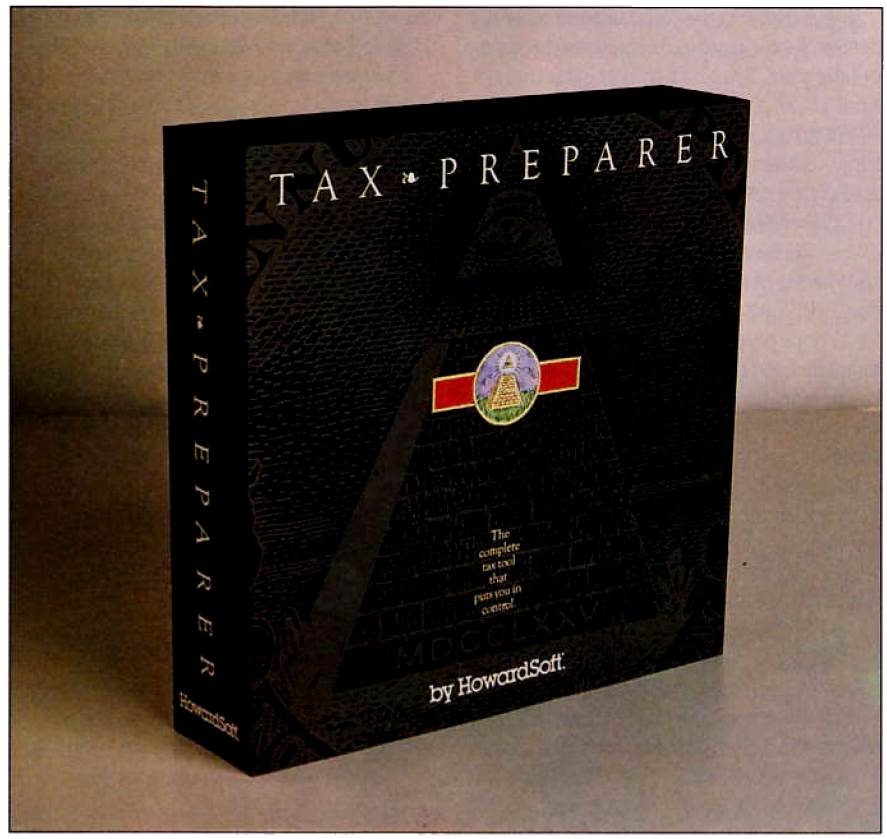
Entering information into 1040Works-X is just like using any other AppleWorks template. In the entry cells — where 1040Works-X contains notes, or indicators — you must be sure to blank out any unwanted information that remains in the cell after you make an entry. If you don't, it will show up on your printout.

Once you have worked through the 1040Works-X forms, which correspond to IRS forms and schedules, you can consolidate your return. All that's actually left to do is print out your return. You can copy the information onto a tax form if you don't have a printer.

1040Works-X accepts information in Data Interchange Format (DIF) from programs such as Monogram's Dollars And Sense and Intuit's Quicken. 1040Works-X also includes a simple Financial Organizer that can be used to keep track of and summarize revenues and expenses by category.

One cumbersome aspect of 1040Works-X's operation, which is a drawback inherent in AppleWorks, is the actual passing of data from one file to the next. In 1040Works-X, this facility — called the Data Transfer Port — takes time to master. The Data Transfer Port moves information from one 1040Works-X file to the other. It is as automatic as it can be, but it's far from one-button simplicity.

The important messages to remember concerning 1040Works-X are as follows: As an AppleWorks template, the program is as good as AppleWorks — from a user-interface perspective. It is an inexpensive program, from a packaging and production viewpoint, and packs a punch when it comes to calculating taxes. It is an aid to preparing your taxes and testing what-if scenarios and can be easily linked with other financial management programs.



Tax Preparer reflects eight years of fine-tuning by HowardSoft.

Tax Preparer By HowardSoft

HowardSoft's Tax Preparer is a dedicated, fully automatic tax preparation system. Using a series of structured menus for data entry and program operation, as well as the best "bullet-proofing" of any tax program ever written, Tax Preparer pulls together your tax return.

Tax Preparer can be used by individual taxpayers or tax professionals who prepare returns for clients. In either case, the program provides the space to record references that support documents used in the preparation of a tax return. It also features a batch processing facility that can calculate up to 15 returns at a time.

When you first start up Tax Preparer, you are presented with a main menu that offers choices for formatting storage disks, preparing a return, printing a return or changing program settings. Each operation is self-explanatory.

Once you start preparing a return, you immediately come to a fork in the program. One route is for expert users who are familiar with the software and the tax forms and schedules. Expert users can maneuver freely through the program by selecting the forms and schedules they want to use.

For less experienced taxpayers, a built-in road map can be activated. The road map starts at Form 1040 and branches out when necessary to other forms and schedules. In essence, the road map is an autopilot for the software.

Tax Preparer includes a built-in calculator feature. Users don't have to add up numbers separately and then key them into itemized lists or worksheets. The program actually maximizes the automatic passing of information. Some 300 automatic transfers take place without the users even pushing a key.

Tax Preparer can also be used to store the details of your taxable transactions throughout the year. You don't just use it around April 15. The same holds true for 1040Works-X. Unfortunately, Tax Preparer cannot accept data transfers from any other application program.

Tax Preparer's documentation contains an extensive discussion of the nuances of using computer-generated forms in lieu of IRS standard forms, as well as sources of supply for various preprinted forms, transparent templates and the like.

The screens within the program are exceptionally well designed and use advanced split-screen techniques. Processing is fast and efficient, and it's nearly impossible to crash the program or otherwise make a serious mistake.

Also included in the programming are the post-1990 Tax Reform Act provisions. This makes Tax Preparer an excellent tool for testing longer term tax-avoidance strategies. It's worth noting that this feature is not included with 1040Works-X.

Important messages concerning Tax Preparer are as follows: It is thoroughly documented and supported; it can accommodate tax and computer experts as easily as it can novices; and it is designed to be a comprehensive tax system that stands on its own.

Head To Head

How do the two programs compare? From a tax-coverage perspective, both systems are about equal. Each supports almost the same forms and schedules (outlined in the accompanying comparison table). That's where the similarity stops, however.

1040Works-X will calculate your taxes just as well as Tax Preparer, but you have to be willing to "free-fall" some on your own. Don't try doing your taxes with 1040Works-X unless you are a fairly accomplished AppleWorks user.

Doing your taxes is stressful enough, you don't need to have the additional pressure of learning how to use AppleWorks. The publisher of 1040Works-X isn't always available to answer questions or give operational advice, either. At under $30 per copy, perhaps he can't afford to be.

HowardSoft has a staff of professionals who will answer your questions concerning their program. They will also help you debug any problems you may experience with the software. Of course, this support cost has been figured into Tax Preparer's price.

Working through 1040Works-X is like slalom skiing when it's foggy. You can see the outline of the gates, but they are not crystal clear — until you're on top of them, that is. If you want a program that has extensive, indexed documentation and a concrete, foolproof structure, buy Tax Preparer and leave the fancy skiing to someone else.

If you are adventurous, want additional flexibility and would like the opportunity to tinker and add extra functions, 1040Works-X is the perfect product.

What about next year, however? Will 1040Works-X be updated for any new tax laws?

HowardSoft has provided updates for eight years for its product. With an installed base of more than 25,000 systems, it should be able to do that for another eight years. Personal Financial Services may not. Then again, if you like adventure, you could enter the updates yourself. Nothing on a template is unchangeable.

Neither 1040Works-X or Tax Preparer deserve any credit for capitalizing on the speed, graphics or sound capabilities of the Apple IIGS. Both systems (AppleWorks in the case of 1040Works-X) were designed to work across the Apple family.

Perhaps neither one should be optimized for the IIGS. Sound and graphics don't really help you prepare your taxes, unless you're under 12 years of age.

In any contest — especially one staged for your benefit — there should be a clear winner, but we don't have one. Each product has strengths and weaknesses that are directly related to price. As the user and taxpayer, you will have to decide which one is best for you. ■

— Ken Landis, contributing editor

Features Included

	1040Works-X	Tax Preparer
Menus	Macros	Yes
Automatic Data Passing among Forms and Schedules	Limited	Extensive
Prints IRS Approved Forms	Yes	Yes
DIF File Transfer	Yes	No
Yearly Updates	Yes	Yes
What-Ifs	Yes	Yes
Integrated Record Keeping	Yes	Yes
Automatic Storage of Backup Schedules	No	Yes
Error Proofing	Limited	Extensive
Documentation	Limited	Extensive

TopRAM

Inexpensive Memories

There are handfuls of memory cards available for the IIGS, ranging in price from $129 to $500 or more, depending on the capabilities. At first glance, TopRAM's $189 price tag doesn't seem too special or inexpensive, until you realize you're buying an entire megabyte of memory for the same price many companies sell their 256K cards.

For now, TopRAM is the least expensive 1 MB Apple IIGS memory board available. There are some sacrifices associated with the discount price, however.

TopRAM is a totally no frills, generic RAM card. Its 13-page manual, while brief, does give essential information on installing TopRAM, and using it as a RAM disk, as well as technical specifications..

The board consists of 32 RAM chips and six support chips. All integrated circuits (ICs), including the RAM, are soldered to the board. While soldering the chips increases reliability, it also makes the board more difficult to repair, possibly eliminating the advantage of the lower purchase price. Memory chips placed in IC sockets are easier to replace — if they ever fail — and easier to upgrade.

Another place where Parallax, TopRAM's manufacturer, has cut corners is in software utilities. Other companies supply cache programs, diagnostic utilities, file management software or desktop expanders for AppleWorks — to name the most popular applications — with their boards. TopRAM doesn't come with any utility programs.

Functionally, TopRAM will work with any application that requires or uses the Apple Memory Expansion card. Any program that requires extended memory, including paint programs, IIGS utilities and others, will work with TopRAM's extra memory.

Physically, TopRAM is slightly smaller than the Apple Memory Expansion card, but this does not create a problem. TopRAM's slightly unorthodox placement of the expansion connector — on the front — makes the device incompatible with the Checkmate MemorySaver board (see the Winter '87 issue of *The Apple IIGS Buyer's Guide* for a review), however.

For users who don't need the MemorySaver's ability to constantly supply power to RAM, this is not an issue.

The expansion connector's position could also lead to interference with other cards plugged into slot 7. Perhaps the design of the card would have been better had the expansion connector been placed on the back of the main memory board.

The only expansion board currently available for TopRAM is the TopROM board, which Parallax sells separately. TopROM also has an expansion connector for possible future products. TopROM retails for $89.95 without any memory and has space for 14 64K EPROMs (Erasable Programmable Read Only Memories), which you can program with other programs or utilities.

Once placed on the board, the EPROMs become part of your computer's permanent memory. They can be accessed as soon as you turn on your Apple.

The trouble with TopROM is that its documentation is brief. A single line describes the memory setup where each ROM occupies a bank of memory from $F0 to $FD.

TopROM's ROMs can only be programmed by an experienced programmer using the proper EPROM programming hardware, which is very expensive and not available from Parallax.

TopROM does have possible potential for future applications, if manufacturers begin to supply utilities or preprogrammed applications in ROM that can be easily added to TopROM. Instead of waiting for a slow disk drive (or even a faster hard drive), ROM-based programs can be loaded into memory as soon as you turn on your IIGS.

No software vendor has, as yet, agreed to supply its programs on ROM, and only the most sophisticated users can produce their own ROM programs.

It's a classic case of "getting the horse before the cart." Software publishers want hardware developers to sell several thousand ROM expansion cards before they'll consider investing the time and money to produce ROM versions of their software. Quite naturally, consumers want to know that software on ROM is available before purchasing the hardware products.

As mentioned, TopRAM is inexpensive. If you have a tight budget, it may be the right memory expansion board for you. We can't recommend the TopROM board until software becomes available in adequate selections, however.

— Philip Chien

Product: TopRAM
Price: $189 retail; TopRAM (1 MB of RAM) $89.95 retail; TopROM (unpopulated)
Company: Parallax, Inc.; 5249 Locust Ave.; Carmichael, CA 95608; 916-721-5451
Requirements: Apple IIGS
Warranty: Five years

LifeGuard

Save That File

Have you ever accidentally deleted an important file? If you haven't, you're among the rare minority of computer users who never make mistakes, never experience power failures and have IQs over 175.

The rest of us occasionally delete important files and become extremely frustrated in the process. We sometimes wish we could take back the fatal keystrokes that wipe out hours — or even weeks — of work.

Maybe there's hope for us yet. LifeGuard acts like a lifeguard at the beach. If you get into trouble, the human lifeguard will jump in and rescue you.

Though helpful, the LifeGuard program doesn't keep such close tabs on your actions. If you accidentally delete a file and want it back, you must run LifeGuard before writing more information to disk. This ensures that you don't accidentally overwrite the deleted portion, making it impossible for LifeGuard, or any other similar program, to retrieve the file.

To understand how LifeGuard recovers a deleted file, you must examine how file deletions work. It's a little involved, but not too difficult to comprehend.

Contrary to popular opinion, when you delete a file, the disk operating system doesn't erase that file. Here's what happens: When you use the delete command, the filename in the catalog listing on disk is changed to indicate that the file shouldn't be shown in the catalog display.

The pointers that tell ProDOS what portions of your disk are used and unused are changed to indicate that those portions of

the disk can be used again.

At no point in the deletion process is data in the file actually deleted, erased or overwritten. When the tables that tell ProDOS what portions of the disk are available indicate that the space used by a file isn't in use anymore, other files can reuse that space. Eventually, the space is overwritten and reused by other files and programs.

For a utility such as LifeGuard to work, it has to search a disk for the filenames in the catalog that have been deleted. When you select the deleted file you want restored, LifeGuard resets the filename to indicate that the file again exists. ProDOS is then informed that the portions occupied by the file are once more in use. Consequently, no other program will overwrite that disk space.

This description also shows why file "undeletions" don't always work. If another program has overwritten the filename or the space on the disk has been reused — either by a new file or an increase in size of an existing file — the old file may be overwritten. When this happens, data is not recoverable.

The trick behind successful file undeletions is simple. When you accidentally delete a file, run your undelete program immediately — before you do anything that may save data to the disk.

Although LifeGuard's instruction manual doesn't suggest it, we highly recommend copying all files onto another disk and erasing the original disk after running an undelete procedure. This is a precautionary measure in case files were accidentally changed during the undelete process.

LifeGuard, written in ProDOS 16, only runs on an Apple IIGS. It can, however, undelete all ProDOS-compatible files, including ProDOS 8 (Apple IIe/IIc programs), SOS (Apple III) and ProDOS 16 (Apple IIGS). All ProDOS-compatible block input/out (I/O) devices — such as 5.25-inch disk drives, 3.5-inch drives, hard drives, RAM drives and so forth — are compatible.

Any disk with files undergoing recovery must be intact ("catalogable") and readable on your normal diskette drive. LifeGuard will not undelete files created with other popular Apple disk operating systems, including DOS 3.3, UCSD Pascal and CP/M.

Regrettably, LifeGuard only works with unmodified, uncorrupted ProDOS directories, limiting its usefulness to user errors. If your files were lost or scrambled due to some outside force, such as magnetic interference or power outages, the program won't help.

It also fails if the root directory information has been deleted or corrupted, if the disk-use indicator tables are incorrect or if a disk's formatting has been damaged. Perhaps a later version will be developed that includes these additions.

Besides searching through a directory for a deleted filename, you can type in the filename of a deleted file (partial or complete name), search for data within the file or search for a specific file type (such as an AppleWorks word processing file).

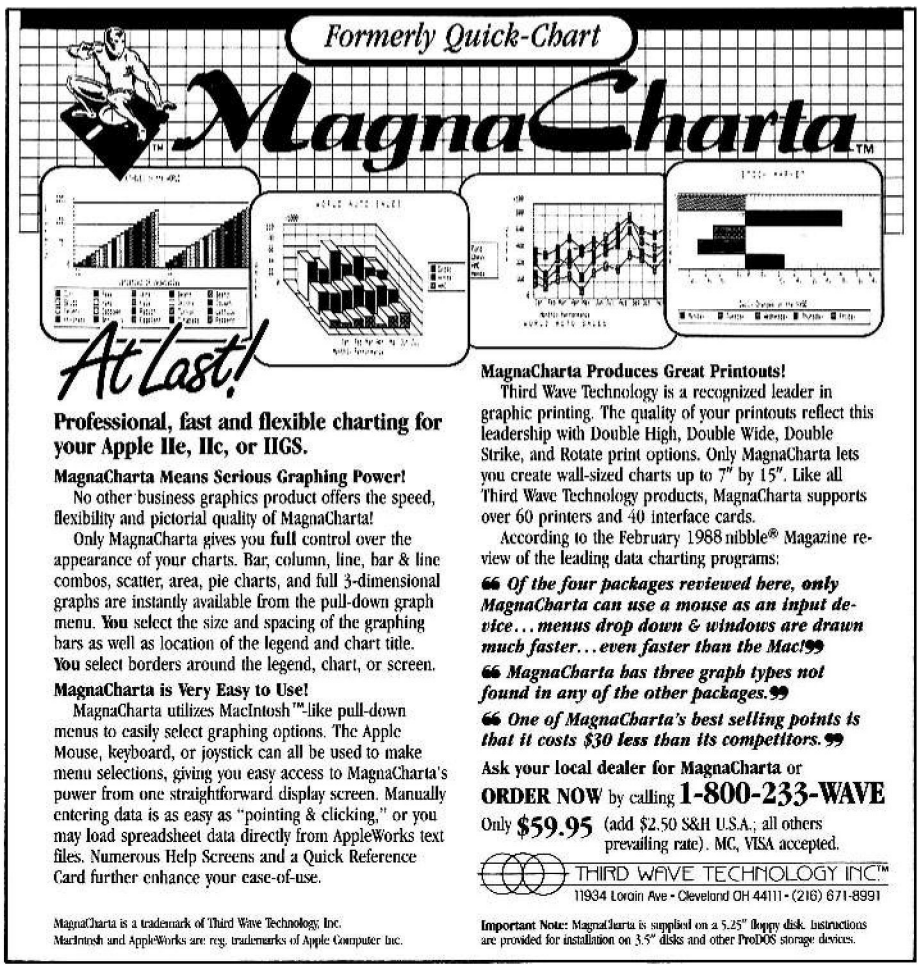
Another extra function provided is MAP. This shows a graphic representation of your disk resources, including which sections have data written on them.

Besides lacking the capability to recover files from hardware errors or damaged disks, we have only one other reservation about LifeGuard — its price. Similar undelete programs, while not as powerful, are available in the public domain.

Is the program worth its $59.95 price tag? If you should accidentally delete a file that took you several hours or days to type in — or will take many hours to recover — then LifeGuard could conceivably pay for itself in one use.

— Philip Chien

Product: LifeGuard
Price: $59.95 retail
Company: Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton, MA 01720; 617-263-1870
Requirements: Apple IIGS; 512K RAM
Format: 3.5-inch copyable disk



Reader Circle Number 6

Life Science

An Encyclopedia On Disk

Information Laboratory Software: Life Science is designed to be a research tool for students in grades 6 to 9. The program's database contains more than 600 data cards and 50 illustrations dedicated to a variety of life-science themes. In all, there are 20 subject areas, including animal kingdom, biographies of scientists, biomes, cells, chemistry, ecology, health, theories about life and more.

Each subject area contains decks, or collections of topically related files, that can be used for further exploration. If you focus on health, for example, the database search calls up the following decks: disease, drugs, environmental hazards, health, natural body defenses and nutrition.

If you select energy, the deck list contains such files as chemical reaction, energy pyramid, phase change, physical basis of life and solar energy.

Each deck file can, in turn, lead to searching other information files. Following the search path for a particular deck list and its related deck files produces related facts and figures that students can weave together into a life-science report.

The program has a Macintosh-like user interface complete with pull-down menus, windows and scroll bars. The interface takes full advantage of the IIGS' mouse technology.

The menu bar offers a help file that students can select for on-screen instructions. This file gives brief explanations of the terms and commands found in the program. Students can also read about the variety of program menus included on disk, including file, function, search path, print and deck list.

The help file also tells how to work with the program's illustrations. Occasional on-screen prompts provide additional assistance.

The Information Laboratory comes on two copy-protected 3.5-inch disks. Backups are included, as is a well-written teacher's manual and 42 master searchsheets that can be duplicated for distribution to a class.

Searchsheets give practice locating subject areas, creating decks, hunting for cards (specific deck titles or data files) and browsing through the program's table of contents.

Students who work their way through the searchsheets can familiarize themselves with the program and learn to use the database with ease. They will also pick up interesting life-science facts about topics such as human digestion, scientific methods, environmental pollutants, ecosystems and heredity.

The more we used the program's database, the more we realized that Life Science Laboratory is a polished electronic encyclopedia. It also teaches students about databases and the hierarchical organization of information.

Students can use the program throughout an entire school year, it's true, but what does it offer that a regular encyclopedia does not?

The answer is not readily clear. The program has relatively few illustrations. Students must rely on written words. There are none of the visual reinforcements often found in textbooks. In addition, students are limited to the study of a single topic (life science), broad as that area may be. Textbook encyclopedias contain information on a wide range of subjects.

Even if the vendor brings out extra data disks to use with the Information Laboratory disk, the program would benefit from the addition of an editing feature. Then teachers would be able to enter their own life-science decks or create other topical decks and deck lists. An increased number of on-disk illustrations would also be a welcome feature.

Even though Information Laboratory Software: Life Science is well conceived and produced, it is extremely restrictive and rather expensive for what it offers.

It's possible that teachers would be better served by an integrated database/word processing/spreadsheet program and 512K of expanded memory. If they could not find a database template to suit their needs, they could create their own. Students could access the database information and use it — along with the program's word processing features — to type out reports.

Back to the drawing board Addison-Wesley. This product needs more work!

— Carol S. Holzberg, Ph.D.

Product: Information Laboratory Software: Life Science
Price: $72 retail (school price)
$96 retail (consumer price)
Company: Addison-Wesley Publishing Co., Inc.; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 800-227-1936 or 415-854-0300
Requirements: Apple IIGS; 512K RAM

Space Lace

An Interactive Kaleidoscope

Remember the toy kaleidoscope you played with as a kid? You know, the tube with a peephole at one end and a small piece of glass at the other. When you looked through the viewer, you saw a symmetrical pattern of colored objects. As you turned the tube, the patterns changed.

Well, kaleidoscopes have now entered the electronic age. With Space Lace, you can create computer-generated designs that fill a color monitor. Ordinary kaleidoscopes will never seem the same.

Space Lace comes on an unprotected 5.25-inch disk. Its main menu has two options: Kaleidoscope and Kaleidomakers.

Pressing the Shift key and either the "I" (up) or "M" (down) keys moves you through the menu. Pressing Return makes your selection. Engaging Caps Lock eliminates the need for the Shift key. Pressing Control-Reset allows you to exit from the program and return to the main menu.

The Kaleidoscope option presents a menu of nine activities. Three of which — Serenity, Electric and Warmth — use super-high-resolution graphics. This means these activities are available for viewing only on an Apple IIGS.

Actually, one of the activities (Kaleidomusic) will run only on an Apple II+ or IIe that has a tape recorder plugged into its cassette input jack. The Apple IIGS does not have a cassette port. Therefore, loading Kaleidomusic on a IIGS causes the program to crash. Fortunately, pressing Control-Reset restores the main menu.

All of Kaleidoscope's nine options are similarly structured. Pressing a letter key makes a different kaleidoscope appear on screen. Each kaleidoscope is defined by seven different settings, or parameters. These are: graphics mode, rate, action, que size, symmetry, color and duration.

Graphics mode determines how many pixels will be placed on screen. Five modes

The most powerful Apple II in history.



If the idea of getting a computer for the family intrigues you, then there's one subject you'd do well to study. The Apple IIGS.™

There are more Apple® IIs in more schools than any other personal computer. And the IIGS is at the head of the class. Which is not surprising. After all, it has enough power to run virtually all 10,000 Apple II programs. Up to three times faster than they've ever run before.

What's more, Apple IIGS graphics programs let you use over 4,000 colors with near photographic realism. And its music programs let you simulate anything from a human voice to a symphony orchestra.

**Anyone, that is, who's an artistic genius. But take heart, all the colors and all the notes are there.* *©1987 Apple Computer, Inc. Apple and the Apple logo are registered trademarks*

And every other subject.



In short, the IIGS runs programs that cover every area of human endeavor, from writing a school paper to planning a company budget. Kids can study anything from ABCs to SATs. And anyone can learn to paint like Monet or compose like Mozart.*

All this on one of the easiest subjects in the world to master–the Apple IIGS.

Interested?

Then why not pursue this subject with your nearest authorized Apple dealer.

You'll find that once your family sees and hears what the Apple IIGS can do, the idea of owning any other kind of personal computer will be, well, history. The power to be your best.™

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are available on the IIGS: Lo-Res, Hi-Res, Double Lo-Res, Double Hi-Res and Super Hi-Res. Earlier Apple II models offer fewer graphics-mode options.

Action defines how a pixel pattern moves, either diagonally from the most recently plotted pixel or horizontally and vertically. It's possible to select a combination of all three movements, and you can use a joystick to control pixel plotting.

The rate parameter sets how fast a kaleidoscope will run. Que size determines the length of time a pixel remains on screen before it is removed. The symmetry parameter makes it possible to repeat a design as many as eight times.

A table of colors is available for each of the five IIGS graphics modes. Setting the duration value determines how many pixels are plotted in a particular color before the color changes. Working your way through each of the nine menu options — with assistance from the program's manual — will help you understand how the different parameters affect the appearance of a kaleidoscope.

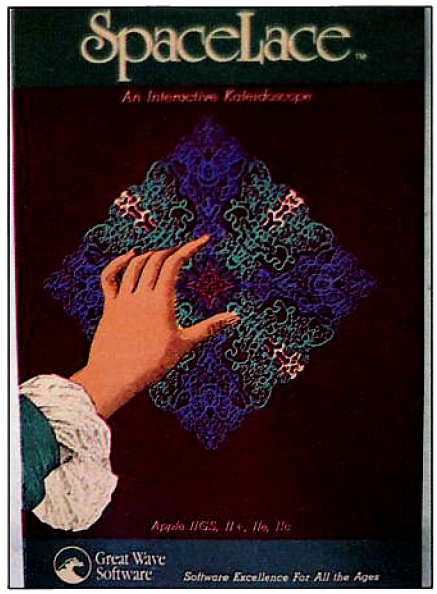
Kaleidomaker is the second category on the main menu. It offers two activities: Kaleidomaker1 and Kaleidomaker2. These activities let you set your own kaleidoscope design parameters.

Kaleidomaker1 uses the Lo-Res, Hi-Res, Double Lo-Res and Double Hi-Res graphics modes. Kaleidomaker2 is similar, but it uses Super Hi-Res graphics, which means it takes advantage of the graphics mode unique to the Apple IIGS.

To design a kaleidoscope, you must determine values for each of the seven parameters. Then press the Escape key and watch your creation unfold.

Space Lace allows you to change the parameters while your kaleidoscope is plotting, which is a nice feature. To see your parameter changes, access the parameter menu by pressing Control-P.

What purpose does a program like Space Lace serve? If this were the 1960s and a user was a self-identified hippie, providing a constantly changing color pattern on a RGB monitor might have an intrinsic "wow value." Nostalgia aside, Space Lace offers more than simple entertainment. It is a great learning tool and a valuable computer literacy aide.



Space Lace provides more than pleasant pixel patterns.

Space Lace gives a visual demonstration of the differences between low-resolution, high-resolution and super-high-resolution graphics, while also providing an introduction to the complexities of computer-generated graphics.

The program's seven parameters help illustrate the intricacies required to create graphics patterns on screen. Though not as obvious, even the use of hexadecimal numbers (base 16) is helpful as shorthand labels for the 16 available colors and for the range of parameter settings possible.

Finally, Space Lace's manual offers six AppleSoft BASIC programs that students can use as introductions for, or practice with, writing their own kaleidoscope programs. The program helps students expand their programming skills and is a good value for the money.

— *Carol S. Holzberg, Ph.D.*

Product: Space Lace: An Interactive Kaleidoscope
Price: $29.95 retail
Company: Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990
Requirements: Apple IIGS, IIe, IIc, II+; color monitor

Speller Bee

'Bee' Prepared

On Mondays, my 7-year-old son brings home a spelling list from school. On Fridays, his teacher gives him a spelling test. During the week, he practices spelling and writing the words as I dictate them to him at the kitchen table.

Our labor is productive. He usually gets a perfect score. The homework is humdrum, however, and sometimes his mind wanders away from his work.

Enter Speller Bee. This program, designed for children age 5 to 12, gives practice in reading and writing spelling words of your choice. There are also 15 word lists (with 10 words in each list) already stored on the program disk.

The Speller Bee word lists come in three categories — starter, worker and challenger — with five levels of difficulty. Level one is the easiest and level five the hardest.

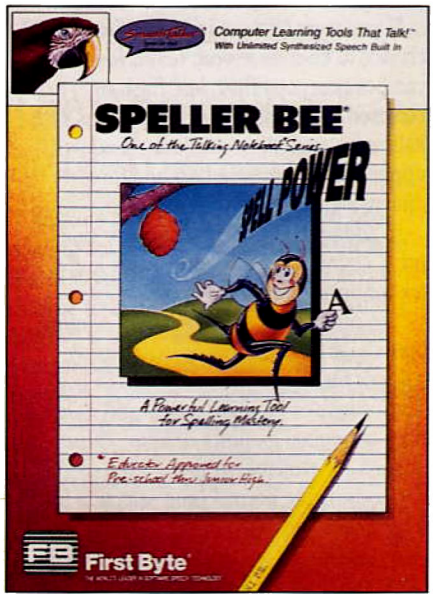
Developed for the Apple Macintosh, Speller Bee was recently ported to the Apple IIGS. It takes full advantage of the IIGS' Macintosh-like user interface, offering a menu bar, picture icons, pull-down menus and scroll bars. Users must click or click and drag their mouse devices to access program options and select disk activities.

If you take advantage of all Speller Bee has to offer, it can make parent/child homework interaction a pleasurable event. Teachers will also find the program useful.

Speller Bee is part of the Talking Notebook Series from First Byte. In each of these programs, words stored in various word lists and on-screen program instructions are spoken by the computer. Speech is possible because Speller Bee takes advantage of the Ensoniq digital oscillator chip built into the Apple IIGS.

While the synthesized speech patterns sound more robotic than human, they are intelligible and provide lots of listening fun. To hear them, however, you have to access the IIGS Control Panel and turn the sound to maximum prior to booting.

If you access the IIGS Control Panel while Speller Bee is in memory, the program will crash when you leave the Control Panel and attempt reentry.



The Ensoniq chip gets a sound workout with Speller Bee.

Despite its robot-like qualities, the vocabulary of the synthesized speech is virtually unlimited. If the Bee in Speller Bee mispronounces words on your list, you can teach it how to say them correctly by typing in words or word parts that sound like the words.

First Byte promises an improved speech technology early in 1988. Meanwhile, it's not difficult to make do with the current program version.

You can also choose to turn the speech option off, in which case there is no sound at all, or you can limit the Bee's speech.

Speller Bee offers a number of activities and options designed to be educational and entertaining. First-time users can take a Guided Tour of what's available.

Users familiar with the program can go directly to the main menu and select from its four activities: My Words, Spell Power, Help and Quit.

By clicking on Quit, a user can exit from the program. Clicking on Help accesses either the Guided Tour or SOS. Both selections present information and instructions about Speller Bee activities.

Clicking on My Words calls up either List Maker or Spelling Library. If you select List Maker, you can type in your own word lists, save them to disk and teach the Bee to pronounce each word correctly. You can also print, change or erase your word lists.

If you select Spelling Library, you can hear, see and print any Speller Bee word list, including your own.

Spell Power offers five activities: Bee Prepared, Spelling Bee and three games — Search, Scramble and Detective. Bee Prepared gives you practice with words in your word list or words from one of the program's word lists.

Speller Bee pronounces each word in the chosen list, spells it and then asks you to type it yourself. To hear a word again, you can click on the appropriate box. Misspelled words can be spelled again. Spelling Bee gives you a practice test using a word list of your choice.

Each game offers you a choice of word lists. With Search, you race against a timer to find words hidden in a maze of letters. Concealed words are written either horizontally or vertically.

You can turn mixed-up letters into recognizable words in Scramble. If necessary, the computer will give you clues, but each clue costs you points. In Play Detective, you hunt for missing letters and attempt to spell words correctly.

Overall, we like Speller Bee, but we have a few minor concerns. First, Speller Bee requires 768K or more to run. As a result, you need a memory card with at least 512K. You also need lots of patience while the program loads into memory.

Second, the word activities is misspelled in the on-screen Guided Tour Menu. A program designed to teach spelling skills to children should not contain such an error.

Third, Speller Bee crashed on two occasions during our tests. This happened at the end of the Guided Tour and when we clicked on the mouse to select Search Game from the Help menu. In both instances, Speller Bee tried to reboot. When it could not, we had to reset and start over from scratch.

Because neither crash interfered with the program's spelling games and activities, the need to reboot turned out to be more of an inconvenience than a major flaw. Hopefully, the bugs will be corrected in the upgraded version.

— Carol S. Holzberg, Ph.D.

Product: Speller Bee
Price: $49.95 retail
Company: First Byte; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006; distributed by Electronic Arts
Requirements: Apple IIGS; 768K RAM; color monitor

The Print Shop IIGS

Greeting Cards, Banners And More

The original version of The Print Shop was so popular it revolutionized the graphics software industry and practically initiated desktop publishing on the Apple II. Since 1984, The Print Shop has sold more than 800,000 copies.

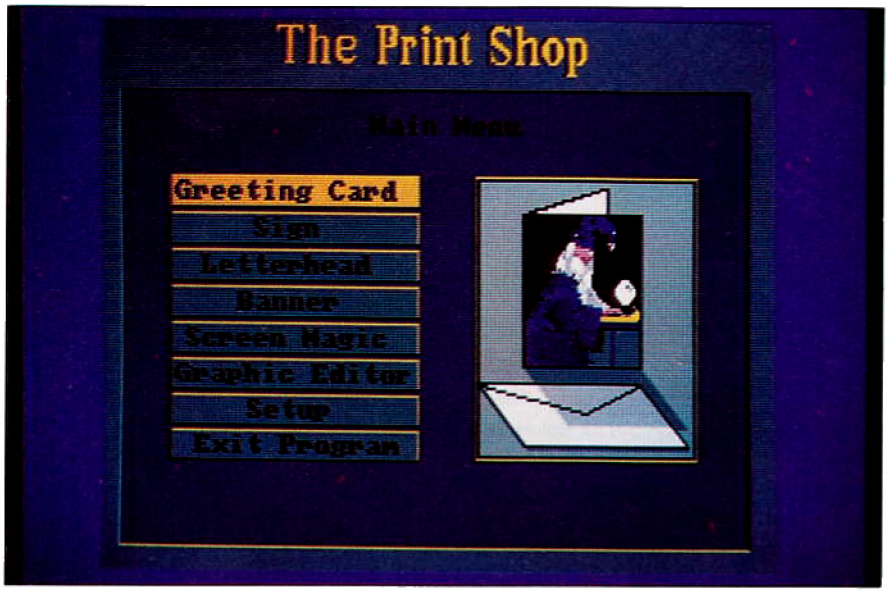
The program can be found in a variety of home, school and office settings. It is used to print cards, posters, book-report covers, personalized stationery, logos and announcements of all types.

Broderbund has released a IIGS version of its popular program. Designed to take advantage of IIGS technology, this version has been rewritten and new features have been added. For example, the new version offers super-high-resolution graphics and also prints finished products in higher resolution. It comes on a 3.5-inch diskette, includes click-on menus and mouse technology and requires 512K RAM.

You can access The Print Shop IIGS through the Program Launcher by selecting the file entitled PS System. You can also install the program on a hard disk by selecting Hard Disk Installation from the Setup menu and following the on-screen instructions.

The Print Shop IIGS supports printing in eight colors. If you have an appropriate printer and color ribbons, you can make single-color or multicolor greeting cards, signs, letterheads and banners. With a little creativity, you also can print out some fancy certificates.

You can even get good results with black printer ribbons, because contrast is obtained in the program by using multiple shades of gray.



Super-high-resolution graphics, high-quality printouts, click-on menus and mouse technology set The Print Shop IIGS apart from earlier 8-bit versions.

The Print Shop's main menu offers seven activities: Greeting Card, Sign, Letterhead, Banner, Graphic Editor, Setup and Exit Program. Desired options are selected by double-clicking on the mouse. You can also use your arrow keys in combination with the Return key and a highlighted bar that moves through the menu.

First-time users should run Setup to configure the program to meet their printer specifications. Clicking on the appropriate box tells the program where your printer is connected (through a port or interface card) and which slot holds the interface card.

You may need to modify your printer setup — via the IIGS Control Panel — to work with The Print Shop IIGS. If so, you must reboot to reenter the program.

Once The Print Shop has all the information it needs, it will run a test. If the printer test is successful, you can save the information to disk and skip the setup requirements next time around.

On-screen instructions make the program easy to learn and fun to use. It doesn't take long to print out a greeting card or any of the other projects.

All of The Print Shop IIGS' activity options work in a similar way. You can design projects, select ready-made ones previously saved to disk or choose your own from another disk. If you design your own, you must choose a panel type (full-page design) from 12 single-color patterns; 12 multicolor patterns; or eight ready-made, multicolor panels. Of course, you can opt for no panel at all.

Users designing their own letterheads have eight multicolor designs available. To see how your choice looks, click on preview. This feature is available at any time.

Next, select a border from 12 single-color or 12 multicolor border styles. You can also choose not to have a border.

Graphics are chosen by picture, number or from another disk. They may also be omitted altogether. Layouts may be chosen from a large number of available options, or customized layouts can be designed as desired.

This version of The Print Shop lets you place two different graphics and mix graphics sizes on a single page. You may also choose a font from the 12 included on disk, select a font from another disk or omit a font entirely.

If you want text, you will be offered the chance to customize your text layout. You can position copy flush left, flush right or centered. Personalizing your creations with italic type, underlines, outlines, shadows, upper and lowercase letters and three-dimensional text is also possible.

In addition, you can use large or small print, change colors for every new line of text or print every word in one color.

The program offers a variety of printing options, such as normal or draft quality, color or black and white, forward or backward, single or multiple copies and reduced sizes of original graphics designs. These options are available from the Print menu.

Choosing the normal print selection for final copies and draft printing for test versions saves wear and tear on your ribbons. Other print options include backward printing when creating a T-shirt design; reducing graphics to 25 percent of their original size to make bookmarks, gift tags or mailing labels; and experiment with the reduction feature to get a correct size.

The Graphics Editor lets you turn previously saved black-and-white Print Shop graphics into multicolor designs. The Editor's 16 drawing and editing tools can also be used to create or modify graphics displays.

If graphics design is not what you're after, you can use the 64 color graphics contained on disk.

We enjoy using this productivity program and wonder how we ever got along without it. The Print Shop IIGS is an excellent software product.

— Carol S. Holzberg, Ph.D.

Product: The Print Shop IIGS
Price: $59.95 retail; backup $10 retail (home edition)
$69.95 retail (school edition includes backup)
Company: Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3200
Requirements: Apple IIGS; 512K RAM; color monitor; printer

WordPerfect For The Apple IIGS

The Latest Contender In WP

Editor's Note: This issue's word processing feature was supposed to include WordPerfect. The package didn't arrive in time to be included, however. What follows is a first look based on limited experience with this new Apple IIGS program. A more comprehensive review will follow in a future issue.

WordPerfect is available for several different computers, including minis such as the DEC VAX and Data General and personal computers like the IBM PC (where it's a runaway best-seller), Amiga and other Apple II models.

WordPerfect has gained an excellent reputation as one of the most powerful word processors available for any computer. Likewise, the IIGS version also lives up to its billing as a powerful word processor.

While a typical Apple word processor takes up anywhere from 100K to 800K of disk space, the WordPerfect program comes on three 3.5-inch disks with a total of more than 2 MB of disk code. No wonder it took nine programers to design this system.

WordPerfect's sophisticated functions include widow/orphan protection (which prevents small portions of paragraphs, such as one or two lines, from ending up alone at the end of a page), search backwards (most programs just search forward), sophisticated page-numbering techniques (for example, numbering even pages on the left side and odd pages on the right, the way books are numbered), automatic footnote numbering, end notes (glossary), macros, automatic hyphens, a 10,000-word thesaurus, a 115,000-word dictionary, mail merge and form letter capabilities.

Other features include half-line spacing; a convert utility that changes AppleWorks, AppleWriter and other word processing files into WordPerfect format; and insert date/time — to name a few of the powerful functions.

The program features full pull-down menus and mouse-pointing operations. Keyboard users can select a variety of Command-key alternates or use a unique speed-command selector. To use the speed commands, just hit the Control key and the first letter of the command. A pop-up window will show you the various valid commands that start with that letter.

You can scroll through the commands for cases where there's more than one command starting with the same letter.

For example, to select hard hyphen, hard space, headers or help, just hit the Control and "H" keys simultaneously. Then use the arrow keys to scroll to the command you want. With the addition of a 10-chapter tutorial, WordPerfect's special commands are fairly easy to learn and understand.

For different types of printer support, WordPerfect is unsurpassed. Hundreds of different printers are supported, including the Apple LaserWriter and more traditional dot matrix, daisy wheel and other types of printers.

If by some quirk your printer isn't supported, you can train WordPerfect how to use your printer's special functions. For text-based printing, WordPerfect has no equal.

With all these capabilities, why isn't WordPerfect a friendlier program to operate? And why doesn't it make better use of graphics-based word processing?

First things first. Although its programmers decided to use Apple's Macintosh-style pull-down menus, WordPerfect doesn't use the rest of the Macintosh desktop interface. When you want to load a file from the disk, for example, you have to know exactly how the file is spelled and where it's located on disk.

Miss by one character and a very confused WordPerfect won't find your document. This filing system is much more difficult than menu systems that let you choose your file with either a mouse or menu.

Other areas of the program seemingly suffer from similar problems. If you want to switch between different documents on the desktop, for example, you have to know what order you loaded the documents. Instead of choosing a document by name, you have to select it by number.

In addition, while WordPerfect uses the graphics screen to display the cursor, menus and text, it doesn't use the IIGS' graphics capabilities.

Other graphics-oriented word processors let you choose different fonts with a variety of sizes and they show those fonts on screen, complete with bold or underlined text — almost exactly how they look in their final printed forms. If you have a color monitor and a color ribbon in your ImageWriter II, you can even see the color on both the screen and printout with other IIGS word processors — but not with WordPerfect.

WordPerfect uses your printer's built-in standardized fonts and only indicates on screen with coded abbreviations how your commands will affect your output. The program limits color capabilities to the selection of screen colors. Bold and underline are indicated on screen with colors, instead of actually showing bold and underlined text on screen.

If nothing else, WordPerfect proves that designing a program that uses a mouse and Macintosh-style menus doesn't automatically guarantee user friendliness. On the other hand, it also proves that such an interface does not limit a program's power. ■

— Philip Chien

Product: WordPerfect
Price: $179 retail
Company: WordPerfect Corp.; 288 W. Center; Orem, UT 84057; 801-225-5000
Requirements: Apple IIGS; 512K RAM
Format: Three copyable 3.5-inch disks

Apple IIGS Hardware And Software Directory

About This Directory

The Apple IIGS is the latest member of the Apple II family. In most cases, the Apple IIGS runs the vast majority of programs and works with most hardware designed for earlier 8-bit Apple II computers, including the Apple IIe, IIc and II+. Most of this software is supplied on 5.25-inch disks, and a 5.25-inch disk drive may be required to run these packages.

The Apple IIGS also offers a new 16-bit capability that's unique. Programs or peripherals designed to take advantage of this capability incorporate improved graphics and sound and typically utilize more memory than found on earlier Apple II machines. In the case of software, virtually all of the Apple IIGS-specific products use the ProDOS 16 operating system and are supplied on 3.5-inch disks.

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.

Every effort has been made to verify this information for readers. However, neither Redgate Communications Corporation nor *The Apple IIGS Buyer's Guide* assumes any responsibility for the accuracy of the product descriptions nor the suitability of any product for specific tasks. The product descriptions listed here are based on the latest information received from vendors.

Accessories

A-B Box

Switch box

Apple IIGS.

The A-B Box is a switch box that connects two peripherals to one serial port or lets you share one peripheral between two Apple IIGS computers. It comes with a 2-inch-Mini-DIN8 cable. For older equipment with DB9 connections, you can get an Apple conversion cable from the vendor. The A-B Box is also compatible with the Macintosh.

$99.95 retail

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

Apple Security System

Security kit

Apple IIGS.

The Apple Security System lets you secure an Apple IIGS computer, monitor, keyboard and peripherals without interfering with its functioning or setup. It attaches easily and comes with security cables, screws and a padlock.

$49.95 retail

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

AppleTalk Clips

AppleTalk accessory products

Apple IIGS; AppleTalk network.

AppleTalk Clips are designed to keep an AppleTalk network securely connected. With these products, the chances for poor connections between printers and Apple IIGS computers, or networked IIGS and Macintosh computers, are reduced. Clips are available for securing cables (plain Cable connections) and for securing Connection Boxes.

$25 retail; 25 Clips for plain Cables

$13.75 retail; Three Clips for Connection Boxes, 4 Clips for plain Cables

$25 retail; 25 Clips for Connection Boxes

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

Bose RoomMate Speakers

Digital sound speakers

Apple IIGS.

Bose RoomMate Speakers contain full range drivers, a dual-channel amplifier, an equalization network and distortion-limiting circuitry. Their compact size, finish and advanced sound capabilities make them ideal for use with the Apple IIGS.

$229 retail

Bose Corp.; The Mountain; Framingham, MA 01701; 617-879-7330

Cable Assemblies

Cable connections

Apple IIGS.

Data Spec offers a variety of cable assemblies compatible with the Apple IIGS and most Apple-compatible peripherals, including printers and modems.

$9.95 retail to $28.95 retail

Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Disk Accessories

Disk cleaning kit and holder

Apple IIGS.

The Disk Drive Cleaning Kit for the Apple IIGS contains a reusable cleaning cartridge, cleaning disks and cleaning fluid. Everything is included for 12 cleanings, a full year's supply.

The Disk Pocket is a tray that attaches to the side of an Apple IIGS or monitor and stores up to 10 3.5-inch disks. No tools are required for installation. The Disk Pocket removes easily when placing the Apple IIGS in its carrying case.

$29.95 retail; Disk Drive Cleaning Kit

$9.95 retail; Disk Pocket

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

Disk Drive Cleaner
Disk drive cleaner
Apple IIGS; disk drive.

The 3 1/2" Disk Drive Cleaner is designed for use with the 3.5-inch drives of the Apple IIGS. It is a non-abrasive, wet-type system that includes a .5 ounce bottle of cleaning fluid and instructions.
$6.99 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

DMS802 And DSM804
Data switches
Apple IIGS; peripherals.

The DSM802 and DSM804 are compact data switches with mini pin connectors. The DSM802 is a two-way switch with mini 8-pin DIN connectors. The DSM804 is a four-way switch with 8-pin connectors.

Both products are designed for use with an Apple IIGS, Macintosh II, Macintosh SE or Macintosh Plus computers. The DSM802 enables users to attach two peripherals to one computer; or two computers to one peripheral. The DSM804 allows users to link four peripherals to one computer; or attach four computers to one peripheral. A two-tone gray finish matches the Apple IIGS case coloring scheme.
$52.95 retail; DSM802
$59.95 retail; DSM804
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Dust Cover For The Apple IIGS
Dust cover
Apple IIGS and monitor.

The Dust Cover For The Apple IIGS is a clear, anti-static cover that protects an Apple IIGS computer, monitor and keyboard.
$13.75 retail
Kensington Microware Ltd.; 251 Park Ave. S.; New York, NY 10010; 800-535-4242 or 212-475-5200 in NY

Dust Covers
Protect your computer
Apple IIGS.

Apple IIGS dust covers from Co-Du-Co come in tan, navy, royal, gray, red and brown. Unlike plastic covers, these covers allow heat from equipment to flow through the fabric. The covers are all-fabric machine washable and custom designed for IIGS contours.
$24.95 retail
Co-Du-Co; 4802 W. Wisconsin; Milwaukee, WI 53208; 414-476-1584

JuiceBox
Surge suppressor and fan
Apple IIGS.

The JuiceBox is a surge suppressor and fan for the Apple IIGS. It provides power protection for the IIGS, in addition to two switched outlets of surge suppressed power for other system peripherals. A third outlet powers other electrical devices, and an efficient fan system keeps cool air moving through the IIGS to prevent overheating.
$79 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.

Kablit for the IIGS is a cabling system that ties down and secures an Apple IIGS and peripherals. It uses snap-in fasteners for the computer and monitor and comes complete with all necessary hardware, in addition to a lock and cable.
$39.95 retail
Secure-It, Inc.; 10 Center Sq.; E. Longmeadow, MA 01095; 413-525-7039

Kraft Premium II
Joystick
Apple IIGS.

The Kraft Premium II is a two-button joystick available for the Apple IIGS. It is equipped with a "center-lok" mode selector for spring-centered or free-floating use.
$39.95 retail
Kraft Systems, Inc.; 450 W. California Ave.; Vista, CA 92083; 619-724-7146

Kurta IS/GS
Cordless graphic input system
Apple IIGS.

The Kurta IS/GS is a cordless graphic input system for an Apple IIGS that includes either a cordless pen or a cordless puck and tablet. It can be used either as a mouse or graphics tablet. Users can switch between mouse and tablet modes while working on any application.
$495 retail
Kurta Corp.; 3003 W. Chambers; Phoenix, AZ 85040; 602-276-5533

Modunet
Networking connectors
Apple IIGS; AppleTalk network.

Modunet is a line of networking connectors. The product conforms to AppleTalk standards, yet offers additional features, including adaptability to existing phone wiring. With MODUNET, users can connect into existing telephone cabling or string new network wiring with standard telephone wires or modular telephone cables. Extended distances are possible, with communication capabilities of up to 5,000 feet. Three models are available.
$37.95 retail to $47.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Mouse Accessories
Accessories for mice
Apple IIGS; mouse.

The Mouse Cleaning Kit contains nonabrasive foam swabs, lint-free cleaning cloths, cleaning solution and a can of compressed air — everything, its vendor claims, most users will need for 25 cleanings a year.

Mouse Pocket ADB is designed to keep the mouse clean and safely out of the way when not in use. It installs with adhesive backing and is colored Apple Platinum.

Mouseway provides a smooth, dirt- and static-resistant work surface for the Apple IIGS mouse. It keeps the mouseball from scratching furniture surfaces and absorbing damaging furniture cleaning solutions. Its color is slate gray.
$24.95 retail; Mouse Cleaning Kit With Mouse Pocket
$9.95 retail; Mouse Pocket ADB
$9.95; Mouseway
Kensington Microware Ltd.; 251 Park Ave. S.; New York, NY 10010; 800-535-4242 or 212-475-5200 in NY

MousePouch
Mouse container
Apple IIGS.

MousePouch is a place to keep your mouse when not in use. It is a vinyl suede pocket that attaches to the side of the Apple IIGS or monitor, or any other convenient surface with Velcro. The product will also carry eight 3.5-inch disks.
$5.95 retail
H&H Enterprises; PO Box 2672; Corona, CA 91718; 714-737-1376

Printer Accessories
Printer accessory products
Apple IIGS; printer.

The Printer Muffler 80 and Printer Muffler 132 are printer covers that reduce noise from Apple IIGS printers by 75 to 80 percent. Molded from high-impact styrene plastic for durability, they keep dust out and are transparent. Both products are intended for use with dot matrix printers only with carriages of 80 and 132 inches.

The Printer Muffler 80 Stand and Printer Muffler 132 Stand are companions to the Printer Muffler products. They allow the user to raise a printer and Printer Muffler four inches, allowing for paper storage underneath.

The Universal Printer Stand is made of sturdy metal and fits all popular dot matrix printers, short carriage or wide, including the ImageWriter II. It raises a printer 1 1/2-inches at the front and 4 1/2-inches at the back. (For use without the Kensington Printer Mufflers.)
$59.95 retail; Printer Muffler 80
$79.95 retail; Printer Muffler 132
$29.95 retail; Printer Muffler 132 Stand
$19.95 retail; Universal Printer Stand
Kensington Microware Ltd.; 251 Park Ave. S.; New York, NY 10010; 800-535-4242 or 212-475-5200 in NY

System Saver IIGS
Cooling fan power center
Apple IIGS; monitor; two peripherals.

System Saver IIGS organizes a IIGS power supply and provides four outlets for a computer, monitor and two peripherals. Two front-mounted switches attach to the computer and the monitor respectively.

System Saver IIGS protects a IIGS system against power surges, spikes and noise. It clips spikes and surges at a safe level and filters out disruptive noise. A built-in fan draws air up and through the IIGS case.
$99.95 retail
Kensington Microware Ltd.; 251 Park Ave. S.; New York, NY 10010; 800-535-4242 or 212-475-5200 in NY

Turbo Mouse ADB
Replacement mouse
Apple IIGS; mouse attachments.

The Turbo Mouse ADB works at twice the speed of a standard mouse and in half the space, its vendor says. It turns mouse technology around and puts the mouse ball on top, not the bottom. Only the ball of the mouse moves, not the whole mouse.
$129.95 retail
Kensington Microware Ltd.; 251 Park Ave. S.; New York, NY 10010; 800-535-4242 or 212-475-5200 in NY

Universal Security Kit
Physical security system
Apple IIGS.

The Universal Security Kit simplifies the task of providing physical security for the Apple IIGS. It includes adapters for the platinum-colored IIGS, along with a special screwdriver and 10 tamper-resistant screws that are used to secure the system. One 10-foot steel security cable is included; the user supplies a padlock or similar device.
$49.95 retail
Grimes Co.; 115 S. Airovista Circle; Brea, CA 92621; 714-671-3931

AppleWorks

1040Works-X
Copes with new tax laws
Apple IIGS; other Apple II models.

1040Works-X is a tax template for AppleWorks that provides most of the commonly used tax forms for preparing individual tax returns. It performs all of the calculations for each form, computes your tax and prints out finished forms that can be sent to the IRS without recopying.
$27.95 retail; $3 for 3.5-inch disk
Personal Financial Services; PO Box 1401; Melville, NY 11747; 516-261-8652 or 800-541-0900 (orders only)

AppleWorks Version 2.0
Word processing, database management, spreadsheet analysis
Apple IIGS.

This latest version of this best-seller from Claris Corp., a subsidiary of Apple Computer, Inc., includes a built-in mail-merge capability that allows a user to produce customized form letters by combining a word processing document with selected information from a database.

Word processing features include on-screen display of page breaks, centering, headers, footers, insertions, deletions, search and replace, proportional spacing and more.

The electronic spreadsheet features 999 rows by 127 columns, reads VisiCalc files and sets variable column widths.

Database management features including tracking and sorting of up to 30 categories.
$250 retail
Claris Corp.; 440 Clyde Ave.; Mountain View, CA 94043; 415-960-2790

Graphic Edge
Prints graphics
Apple IIGS; other Apple II models.

Graphic Edge creates color charts and graphs directly from within AppleWorks spreadsheets. Users can generate any of eight different types of graphs, including bar graphs, pie charts and X-Y graphs. A link between Graphic Edge and AppleWorks automatically redraws graphs anytime numbers are changed.
$89 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

ReportWorks
AppleWorks enhancement program
Apple IIGS; AppleWorks.

ReportWorks is a report generator that uses AppleWorks files to print lists, fill out forms and analyze data. The program allows users to design intricate reports, including purchase orders, statements, invoices, estimates and more. It also has the ability to perform math calculations more advanced than offered by AppleWorks and has enhanced sorting capabilities.
$49.95 retail
Megahaus Corp.; 5703 Oberlin Dr.; San Diego, CA 92121; 619-450-1230

TaxWorks
Handles federal income taxes
Apple IIGS; other Apple II models.

TaxWorks is an AppleWorks template that supports all of the common tax forms, including Forms 1040, 1040A and 1040EZ. It also supports Schedules 2106, R, SE and Forms 3906, 8615, 4562 and 2441. The templates print out forms in a format prepared under IRS guidelines and are accompanied by documentation on disk.
$29.95 retail
W*A*R* Software; 4974 N. Fresno St., Ste. 282; Fresno, CA 93726

The TimeOut Series
AppleWorks enhancements
Apple IIGS; AppleWorks.

The TimeOut Series is a family of AppleWorks enhancements that work from inside AppleWorks. TimeOut Quickspell corrects spelling in context or from a list of misspelled words; TimeOut Graph creates nine graph types; TimeOut SuperFonts prints with high-quality Macintosh fonts; Timeout UltraMacros memorizes keystrokes, provides mouse control, macros and built-in commands; TimeOut SideSpread prints spreadsheets sideways; TimeOut FileMaster performs all file and disk operations, and quickly loads or saves any size RAM disk; and TimeOut DeskTools comes with calendar, calculator, note pad, dialer, clock and more.
$69.95 retail; TimeOut QuickSpell
$79.95 retail; TimeOut SuperFonts
$89.95 retail; TimeOut Graph
$59.95 retail; TimeOut UltraMacros
$49.95 retail; TimeOut SideSpread
$49.95 retail; TimeOut FileMaster
$49.95 retail; TimeOut DeskTools
Beagle Bros., Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-296-6400

WriteWorks
Better writing in AppleWorks
Apple IIGS; other Apple II models.

WriteWorks is a stand-alone package that makes the AppleWorks word processor into a more powerful, more flexible word processing system. The package provides a number of features, including unlimited custom printers on a single disk, footnotes located at the bottom of the page, test printing of files to the screen, unlimited page numbering, support for all printer codes and compatibility with all hardware and software configurations.
$29.95 retail
W*A*R* Software; 4974 N. Fresno St., Ste. 282; Fresno, CA 93726

Books And Publications

Apple IIGS Assembly Language Programming
Tutorial on assembly language

Apple IIGS Assembly Language Programming is a tutorial that provides a complete introduction to the machine's architecture, the process of developing a program in assembler, the command set of the 65816 processor and the links between the assembler and the IIGS Toolbox. Included is also a set of examples of commonly used procedures.
$24.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

Apple IIGS Firmware Reference
Guide for programmers and hardware designers

The Apple IIGS Firmware Reference is a technical guide for programmers creating software for the Apple IIGS. It provides an extensive description of the internal operations of an Apple IIGS and presents the latest information about its firmware facilities.
$24.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

Apple IIGS Hardware Reference
Guide to Apple IIGS hardware

Designed as a companion volume to the Apple IIGS Firmware Reference, the Apple IIGS Hardware Reference provides an extensive description of the mechanisms and internal operations of an Apple IIGS. It also presents the latest information on all the machine's hardware.
$24.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

Apple IIGS Machine Language For Beginners
Assembly language tutorial
Apple IIGS.

Apple IIGS Machine Language For Beginners is a book designed for use with the Merlin 8/16 assembler. It starts by reviewing Peeks, Pokes and Calls in Applesoft BASIC and progresses through 20 chapters of how to write mouse-based, menu-driven programs. The book also includes information on writing ProDOS 8 and ProDOS 16 system files, all 65816 commands and Apple IIGS tools such as the Memory Manager, Menu Manager, Event Manager, Window Manager, QuickDraw, Text Tools and Miscellaneous Tools.

The vendor offers a companion disk for the book, the Apple IIGS Machine Language On Disk. It contains source files for the programs mentioned in the book.
$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 with software

The Apple IIGS ProDOS 16 Reference is Apple Computer, Inc.'s guide to ProDOS, the premier operating system for the Apple IIGS. The reference is packaged with ProDOS 16 software and the System Loader. The book documents ProDOS 16, the System Loader and software that works in concert with ProDOS 16.
$29.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

Apple IIGS Technical Reference
Apple architecture book

The Apple IIGS Technical Reference explores the inner workings of an Apple IIGS. All operating modes are explained so that readers can write software that runs on 8- or 16-bit systems.

The book reveals insights about an Apple IIGS' built-in software, the ROM operating system, the disk, serial input/outputs and the IIGS' Toolbox.
$19.95 retail
Osborne/McGraw-Hill; 2600 Tenth St.; Berkeley, CA 94710; 415-548-2805

Apple IIGS Toolbox Reference, Vols. I and II
Toolbox description book

The Apple IIGS Toolbox Reference is a two-volume set that describes the Apple IIGS Toolbox. The Toolbox itself is a collection of more than 600 ready-to-use routines that enable users to access the capabilities of the Apple IIGS.
$26.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

Exploring The Apple IIGS
Graphics and sound programming guide

Exploring The Apple IIGS is a technical introduction to the inner workings of a IIGS. It includes studies that tell how an Apple IIGS is built and how it works.

The book discusses the architecture and capabilities of the Apple IIGS' microproces-

sor, software development environments, ProDOS 16, memory mapping, super-high-resolution graphics and more.
$22.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

Human Interface Guidelines

Defines the Apple standard

The Human Interface Guidelines from Apple Computer, Inc. defines the Desktop Interface used in Apple IIGS-specific programs. The book describes the mouse pointer, windows, dialogue boxes, buttons, pull-down menus, scroll bars and other features. Programs that adhere to the standardized user interface guidelines are generally more consistent with other programs, and hence easier to use.

The book begins with a history of the desktop interface and describes its implementation on Apple family computers.
$14.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

ImageWriter LQ Reference

Technical reference source for printer

The ImageWriter LQ, Apple's new Apple II and Macintosh-compatible printer, has both letter-quality and high-resolution graphics capabilities.

The ImageWriter LQ Reference, written for programmers and serious hobbyists, provides techniques for implementing these advanced features. Descriptions are given for the hardware and software switches that control printer setup; commands that select character sets and features; and methods for sending graphics, color-printing commands and printer control codes in programs. Detailed appendices provide a printer command summary.

Written and produced by Apple Computer, Inc., the ImageWriter LQ Reference provides authoritative information necessary for programming with this new printer.
$22.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

Programmer's Introduction to the Apple IIGS

Introductory programming book

The Programmer's Introduction to the Apple IIGS explains essential concepts for programming the Apple IIGS. The book demonstrates event driven programming techniques, programming with the Apple Desktop user interface, effective use of the Apple IIGS Toolbox and how to write segmented, relocatable code that will make programs run more efficiently. Other topics include file handling, memory management, program launching and writing specialized programs such as shells and desk accessories.

The book is accompanied by a 3.5 inch disk which includes both source code and executable versions of HodgePodge, a functioning sample program written in 65816 assembly language, C and Pascal. The appendices offer source-code listings of HodgePodge in all three languages and hints on converting Macintosh programs and older Apple II programs to the Apple IIGS.
$32.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

Programming The 65816

Teaching manual and reference guide

Programming The 65816 introduces essential programming concepts for those writing software for the 65816, 6502 and related microprocessors. For example, three chapters introduce the architecture of three generations of microprocessors. The 65802 and 65816 share a single chapter because they execute the same instruction set. A teaching section surveys all 256 instructions, grouped into six categories. In addition, a reference section includes information and detail on how various instructions and addressing modes work, their syntax and their op codes.
$24.95 retail
Brady Books/Prentice Hall; One Gulf + Western Plaza; New York, NY 10023; 212-373-8232

Programming The Apple IIGS In C And Assembly Language

Tap the IIGS

Programming The Apple IIGS in C and Assembly Language helps the reader take advantage of the added power, speed, graphics and sound capabilities of the Apple IIGS. The book is a source for programmers who want to program in C and to integrate assembly language routines into their programs. Among the topics included are a look at the 65816 microprocessor, the APW compiler, the IIGS Toolbox, windows, menus and more.
$18.95 retail
Howard W. Sams & Co.; 4300 W. 62nd St.; Indianapolis, IN 46268; 317-298-5400

Technical Introduction To The Apple IIGS

Software conversion book

The Technical Introduction To The Apple IIGS is written for programmers who want to write their own software or adapt programs to an Apple IIGS. It provides an overview of the general design, system architecture, programming environments, Toolbox, graphic modes and sound capabilities of a IIGS.
$9.95 retail
Addison-Wesley Publishing Co., Inc.; Rte. 128; Reading, MA 01867; 617-944-3700

The Apple IIGS Book

Historical overview

The Apple IIGS Book chronicles the Apple IIGS computer from conception to development. It begins with a user's reference guide that explains basic computer concepts and working procedures, then explains the features of an Apple IIGS, the computer's 16-bit environment and some of its new software.
$18.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

The Apple IIGS Toolbox Revealed

Read before programming

The Apple IIGS Toolbox Revealed introduces the reader to crucial concepts before starting to program. Programming newcomers can take a look inside the computer and some of its circuits, and can learn about programming languages and how to choose the appropriate one. Experienced Apple II programmers can learn how the Toolbox works and how to incorporate its routines into C, Pascal and assembly language programs.
$21.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

Business And Productivity

ASCII Express

Powerful communications package
Apple IIGS; other Apple II models; modem

ASCII Express is a complete telecommunications program that has advanced and flexible features. The program includes a built-in editor, macro system, terminal emulation, unattended operationa and more.

ASCII Express supports all popular modems and data transfer speeds of up to 9,600 baud.
$129.95 retail
United Software Industries; 8399 Topanga Canyon Blvd., Ste. 200; Canoga Park, CA 91304; 800-332-7244 or 818-887-5800

BusinessWorks

Business accounting software
Apple IIGS; two 3.5-inch disks or hard disk; 80-column printer.

BusinessWorks is a full-featured accounting program comprised of the following modules: General Ledger, Accounts Payable, Accounts Receivable, Inventory Control, Payroll and the System Manager. The modules may be purchased separately or as a bundle.

Features of the program include on-line help, which is available at almost every prompt; pop-up windows that list needed account numbers and other information; password security; an interface that looks and acts like AppleWorks; and more.
$195 retail; each module
$95 retail; System Manager
$495 bundle retail
Manzanita Software Systems; One SierraGate Plaza, Ste. 200-A; Roseville, CA 95661; 800-531-3552 or 800-447-5700 in CA

CADAPPLE 3.5 Version 3

Design and drafting
Apple IIGS.

CADAPPLE 3.5 Version 3 features sophisticated precision drafting tools for educational and professional use. Included in this computer-aided design package are features such as floating-point operation, logical on-screen menu structure for easy learning and focused attention, single-keystroke command selection, interactive screen graphics and context-sensitive help screens.

The program also has built-in primitives, including curves and ellipses, as well as independent drawing attributes for line style, density and a plotter pen.
$995 retail
Versacad Corp.; 2124 Main St.; Huntington Beach, CA 92648; 714-847-9960 or 714-960-7720

DB Master Version 5

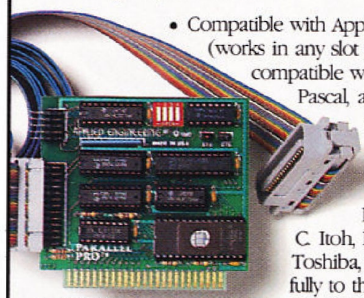
Versatile database management system
Apple IIGS; other Apple II models.

DB Master Version 5 is the latest and most powerful version of the DB Master family. It

Parallel Pro™

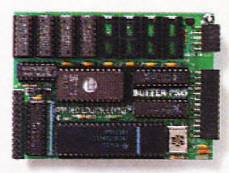
The Most Powerful Apple Printer Interface You Can Buy

When you're trying to find the right parallel interface for your printer, look to Applied Engineering to bring you the best in quality and features.



• Compatible with Apple IIe, IIGS, and II+ (works in any slot except 3). • Fully compatible with ProDOS, Dos 3.3, Pascal, and CP/M. • Works automatically with all software. • Supports almost all parallel printers including: Epson, IBM, Okidata, C. Itoh, NEC, Star Micronics, Toshiba, and more. • Conforms fully to the Centronic Standard • Built-in control panel allows easy access to set-up information • Automatic formatting of basic listings. • Built-in self test and Buffer Pro™ support • Extensive graphics print capability for the hi-res, double hi-res, and the IIGS super hi-res screens • Buffer option available (see below). • Includes 6-ft. cable for connecting to your printer.

Buffer Pro™



Buffer Pro adds memory to Parallel Pro, freeing your Apple from running the printer. With Buffer Pro, you can continue to use your Apple while the printer is printing. To add Buffer Pro to Parallel Pro, simply unplug the cable on Parallel Pro and plug Buffer Pro where the cable was, then plug the cable onto Buffer Pro. That's it!

• Compatible with IIe, IIGS, and II+. • Fits in a IIGS with or without fan. • Adds 32 to 256 pages of printer buffering. • User expandable using 64K or 256K RAM chips one chip at a time and in any combination. Each 256K chip adds 32 pages (maximum of 8 chips). • Connects directly to Parallel Pro. • Works automatically with all software • May be paused or cleared with simple commands (unlike other buffers, you don't have to "shoot the computer" if you want to stop the print-out before it's done).

Both Parallel Pro and Buffer Pro come with a comprehensive manual, a 5-year warranty — parts & labor, and outstanding technical support if needed.

Parallel Pro. **$89.00**

Buffer Pro Option: with 32-page buffer. **$99.00**
with 128-page buffer. **$139.00**
with 256-page buffer. **$169.00**

Order today!

See your dealer or call Applied Engineering today, 9 a.m. to 11 p.m. 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add 7% sales tax. Add $10.00 outside U.S.A.

APPLIED ENGINEERING™
The Apple enhancement experts.

(214) 241-6060
P.O. Box 798, Carrollton, TX 75006

Prices subject to change without notice.

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Other brands and product names are registered trademarks of their respective holders.

Reader Circle Number 7

uses menus, text line input and a "dynamic prompting system" to help users build sophisticated database applications on the Apple IIGS. The product works with all ProDOS disk drives and most RAM disks and easily exchanges data with other programs, including AppleWorks. DB Master Version 5 also offers several field types.

From the main menu, 33 separate functions are available, grouped into four categories: Data Entry and Search, Report Generator, Maintenance Functions, and Change Files or Exit. The program comes with a 450-page manual and technical phone support.

DB Master Version 5 Professional brings multifile relational capability to the DB Master user.
$179 retail; DB Master Version 5
$295 retail; Professional Version
Stone Edge Technologies, Inc.; PO Box 200; Maple Glen, PA 19002; 215-641-1825

Dental Office Management IIP

Dental office management
512K Apple IIGS; SCSI hard drive; 3.5-inch disk drive; 130-column printer.

Dental Office Management IIP provides a mouse-selectable integrated application for patient billing, claim form preparation, appointment scheduling, patient transaction histories, treatment records/plans and word processing.

The system will handle up to 10 dentists/hygienists and 9,000 patients and will maintain appointments for a year.
$1,295.95 retail
CMA Micro Computer; 55888 Yucca Trail; PO Box 2080; Yucca Valley, CA 92286-2080; 619-365-9718

Desk Manager

Five ways to clean a desk
Apple IIGS; other Apple II models.

Desk Manager is designed to handle all the notes, memos, thoughts and appointments that need to be recorded each business day. The program features pull-down windows that allow users to operate all five programs at once.

The Letter Writer features cut and paste, search, move and other features found in stand-alone word processors. The Note Pad keeps track of short memos and lists things to do. The Calendar will track appointments on a daily basis and can be viewed by day or month.

The Address Book can be configured to the user's tastes and will search and sort entries and print labels. The Calculator features a memory where results can be stored and pasted into the Letter Writer.
$39.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

GS File

Graphical database management system
Apple IIGS; 512K.

GS File is a mouse-oriented database manager designed specifically for the Apple IIGS. It simulates a real desktop and appears very much like a Macintosh program.

The program is RAM-based and works similar to AppleWorks. Pull-down menus are used to design, edit and print files with the mouse. The program's report generator allows users to visually control how printouts appear.
$99.95 retail
Softwood Co.; 1311 Anacapa St.; PO Box 90331; Santa Barbara, CA 93190; 805-966-4662

List Manager

Database and report generator
Apple IIGS; 768K.

List Plus is a full-featured IIGS database and report generator for keeping up-to-date business or personal records, mailing lists and labels, customer lists, name and address files, etc. It features a mouse interface and pull-down menus and allows users to input data easily and without prior setup. Reports are generated using a Quicklist feature.
$99.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Managing Your Money

Financial Planning/small-business package
Apple IIGS; two disk drives.

Managing Your Money combines nine integrated programs in one to help users organize and analyze their financial affairs, from basic checkbook management to complex investment tracking.

More than 200 help screens are provided in the program on subjects ranging from investment portfolios, taxes, life insurance needs and net worth. The program is integrated and generates a variety of reports.
$149.95 retail
MECA Ventures, Inc.; 355 Riverside Ave.; Westport, CT 06880; 203-226-2400

Medical Office Management IIP

Medical office system
Apple IIGS; 512K; SCSI card; SCSI hard disk; 130-column printer.

Medical Office Management IIP is a mouse-selectable integrated application for patient billing, claim form preparation, appointment scheduling, patient transaction histories, medical records and word processing. It will handle up to 10 doctors and 9,000 patients. A year's appointments can be maintained on the system for scheduling and recall of patients for their physicals and checkups.
$1,295.95 retail
CMA Micro Computer; 55888 Yucca Trail; PO Box 2080; Yucca Valley, CA 92286-2080; 619-365-9718

MouseTalk

Telecommunications
Apple IIGS; other Apple II models; modem.

MouseTalk is a telecommunications product that uses a Macintosh-like interface and features a mouse-driven operating environment and pull-down menus.

Program features include a built-in, full-screen text editor and macro system and the ability to use keyboard commands as an alternative to a mouse, unattended operation and terminal emulation.

MouseTalk accommodates data-transfer speeds up to 19,200 bits per second on the Apple IIGS and is compatible with most popular modems.
$99.95 retail
United Software Industries; 8399 Topanga Canyon Blvd., Ste. 200; Canoga Park, CA 91304; 800-332-7244 or 818-887-5800

Notes 'N Files

Database and word processor
Apple IIGS; 512K.

Notes 'N Files combines a database filing system with a word processor-like editor. The product includes full mail-merge and mailing-label management capabilities. According to its vendor, Notes 'N Files also

offers a desktop environment with graphic representation of filing cabinets, office stationery, etc.

Other features include direct import of AppleWorks files, choice of font size and typefaces, and a customized mailing list capability.
$129.95 retail
DataPak Software, Inc.; 14011 Ventura Blvd., Ste. 507; Sherman Oaks, CA 91423; 800-327-6703 or 818-905-6419

On Balance
Personal finance program
Apple IIGS.

On Balance for the Apple IIGS is a personal finance program with information entry screens designed to look and work like a checkbook register. It provides a familiar format for people trying to get used to electronically recording their financial records.

The program includes record keeping and automatic reconciliation, reports net worth and net income, develops monthly and yearly budgets and prints and balances checks.
$59.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500

Personal Accountant 2.0
Personal accounting system
Apple IIGS.

Personal Accountant 2.0 has a desktop interface resembling the Macintosh. Data can be entered using either a mouse or the keyboard, and files can be exported to most spreadsheets. The latest version is a financial package designed for personal and small business use. It contains an easy-to-use double entry bookkeeping system and automatically posts entries to the general ledger.
$49.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

Point-To-Point
Telecommunications program
Apple IIGS; other Apple II models; two disk drives; extended memory card recommended.

Point-To-Point opens an Apple IIGS to the world of telecomputing and lets it communicate with almost any computer and modem. It can electronically search databases, join ongoing real-time discussions and swap programs and files. Several communications protocols are supported, including standard binary II and extended Xmodem.
$129 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Profiler 3.0
Database management system
Apple IIGS; other Apple II models; hard disk drive recommended.

Profiler 3.0 uses both a textual and mouse-based interface. Its B-tree file saving format works fast and efficiently. The Apple IIGS text screen is used for input and output, but an Apple mouse can be used for menus and record selection.

Each Profiler 3.0 record can be up to eight screens long, and fields can occupy the entire screen. This makes very large entries possible, including directory material.
$129 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Proterm
Telecommunications
Apple IIGS.

Proterm is a telecommunications package that features a Scrollback buffer that captures all text as it crosses the screen, allowing a user to scroll forward and backward through data for editing, printing or saving to disk.

Other features include automatic macro generation for log-on to remote databases, support for larger memory cards and sophisticated data transfer capabilities. Version 2.0 also includes a text editor, full VT100 emulation and exec procedure files that can be called from Proterm macros.
$95 retail
Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 800-325-7347 or 602-966-5802

Salary Magic
Salary spreadsheet
Apple IIGS; 512K.

Salary Magic is a spreadsheet/database program designed to calculate employees' salaries, benefits and annual raises.

Salary schedules are created quickly, and tools are provided to make what-if projections individually and collectively. Raises, benefits and experience can be taken into account and recalculated based on alternatives to current proposals.
$395 retail
Magic Software, Inc.; 1706 Galvin Rd. S.; Bellevue, NE 68005; 800-342-6243 or 402-291-0670

Tax Preparer
Tax accounting software
Apple IIGS.

The latest edition of Tax Preparer contains information for filing under the Tax Reform Act. The new edition also contains major advances in speed, automation and ease of use.

Among the program's automated features are on-screen support to guide users through the program, a calculator scratch pad, unlimited itemizing and built-in record keeping.
$250 retail
HowardSoft; 1224 Prospect St., Ste. 150; La Jolla, CA 92037; 619-454-0121

Telecomm Plus
Communications
Apple IIGS; 512K.

Telecomm Plus is made specifically for the Apple IIGS. It allows the user to connect to on-line services such as The Source and Compuserve, send and receive art and files, search information services and take part in on-line conversations. The program uses the IIGS interface, allowing the use of pull-down menus and pointing and clicking of the mouse.

The program features a procedural language that can do conditional branching such as If...Then and Go. Among other things, this means the user can set up a procedure that allows him to communicate at any time without being at the computer. Telecomm Plus also contains macro keys that automate sequences of frequently used keystrokes and save time re-entering the same information.
$99.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Trio
Integrated word processor, database, spreadsheet
Apple IIGS; other Apple II models.

Trio combines three computer programs on a single disk. It is designed with continuous on-screen prompts, plus pull-down windows for instant on-screen help. An integra-

tion feature allows information to be passed from one module to another.

Trio Word is a word processor that features find and replace, full word wrap, undo, left/right justify, center text, underline, bold, italics, flexible print and label configuration, insert and delete modes, and more.

Trio Calc offers a large flexible worksheet that uses a natural order of recalculation to automamtically update the spreadsheet whenever a change is made. Cells, or blocks of cells, can be copied, moved or erased.

Trio File gives a user the flexibility to design many types of databases. It searches, sorts and prints records and labels.
$59.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

VIP Professional
Integrated spreadsheet
Apple IIGS; extended memory card recommended.

VIP Professional is an integrated spreadsheet with database and graphics features. It incorporates the features and functionality of Lotus 1-2-3, as well as a mouse interface with pull-down menus and icons. The program offers file compatibility with Lotus 1-2-3 and AppleWorks, thereby allowing users to move spreadsheets from one program to another.

The latest version offers performance improvements in recalculation speed and other areas.
$299.95 retail
ISD Marketing, Inc.; 2651 John St., Unit 3; Markham, Ontario, Canada L3R 2W5; 416-479-1880

Visualizer
Business graphics
Apple IIGS.

Visualizer is a business graphics program designed to take advantage of the graphics capabilities of an Apple IIGS, including color, mouse support, fonts and pull-down menus.

Features include the ability to display title and legend boxes; more than 100 colors for text and graphs and a graph background that can be displayed in different color patterns.
$99.95 retail
PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

Creative

816/Paint
Color graphics program
Apple IIGS; other Apple II models; color monitor.

816/Paint software supports the 4,096-color super high-resolution mode on the Apple IIGS. In fact, the latest version supports all Apple color graphics modes, including the 320 and 640 modes. The program also works with several popular graphics printers, including Epson and Apple models.

Users can scale, rotate, stretch or paint any object on screen. The program can be used to illustrate "video slides," to produce clip art for desktop publishing or as a form of entertainment.
$75 retail
Baudville, Inc.; 5380 52nd Street SE; Grand Rapids, MI 49508; 616-698-0888

Award Maker Plus
Award-style graphics
Apple IIGS; printer.

Award Maker Plus is graphics software designed to create awards, certificates, licenses, coupons or other documents. It is compatible with The Print Shop from Broderbund and has 12 border designs that can use any of 14 colors.

Users can choose their own custom high-resolution pictures on award styles or choose from 286 prepared award styles. Users can also choose text styles, enter messages and select colors.
$39.95 retail
Baudville, Inc.; 5380 52nd Street SE; Grand Rapids, MI 49508; 616-698-0888

Clip Art Gallery
Clip art software
Apple IIGS; graphics program.

Clip Art Gallery is a database of more than 600 images designed for use with several Apple IIGS graphics programs. It consists of pictures in 24 categories, including business, school, sports, American themes, animals, bugs, fantasy, outer space, gadgets, people and holidays.

The product is designed to work with Paintworks Plus and Writer's Choice Elite, or any other IIGS-specific paint or word processing program.
$29.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Deluxe Library
Clip art software
Apple IIGS: DeluxePaint II.

Deluxe Library is a family of color clip art disks for DeluxePaint II.

Art Parts, Volume I contains more than 175 color images, including faces, maps, charts, birds, plants and fantasy art ranging from dinosaurs and African landscapes to alien creatures.

Art Parts, Volume II contains more than 100 color images in 12 categories, including astronomy, military, interiors, seascapes, people, store fronts, farms and nature.

Seasons & Holidays contains art for holidays, including New Year's Eve, Easter and the Fourth of July.
$29.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

DeluxePaint II
Paint software
Apple IIGS; color monitor.

DeluxePaint II contains more than 90 painting tools and effects, including perspective, custom brushes, variable zoom, stenciling, fixed backgrounds, gradient fills, pattern fills, color cycling, font control and symmetry.

Users can copy or pick up any piece of a painting, and use it as brush or fill pattern. The "brush" image can be rotated, stretched and flipped (vertically or horizontally), or used as a nozzle on the Airbrush tool.
$99.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

DeluxePrint II
Design your own messages
Apple IIGS.

DeluxePrint II is a creativity program for designing cards, signs, banners, letterhead, labels and calendars. A full-featured editor allows users to create their own clip art or modify over 200 images found on the program disk.

Users can also import clip art or background art from DeluxePaint II or other popular IIGS paint programs.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Design Your Own Home, Architecture

Rewritten for the Apple IIGS
Apple IIGS; 512K.

Design Your Own Home, Architecture has been rewritten from the ground up to provide new features and a new user interface. The program enables the user to draw floor plans, view building plans and structural details with ease. Shapes can be rotated, scaled up and down or arranged in numerous ways on the screen.

The program also features zoom, 360-degree variable shape rotation and color printing.

The vendor says that an interior and a landscape version is coming soon.
$89.95 retail
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Draw Plus

Drawing software
Apple IIGS.

Draw Plus is a full-color drawing program that can be used together with Paintworks Plus, Writer's Choice Elite and Clip Art Gallery to create and customize graphics and documents in limitless ways.

With Draw Plus, users can create floor plans, logos, forms, letterheads, flow charts and organizational charts, furniture arrangements, presentation graphics, landscape designs and more.
$89.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Fantavision IIGS

Animation and special effects
Apple IIGS; color monitor.

Fantavision has been rewritten to make full use of the Apple IIGS' color, speed, sound and super high-resolution screens. Using "Tweening and Transformation" tools, a user can create detailed animation without needing to be an artist or expert animator.

With Tweening, Fantavision can create up to 64 intermediate frames of animation for each user-drawn image. Transformation enables Fantavision to automatically transform one object to another.

The enhanced sound capabilities of the Apple IIGS are also supported.
$59.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500

Paint Write Draw

Three programs in one.
Apple IIGS; 512K; color monitor; 1.25 MB suggested when using Writer's Choice Elite.

Paint Write Draw is a combination of three products: Paintworks Plus, a paint/graphics/animation program; Writer's Choice Elite, a full-color word processor with graphics integration; and Draw Plus, an object-oriented precision drawing tool. The new product also includes Clip Art Gallery, a collection of over 650 colorful, ready-to-paste images.

These Apple IIGS creativity/productivity programs look and work alike, using the Apple standard interface of pull-down menus and simple, one-step mouse operations. They also work together — an integrated family of products for the IIGS. Users can combine artwork and pictures from one with text from another through simple cut and paste commands.
$179.95
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Paintworks Gold

Sophisticated paint program
Apple IIGS; RGB monitor; 1 MB expansion card.

Paintworks Gold offers more than 80 new features over its predecessor, Paintworks Plus. For example, it allows users to work on two full pages for creating art. The second page can also be used as a separate document or as a draft copy of page one. In addition, the second page can be used as a fixed background for page one, allowing both pages to be saved as a single picture. Color masking allows the user to select colors that can be protected from being painted over.

Other features include 3-D perspective; setting of vanishing points so that 3-D is automatic; selection of any area on screen for painting; gradient color blending, allowing selection of 16 colors and four gradient patterns; use of multiple transparent colors (up to 16 colors); four levels of Fat Bits magnification; color control; compatibility with all IIGS graphic standards; and more.
$99.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

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For IIGS or Apples/compatibles with at least 256K RAM, only $27.95 (includes shipping). Requires AppleWorks; printer recommended. Available on 3.5-inch disk; add $3. We also offer **1040Works** for 128K Apples, $24.95. In NY add state/local tax. Check or money order, or for bank card orders, call

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Paintworks Plus
Paint program
Apple IIGS.

Paintworks Plus allows Apple IIGS computer users to produce multicolored graphics which can come alive in animated sequences. The program contains a Clip Art Gallery with over 600 images.

The color imagery uses all 4,096 separate colors, and up to 128 customized color palettes may be saved for future reference. Other features include a color search that identifies all areas of an image that use any color or color shade; a mirror option that provides the ability to draw symmetrical shapes; and a lasso that gives users the power to move any image without capturing the background.
$69.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Postcards
Creative paint and print product
Apple IIGS.

Postcards is a collection of crazy clip art, bizarre backgrounds and creative captions that can be used for making postcards, invitations, office notes, momentos and more. Postcards includes a full-featured paint program so the user can write and design his own artistic creations. The Apple IIGS version requires the use of Paintworks Plus.
$29.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

ShowOff
Professional-looking visuals
Apple IIGS.

ShowOff is designed to help users produce overhead transparencies, 16-color printed sheets and IIGS interactive video slide shows. The program includes over 380 graphics, 140 borders and a variety of type styles and sizes. In addition, ShowOff offers a built-in graphics editor and design tools that let users create original graphics.
$59.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500

The Graphics Studio
Do-it-yourself studio
Apple IIGS; 512K; color monitor.

The Graphics Studio is designed for creative artists from novice to professional. It features cutting and pasting from a full screen clipboard, text capability and compatibility with all GEM font options. Color cycling capability can also be used to produce animated pictures.

Drawings can be rendered in an 8.5- by 11-inch format by utilizing the automatic shadowing option, a color palette of 512 colors and a pattern library with 24 preset options, each of which can be altered. Text can then be added in five sizes and different type styles. Graphic images and text can be saved to a disk or printed on a compatible printer.

The Graphics Studio also features a variety of drawing tools, including freehand and line drawings, rays, circles, ovals, polygons, flood and line fill (horizontal and vertical), and spray paint capabilities.
$69.95 retail
Accolade; 20813 Stevens Creek Blvd., Ste. 102; Cupertino, CA 95014; 408-446-5757

Top Draw
Design software
Apple IIGS; color monitor.

Top Draw is an object-oriented drawing program that offers structured graphics and Macintosh-like features similar to MacDraw. Drawings are based on mathematically defined shapes that can be moved, grouped, placed on top of one another, duplicated, reshaped, resized and filled with patterns and colors.

Objects can also be flipped vertically or horizontally, rotated in 90-degree increments and protected from unintentional editing or deletion.
$99.95 retail
StyleWare, Inc.; 5250 Gulfton, Ste. 2E; Houston, TX 77081; 713-668-1360

Desk Accessories

Deskpak
Under the Apple icon
Apple IIGS.

Deskpak is one of the first desk accessories designed for the Apple IIGS. It provides 10 Macintosh-like accessories, which are installed and accessible under the Apple icon found on most IIGS programs. The program includes file tools, a calculator, a system security lock, a file printer and more. Deskpak is compatible with all IIGS software using the Apple icon in the menu bar.
$39.95 retail
Simple Software; 4612 N. Landing Dr.; Marietta, GA 30066; 404-924-2667

DeskWorks
A collection of utilities
Apple IIGS.

DeskWorks combines the standard desk accessories familiar to Macintosh users — a scrapbook and notepad, for example — with additional accessories, including a phone dialer, scientific calculator, keyboard macros, a scrapbook for storing graphic images and an alarm clock. The product includes a utility for blanking the IIGS screen when the computer is not in use.
$59.95 retail
StyleWare, Inc.; 5250 Gulfton, Ste. 2E; Houston, TX 77081; 713-668-1360

Pinpoint Desktop Accessories
ProDOS enhancements
Apple IIGS; other Apple II models; two disk drives; AppleWorks 1.3 or later version or selected ProDOS applications; extended memory card recommended.

Pinpoint Desktop Accessories offers a complete selection of pop-up tools designed to enhance AppleWorks or other selected ProDOS programs. Its eight applications include Appointment Calender, Calculator, Communications Window, Telephone Dialer, Graphmerge, Notepad, Quicklabel and Typewriter.

With Pinpoint Desktop Accessories, an entire program remains resident in RAM while AppleWorks (or other ProDOS programs) continue in the foreground.
$89 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Pinpoint Starter Pak
Three-in-one package
Apple IIGS; other Apple II models.

The Pinpoint Starter Pak combines three of Pinpoint Publishing's programs onto one 3.5-inch disk: the Pinpoint Desktop Accessories, Spelling Checker and KeyPlayer macro keys. The three programs include a total of 10 accessories that can be preinstalled for one low price.

$149 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Softswitch
Desk accessory
Apple IIGS; 512K.

Softswitch is a desk accessory that allows users to switch among several applications loaded into RAM with just a keystroke. It installs automatically and allows users to cut and paste regular and double high-resolution screens between certain graphics programs, such as The Print Shop, Fantavision, Blazing Paddles, LogoPrint and others.

The program is able to revert from the current program to an earlier state, enabling the user to switch back and forth between different locations in the same program.
$59.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

The Communications Manager
Desktop communications
Apple IIGS; 512K; The Desktop Manager.

The Communications Manager works in conjunction with The Desktop Manager from the same vendor. It runs as an accessory on the Apple IIGS and provides most standard telecommunications features, including Xmodem and Binary II file transfer protocols, fast downloading and more.
$49.95 retail
On Three, Inc.; 4478 Market St., Ste. 701-702; Ventura, CA 93003; 805-644-3514

The Desktop Manager
Unclutters the desktop
Apple IIGS; 512K.

The Desktop Manager is a full-featured desk accessory that runs with most ProDOS 8 and ProDOS 16 applications. It includes: a Note Pad with word processing features such as word wrap and automatic repagination; a Calculator with 16-digit precision and paper tape printout; a Printer Manager for printer control; an Envelope Labeler for defining mailing labels; an ASCII chart; a Screen Print facility; Cut and Paste between applications; and an Appointment Calendar.

All accessories run in the background. In addition, the program is expandable with other add-on accessories from the vendor.
$89.95 retail
On Three, Inc.; 4478 Market St., Ste. 701-702; Ventura, CA 93003; 805-644-3514

The Disk Manager
Utilities from within any program
Apple IIGS; 512K; The Desktop Manager.

The Disk Manager accessory works with The Desktop Manager from On Three, Inc. and provides access to several disk functions from any program. They include: list files to screen; print files; copy files between disks; delete, rename and lock/unlock files; copy disks; format and erase disks; verify disks; create subdirectories; and more.
$39.95 retail
On Three, Inc.; 4478 Market St., Ste. 701-702; Ventura, CA 93003; 805-644-3514

Video Link
Controls videodisc players
Apple IIGS; videodisc player.

Video Link is a desk accessory for use in interactive video which facilitates the control of videodisc laser players via graphic icon buttons and video script files. It allows a user to access a laser player while inside another software program. For example, a presentation can be made via television projection to a large audience utilizing images from a laser player. At the same time, text or drawings can be done on the screen from inside a graphics program.
$79 retail
Knowledgeware; PO Box 2292; Paso Robles, CA 93447; 805-238-5233

Viva Presents!
Access to video laser players
Apple IIGS; laser player.

Viva Presents! is a desk accessory utilizing a simulated remote control via graphic icon buttons. It allows a user to access a laser player while inside another software program. For example, a presentation can be made to an audience utilizing images from the laser player, and, at the same time, text or drawings can be done on the screen from inside a graphics program. Viva Presents! is designed for use by educators, lecturers and training programs.
$129 retail
Knowledgeware; PO Box 2292; Paso Robles, CA 93447; 805-238-5233

Desktop Publishing

Medley
Integrated desktop publishing
Apple IIGS; 1 MB; color monitor recommended.

Medley is an integrated desktop publishing program created specifically for the Apple IIGS. It combines complete word processing, artwork and page layout capabilities into a single program.

Features include: complete word processor, with justify, hyphenation, change of fonts, etc.; complete color artwork functions, including ability to modify clip art pictures; complete page layout capability, including multiple columns; an 80,000-word spelling checker; a thesaurus; movement from text to art functions and back; and a 500-picture clip art library.
$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
Apple IIGS; other Apple II models.

Personal Newsletter provides integration of text, graphics and page composition. The program includes a wide selection of fonts and many type styles, including underline, boldface, italics, reverse, outline, shadow, fat and tall. Other features include word wrap, cut and paste, up to 10 columns, newspaper-style headlines, on-screen help and 30 fill patterns.

The program also imports files from The Print Shop, Dazzledraw and other programs, including double high-resolution graphics. In addition, Personal Newsletter includes a library of clip art and imports ASCII files from any word processor.
$59.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

Printrix 1.1
Font printing package
Apple IIGS; printer.

Printrix is a font printing package that includes a large selection of fonts. It enhances the print quality of many dot-matrix printers, including the ImageWriter and Epson FX series printers and allows direct printing of text files from AppleWorks, AppleWriter, WordPerfect and Word Juggler.

The software also merges text and graphics together, includes boldface and italic lettering, prints in color, on-screen preview and more.
$65 retail
Data Transforms, Inc.; 616 Washington St.; Denver, CO 80203; 303-832-1501

Springboard Publisher
Publishing program
Apple IIGS; other Apple II models.

Springboard Publisher is a desktop publishing package designed for those who create and publish pages in the home, school and business. Pages can be preformatted or the user can work free-form. All of the tools are available on screen and are accessed through pull-down menus.

Page-layout features include "intuitive text" that automatically flows around graphics; direct import of AppleWorks files; multiple-column, variable-width column pages; automatic borders to separate sections of the page; and the capacity to insert and overlap both text and graphics.

The program includes a full-featured word processor, graphics tools and can print using dot matrix printers or laser printers, using the optional Laser Driver product.
$139.95 retail; Springboard Publisher
$39.95 retail; Laser Driver
$29.95 retail; Style Sheets
Springboard Software, Inc.; 7808 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3915

The Print Shop Graphics Library Sampler Edition
Art for The Print Shop
Apple IIGS.

The Print Shop Graphics Library Sampler Edition is a collection of 190 professionally designed graphic elements that introduce users to artistic excellence. The disk includes full-color graphics that can be used all year long with The Print Shop, including art for holidays, birthdays, weddings, anniversaries and special occasions.
$34.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500

The Print Shop IIGS
Personal publishing
Apple IIGS; printer.

The Print Shop has been redesigned to take advantage of the power, color and resolution of the Apple IIGS. The IIGS version of The Print Shop can be used to create personalized greeting cards, stationery and banners (either vertically or horizontally) and print out creations in up to 10 colors.

The program offers a wide range of type styles and sizes and dozens of multicolored graphics, borders and backgrounds. Graphics are available in small, medium and large sizes, and users can put two graphics on the same page. A sophisticated graphics editor for editing multicolor graphics is also included, along with full on-screen Preview and Save features.
$59.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500

Education

Calendar Crafter
Creates customized calendars
Apple IIGS; 512K; printer.

Calendar Crafter is a utility that allows teachers to create and print customized calendars for a week, month or year. Event information can be added to appropriate dates. Designed to work specifically with the Apple IIGS, Calendar Crafter includes the ability to store holidays, birthdays and other events using up to 10 categories and 100 events per category.
$59 retail
Minnesota Educational Computing Corp. (MECC); 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Clock Works
Time teaching program
Apple IIGS.

Clock Works teaches young users in grades 1 through 3 how to tell time and set time on both analog and digital clocks. It uses both time intervals, such as minutes, quarter-hours and hours, etc., and words. The program offers animation and sound as rewards for correctly answering questions.

Four activities make up the bulk of the program: What's The Time; Set The Clock; Digital Drill; and The Clock Factory.
$55 retail
Minnesota Educational Computing Corp. (MECC); 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Computer Mad Libs
Entertainment word game
Apple IIGS; 768K.

Computer Mad Libs is an electronic version of the party game people have been playing for years. The program's stories use the vendor's Smoothtalker speech technology to let players hear their stories with humorous results.

This strategic word game is appropriate for all ages and provides pure entertainment illustrated with cartoons. Mad Libs Titles, Mystery Mad Libs and Mad Libs Library are the main menu choices so far available.
$19.95 retail
First Byte, Inc.; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

CSL Marks
Software for teachers
Apple IIGS.

CSL Marks is a fast, easy program that allows teachers to produce reports. It handles the production of report cards and keeps complete academic progress records. Among the areas tracked are standard comments from teachers regarding students, grading scale with up to 41 user-defined letters or numeric grades, sorts by student name or I.D., and production of Individual Student Reports, Class Lists, Spreadsheet Reports and more.
$75 retail; individual teacher license
$250 retail; school site license
Chancery Software, Ltd.; 500-1168 Hamilton St.; Vancouver, BC, Canada V6B 2S2; 604-685-2041

Elfe
Grammar for French students
Apple IIGS; 512K.

Elfe is a set of exercises designed to give students practice on the basic grammar points of the French language. It includes 800 exercises grouped according to verb forms, functions words and sentence patterns. The exercises include most of the grammar forms and structures typically presented in elementary and intermediate French classes. Each exercise contains between five and 35 items so that students have ample opportunity to master each grammar form. The software is available in modules or a complete set.

$480 retail; complete set
Conduit; The University of Iowa; Oakdale Campus; Iowa City, Iowa 52242; 319-335-4100

First Letters And Words

Alphabet learning program
Apple IIGS; 768K.

First Letters and Words introduces children 3 to 6 to the alphabet through a talking narrator named Ted E. Bear. First Letters and Words is the second title in First Byte's Building Blocks for Learning series.

The program is an early education skill builder in letter formation and building letters into words. It incorporates synthesized speech to aid children in learning reading readiness skills.
$49.95 retail
First Byte, Inc.; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

First Shapes

Basic shapes recognition program
Apple IIGS; 768K.

First Shapes is an elementary program on geometric shapes for children ages 3 to 8. It introduces young learners to the world of geometric shapes and sizes through a talking character named Ted E. Bear.

The program helps children increase their understanding and interest in mathematics and boosts their confidence in problem-solving and independent decision making.
$49.95 retail
First Byte, Inc.; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Garden Series

Primary education software
Apple IIGS.

This series of 10 programs based on natural science themes invites discussion of many different topics, including the plant kingdom, the weather and its influences and water in its different states. Many social, pre-reading and premath skills are encouraged and developed.

The programs include Grow A Garden, Trees And Seasons, Gardening Tools/Gardening Step-By-Step, Parts Of A Flower, Flower Pollination/Growing A Bean Seed, and Flowers And Their Leaves.
$39.95 retail
DIL International; 2115 Boivin; Ste-Foy, Quebec, Canada GIV IN6; 800-463-5581 or 418-687-9788

GradeBook Deluxe

Grade tracking for teachers
Apple IIGS; other Apple II models.

GradeBook Deluxe, Version 3.4, has been enhanced for the Apple IIGS with several new features. The latest version prints student names on labels, automatically personalizes report comments with each student's name, allows teachers to select and substitute a minimum topic average and more. It handles up to 255 grades per student, 40 students per class and up to 18 classes.
$59.95 retail
EduSoft; PO Box 2560-PS; Berkeley, CA 94702; 800-EDUSOFT or 415-548-2304 in CA

Homework Helper-Math Word Problems

Math program
Apple IIGS.

This program teaches students a step-by-step method of solving many types of math word problems. Geared for grades 7 through 12, it shows how the key to solving math word problems is in building a proper equation with the provided information.

The program includes a tutorial section with a complete range of problems in terms of type and level of difficulty, includes help screens that explain prompts and questions in greater detail and provides calculator and word processor modules.
$49.95 retail
Spinnaker Software Corp.; 1 Kendall Sq.; Cambridge, MA 02139; 617-494-1200

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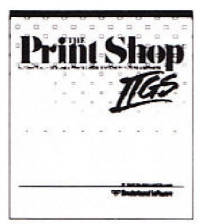
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Reader Circle Number 9

Homework Helper-Writing
Term paper program
Apple IIGS.

Homework Helper-Writing guides students through the three fundamental steps in writing a paper: formulating ideas about the topic, organizing those ideas into an outline and writing the actual text. The program is designed to address book reports and essays, the most common writing assignments for students in grades 7 to 12.
$49.95 retail
Spinnaker Software Corp.; 1 Kendall Sq.; Cambridge, MA 02139; 617-494-1200

Homeworker
Secondary education program
Apple IIGS; other Apple II models.

Homeworker is a productivity tool for secondary and college students that is designed to provide the tools necessary to earn good grades. The program attempts to accomplish this objective through six integrated modules: Work Processor, Outliner, Flash Card Maker, Grade Keeper, Calendar and Calculator with conversion tables.

Homeworker features on-screen tutorials, special multiple-learning activity data files and a clipboard for easy transfer of material from one module to another.
$89.95 retail; Home Edition
$249.95 retail; Classroom Edition with 10 disks
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-4070

Information Laboratory Software: Life Science
Database on disk
Apple IIGS; 512K; color monitor.

Information Laboratory Software: Life Science is a research database for students in grades 6 to 9. The database contains more than 600 data cards and illustrations following life science themes. Among subjects covered are animal kingdom, biographies of scientists, ecology, health and more.

The program uses a Macintosh-like interface and pull-down menus. Students work their way through menus and become familiar with interesting life science facts.
$72 retail; school
$96 retail; consumer
Addison-Wesley Publishing Co., Inc.-School Division; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 800-227-1936 or 415-854-0300

KidsTime II
Creative software
Apple IIGS; 512K; color monitor.

KidsTime II contains two educational programs designed for children ages 3 to 10: ABkey and KidsNotes.

ABkey is a letter-recognition/keyboard skill program that contains different levels of difficulty. The simplest level involves identifying an uppercase letter on screen and pressing the corresponding key on the keyboard. A more difficult level involves identifying lowercase letters.

KidsNotes is an introductory music program that allows a child to explore the many aspects of music. An assortment of simple melodies, familiar to young children, is included on the disk.
$39.95 retail
Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

KidTalk
Talking notebook
Apple IIGS; 768K; color monitor recommended.

According to its vendor, KidTalk increases a child's ability to read, write and communicate ideas. It creates an environment in which a child can write, hear and read stories, reports, plays, poems and secret messages.

KidTalk provides word-oriented pull-down menus for older children along with standard file, edit and print commands. For younger children, it offers picture-oriented menus with speech capability that allows a child to hear an entire story or have each letter, word or sentence spoken as it is entered into the computer.
$49.95 retail
First Byte, Inc.; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Mastering Math
Drill-and-practice software
Apple IIGS.

Mastering Math is a collection of arithmetic drill-and-practice software for students in grades 1 through 4.

Coordinate Math provides students in grade 9 with practice at using Cartesian coordinate systems. Equation Math is designed for high school students choosing to investigate linear, quadratic or trigonometric equations.
$35 to $60 retail; individual Mastering Math packages
$400 retail; all 10 packages in Mastering Math
$59 retail; Coordinate Math and Equation Math (3.5-inch disk)
Minnesota Educational Computing Corp. (MECC); 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Math And Me
Math by motivation
Apple IIGS; other Apple II models.

Math and Me is designed to build early math skills with 12 motivating learning games in four areas of math: Shapes, Numbers, Patterns and Single-Digit Addition. The program has been developed for children ages 3 to 6.

Math and Me motivates and rewards children with sound and animation as they learn, through the 12 activities. A graphic certificate may be printed each time an activity is successfully completed. The certificate is designed so that children may color and display it.

With the vendor's Early Learner Interface, children have the option of using a mouse or the keyboard to select icons and answers. In addition, a series of six workbooks is being prepared to accompany the program.
$39.95 retail
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-4070

Math Blaster Plus
Mastering math skills
Apple IIGS; other Apple II models.

Math Blaster Plus, designed for students in grades 1 through 6, covers the fundamental skills of mathematics: addition and subtraction, multiplication and division, and fractions, decimals and percents. The program uses color graphics on the Apple IIGS, sound effects and five learning activities to build motivation and skills.

The program includes over 750 basic math facts. Learning activities include Countdown, Ignition, Lift-off, Orbit and the Blasternaut Game, where students direct an animated character while reviewing basic math facts. New features in the latest version cover student record keeping, printed graphics, a test maker, drill-and practice sessions, pull-down menus and more.
$49.95
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-4070

MathTalk
Talking notebook
Apple IIGS; 768K RAM; color monitor recommended.

MathTalk is designed to help children solve math problems, learn to complete assignments on time, prepare for tests, learn calculator skills and master basic mathematical facts.

The program allows children to enter their own math problems and receive individualized graphic and spoken help specific to each problem.

In addition, MathTalk introduces a talking helper who provides each child with his own private tutor. This character helps a child work through the program's tutorials, simulations and games.
$49.95 retail
First Byte, Inc.; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

MathTalk Fractions
Talking notebook
Apple IIGS; 768K; color monitor recommended.

MathTalk Fractions features Professor Matt A. Matics matching wits with his students as he guides them through this talking notebook of decimals, fractions and percents. Students enter their own problems, plus play a variety of games, as they test their skill at math while getting their homework done.
$49.95 retail
First Byte, Inc.; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Mavis Beacon Teaches Typing!
Expert typing teacher
Apple IIGS; 512K.

Mavis Beacon Teaches Typing uses artificial intelligence to help users build their typing skills. User progress is checked in each lesson as the program tailors a typing course to individual needs. Mistakes are explained in conversational sentences, helping to make learning interesting and fun.

The program includes 3-D graphics, a "guide hands" graph for perfecting typing technique, over 20 color graphics displays of user progress, Dvorak or standard keyboard lessons, joystick or mouse control and more.
$44.95 retail
The Software Toolworks; One Toolworks Plaza; 13557 Ventura Blvd.; Sherman Oaks, CA 91423; 818-907-6789

Read 'N Roll
Reading comprehension program
Apple IIGS; other Apple II models.

Read 'N Roll helps students in grades 3 through 6 improve overall reading comprehension in five main skill areas. The five reading activities include 320 high-interest reading passages and 320 vocabulary words. An optional timing feature allows students to work at their own speed or build to a faster pace. A printed Certificate of Excellence rewards outstanding scores.

The five reading areas include: Main Idea, where students practice reading important passages; Sequences, where story sequences are identified; Inferences, where students analyze passages and make inferences; a Vocabulary Building Bowling Game; and an easy-to-use Editor.
$49.95 retail
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-4070

Reader Rabbit
Talking early education program
Apple IIGS; color monitor recommended.

Reader Rabbit uses the speech capabilities of the Apple IIGS to reinforce the learning process in children ages 4 to 7, particularly reading, spelling and vocabulary skills.

An animated Reader Rabbit and lively music help to reward correct solutions. Special exercises develop and test concentration and memory. Multiple options also allow parents and teachers to customize the program to individual reading levels. The program includes a vocabulary of over 200 three-letter words.

The IIGS version of Reader Rabbit supports the 16-color graphics of the IIGS and does not require additional sound hardware. It uses digitized speech, a more natural-sounding speech than synthesized speech.
$59.95 retail; home edition
$79.95; retail; school edition
$39.95 retail; home edition without speech
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

SpaceLace
An interactive kaleidoscope
Apple IIGS; other Apple II models.

SpaceLace turns the Apple IIGS into a fascinating visual display that's educational as well as pleasing to the eye. The program creates various kaleidoscope patterns that perform in intricate symmetries, changing color or patterns with a keystroke.

The program includes two levels of tutorials for assistance in creating symmetries. The first is for novices at programming. The second teaches programming in AppleSoft BASIC as well as how to create exciting shapes.
$29.95 retail
Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

Speller Bee
Talking notebook
Apple IIGS; 768K; color monitor.

Speller Bee incorporates speech capability and graphics for the purpose of improving a child's spelling skills. Designed for ages 5 to 13, Speller Bee allows a child not only to see his own spelling words, but to hear them spoken as well.

Children are able to create 32 of their own spelling lists, with each list containing 10 words up to 15 letters in length. Speller Bee contains 150 prestored spelling words, each at a different level of difficulty.
$49.95 retail
First Byte, Inc.; 3333 E. Spring St.; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Stickybear Math
Basic addition and subtraction
Apple IIGS; other Apple II models.

Stickybear Math provides drill and practice in basic addition and subtraction for children ages 6 to 9. The process of adding and subtracting becomes fun, and each correct answer helps Stickybear in a series of animated adventures. The program contains 20 levels of problems, including single to four-digit problems in horizontal and vertical addition.

The 3.5-inch disk version of Stickybear Math will be available in April 1988.
$39.95 retail
Weekly Reader Family Software from Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 800-327-1473 or 203-542-5553

Stickybear Reading
Builds word and reading skills
Apple IIGS; other Apple II models.

Stickybear Reading includes three activities on disk to help children learning reading skills: Match The Word; Find The Word; and Build A Sentence. The activities allow children to create their own animated sentence stories on screen. The program is designed for ages 5 to 8.

The 3.5-inch disk version of Stickybear Reading will be available in April 1988.
$39.95 retail
Weekly Reader Family Software from Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 800-327-1473 or 203-542-5553

Talking Text Writer
Speech word processor
Apple IIGS; Echo board.

Talking Text Writer is a software package that combines word processing with the Echo board, a speech synthesizer from Street Electronics. Children can hear aloud any letters, words, sentences, stories or other text they type.

The program is designed as a literacy tool for use by students in prekindergarten through 6th grade, for gifted and bilingual children and for students with communication disorders or in remedial reading programs.

Students can see the text and control how they want it to look by changing screen colors, margins and text size.

The latest version of Talking Text Writer uses the Ensoniq speech chip built into the IIGS and does not require the Echo board.
$199.95 retail to educators (with Echo board)
$149.95 retail to educators (without Echo board)
$249.95 retail for home versions (includes Echo board)
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

To Preserve, Protect and Defend
A U.S. Constitution lesson
Apple IIGS; other Apple II models.

To Preserve, Protect and Defend is an educational computer game based on key issues and persons that affected the creation of the U.S. Constitution in 1787. Students play the role of a guard assigned to protect the Constitution before it is to be signed at the Constitutional Convention. Students perform their guard duties in the State House in Philadelphia.
$59 retail
Minnesota Educational Computing Corp. (MECC); 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Typing Tutor IV
Keyboard instruction
Apple IIGS; color monitor recommended.

Typing Tutor IV is a typing program that automatically adjusts to a user's abilities and progress. It shows a user his speed, accuracy, strengths and weaknesses and graphs progress along the way. The program can also be used to create customized typing lessons.
$49.95 retail
Simon and Schuster Software; 1 Gulf & Western Plaza; New York, NY 10023; 800-624-0023 or 800-624-0024 in NJ

Zoyon Patrol
Learning the scientific method
Apple IIGS; other Apple II models.

Zoyon Patrol is a game-like simulation that provides an environment for learning the problem-solving strategies in the scientific method. A student or group of students assumes the role of a director of a city agency responsible for locating and capturing zoyons — an imaginary order of animals that is an endangered species. Players use the tools and information at their disposal to find the animals.
$59 retail
Minnesota Educational Computing Corp. (MECC); 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Entertainment

California Games
A game of skill
Apple IIGS.

California Games is a challenging game of skill. The players will find themselves going through the Golden state with events like Surfing, Half Pipe Skateboarding, Roller Skating and more. The players have the opportunity to win prizes from the on-screen sponsors — names like Kawasaki, Casio and Ocean Pacific.
$39.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Cavern Cobra
Action arcade game
Apple IIGS.

Cavern Cobra is a fast-action arcade game with digitized sounds which will play back in stereo when used with the MDIdeas' SuperSonic Stereo Card. The mission for Cavern Cobra is to enter a terrorist stronghold consisting of over seven cavern levels, destroy that stronghold and ultimately kill the world's most dangerous terrorist.
$49.95 retail
PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

Destroyer
You are in command
Apple IIGS.

Destroyer is a cross between an action game and a simulation. The user is in control of a Navy destroyer and can command and oversee all of the operations. The game includes several missions, such as hunting for subs, rescuing a downed pilot or guiding a convoy into a port.
$39.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Dondra: A New Beginning. . .
A graphics quest
Apple IIGS.

In this the first in the Questmaster series, the player is Terna, last of the Tellasien race. The adventure begins in the futuristic world of Dondra, where the player embarks on a journey to find a crystal prism. The land is filled with mythical characters, cartoon-style graphics, and detailed animation sequences that take full advantage of the Apple IIGS.
$49.95 retail
Spectrum Holobyte; A Division of Sphere, Inc.; 2601 Challenger Dr.; Alameda, CA 94501; 415-522-3584

Dream Zone
Graphics game
Apple IIGS; 512K.

Dream Zone is a graphic adventure game designed specifically for the Apple IIGS. The

program takes full advantage of the IIGS color graphics and animation. Stereo sound is also featured.

The adventure casts the player as prisoner of his or her own dreams, traveling to exotic locales and meeting multitudes of unique characters and creatures, all in an effort to escape the Dream Zone.
$49.95 retail
Baudville, Inc.; 5380 52nd Street SE; Grand Rapids, MI 49508; 616-698-0888

GBA Championship Basketball

Basketball simulation
Apple IIGS.

GBA Championship Basketball combines arcade game action with basketball strategy. This Apple IIGS version of the original Activision classic allows one or two players to practice inside and outside shooting, dribbling, ball stealing, quickness and jumping ability.
$44.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Hacker II: The Doomsday Papers

Strategic adventure
Apple IIGS.

The United States government discovers a diabolic plot to destroy the world. Players of Hacker II: The Doomsday Papers are asked to help collect details on the project, known only as "The Doomsday Papers."

Players are provided with a top secret operations document, called the MSFM Operational Manual, which gives secret intelligence-gathering procedures to help complete a mission.
$39.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Hardball!

Baseball simulator
Apple IIGS; 512K; color monitor.

Hardball! features 3-D field perspectives in baseball, including center field/pitcher/batter view, behind-the-plate view of right field and behind-the-plate view of left field. Up to six different pitches — fast balls, sliders, curve balls, screwballs, change-ups and sinkers — may be thrown by either a right- or left-handed pitcher.

Throughout the game, managerial decisions, such as intentional walks, substitutions, bunts, base stealing and infield/outfield positioning can be made. All strategic and physical maneuvers in the game are mouse and keyboard controlled.
$44.95 retail
Accolade; 20813 Stevens Creek Blvd., Ste. 102; Cupertino, CA 95014; 408-446-5757

Leisure Suit Larry

Nerd for the night.
Apple IIGS; 512K.

Meet Larry, the star of Leisure Suit Larry In The Land Of The Lounge Lizards, is the original blind date nightmare. He's the unlikely "hero" of this 3-D animated adventure game.

In this program, the user becomes the lovable nerd Larry for one fabulous night in "Lost Wages." He or she will plunge into the fast lane of reckless gambling, excessive inebriation and rampant whoopee.

Leisure Suit Larry is a humorous, harmless endeavor for adults only. The object of the game is to help Larry overcome his "jerkisms" and become a successful swinging single. The program comes to life with graphics and advanced animation. On-screen characters walk, talk, lounge and even ignore some of the best pickup lines. Not recommended for those under 18.
$39.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Marble Madness

A 3-D race
Apple IIGS.

Marble Madness is a IIGS version of the arcade game based on the famous coin-op classic from Atari Games Corp. This new version offers exciting game playing, the music and graphics of the original version and a new secret level. In the one player mode, using a joystick, the user rushes down treacherous raceways in an attempt to beat the clock to the goal. In a two-player game, the racers compete head to head trying to beat their opponents to the goal line.
$34.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Mean 18

Realistic golf simulator
Apple IIGS; 512K.

Mean 18 sets up for the player a round of 18 holes on three of the toughest golf courses in the U.S. The video golfer first chooses a course (beginner to expert levels are available) and then controls practice tees, putting on the green and playing a whole round of golf using the IIGS mouse. The game uses sharp, colorful graphics and sound and even allows the user to "paint" a fairway by adding roughs and hazards.

Famous Course Vol. II is a Mean 18 option that adds more challenging courses to the game. It contains the Inverness Club in Ohio; Turnberry, Scotland; and Harbour Town, South Carolina. Famous Course Disk III & IV add the Olympic Club, San Francisco; Las Colinas, Texas; Muirfield, Scotland; Doral, Florida; Castle Pines, Colorado; and Kapalua, Hawaii.
$44.95 retail; Mean 18
$19.95 retail; Famous Course Vol. II
$34.95 retail; Famous Course Vol. III & IV
Accolade; 20813 Stevens Creek Blvd., Ste. 102; Cupertino, CA 95014; 408-446-5757

Monte Carlo

Games rich people play
Apple IIGS.

Monte Carlo allows the user to experience casino games. Games include blackjack, roulette, craps, baccarat, poker and trente-et-quarante.
$39.95
PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

Realm Of Altair Trilogy

All-text adventure series
Apple IIGS.

The Realm Of Altair series is a trilogy of all-text adventures similar to Zork. Each game has a sophisticated vocabulary interpreter that understands more vocabulary than most adventure games.

The Gem Of Zephyrr involves a journey through strange cities, a water borne adventure and more. The Sword Of Altair continues the adventure started in the first part, where the user saves the realm from various evils. The Quest For Varsar, due out in the second quarter of 1988, will be the conclusion.
$29.95 retail; Gem Of Zephyrr
$29.95 retail; Sword Of Altair

$29.95 retail; Quest For Varsar
DAR Systems International; c/o DATAMAGIC, Inc.; PO Box 160488; Miami, FL 33116; 305-529-3572

Roadwar 2000
Futuristic war game
Apple IIGS; 512K.

In the year 2000, bacteriological warfare has ripped apart the fabric of American civilization. The user is the patriotic leader of a road gang which has been asked by what is left of the federal government to locate eight scientists, and to return them to a secret underground lab so they can develop a vaccine to neutralize the deadly microbes.

Roadwar 2000 is a game of survival in a brutal land. The user must maximize his chances by fighting for new recruits, vehicles, supplies, food, gas, guns, ammunition and medicine.
$44.95 retail
Strategic Simulations, Inc.; 1046 N. Rengstorff Ave.; Mountain View , CA 94043; 415-964-1353

Sea Strike
Save the tankers
Apple IIGS.

Sea Strike is a fast-action arcade game. The player's mission is to defend endangered oil tankers from attack. This arcade game uses digitized sound, super-high-resolution graphics, pull-down menus, mouse control and high-speed animation.
$39.95 retail
PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

Shanghai
Oriental strategy game
Apple IIGS.

Shanghai is derived from an ancient oriental game called Mah Jongg. The game consists of 144 tiles of seven visually different suits, which are stacked in a five-level, dragon-shaped pyramid.

To play the game, players must match and remove pairs of tiles until no additional moves can be made. As each pair of tiles is matched, they disappear, leaving in view any tiles hidden underneath. The play continues until no additional moves can be made.
$44.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Silent Service
Submarine simulation
Apple IIGS; color monitor recommended.

The Apple IIGS' graphics, sound and speed enhance the realism of Silent Service, a submarine simulation game. Players captain a World War II submarine in the South Pacific through a wide selection of historical scenarios, ranging from single-ship attacks to patrol missions with heavily escorted convoys.

All of a submarine's critical battle stations are replicated: the conning tower, engine room and ship's bridge.
$39.95 retail
MicroProse Software, Inc.; 180 Lakefront Dr.; Hunt Valley, MD 21030; 301-771-1151

Space Quest
An animated adventure game
Apple IIGS.

Space Quest features 3-D graphics, advanced animation, arcade sequences and a colorful new windowing system that reveals player information quickly. Space Quest introduces Roger Wilco, sanitation engineer turned space-age swashbuckler. His mission is to search and destroy the super-secret star generator which has been stolen from his vessel, then initialize a new star for his paling planet.
$49.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Strategic Conquest II
Strategy war game
Apple IIGS.

Strategic Conquest II is a strategy war game that starts the player in an unknown world. The player then explores continents, develops forces and eventually confronts his mortal enemy, the computer. There are two billion different world maps and 15 levels of play.
$49.95 retail
PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

Sub Battle Simulator
Command a Navy sub
Apple IIGS.

Sub Battle Simulator allows the players to be in command of any one of six different classes of U.S. Navy submarines or German Kreigsmarine U-Boats during any selected year between 1939 and 1945.
$39.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Tass Times In Tonetown
Exotic adventure
Apple IIGS.

In this detailed adventure, the Gramps character travels to a place called Tonetown and acquires "tass." A grandchild, set on saving his grandfather's life, journeys to Tonetown with the only clue Gramps left behind: a cryptic note and a receipt for pepperoni pizza. This game uses the graphics and sound capabilities of the Apple IIGS.
$34.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

The Bard's Tale
Medieval adventure
Apple IIGS.

The Bard's Tale is an adventure story played and narrated in a way that takes advantage of the Apple IIGS' sound and graphics capabilities.

The game takes place in a country town called Skara Brae. The plot revolves around attempts to halt the evil spread by the wizard Mangar the Lionhearted, who has stolen magical powers.

The Bard's Tale characters are created from 10 character professions and six status levels.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

The Tower Of Myraglen
Adventure action game
Apple IIGS.

The Tower of Myraglen revolves around a dying world known as Myraglen. The few remaining knights of justice draw together in the once-great civilization, knowing that its only hope lies with them. Each knows well the world of Myraglen and of its devastation since the unholy war. Myraglen is infected with a disease that cannot be cured without another confrontation.
$54.95 retail
PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

Thexder
A computer action game
Apple IIGS.

Designed in Japan, Thexder offers music, animation and play value. Players are given the chance to pilot an armored robot through multiple attack scenarios. The battlefields include caves, vast cargo holds and spaceship interiors. Over 20 different kinds of aliens will do battle with the player and the challenge and music escalate as the game progresses.
$34.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Tomahawk
Flight simulator
Apple IIGS; 512K; joystick.

Tomahawk simulates the cockpit of the U.S. Army's AH-64A Apache, one of the world's most feared hunter/killer helicopters.

The Apache was designed to be the deadliest attack chopper in the sky. And it has just one mission: seek and destroy aircraft, tanks, artillery, buildings — anything unlucky enough to stand in its way.

Features include 3-D, real-time graphics and display; offensive and defensive flight maneuvers; ground attack and air-to-air interception, day and night vision systems; instrument-only flying; and a complete weapons system.
$29.95 retail
Datasoft/IntelliCreations, Inc.; 19808 Nordhoff Pl.; Chatsworth, CA 91311; 818-886-5922

War Or Peace? You Decide!
Decision-making in a nuclear age
Apple IIGS; other Apple II models.

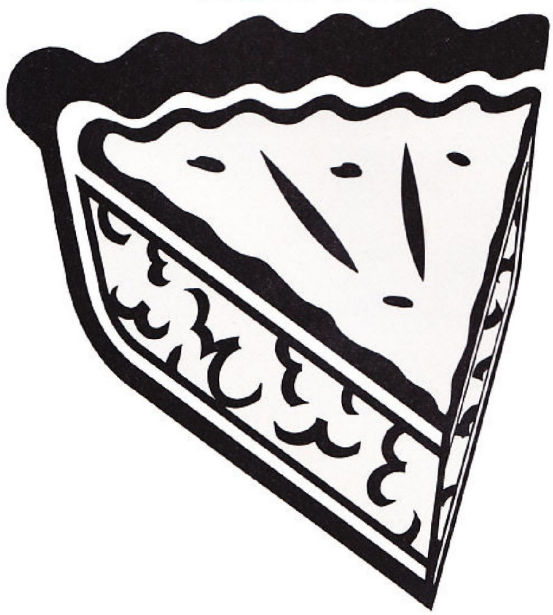
War or Peace? You Decide! is a simulation of events that may lead up to or avert a nuclear war. The choice is up to the user. Through the use of six intricate scenarios, War or Peace educates participants in the complex and often clandestine processes that superpower countries engage in to survive in a world where life and death rests on the touch of a button.

Each scenario is supported by full-color graphics. The program is intended primarily for high school and college level students.
$64.95 retail
Bright Ideas, Inc.; 52 Exeter St.; Portland, ME 04102-2839; 207-775-1330

Wheel Of Boredom
America's favorite show
Apple IIGS; other Apple II models.

Wheel Of Boredom is a computerized version of America's favorite game show. Users spin, choose a letter, buy a vowel or guess the puzzle. The user has the option of using one of the 300 puzzles included with the program, or making his or her own puzzles.
$18.95 retail
DEC Computing; 5307 Lynnwood Dr.; West Lafayette, IN 47906

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Winter Games
Enter the Olympics
Apple IIGS.

Winter Games is a compilation of eight events from the Winter Olympics. It includes bobsledding, downhill skiing, ice skating, ski jump and more. It can accommodate between one and eight players, who choose countries for which to compete. Players can compete in any or all of the events.
$39.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

World Games
Play the world
Apple IIGS.

In World Games, users participate in events that one normally identifies with particular countries. For example, Mexico has cliff diving, Japan offers sumo wrestling, Russia has weight lifting, and the United States offers bull riding at rodeos. According to Epyx, this game takes full advantage of the graphics capabilities of the Apple IIGS.
$39.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

World Tour Golf
Brush up on golf
Apple IIGS.

World Tour Golf is designed for computer golfers of all levels. The program contains a wide variety of classic courses, including Scotland's St. Andrews, Georgia's Augusta and the world famous Pebble Beach in California. The program can accommodate players who want to practice specific types of swings before venturing onto the course, and it comes with a construction set for designing tailored courses. Split-screen animated graphics give both an overhead view and a golfer's-eye view of the hole.
$39.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Hardware And Peripherals

Apple 3.5 Drive
The IIGS standard
Apple IIGS.

The Apple 3.5 Drive provides 800K of program and file storage for the Apple IIGS. This platinum-colored drive enables the Apple IIGS to run the majority of IIGS-specific programs, most of which are introduced on 3.5-inch media. The Apple 3.5 Drive can be daisy chained with another Apple 3.5 Drive or with an Apple 5.25 Drive.
$399 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple 5.25 Drive
Runs earlier Apple II software
Apple IIGS.

The Apple 5.25 Drive enables the Apple IIGS to run most Apple II programs released on 5.25-inch disks. This platinum-colored unit provides 143K of program and file storage on a single disk.
$299 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple Hard Disk 20SC
Mass storage for data
Apple IIGS; Apple SCSI Card; System Cable.

The Apple Hard Disk 20SC provides 20 MB of storage for an Apple IIGS. It works in conjunction with the Apple II SCSI (small computer-system interface) Card and Cable. The system's major features include: storage capacity equivalent to twenty five (25) 800K 3.5-inch disks; a high-performance SCSI parallel port, which can easily connect up to three devices on an Apple IIGS; and a platinum finish.
$1,299 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple II SCSI Interface Card
Apple SCSI Interface
Apple IIGS; SCSI system cable.

The Apple II SCSI Card provides compatibility with high-performance peripherals that use the SCSI standard, such as the Apple Hard Disk 20SC.

The card features high-performance parallel data transfers and the ability to connect up to four SCSI ProDOS 1.2-controlled peripherals with one card.
$129 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS Memory Expansion Card
Extended memory board
Apple IIGS.

The Apple IIGS Memory Expansion Card adds as much as 1 MB of additional memory in 256K increments to an Apple IIGS. The card is compatible with most Apple II software that works with the Apple IIe Memory Expansion Card.
$129 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS System Fan
Temperature maintainer
Apple IIGS.

The Apple IIGS System Fan maintains the proper temperature in an Apple IIGS that has three or more expansion cards installed.
$49 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS Upgrade
Transformer kit
Apple IIe.

The Apple IIGS Upgrade gives the Apple IIe the advanced capabilities of an Apple IIGS. It is a dealer-installed option that involves replacing the logic board and metal base pan of an Apple IIe with a new Apple IIGS board. The Upgrade Kit's features include 256K of built-in memory, with RAM that is expandable to 8 MB. The basic system comes with 256K and can be increased in 256K increments.
$499 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleColor RGB Monitor
Color monitor
Apple IIGS.

The AppleColor RGB Monitor simultaneously displays high-resolution text and color graphics. It features a 12-inch screen; high-resolution, analog RGB color; and direct connection to the RGB port of an Apple IIGS. The connector cable is supplied and no adapters or interface cards are necessary.
$499 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Central Point 3.5 Drive

Disk drive

Apple IIGS; Universal Disk Controller.

The Central Point 3.5-inch drive provides 800K of storage on an Apple IIGS. It connects to the Universal Disk Controller from the same company and includes an LED "in use" light. According to the vendor, the product is fully compatible with the 3.5-inch drive from Apple Computer, Inc.

$225 retail; 3.5-inch drive
$90 retail; Universal Disk Controller
Central Point Software, Inc.; 9700 SW Capitol Hwy., Ste. 100; Portland, OR 97219; 503-244-5782

CMS Series Hard Disk Subsystems

Apple SCSI hard disk drives

Apple IIGS; other Apple II models.

CMS Enhancements, Inc. provides a family of hard disk drives compatible with the Apple IIGS. Each subsystem contains two SCSI ports for daisy chaining, and supports ProDOS 8 and ProDOS 16 applications. The drives automatically boot from the hard disk. Average access times range from 40 milliseconds (ms) for the SD60/A2S to 85ms for the SC20/A2S.

$895 retail; SC20/A2S Compact Series
$1,295 retail; SC40/A2S Compact Series
$895 retail; SD20/A2S ProDOS Stack Series
$1,095 retail; SD43/A2S ProDOS Stack Series
$1,195 retail; SD60/A2S ProDOS Stack Series
(Prices include a SCSI II Interface Card)
CMS Enhancements, Inc.; 1372 Valencia Ave.; Tustin, CA 92680; 714-259-9555

ComputerEyes IIGS

Color video digitizer

Apple IIGS; video source.

ComputerEyes IIGS is the latest digitizer from the vendor and supports all the graphics capabilities of the Apple IIGS. This hardware/software combination includes a single card that plugs into the IIGS and any standard video source, including a VCR, videodisc player, etc. Video signals are scanned and captured in under six seconds in the 320 by 200 pixel, 16-color mode or under 12 seconds in the 640 by 200 pixel mode.

Images can be acquired for many popular IIGS paint programs, including DeluxePaint and Paintworks Plus. System software included with the package allow images to be shrunk, expanded, flipped, scrolled and more. Routines also allow high-resolution and double high-resolution graphics to be converted to the GS super high-resolution format.

$249.95 retail
Digital Vision, Inc.; 66 Eastern Ave.; Dedham, MA 02026; 617-329-5400

ComputerEyes/2

Video digitizer with GS software support

Apple IIGS; video source.

ComputerEyes/2 is a hardware/software image capture system that connects a standard video source to any Apple II, II+, IIe or IIGS. According to the vendor, the system software is friendly and menu-driven for easy acquisition.

The ComputerEyes/2 GS Support Software allows Computereyes/2 to be used on the Apple IIGS to acquire and display 16 gray-level Super Hi-Res images of near-photographic quality.

Once acquired, images can be saved to disk in a format compatible with popular GS graphics programs such as Paintworks Plus or DeluxePaint.

$129 retail
$19.95 retail for the ComputerEyes/2 Support Package
Digital Vision, Inc.; 66 Eastern Ave.; Dedham, MA 02026; 617-329-5400

Conserver

Surge suppression device

Apple IIGS.

The Conserver is an integrated surge suppressing unit that provides six AC outlets, surge protection and a fan. The unit acts as both a monitor stand and as a holder for one or two Apple 3.5-inch disk drives. The fan circulates and extracts air from the computer, giving maximum cooling and protection from heat-related failures.

$149.95 retail
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

Datalink

Modem board

Apple IIGS.

Datalink is a 1,200-baud internal modem for an Apple IIGS. Because it looks to the computer like an Apple Super Serial card attached to a Hayes Smartmodem, Datalink is compatible with many communications software packages designed for this combination. The modem itself uses a one-chip design, fits into any Apple IIGS slot and has a second jack for connection to a telephone.

A basic communications package is built into the circuitry of Datalink. This software in ROM can be used to replace regular communications software for many communications purposes. More powerful communications software on disk is also included.

$219 retail
Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Digitizer And Digitizer Professional

Two-channel audio digitizer

Apple IIGS.

Digitizer inputs audio into the Ensoniq sound chip of the Apple IIGS where it is digitized and stored in memory. Digitizer allows the user to record, edit, save and play back voices, music and sound waveforms. Features include its capability to plug directly into the SuperSonic stereo card expansion connector and its high-speed CMOS sample and hold circuitry.

Digitizer Professional allows the user to digitize stereo or other two-channel audio sources. It is a complete stand-alone card, yet remains compatible with the Ensoniq sound chip and the SuperSonic stereo card. Software controlled functions allow for panning and fading effects during digitizing.

$59.95 retail; Digitizer
$149.95 retail; Digitizer Professional
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

Echo IIb Speech Synthesizer

Text-to-speech board

Apple IIGS.

The Echo IIb is a small plug-in board that features both speech synthesis and natural-voice capabilities. It is compatible with speech, educational and special-needs software written for the Echo II and Echo+ boards.

Echo IIb has an improved audio circuitry and voice and a sharper, higher-quality speaker than its predecessors. With the addition of headphones, several individuals in a classroom or computer lab can simultaneously access talking programs without disturbing fellow students.

The Echo IIb includes a number of features to aid blind and non-vocal users. It supports Textalker 3.1.2 software, an enhanced version of Textalker.

$129.95 retail
Street Electronics Corp.; 1140 Mark Ave.; Carpinteria, CA 93013; 805-684-4593

FingerPrint GSi

Screen dump graphic utility card
Apple IIGS; printer.

The FingerPrint GSi is a screen dump graphic utility card with special desktop accessories and graphic tools that allow the user to interrupt the Apple IIGS at any moment, even if the application does not allow interrupts or access to the desktop and control panel. At a touch of a button, the user can access the product's desktop environment with pull-down menus. These can then control printers, handle screen dumps or activate any of the standard, or user definable, desktop accessories.

Desktop accessories include a typewriter, calendar, calculator and more.
$99 retail
Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FingerPrint-Key

Voice translator
Apple IIGS; accessories.

The FingerPrint-Key is a small board that plugs into any slot of an Apple IIGS. It interrupts the link between the keyboard and the computer to provide additional ways of inputting data. It uses advanced macros to convert long text strings and numbers into just a few keystrokes, including electronic banking account numbers, phone numbers, database numbers and passwords.

FingerPrint-Key accepts a wide range of accessories through its RS-232 ports, including optical scanners.
$199 retail
Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FutureSound

Stereo output/digital recorder
Apple IIGS; 512K RAM, 1 MB recommended; two speakers or stereo amplifier.

FutureSound is a hardware/software package that gives the user complete control of the sound capabilities of the Apple IIGS. It records from a direct source in true stereo or mono, and comes with a microphone. The sound editor shows the sound wave and supports 15 separate tracks with splicing, looping, reversing and many more special effects. The stereo output works with all stereo software available.

$279 retail
Applied Visions, Inc.; 1 Kendall Sq., Ste. 2200; Cambridge, MA 02139; 617-494-5417

Grappler C/Mac/GS

Parallel printer interface
Apple IIGS; parallel printer.

The Grappler C/Mac/GS is a universal parallel interface that allows an Apple IIGS to print on a parallel printer, such as an Epson FX-80 or a laser printer. The product takes printer commands from the IIGS and converts them to code that a parallel printer understands. As a result, an Apple IIGS "thinks" it is talking to an Apple ImageWriter printer.

According to its vendor, the Grappler C/Mac/GS can even print color on parallel color printers. Mouse clicks generate a variety of printer graphics with options such as cropping, sizing, rotating, inverse printing, etc. The product can also serve as a IIGS desk accessory.
$99 retail
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

GS-RAM And GS-RAM Plus

Extended memory boards
Apple IIGS.

The GS-RAM memory-expansion board is compatible with all operating systems for the Apple IIGS.

The board is available in 256K, 512K, 1 MB and 1.5 MB versions and can be increased to 8 MB by adding a piggyback card. It includes software that expands AppleWorks' memory limits, thereby allowing much larger databases to be created. Cache software is included as well that increases disk access time on a 3.5-inch drive. In addition, a graphic memory test utility is provided to test the board and any added memory chips.

The GS-RAM Plus board is available for unusually high memory requirements. It uses 1 MB RAM chips that plug into the main board. A piggyback card can be added to increase total memory to 8 MB.
$179 retail; 256K GS-RAM
$239 retail; 512K GS-RAM
$359 retail; 1 MB GS-RAM
$459 retail; 1.5 MB GS-RAM
GS-RAM Plus; available 1 through 6 MB; call for pricing
GS-RAM 2 MB expander; call for pricing
Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

GSX

Faster processing for the IIGS
Apple IIGS.

GSX is an add-on board that enables the IIGS to run at 5.6 MHz, twice the 2.8 MHz speed. It uses a faster 65816 processor and comes with high-speed static RAM expandable to 1 MB. According to its vendor, GSX speeds up all applications.

The product installs in slot three only and acts as an accelerator and memory expansion card at the same time. The vendor says GSX will be available in February 1988.
Retail price: N/A
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

HyperDrive FX/20

Hard disk drive
Apple IIGS; SCSI card.

The HyperDrive FX/20 is an external SCSI hard disk drive. It can be installed on an Apple IIGS with the Apple II Conversion Kit. This kit contains special Apple II editions of the HyperDrive System Software on both 3.5-inch and 5.25-inch disks, along with installation documentation.

When properly formatted, HyperDrive FX/20 can be plugged directly into an Apple IIGS with an Apple SCSI Card installed. It provides 20 MB for data storage.
$999 retail; conversion kit $30
General Computer Corp.; 580 Winter St.; Waltham, MA 02154; 800-634-9737

MemorySaver

Makes memory cards into ROM disks
Apple IIGS; compatible memory card.

MemorySaver is a hardware/software system that transforms standard Apple IIGS memory cards into instant-access ROM disks. With MemorySaver, programs that once may have taken a minute or more to load can now be accessed and used much faster. Users can create a ROM disk that is larger than the 512K maximum described by Apple Computer, Inc. In addition, the product can accommodate two separate RAM cards.

MemorySaver works with several popular RAM cards besides a 2 MB card offered by the vendor. A separate power supply is included.
$149.95
Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 800-325-7347 or 602-966-5802

OctoRAM And OctoRam ESP

Extended memory board

Apple IIGS.

OctoRAM is an extended memory board that uses SIMMS (single integrated memory modules), which are compact and easy to install. Memory chips come in modules of 256K and 1 MB, giving users flexibility in upgrading their systems.

OctoRAM is also available with an optional Extended Static RAM Pack (ESP board). This product mimics a ROM disk, allowing the Apple IIGS to access it like a fast disk drive. The ESP board can be used to allow any program to be loaded into memory in under two seconds.

$149.95 retail; OctoRAM with 256K
$599.95 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

Parallel Pro And Buffer Pro

Parallel printer interface

Apple IIGS; other Apple II models.

Parallel Pro is a printer interface that works in any slot except three. It is fully compatible with ProDOS, DOS 3.3, Pascal and CP/M.

Parallel Pro supports most parallel printers. Additional features include: conformation to the Centronic standard; built-in control panel allows access to setup information; automatic formatting of basic listings; built-in self-test; and extensive graphics print capability for the IIGS super high-resolution screens. Also included is a 6-foot cable for connecting to the printer.

Pro Buffer is an available option that adds memory to Parallel Pro, freeing the Apple from running the printer. Thus, a user can continue to use the computer while the printer is printing. Features include: use in a IIGS or without a fan; adds 32 to 256 pages of printer buffering; and is user expandable using 64K or 256K RAM chips.

$89 retail; Parallel Pro
$89 retail; Buffer Pro Option with 32-page buffer
$119 retail; Buffer Pro Option with 128-page buffer
$139 retail; Buffer Pro Option with 256-page buffer
Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

PC Transporter

MS-DOS board for the Apple II

Apple IIGS; other Apple II models.

PC Transporter is a board that brings MS-DOS capabilities to the Apple IIGS and other Apple II computers. It plugs into a single expansion slot and allows the computer to run popular PC-compatible, MS-DOS software, such as Lotus 1-2-3, MultiMate, Dbase III and more. Once installed, PC Transporter will recognize all Apple IIGS peripherals as IBM hardware. In this way, the Apple ImageWriter printer can work and act just like an IBM Graphics Printer.

PC Transporter supports either an Apple mouse or an IBM-compatible serial mouse, and supports both 3.5-inch and 5.25-inch MS-DOS formatted diskettes. Disk drives in the IBM PC-compatible 5.25-inch format are available from Applied Engineering.

The Apple 3.5 Disk Drive supports both MS-DOS and ProDOS under PC Transporter. Any combination of up to five drives will work. As for graphics, PC Transporter uses an analog monitor to provide CGA-quality graphics superior to the IBM PC and compatibles.

$489 retail; PC Transporter with 384K
$529 retail; PC Transporter with 512K
$609 retail; PC Transporter with 768K
$269 retail; 5.25-inch 360K Drive
$399 retail; Dual-Drive 5.25-inch System
$139 retail; IBM-style Keyboard
Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Phasor

Sound board

Apple IIGS.

Phasor allows an Apple IIGS to run many sound-oriented software programs written for earlier sound boards for Apple II family computers.

It does this by emulating the Mockingboard, ALF music synthesizer, Echo speech board and others. The product includes a music synthesizer and one speech chip. A second speech chip can be added at a later time.

Including with Phasor is software that includes demonstration programs and utilities for composing songs.

$179 retail
Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Plus Hard Disk Systems

Hard disk drives

Apple IIGS; SCSI port.

The Plus drives are hard disk drives that add 30 or 60 MB of storage to an Apple IIGS through a SCSI port. A 60 MB tape backup system is also available. Up to seven drives can be connected to provide a maximum of 455 MB of storage.

$895 retail; Plus-30
$1,195 retail; Plus-65
$995 retail; 60 MB tape backup system
MacPeak Systems; 1201 Spyglass; Austin, TX 78746; 512-327-3211

ProGrappler

Parallel printer interface

Apple IIGS; Apple IIe.

ProGrappler provides the hardware to connect most popular parallel printers to an Apple IIGS. It also provides many options for printing text or graphics directly from the screen. This is accomplished on the Apple IIGS through pull-down menus, allowing easy visual selection of any ProGrappler or printer features.

Printing options include inverted and rotated graphics windowing, enlargement and printing of any high-resolution graphics. All features can be accessed through traditional and English commands. ProGrappler functions can also be accessed through the IIGS' Desk Accessory menu.

$119 retail
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

ProModem 1200A/2

Internal modem

Apple IIGS; communications software.

The ProModem 1200A/2 is a Hayes-compatible 300/1,200-baud internal modem with built-in ROM software that supports 80 columns and all modem functions. It has a built-in speaker and volume control; two phone jacks, with exclusion switching that makes it easy to switch back and forth between voice and data; senses whether to tone or pulse dial; and has auto-redial-on-busy capability.

$249 retail
Prometheus Products, Inc.; 4545 Cushing Pkwy.; Fremont, CA 94538; 415-490-2370

RAM Talker Plus

Multifunction card

Apple IIGS; other Apple II models.

RAMTalker Plus is a multifunction card that combines a battery-protected RAM disk, high-quality SmoothTalker speech and a clock/calendar function all in one card.

The RAMDisk is bootable in both ProDOS and DOS 3.3. A simple print command provides high-quality speech without the need to load software. A clock automatically time stamps your files and can display the time and date with a simple keystroke.

$279 retail

Electronic Learning Systems, Inc.; 2630 NW 39th Ave.; Gainesville, FL 32605; 904-375-0558 or 800-443-7971

RamKeeper

Instant access to programs

Apple IIGS; extended memory card.

RamKeeper provides constant power to the RAM memory in an Apple IIGS, even when the computer is switched off. By so doing, programs loaded into RAM can appear on the screen within seconds of switching on the power. With RamKeeper, users can divide RAM memory into part RAM disk and part memory for programs.

Features of RamKeeper include instant access to programs without slow disk delays; long-life backup battery power; reduced power strain to the computer's power supply; support of up to two IIGS memory cards; and support of 256K and 1 MB memory chips.

The product comes complete with battery, software and documentation.

$179 retail

Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

RamPak 4GS

Extended memory card

Apple IIGS.

The RamPak 4GS memory expansion system for an Apple IIGS provides a standard 512K of memory, expandable to 4 MB. It includes a memory management utilities package for RAM caching, diagnostics and dynamic allocation of memory.

The RamPak 4GS uses 256K by 4 RAM chips, enabling a user to expand in two-chip increments, as opposed to the eight-chip minimum required by other formats. Memory automatically self-configures, so no switch settings or jumpers need be changed. A RAM diagnostics utility detects and pinpoints any RAM problems that may arise.

$189 retail; 512K RamPak 4GS

$49 retail; 256K Expansion Kit

Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

Serial Pro

Multifunction card

Apple IIGS.

Serial Pro is a mulifunction card that combines a serial port with a functioning clock/calendar card. It can connect to a printer, modem or other serial device and is compatible with most letter-quality and dot-matrix printers. The serial port can communicate with the fastest external modems at baud rates from 50 to 19,200.

Serial Pro's clock/calendar is ProDOS, DOS and AppleWorks compatible. All AppleWorks files are automatically time and date stamped. The card incorporates a 20-year auto recharging battery and switch selection for real-time interrupts.

$139 retail

Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Sider

Hard disk drive and tape backup

Apple IIGS; Apple IIe.

Sider is an external hard disk available in 20 MB and 40 MB sizes. The internal Xebec controllers have a SASI/SCSI interface bus with a host interface card available for the Apple IIGS.

The interface offers fast throughput with low software overhead, an auto alternate track capability that ensures greater system integrity, and convection cooling that increases reliability and reduces power consumption.

The Sider Model T6 is a tape backup subsystem for the IIGS that offers 60 MB cassette streaming tape combined with Xebec's menu-driven software for fast backup and restore capabilities.

The Sider Model C46 combines the features of the Model D4 and the Model T6 into a single "bookend style" subsystem.

$595 retail; Sider Model D2

$995 retail; Sider Model D4

$895 retail; Sider Model T6

$1,795 retail; Sider Model C46

First Class Peripherals; 3579 Hwy. 50 E.; Carson City, NV 89701-2826; 800-982-3232

Smartmodem 1200A

Modem

Apple IIGS; communications software.

Smartmodem 1200A provides 1,200-baud communications capability, call-progress monitoring, built-in test modes, Hayes Standard "AT" command set implementation, voice and data transmission, auto-dial and auto-answer modes, two phone jacks, redialing and more.

Smartmodem 1200A may be operated using a new version of Smartcom communications software from Hayes, sold separately.

$349 estimated retail; Smartmodem 1200A

$119 retail; Smartcom software

Hayes Microcomputer Products, Inc.; PO Box 105203; Atlanta, GA 30348; 404-449-8791

Supersonic

Digitized stereo card

Apple IIGS.

Supersonic uses the Ensoniq sound chip of an Apple IIGS to produce stereo sound for any software that addresses the sound capabilities of the computer. The card plugs into any slot and has high-speed circuitry for separating two channels into true stereo sound.

Filters allow only selected frequency sounds to pass through for distortion-free sound, and buffer amplifiers isolate the audio further for even cleaner sound.

The unit comes with two .5-watt amplifiers that can drive 8-ohm mini speakers. A user can also select power output levels for speakers, headphones or hi-fi stereos (line level output).

$59.95 retail

MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

ThunderScan

Low-cost digitizing

Apple IIGS.

ThunderScan fits into any ImageWriter printer, except the LQ, and replaces the ribbon cartridge with a digitizing scanning cartridge. Printed images are then scanned by ThunderScan, and the software shows 16 shades of gray that can be changed in contrast and brightness according to the user's specifications.

Once the user has an image to his liking, he can save it for use with painting programs like DeluxePaint II, 816/Paint and Paintworks Plus. Images can also be combined with text, frames and objects using

TopDraw and the new desktop publishing packages. ThunderScan uses super high resolution in both the 320 and 640 modes.
$219 retail
Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94563; 415-254-6581

TopRAM And MegaROM

Low-cost memory card
Apple IIGS.

TopRAM is an inexpensive 1 MB memory card that has two expansion ports for adding more memory, ROM or other add-ons. It is fully compatible with the equivalent card from Apple Computer, Inc.

MegaROM is an add-on product to TopRAM that provides up to 896K of ROM software. It also offers an expansion port for adding additional memory and other add-ons. The vendor says that several ROM software packages will be available in the coming months.
$199.95 retail; TopRAM
$89.95 retail; MegaROM (unpopulated)
Parallax, Inc.; 5249 Locust Ave.; Carmichael, CA 95608; 916-721-5451

Universal Disk Controller Card

Connecting card
Apple IIGS; compatible drives.

The Universal Disk Controller Card connects many combinations of disk drives on an Apple IIGS, including 5.25-inch disk drives, the Apple UniDisk 3.5 and Macintosh-compatible 400K and 800K drives.

Two different drive types (a 5.25-inch drive and a 3.5-inch drive) can be connected to the card simultaneously. With any supported drive, data transfer rate occurs at full speed.
$90 retail
Central Point Software, Inc.; 9700 SW Capitol Hwy., Ste. 100; Portland, OR 97219; 503-244-5782

Voice Master Jr.

Inexpensive speech recording
Apple IIGS; other Apple II models.

Voice Master Jr. is a small speech digitizer and voice recognition system. All electronics are built in its multifunction plastic case, including the microphone. Voice Master Jr. can be used hands-free as a desktop microphone or as a handheld unit, depending upon the application. It plugs into the joystick port of the computer. Speech, sound or music comes from the computer monitor or TV. An external microphone jack on the side of Voice Master Jr. allows for an optional headset.

A user can record up to 64 words or phrases at one time in any accent or language. A user also can save a vocabulary disk and later play it back without needing to use Voice Master Jr.

The computer can recognize up to 32 words or phrases, and additional voice commands can be loaded from disk. A bar graph display of speech resembles a real-time spectrograph.
$39.95 retail
Covox, Inc.; 675 D Conger St.; Eugene, OR 97402; 503-342-1271

Music

ECL Music Training Programs

Family of music training products
Apple IIGS; MIDI card; synthesizer.

Electronic Courseware Systems, Inc. offers a broad range of IIGS-compatible products for music training purposes. Software is available for learning music basics as well as more advanced musical concepts. All programs require at least an Apple IIGS, and in many cases additional hardware is required, such as a Passport or Sonus MIDI card or a Roland MIDI interface, MPU and synthesizer.
$39.95 retail; Keyboard Tutor-MIDI
$39.95 retail; Early Music Skills-MIDI
$79.95 retail; Keyboard Extended Jazz Harmonies-MIDI
$39.95 retail; Tap-It
$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
Electronic Courseware Systems, Inc.; 1210 Lancaster Dr.; Champaign, IL 61821; 217-359-7099

Instant Music

Music construction set
512K Apple IIGS.

A non-standard form of music notation and the use of artificial intelligence make Instant Music a creative music composition tool for non-musicians. Up to four instruments can be played at one time, and the user can take control of one instrument and "jam" along with the other three.

For composition, the user turns on a QuickDraw icon, describes a line on the screen with the mouse and the program fills in the proper notes along that line. The user can zoom in to see several measure at a time or just one measure.

Instant Music is available with two library disks of songs, each containing over 15 new digitized instruments and 40 songs.
$49.95 retail; Instant Music
$29.95 retail; It's Only Rock 'N Roll
$29.95 retail; Hot & Cool Jazz
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Master Tracks Pro

MIDI sequencing program
Apple IIGS.

Master Tracks Pro is a professional MIDI recording and editing package enhanced for the Apple IIGS. It provides real-time, step-time and song mode sequencing that uses up to 2 MB of expanded memory for longer songs.

The Main Sequencer and Song Mode sections can send and receive a MIDI Song Position Pointer. It can also be used to write film scores or jingles synced to videotape. The vendor says Master Tracks Pro will be available in late 1988.
$299.95 retail
Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

Music Construction Set

Digital sound creation
Apple IIGS; stereo card and speakers recommended.

The Music Construction Set is a complete revision of the best-selling program available for the Apple IIc and Apple IIe. It lets a user compose music, play it back and print out sheet music of all songs created. Prior knowledge of music is not required.

New features developed for the Apple IIGS include 16 digitized instruments; MIDI output; stereo music capability; and music input with a mouse.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

MusicShapes
Musical graphics
Apple IIGS.

MusicShapes is a creative learning environment that involves the user in the process of music making and idea development. The user travels back and forth between screens making and arranging graphic patterns to produce rhythmic, melodic and sound patterns. These musical blocks can be built into complex multitimbral musical structures.

The program allows the user to modify sounds stored in the program. These sounds can be produced by the Ensoniq chip of the IIGS or by linking the Apple II to a Casio CZ synthesizer.

The goal of MusicShapes is to stimulate creative thinking and enhance musical understanding and sensitivity through the active involvement in music composition. No knowledge of notation is necessary.
$175 retail
Music Systems for Learning, Inc.; 311 E. 38th St., Ste. 20C; New York, NY 10016; 212-661-6096

Pyware Music Writer And Music Administrator
Professional music programs
Apple IIGS; 512K; printer.

Pyware Music Writer is a music writing program designed for the Apple IIGS. It offers extensive use of the Ensoniq sound chip, a wide variety of symbols, complete control of symbol placement, automatic barring, automatic stem changing during transposition, automated error checking and more. The program also provides fast input and editing and supports copy, cut, paste, invert and transpose. It also uses a Macintosh-style interface with pull-down menus and icons and works with a variety of printers.

The Pyware Music Administrator is designed for the music educator. It provides complete music management by keeping track of student files, a music library and handles uniform checkout of inventory, a general ledger and instrument forecasting.
$295 retail; Pyware Music Writer, special edition
$595 retail; Pyware Music Writer, professional model
$295 retail; Pyware Music Administrator
Pygraphics Corp.; PO Box 639; Grapevine, TX 76051; 800-222-7536 or 817-481-7536

The Music Studio
Making music on the IIGS
Apple IIGS.

The Music Studio, one of the first music programs announced for the Apple IIGS, offers pull-down menus and pop-up menus to help users write music on the program's screen. A large double-staff occupies the middle of the screen, and users determine note duration, block operations, rest durations and time signatures by clicking on them with the mouse. The program offers a music paintbox, where users can play music with no knowledge of formal notation.

The Music Studio can output to a MIDI device for high-quality sound, and octave ranges are available for up to 15 instruments. In addition, up to three lines of lyrics can be input for a song.
$89.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

On-Line Databases

Compuserve
Telecomputing network
Apple IIGS; modem; communications software.

Apple IIGS users on the Compuserve network have access to several Apple forums, including an Apple II forum with lively interest in the Apple IIGS. Subscribers share information about peripherals, music, technical information and software. In addition, electronic mail allows members from across the country to communicate with one another.

Compuserve maintains a large database of free public domain software in its Apple forum. The only expense for downloading is connect time. Publications, such as the electronic editions of various computer magazines, are also maintained in the forums.
$39.95 retail; Subscription Kit
Compuserve Information Services; PO Box 20212; 5000 Arlington Centre Blvd.; Columbus, OH 43220; 800-848-8199

GEnie
Make friends on line
Apple IIGS; modem.

GEnie is an information exchange with special interest groups set up for Apple II users. Software is available for downloading, and users can participate in on-line conferences, "CB" simulations and more. Databases available include American Airlines travel service, Grolier's electronic encyclopedia, games, financial services and others.
$5 per hour retail
General Electric Information Services Co.; 401 N. Washington St.; Rockville, MD 20850; 800-638-9636

The Source/APPLESIG
Telecomputing network
Apple IIGS; modem; communications software.

The Source, a nationwide on-line database, offers APPLESIG, an on-line network of special interest to Apple IIGS owners. Members can meet other members on-line to discuss computer questions, problems, etc. In addition, APPLESIG maintains a large database of free public domain software, including AppleWorks templates, available for downloading.

Members already on APPLESIG include Apple experts, experienced programmers, user group presidents, businesspersons, investors and hobbyists.
$49.95 retail; initial membership dues
$7.80 per hour retail; 1,200 baud on evenings and weekends
The Source; 1616 Anderson Rd.; McLean, VA 22102; 800-336-3366 or 703-734-7500

Programming And Utilities

Apple IIGS BASIC
Exploits the IIGS
Apple IIGS; 512K.

Apple IIGS BASIC is an implementation of the BASIC programming language especially designed for the Apple IIGS. The program features a full set of control structures comparable to those found in modern languages such a C or Pascal. These include Do/While, Do/Until, While/Until and Do/While/Until. In addition to providing full support for structured programming, procedures and functions with local labels, Apple IIGS BASIC includes full support for the Apple IIGS tools.

$50 retail
Apple Programmer's and Developer's Association; 290 SW 43rd. St.; Renton, WA 98055; 206-251-6548

Copy II Plus 8.0

Backs up copy-protected disks
Apple IIGS; other Apple II models.

Copy II Plus 8.0 is an update of the vendor's ProDOS/DOS 3.3 utility program. The new version includes a disk bit copy program that supports both the IIGS and Central Point's Universal Disk Controller Card. It provides full 3.5-inch disk support for the nibble editor, block editor, high-resolution disk scan and parameter files for the latest IIGS software. With the program, users can transfer many protected IIGS software titles to a hard disk.
$39.95 retail
Central Point Software, Inc.; 9700 SW Capitol Hwy., Ste. 100; Portland, OR 97219; 503-244-5782

Disk Util II

Backs up copy-protected software
Apple IIGS.

Disk Util II is a utility program for backing up many copy protected programs. Once backed up, many programs can then be uploaded to RAM disks, ROM disks or hard disks. According to its manufacturer, Disk Util II supports most of the latest copy protected applications on the market.
$59.95 retail
FWB, Inc.; 2040 Polk St., Ste. 215; San Francisco, CA 94109; 415-474-8055

Graphics Supermarket

Converts images into code
Apple IIGS; 512K

The Graphics Supermarket automatically takes shapes, patterns, icons or entire screens that the user creates and translates them into assembly or C source code. It can also convert images from other programs. The code can then be used in the user's programs, and no licensing fees are required for use in commercial products.

According to the vendor, The Graphics Supermarket is the first Apple IIGS program to teach both novices and experts how to write programs and use the IIGS.
$49.95 retail; program only
$149.95 retail; program and source code
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

LifeGuard

File recovery software
Apple IIGS.

LifeGuard protects Apple IIGS users from accidental loss of data by providing the ability to recover disk files that have been deleted. Files deleted under ProDOS 16 and ProDOS 8 can be recovered.

The program uses the GS mouse and a Macintosh-like interface and can search entire disks for missing files, using full or partial names given by the user or words and sentences as descriptions. Files can be found based on contents without knowing their names.
$59.95 retail
Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton, MA 01720; 617-263-1870

Mac.Transfer

Data transfers for the IIGS
Apple IIGS; other computer, cables or modem.

Mac.Transfer is a text file transfer program that provides a method for moving text and data from one computer system to another so that essential word processing, database and spreadsheet information is not lost. The program transfers data back and forth from Apple II and IBM PC computers to the Macintosh or Apple IIGS. Documentation explains how the connection between computers can be made via modem or direct cable.
$60 retail; Mac.Transfer
$22 retail; cables
Southeastern Software; 7743 Briarwood Dr.; New Orleans, LA 70128; 504-246-8438

MACtoGS Assembler/Linker

Cross development system
Apple IIGS; Macintosh.

MACtoGS Assembler/Linker is a cross development system that allows a user to develop Apple IIGS assembly language programs on the Macintosh. Features include a fully implemented 65816 assembler and linker, a multiple-window editor with Undo, compatibility with the Apple IIGS Programmers Workshop (APW) and the ability to produce complete stand-alone IIGS applications.

The system supports all Apple IIGS ROM and Library routines, includes tools for file transfer of source and applications files, and assembles up to 10,000 instructions per minute.
$195 retail
Consulair Corp.; 140 Campo Dr.; Portola Valley, CA 94025; 415-851-3272

Merlin 8/16

Three assemblers in one
Apple IIGS; other Apple II models.

Merlin 8/16 includes three assemblers in one package: Merlin 16 for assembling 8- and 16-bit ProDOS programs on the Apple IIGS and other Apple IIs equipped with a 65802 or 65816 chip, and two versions of Merlin 8 for assembling 8-bit ProDOS and DOS 3.3 programs. Merlin 8/16 is compatible with all source listings created with Merlin or Merlin Pro, and APW (ORCA/M) source files can be loaded, edited and assembled with Merlin 16.

Features of Merlin 16 include a relocating linker that generates relocatable object code, library routines and run-time packages. It also supports batch processing and conditional reassembly, plus multiple file and/or segment output. Files may be created that run directly under ProDOS 16, including system files, desk accessories, device drivers, etc.

Merlin 8 (formerly Merlin Pro) includes a full-screen editor, relocating linker, macro libraries and a fully commented source listing of Applesoft BASIC.
$124.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

MouseFiler 2.0

A Macintosh-like environment
Apple IIGS; other Apple II models.

MouseFiler brings the same user interface as the Macintosh to the Apple IIGS, and, in effect, replaces The Finder. It includes pull-down menus and allows the user to select files with just a few clicks of the mouse. The product can copy and select single files, groups of files, files that only contain certain types and so on. In addition, MouseFiler can run and list programs from the menu, and a file find feature is integrated into the system.
$69.95 retail
Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton, MA 01720; 617-263-1870

ORCA/BASIC Interpreter And Compiler

BASIC Programming On The IIGS
Apple IIGS.

The ORCA/BASIC Interpreter And Compiler are an extended version of Applesoft BASIC running on a desktop environment which comes with a source level debugger. Extensions include Print Using, If-Then-Else, While statement, subroutines with passed parameters, multiline functions, true local variables and more. The compiler also supports variable dimensions for array declarations.

The ORCA/BASIC Compiler And Interpreter are part of a multilingual environment compatible with any Apple Programmer's Workshop (APW) or ORCA compiler or assembler.
$50 retail; ORCA/BASIC Interpreter
$95 retail; ORCA/BASIC Compiler
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/Desktop For The IIGS

Programming environment for APW
Apple IIGS.

ORCA/Desktop For The IIGS is a programming environment which provides multiple windows, pull-down menus and mouse support for APW languages. Text and graphics can appear on the screen at the same time, allowing program output and source code to be viewed together.

The pull-down menus provide support for copying and deleting files, global search and replace, cut, copy, paste, spilt screen and more.

ORCA/Desktop For The IIGS will work with any APW or ORCA language.
$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

Assemble language programming
Apple IIGS; 512K.

ORCA/M is a complete development environment for assembly language programming on the Apple IIGS. The system includes the assembler with full macro capabilities, link editor, command processor, full-screen text editor, disassembler, utilities, and macro and subroutine libraries. The product supports 65816, 65C02 and 6502 instruction sets. It's also compatible with ORCA/Pascal, APW C and the ORCA/BASIC compilers. It's interchangeable with the Apple IIGS Programmer's Workshop.
$69.95 retail
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/M Support Programs

Support for ORCA/M
Apple IIGS; ORCA/M For The Apple IIGS.

The Utility Package #1 adds 12 new commands to the ORCA/M, ORCA/BASIC, ORCA/Pascal or Apple Programmer's Workshop shell. The utilities include: calendar, bad-block check, file compare, lowercase conversion, quick sort, control character strip, tab and space trip and more. Source code is included.

Subroutine Library Source contains the source code to the ORCA/M 1.0 subroutine libraries, including integer math, formatter I/O, number-string conversions, etc. All are called via the standard macro library.

The Merlin to ORCA/M Source Code Translator takes Merlin source code as input and writes ORCA source code as output. All labels and instructions are translated. ProDOS 8 and ProDOS 16 versions are included, and the program comes with source code.
$39.95 retail; Utility Package #1
$39.95 retail; Subroutine Library Source
$29.95 retail; Merlin to ORCA
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/Pascal For The IIGS

Pascal programming language
Apple IIGS.

ORCA/Pascal For The IIGS is an implementation of standard Pascal with all of today's popular extensions. It comes with a desktop programming environment and source level debugger. Multiple windows allow source code, text or graphics output and the debugger to appear on the screen at the same time.

The debugger supports step and trace, real-time execution of subroutines, and break points. A variables window displays the variables as the program runs. Also included is support for debugging machine language programs.

ORCA/Pascal For The IIGS is part of a multilingual environment compatible with the APW C compiler, the ORCA/M macro assembler and the ORCA/BASIC compiler and interpreter.
$150 retail; ORCA/Pascal with desktop and debugger
$125 retail; ORCA/Pascal with text environment
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

The Diversi Series

Disk drive helpers
Apple IIGS.

The Diversi series is a family of utility software designed to enhance performance of the Apple IIGS and disk drives. Diversi-Key is a keyboard macro generator that allows users to design single-key macros that replace hundreds of keystrokes. Users can define, edit, display and load macros for use in many programs, including AppleWorks.

Diversi-Cache speeds the performance of 3.5-inch disk drives, without the use of a RAM disk. According to its vendor, programs run up to five times faster after booting with Diversi-Cache.

Diversi-Copy lets users copy unprotected 3.5- or 5.25-inch disks at maximum speeds. It uses up to 800K in RAM for one-pass copying.
$45 retail; Diversi-Key
$35 retail; Diversi-Cache
$30 retail; Diversi-Copy
Diversified Software Research, Inc.; 34880 Bunker Hill; Farmington, MI 48018-2728; 313-553-9460

The Power System

Programming systems
Apple IIGS; other Apple II models.

The Power System is comprised of three separate programming languages, and special implementations for the Apple IIGS are available. They are UCSD Pascal, Modula-2 and FORTRAN-77. Each one features fast compilation with compact code; virtually no source or code size restriction; dynamic memory management; automatic overlay scheme; error handling; machine-independent screen management; program chaining; I/O redirection; event driven multitasking; auto startup of applications; and full compatibility with the programmer's file system and hardware.

$99.95 retail; UCSD Pascal
$99.95 retail; Modula-2
$99.95 retail; FORTRAN-77
Pecan Software Systems, Inc.; 1410 39th St.; Brooklyn, NY 11218; 718-851-3100

TML BASIC
Full-featured BASIC compiler
Apple IIGS; 512K.

TML BASIC is a modern 16-bit BASIC compiler designed specifically for the Apple IIGS. The program is compatible with Apple's GS BASIC interpreter, which offers much of the same functionality as the company's TML Pascal. TML BASIC creates stand-alone ProDOS 16 applications, provides access to the Apple IIGS Toolbox, produces super high-resolution graphics, provides access to the IIGS' sound functions and more. It also offers advanced language features, including Print Using, Do/While, Until and If/Then/Else. Over 400 pages of documentation provides all the information needed to use both TML BASIC and the Apple IIGS.
$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
Complete Pascal programming
Apple IIGS; 512K; extended memory board recommended.

The stand-alone version of TML Pascal is a native code Pascal compiler that provides access to the Apple IIGS Toolbox for creating ProDOS 16 applications and both new and classic desk accessories. It implements a fully integrated programming environment for writing, editing, compiling and running applications. The software compiles at more than 6,000 lines of source code per minute.

The Apple Programmer's Environment version of TML Pascal is fully compatible with the stand-alone version. It is a one-pass compiler that features separate compilation of units and complete access to the Toolbox. The APW software package is required to use this version.

The TML Source Code Library is a collection of TML Pascal source code example applications that demonstrate the use of IIGS ROM Tools.

The TML Speech Toolkit is capable of converting English text into computer-generated speech using the IIGS Ensoniq sound chip. It supports both male and female speech as well as control over the speed, pitch and volume of the speech generated. Compatible with both TML Pascal and TML BASIC, the TML Speech Toolkit allows computer-generated speech to be added to any program written in either language.
$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

ZBasic 4.0
ProDOS compiled BASIC
Apple IIGS; other Apple II models.

ZBasic 4.0 for ProDOS is a compiler that incorporates many new commands and features over the previous DOS 3.3 version. New features include support of ProDOS pathnames, double high-resolution graphics, MouseText characters, customized character sets and use of the Apple Mouse. A full screen editor that uses WordStar keystroke commands has also been included.
$49.95 retail
Zedcor, Inc.; 4500 E. Speedway, Ste. 22; Tucson, AZ 85712; 800-482-4567 or 602-881-8101

Word Processing

//Write
Multiple windows
Apple IIGS.

//Write is a word processor that features multiple document windows, full control of commands through the mouse and keyboard, true what-you-see-is-what-you-get displays, cut-and-paste capabilities, pull-down menus, a wide range of font and type styles, scroll bars, multifaceted alignment rulers and shortcut keys for experienced users.

Other features include cut, copy, paste, replace and delete; cut or copy to the clipboard; and align left, right, justify and center.
$79.95 retail
Random House, Inc.; 201 E. 50th St.; New York, NY 10022; 800-638-6460 or 212-751-2600

DeluxeWrite
Combines text and graphics
Apple IIGS.

DeluxeWrite is a word processing program compatible with DeluxePaint II and DeluxePrint II. It combines text and graphics in letters, memos and reports.

DeluxeWrite's text features include multiple documents, AppleWorks compatibility, a 90,000-word spelling checker, along with cut and paste, search and replace, and add headers and footers.

DeluxeWrite allows the user to place high- or low-resolution graphics anywhere in a document, then to crop, resize and move the image for perfect placement.
$99.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

GraphicWriter Version 2.0
Graphics/word processor
Apple IIGS; 512K; extended memory card recommend.

GraphicWriter is a combination page-layout, graphics and word processing program designed exclusively for the Apple IIGS. All three functions can occur "overlayed" on the same page.

Features include automatic multicolumn text (in which text "wraps" between columns), text formatting for "wrapping" around pictures and illustrations, LaserWriter printing and over 1,100 type style variations.

Its on-line, object-oriented graphic tools allows precision graphic drawing within multiple "regions" on a page layout, while its on-line "paint" tools allow free-form drawing, all in 48 colors. GraphicWriter can also import graphics or text from other programs.

As a word processor, GraphicWriter also provides full facilities of text justification, tab settings, paragraph formatting, running headers and footers, superscript and subscript, and Search and Replace, along with a handsome array of Fonts and Styles.
$149.95 retail
DataPak Software, Inc.; 14011 Ventura Blvd., Ste. 507; Sherman Oaks, CA 91423; 800-327-6703 or 818-905-6419

MouseWrite
Moused-based word processor
Apple IIGS; extended memory card recommended; two disk drives.

MouseWrite Version 2.6 is a ProDOS mouse-based word processor that features pull-down menus, mouse control and support of expanded memory environments. The expanded desktop can handle up to 12 open documents at once, and a feature called Print-While-You-Work has background print spooling ability.

Other enhancements include an integrated spelling checker, mail merge, communications, glossary and the ability to directly load AppleWorks word processing files without conversion.
$149.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

Multiscribe GS 3.0
Word processor with graphics
Apple IIGS; 512K.

Multiscribe GS 3.0 is a mouse-based word processing program that brings Macintosh-like pull-down menus, windowing and fonts to an Apple IIGS. It lets users choose from a selection of fonts and character sizes and offers what-you-see-is-what-you-get word processing.

Multiscribe GS 3.0 also allows a user to open up eight different document windows at once. Editing options include the Cut, Copy, Paste and Undo commands.

The latest version includes an 80,000-word spell checker and thesaurus that provides alternative suggestions that are made phonetically as well as typographically.
$99.95 retail
StyleWare, Inc.; 5250 Gulfton, Ste. 2E; Houston, TX 77081; 713-668-1360

Sensible Grammar
Proofreading program
Apple IIGS; word processing program.

Sensible Grammar is a proofreading program that checks word processing files for common writing errors. It contains a library of more than 2,000 commonly misused English phrases to identify pompous, informal, cliche, vague, wordy, repetitive and other faulty phrases in a user's writing. The program also catches many punctuation, capitalization and other typographical errors, such as repeated words.
$99.95 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Sensible Speller For ProDOS
Electronic dictionary
Apple IIGS; word processing program.

Sensible Speller is an electronic dictionary designed to correct misspellings after a document has been written. The program contains the 80,000-word Concise Edition of the Random House Dictionary on disk. It suggests spellings and allows automatic replacement of words. Words can be added to the dictionary or the user can create a personal dictionary.
$125 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Sensible Writer
Word processor
Apple IIGS.

Sensible Writer uses a Macintosh-like user interface that makes it easy to select portions of text to be moved, underlined, boldfaced, justified and more. According to its vendor, the program is fast, reliable and easy to use. The program uses visual format rulers to easily set tab stops, margins and paragraph indentations on the screen.

Multiple window allow users to work on two independent, full-size documents at the same time (up to 256K each).

Other features include built-in mail merge; automatic envelope addressing; easy to share data with AppleWorks and other word processors; and takes advantage of most extended memory cards by allowing for large text files.
$99.95 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

WordPerfect For The Apple IIGS
Word processor
Apple IIGS; 512K; two disk drives or a hard disk drive recommended; additional memory card recommended.

WordPerfect For The Apple IIGS provides more than 110 word processing features. In addition to a 115,000-word speller and a thesaurus, the program offers footnotes and endnotes, headers and footers, mail-merge, macros and dozens of formatting features.

The program has a mouse interface with pull-down menus and multiple documents on screen. Users can edit an unlimited number of documents at the same time and take advantage of any extra memory available.

Other features include bold, underlining and centering; advance up or down a half of a line; center page top to bottom; widow/orphan protection; on-line help; page up and down; scroll horizontally and vertically; and delete character left and right.
$179 retail
WordPerfect Corp.; 288 W. Center; Orem, UT 84057; 801-225-5000

Writer's Choice Elite
Graphics/text word processor
Apple IIGS.

Writer's Choice Elite is a word processor that allows a user to combine graphics and text. It can be used with Paintworks Plus, Draw Plus, Clip Art Gallery or other compatible graphics programs to create custom reports, memos, letters, fliers and more.

Key feature include full graphic integration with leading Apple IIGS software; mouse interface and pull-down menus; 16 document windows available to work on several documents at once; full-color capabilities including highlighting and crossed-out text; printing in 16 colors; and ruler formatting, including single, double and triple spacing.
$89.95 retail
Activision, Inc.; 2350 Bayshore Pkwy.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

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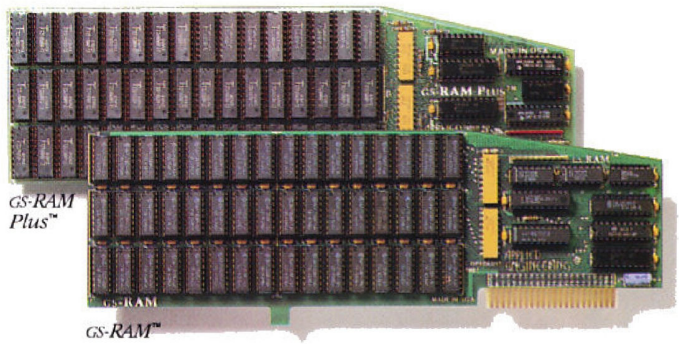
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Steve Wozniak, the creator of Apple Computer

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- ROM expansion port
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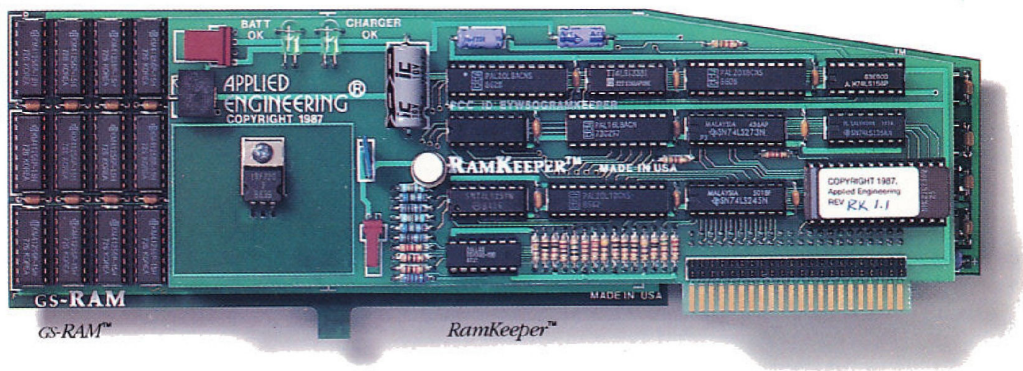
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If you bought your IIGS with Apple's memory card and later wished you had the GS-RAM, no problem. RamKeeper will support both cards plugged into RamKeeper simultaneously!

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Applied Engineering has the most experience in the industry with battery-backed memory for the Apple so you are assured of the most reliable memory back-up system available. And in the world of battery-backed memory, reliability is everything! That's why Applied Engineering uses the more dependable Gel-Cell's instead of Ni-Cad batteries (if Ni-Cad's aren't discharged periodically, they lose much of their capacity). RamKeeper has close to 6 times (about 6 hours) the "total power failure" back-up time of other systems. When power returns, RamKeeper automatically re-charges the battery to a full charge. With power from your wall outlet, RamKeeper will back-up your IIGS memory cards RAM indefinately.

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