More Than 550 Product Listings And Descriptions

The Apple IIGS Buyer's Guide

A Redgate Publication
Spring 1989 Vol. 2, No. 3
U.S. $2.95, Canada $3.95

Spring Productivity Issue:

Word Processor Roundup • Home Money Management • GS/OS And Alternatives
Exchanging Data With The Macintosh • Exploring AppleWorks GS

Beginning This Issue: *Four New IIGS Columns*

91
0 74470 19436 1

Remember when this board meant power and speed?

A majestic nine feet ten inches long and a shade under fifty pounds, the 1966 Big Boy surfboard represented the epitome of power and speed. Today, there's AE's new RamKeeper™.

Imagine. Turn on your IIGS and instantly the finder comes to life! All the speed and RAM power your IIGS was meant to have, packed into one, affordable "electronic hard disk."

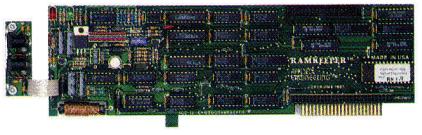
Applied Engineering's RamKeeper. A system that works like a hard disk, only better. It retains stored programs *and* data while your computer is turned off (like a hard disk), but gets up and running five times faster. RamKeeper is solid state, has no moving parts and, unlike a hard disk, has no heads to crash and no parts to wear out. And RamKeeper saves wear and tear on your disk drive, because you don't need it nearly as often.

RamKeeper even powers up to two memory cards *simultaneously* while your computer is off. And the battery backup we include keeps power to the boards, even during power failures.

Your programs and data remain stored in a permanently accessible state, always ready to run. Your computer waits for *you* . . . instead of you waiting for it.

Superior power backup.

RamKeeper comes complete with sealed Gel/Cell batteries for emergency backup in the event of a power outage. Gel/Cell's are by far the most reliable backup power source in this application. Unlike the Ni-Cads others use, Gel/Cell batteries don't lose capacity if not discharged periodically.



RamKeeper lets you keep programs and data in permanent, "electronic hard disk" memory. Turn your Apple IIGS on and you're ready to work.

Our Gel/Cell pack gives you up to six hours of total power failure backup. And the sealed battery pack stays *outside* your computer case, where an unlikely leak won't ruin your computer circuitry.

RamKeeper uses a Switching Power Supply — the same technology used by Apple for the IIGS power supply. This design uses energy much more efficiency to keep your Apple running cooler.

Powers two memory cards in the same slot.

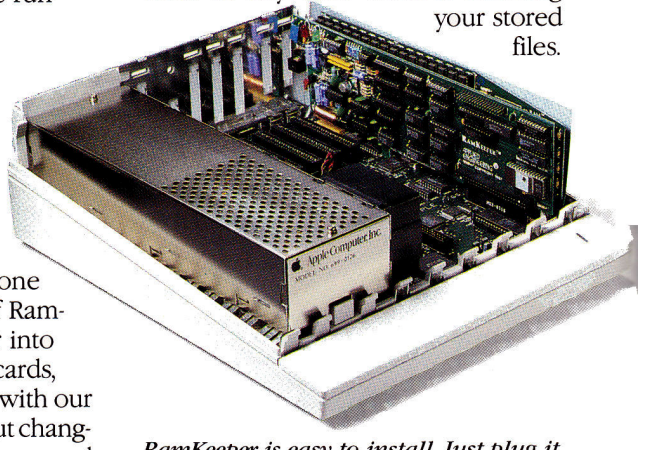
Have Apple's memory card, but now want the features of Applied's GS-RAM card? With RamKeeper, both cards act as one larger card. In one slot. Just attach one memory card to each side of RamKeeper and plug RamKeeper into the slot. And even with two cards, you can still keep slot 7 open with our optional Slot-Mover. All without changing the way either your memory card or your software now operate.

RamKeeper also works fine with only one memory card.

Makes all your memory usable memory.

RamKeeper powers up to 16 Meg. of memory. You can also mix and match different types of memory cards. For example, an Apple card that uses 256K RAM chips and an Applied Engineering card using 1 Meg. RAM chips. RamKeeper firmware automatically configures for two cards when the second card is installed. No need to manually move jumpers.

RamKeeper configures memory linearly to avoid memory gaps that can cause crashes. And *you* decide how much memory to devote to ROM and to RAM from the IIGS Desk Accessories menu. You can configure Kilobytes or Megabytes of instant ROM storage for your favorite programs. And you can change ROM and RAM sizes at any time without affecting your stored files.



RamKeeper is easy to install. Just plug it in. Even when you use two memory boards, you don't have jumpers. You can have two memory boards but use only one slot.

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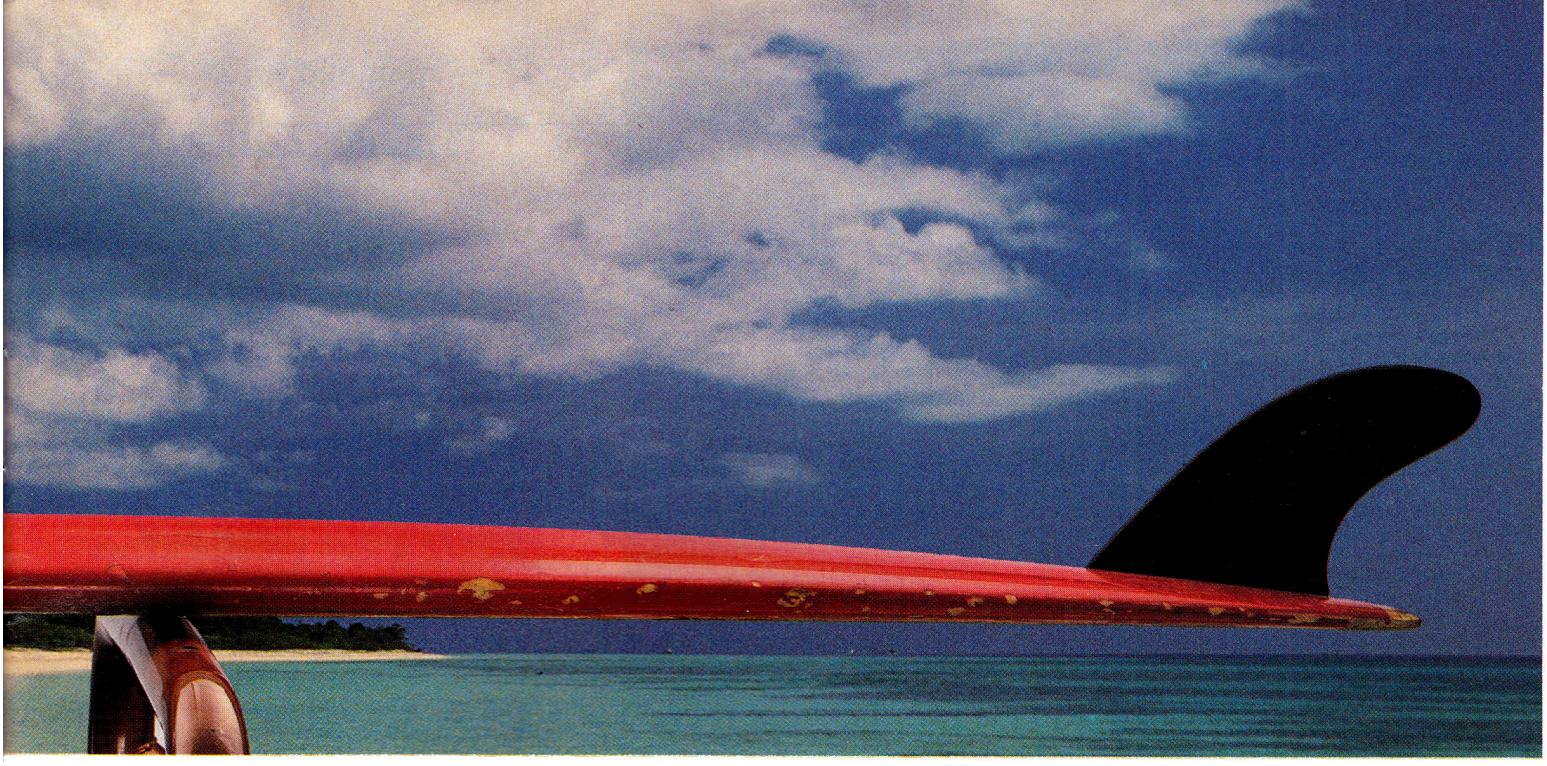


Protect from program crashes.

Reinstalling operating software is not fun. With RamKeeper you'll never have to. Since RamKeeper controlling firmware is in an EPROM, a program crash can't take out the operating software.

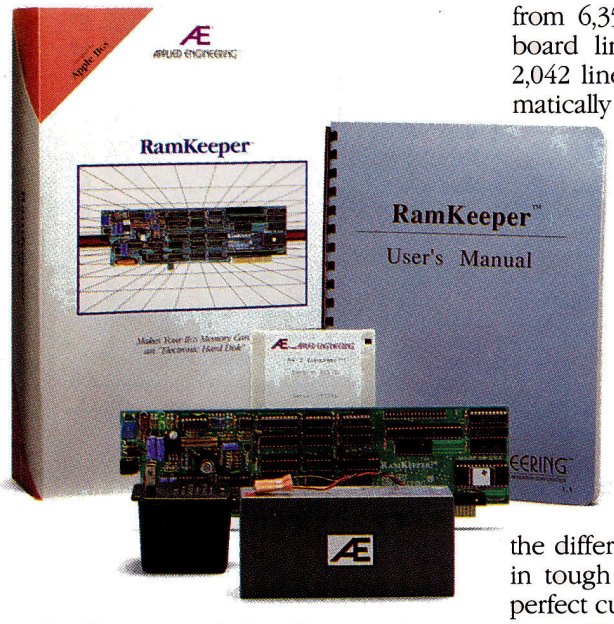
Verifies data security.

RamKeeper firmware uses optional startup checksums to verify that no data was lost while the power was off. The firmware also runs ROM and RAM memory tests without disturbing data on the card.

Significant differences.

Applied Engineering's longer experience with battery-backed memory boards shows in the way we designed and built RamKeeper. There are significant differences between RamKeeper and other systems:

- RamKeeper includes a Gel/Cell battery for 6 hours of total power failure backup, other use the shorter-life Ni-Cads and charge extra for them
- RamKeeper powers up to 16 Meg., others power only up to 8 Meg. maximum
- RamKeeper permits mixing and matching different memory cards and chip sizes, others have more limited combinations
- RamKeeper automatically configures for two cards, others have manually-moved jumpers
- RamKeeper configures linearly to eliminate memory gaps, others don't
- RamKeeper includes EPROM-protected operating software, others use floppy installation



It all comes with RamKeeper ... board, Gel/Cell battery pack, easy-to-understand instructions, and Applied's powerful AppleWorks Expander software.

- RamKeeper's software expands AppleWorks internal limits, others don't
- RamKeeper includes disk-caching software, others don't

Free AppleWorks Enhancement software.

Applied Engineering's powerful AppleWorks Enhancement software comes free with RamKeeper. It's well worth the purchase price alone. Our software makes AppleWorks faster and far more powerful by eliminating internal memory limits. Word processor limits increase from 7,250 to 22,600 lines. Database limits increase from 6,350 to 22,600 records. Clipboard limits increase from 255 to 2,042 lines. Our software even automatically segments large files so you can save them on multiple floppies

In addition, RamKeeper comes with the most powerful disk-caching program available anywhere. The cache tremendously accelerates access time to the Apple 3.5 Drive. Creating, in effect, a speed booster on top of a speed booster . . . a potent combination that runs most applications up to *seven times faster.* That's the difference between paddling out in tough chop and surfing in on a perfect curl.

RamKeeper is proudly made in the U.S.A. and is backed with a five year parts and labor warranty. And a 15-day money-back guarantee.

Only $189.

To order or for more information, see your dealer or call (214) 241-6060, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA, C.O.D. welcome. Texas residents add 7% sales tax. Add $10 outside U.S.A.

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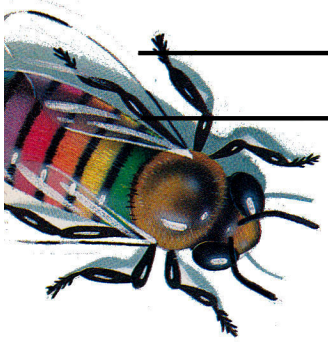

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— *Advertisement* —

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Choosing An Effective Early Learning Tool

Davidson & Associates, Inc. introduces two exciting new interactive computer software programs to develop early math and reading skills, ***Talking* Reading and Me™** & ***Talking* Math and Me™**, for the IIGS.

These programs offer realistic, natural-sounding voice in addition to colorful graphics, animation, and music. Vocal positive reinforcement personalizes your child's computer learning experience.

About Davidson

Dr. Jan Davidson—president of Davidson & Associates, Inc., parent, and former teacher—founded the award-winning educational software company because she saw the need for educationally sound, quality software for her students.

Dr. Davidson's objective is to produce software programs that adhere to fundamental, proven teaching criteria. Also included in most of these programs are creative sound effects and colorful graphics that appeal to children, motivating them to learn.

Best-Selling Software

Davidson's software programs have been consistent top performers on best-seller charts. They have earned awards for quality from major consumer and educational publications, and they are on the highly recommended lists published by educational rating services. Davidson's list of award-winning educational software programs includes:

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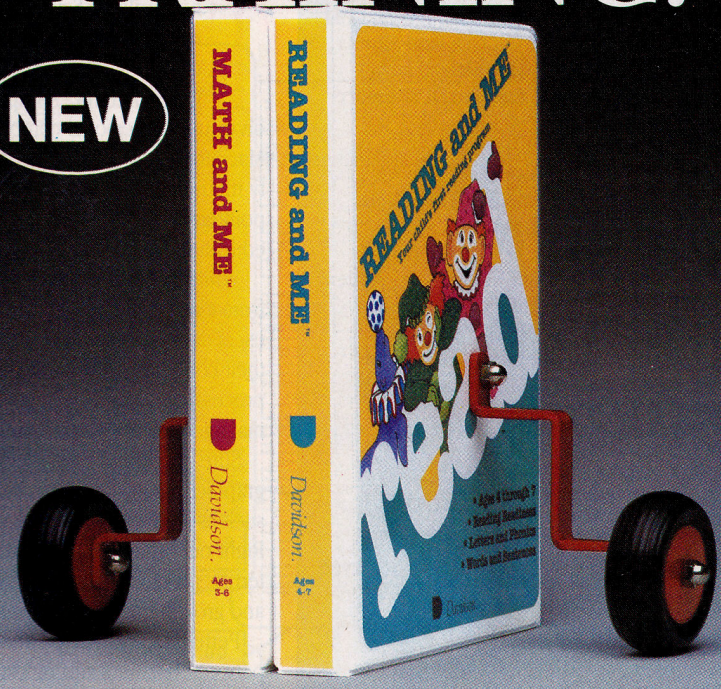
- **Speed Reader II™**
- **Reading and Me™**
- **Math and Me™**
- **Homeworker™**
- **Spell It™**
- **Read 'N Roll™**
- **Grammar Gremlins™**
- **Classmate™**
- **Alge-Blaster™**

BASIC TRAINING.

Talking IIGS Version Available!

NEW



Give your child the basic training needed for future success in school. **MATH and ME** and **READING and ME** software.

These two programs provide your child with a solid foundation in math and reading. Animated, colorful learning games give your child a positive first experience with the computer. And when your child completes an activity, he/she is rewarded with a certificate that has characters for coloring!

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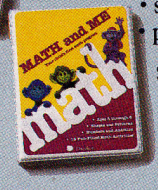
READING and ME (ages 4-7) covers • readiness • alphabet • phonics • words



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GS 3/89

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Productivity On Tap

The Apple IIGS as a productivity machine? We confess that we did not get this issue's theme from Apple Computer, Inc. As Apple prefers to divvy up the personal computer market, the Macintosh reigns supreme on the productivity mountain, with its "little brother," the IIGS, pointed toward the home, entertainment and educational foothills.

While this segmentation may make sense from a marketing standpoint, many IIGS users do not accept the stereotype. They find their computers remarkably adept at word processing, spreadsheet analysis, database management and telecommunications.

Sure, the speed must be improved, the graphics made sharper and added features, such as a built-in SCSI port, would be nice. Right out of the box, however, the IIGS is a terrific productivity computer with a large and growing productivity software base.

Perhaps a distinction should be drawn between business and productivity machines. In recent years, MS-DOS and Macintosh boxes have sewn up the business market, thanks largely to the huge diversity of software that runs on them.

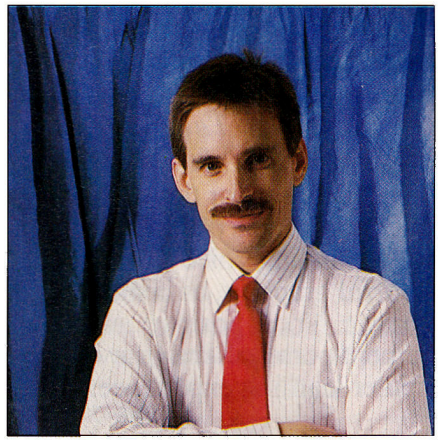
Yet the vast majority of business users are *productivity* seekers who never look beyond a staple of three or four standard programs. After all, relatively few users — even in the business world — ever boot up a funeral management package or dip into oil and gas software.

The current crop of IIGS productivity packages compares favorably against its counterparts on other computers. Sometimes the IIGS software even comes out ahead.

Seamlessly transferring data from one AppleWorks GS module into another, for example, has not been equalled on any other computer, including the Macintosh. And heavyweight productivity packages, such as WordPerfect and DB Master Professional, can tear through lesser programs marketed for other machines.

Nevertheless, the IIGS' reputation as a "fun" computer means that the machine will not invade corporate America anytime soon. Few programmers are likely to press the IIGS to new business heights, even though the Ensoniq sound chip could make an incredible phone-answering device.

And never mind that the same vivid graphics that underlie Paintworks Gold could also



support three-dimensional pie charts that would make most Macintosh screens seem pale by comparison.

We understand. The last thing management needs is employees singing along with Diversi-Tune or playing Alien Mind on company time. At that rate, we'll never catch up with the Japanese. . . .

Although the combination Wall Street and Bad Street Brawler may not click in the business world, the fact is your IIGS doesn't care what software it's running. When the time comes to set aside your work on the "Great American Novel" or the layout for the school newsletter, the computer transforms into a premiere game or educational machine.

When mom finishes her spreadsheet, six-year-old Johnnie can sit down and brush up on Conquering Fractions.

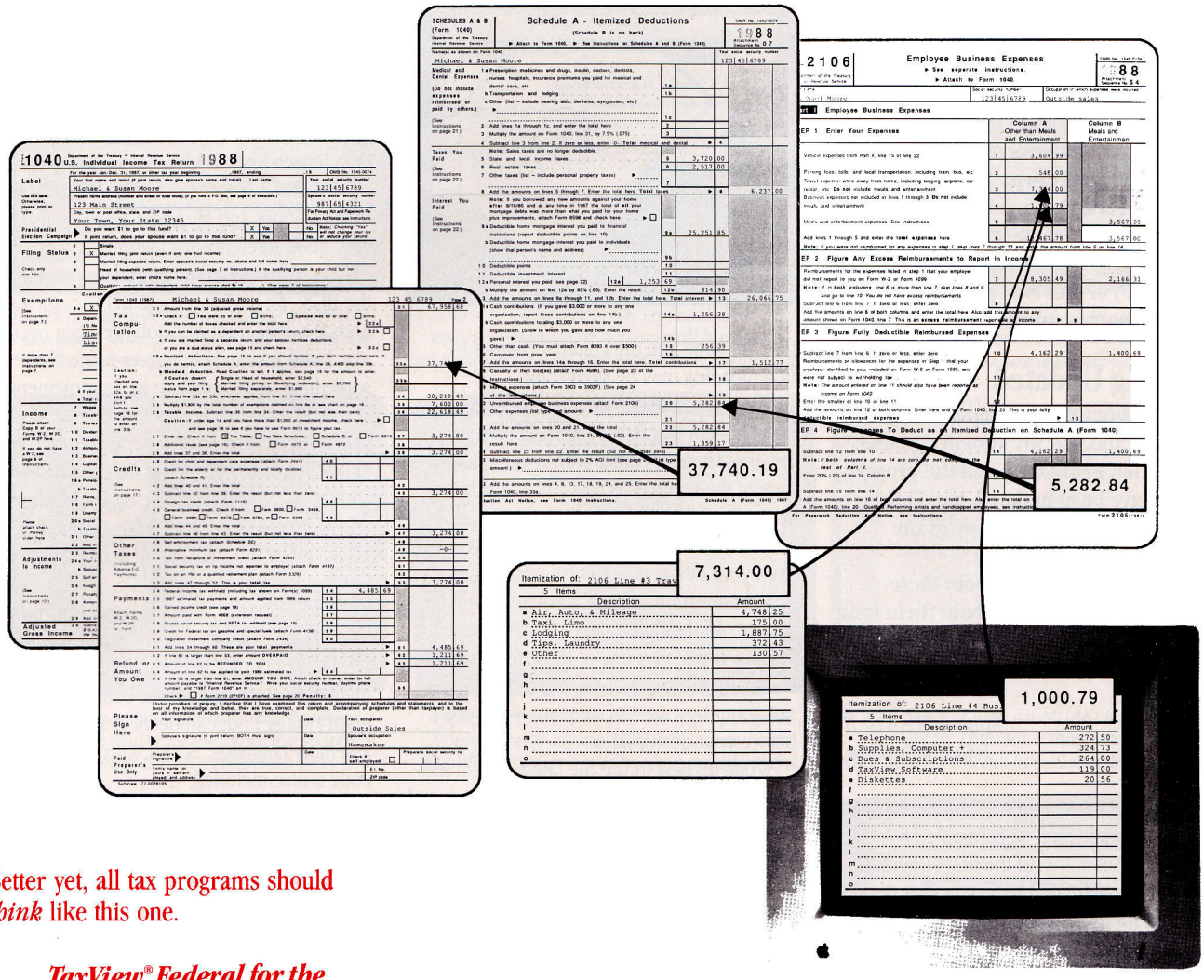
It's this multifaceted personality, which is still unequalled on other computers, that makes the IIGS so enduring — and ultimately productive — for everything from dad's work-at-home database update to a third grader's after-school review.

Anyone who doubts the productivity prowess of the IIGS needs only to scan through this magazine to see what a IIGS can do. In this issue, we're pleased to introduce four new columns — and columnists — that will explore the IIGS' potential in desktop publishing, education, games and productivity software.

Productivity? The IIGS has it in spades and there's plenty more to come. The Apple II may be more than 10 years old, but rest assured, the IIGS excitement is just beginning. ■

— Paul Pinella,
Editor-In-Chief

All tax programs should look and print like this one.



Better yet, all tax programs should *think* like this one.

TaxView® Federal for the Apple IIGS.®

Simply put, TaxView whisks you through stacks of receipts and W-2's by allowing you to enter data directly into 72 IRS forms, schedules, worksheets and statements displayed on-screen in identical IRS format. The program totals all entered amounts, automatically makes all tax calculations, and instantly links data to and from individual forms, schedules, worksheets and statements.

It even checks your input and helps you prevent illogical, inconsistent or incomplete entries.

The complete IRS instruction booklet is stored on a line-by-line basis.

What's more TaxView lets you easily import text files from a variety of outside spreadsheet, database and accounting programs.

When you're ready to sign and send your completed return, the program prints forms and schedules identical to the official IRS versions (complete with your data) onto blank paper using your supported laser *or* dot-matrix printer. Of course, all printed forms are fully IRS-approved.

TaxView Federal 1988

One look and it's easy to see why, each year, users give this program their highest rating.

To order your copy publisher-direct, call SoftView at 1-800-622-6829. Or, visit any one of 10,000 retailers offering TaxView.

TaxView Federal for the Apple IIGS.

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IIGS Address

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

Address all inquiries to IIGS Address, c/o *The Apple IIGS Buyer's Guide*, Redgate Communications Corp., 24 New England Executive Park, Burlington, MA 01803. Questions may also be sent via electronic mail on The Source (SIG049), Compuserve (71625,567) or MCI Mail (352-9601). Individual responses cannot be guaranteed.

Keeping Updated

I read about the ROM update in your magazine and had my system updated. I heard that ProDOS 16 and the program loader have been updated, too. Is this true? Where can I get a copy of the updated versions?

Where can I find out about these updates? I seem to hear about them long after they have been released. I don't receive any notice from Apple.

James J. Wenzel, Jr.
(via Compuserve)

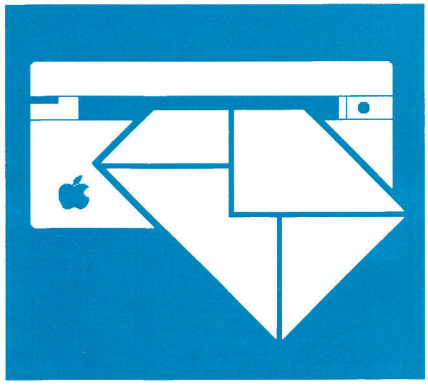
If you sent in the registration card for your IIGS, you should have been notified by Apple Computer, Inc. of the ROM upgrade. That mailing was among the first ever done by Apple for its customers. Apple generally doesn't inform customers about upgrades to system software.

You should be able to obtain the latest system software from your dealer. Apple encourages dealers to update their customers' old system software by just copying the disks. Because Apple can't and doesn't require dealers to do this, some do not.

If you live near a user group, you may be able to get an update from them. Many user groups have paid license fees that allow them to distribute Apple system software.

Another possible source is a major online service, such as Compuserve, Genie and The Source. They have licenses for distributing system software, which is available in their libraries for downloading.

This source isn't necessarily the best place to get new system software, however. The



files are large and the connect charges for downloading may be significant.

Your Apple dealer should also have the latest system manuals. System 4.0, the current system software, comes with two manuals. One of the manuals is virtually identical to the manual that came with System 3.1, however. If you already have it, the $39 package from your dealer may not be a good deal.

Your question came in through an online service. All the online services have Apple forums. If you visit one of these forums and check the messages there, you'll quickly find out about new system software — maybe before your dealer does.

While it's best to use the latest system software — newer versions contain bug fixes and improvements — it's seldom necessary to use it immediately. Keep reading this magazine and you'll learn about new system software soon after it's released.

Learning Pascal

I recently switched from using an Apple II+ to an Apple IIGS and have been programming with Basic for more than three years. I am planning to switch to another language, but I don't know which one. I want to program games and currently have TML Pascal.

Will that do? I am confused about memory locations and stacks. What book would be best for someone who has just started learning?

Lyle Fong
Los Altos, CA

TML has a good implementation of the Pascal language. We know of at least one good game for the IIGS that was written in TML Pascal, so, yes, it will do nicely.

The TML Pascal manual doesn't teach you how to program in Pascal, so you'll want a good book on Pascal. The books mentioned in the manual's introduction are all good.

Pascal User Manual and Report, by Kathleen Jensen and Nicklaus Wirth, is the standard Pascal reference, and *Oh! Pascal!*, by Doug Cooper and Michael Clancy, is also a very good reference for learning Pascal.

You will need some references specific to the IIGS. We find the Apple IIGS Toolbox reference books from Addison-Wesley a necessity, but if you are a beginner you will need something more readable as a supplement.

Our favorite references are Michael Fischer's *Apple IIGS Technical Reference*, Gary Little's *Exploring the Apple IIGS* and *Mastering the Apple IIGS Toolbox*, by Dan Gokin and Morgan Davis. None of the reference books listed use TML Pascal in examples, but they are still very useful.

Another manual, *Programmer's Introduction to the Apple IIGS*, from Apple/Addison-Wesley, contains TML sample code. The manual explains the source code to the program Hodge Podge in detail in Pascal, C and assembly language. A disk with all source code is also included.

No matter how many reference books you have (and we have mentioned only a few), there's no substitute for practice in improving your programming skills. Write as much as you can.

Chain Reaction

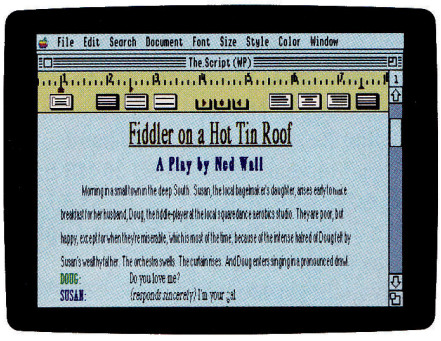
I have been using the Apple IIGS System Disk to bring Apple II+ programs to 3.5-inch disks under ProDOS 8. I have a large program that is broken into segments linked with the Chain program (an assembly language program from the old System Master disk) under DOS 3.3.

My program segments and the Chain program transfer to a 3.5-inch disk OK. When I try to run the Chain program on the Apple IIGS under ProDOS 8, though, it blows up.

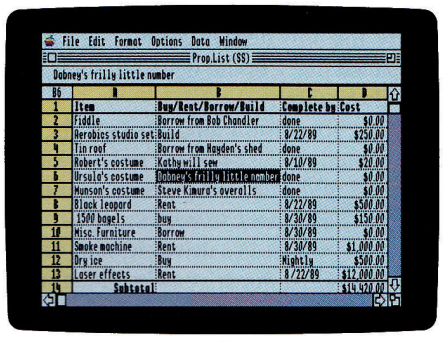
Is there a different Chain program available that I could use under ProDOS 8?

John Butler
Palatine, IL

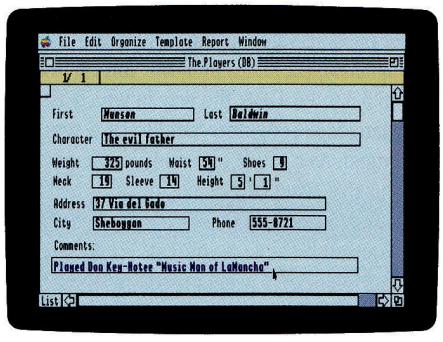
Introducing AppleWorks GS. Now you've seen everything.



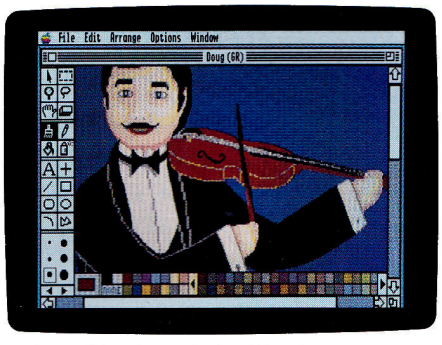
It's six powerful programs in one program. Including a word processor that lets you use different type styles and sizes.



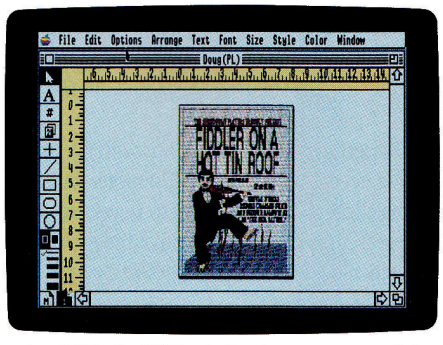
A powerful spreadsheet lets you calculate grades, analyze finances or run a small business— and transforms your numbers into colorful graphs.



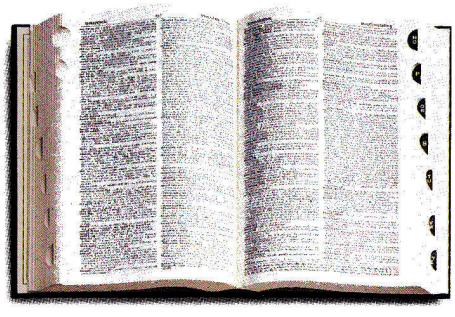
The database lets you store and sort thousands of business, school or home records. And you can use a mouse and pull-down menus.



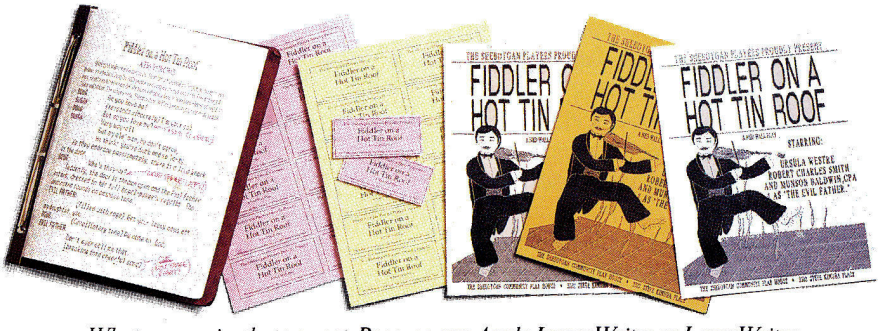
A combination painting/drawing program is designed to utilize all the amazing graphics capabilities the IIGS is famous for.



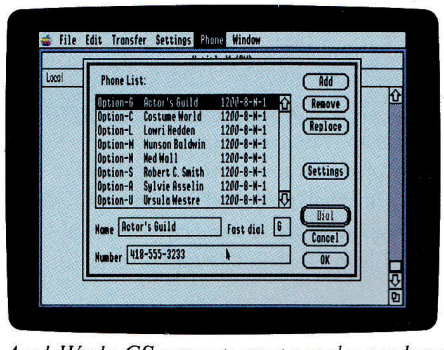
AppleWorks GS includes the most powerful Apple II page-layout program you can buy. Put all the pieces together. Then publish them.



A spell checker with an 80,000-word dictionary is built in. Ditto for a thesaurus that can make you more articulate, eloquent or perspicuous.



What you see is what you get. Because any Apple ImageWriter or LaserWriter printer prints what you see on the screen. Automatically.



AppleWorks GS supports most popular modems to let you send and receive files via telephone.

AppleWorks® GS gives you six of the most popular applications for your Apple IIGS in a single, easy-to-use package.

Just about every kind of program you could want. Just about everything you need to unleash the awesome power of your IIGS.

And AppleWorks GS can read all your current AppleWorks files, too.

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Circle Reader Service Number 4

The Chain program under DOS 3.3 allowed a program too large to fit into memory to be written in segments. Different pieces of the program could be loaded and run while variables kept their previous values in the new program.

When Apple Computer, Inc. turned from DOS 3.3 to ProDOS, the way in which assembly language programs "talk" to DOS was changed. As a result, assembly language programs that issue DOS 3.3 commands will not operate under ProDOS.

You can break large programs into segments in ProDOS using the following command: CHAIN program.name [,@#] [,S#] [,D#].

ProDOS will look for the program in the current prefix (or disk drive last used, if there is no prefix) or you may use a full or partial path name for the program name.

The [,@#] option allows you to have the new program begin at the line number specified by #. The [,S#] and [,D#] options specify what slot and drive numbers to look for on the new program and would be used in place of a full path name.

There are two new commands in ProDOS that are closely related to the Chain command: Store and Restore.

Store allows you to save the values of all the variables in a program to a disk file. Restore allows you to retrieve a file created by a Store command and use the values of the variables in a program.

These commands allow you to run the second part of a long program — at some time other than immediately after the first part was run — or to interrupt a running Basic program and resume it later.

Apple's *Basic Programming With ProDOS* manual, published by Addison-Wesley, is a good source of more information about the Chain, Store and Restore commands.

Disk Drive Blues

I purchased my Apple IIGS from a reputable computer store in Honolulu (on another island) and I am very disappointed with it. Since purchasing the computer, the 5.25-inch disk drive has broken down twice.

The first breakdown occurred a few weeks after I purchased the computer, which was still under warranty. A service technician told me the drive was dirty and only needed cleaning. I was appalled that a brand new computer would be dirty.

Now, six months after I bought the computer, the disk drive is not working again. I called the computer store and the person I spoke to suggested purchasing and using a disk drive cleaning kit. I tried cleaning the drive twice and it still isn't working.

Please advise me as to what remedy I could take to resolve this situation without spending more money on shipping, repair costs and so forth.

Sabina Wery
Hilo, HI

Experts do not agree on how often a disk drive needs to be cleaned. Opinions on the subject range from monthly to never, unless there is a problem. A disk drive only a few weeks old should not need to be cleaned before it will work.

Our first suggestion to those who are not getting satisfaction from their dealers is to try a different dealer, but it sounds like your choices may be more limited in Hawaii.

Whether changing dealers is a practical option for you or not, Apple Computer wants to hear about your problems. Write to Apple at the address printed on the back of any Apple manual or call 408-252-APPL.

You may also call the number printed on the back of your manual and your call will be forwarded.

Base your claim on the fact that the disk drive had the same problem during the warranty period that it did 90 days out of warranty. It's always a good idea to document claims with receipts for repairs, even warranty repairs where possible.

Remember that the customer service representative you are talking to had nothing to do with your problem and is someone you want to help you. Be as polite as you would be to any other person whose help you are seeking.

Fully Configured

I am a subscriber and an avid reader of your magazine. I am also a novice when it comes to my Apple IIGS.

My system includes an Apple IIGS updated to ROM Version 01, the Applied Engineering RAM board with 1 MB, the A.E. RamKeeper, an A.E. 2,400-baud internal modem, the CMS SD 20 MB hard disk drive with SCSI, System disks 3.1 and 3.2, plus software, including AppleWorks GS.

My main problem is that I need detailed and understandable information on how best to configure my system, especially the hard disk, whose original data was lost because of an electrical storm. I would like to determine how best to set up my categories, files, etc. I am prepared to purchase whatever books, software or other supplies that I may need.

Steven F. Thaxton, DDS
Lebanon, TN

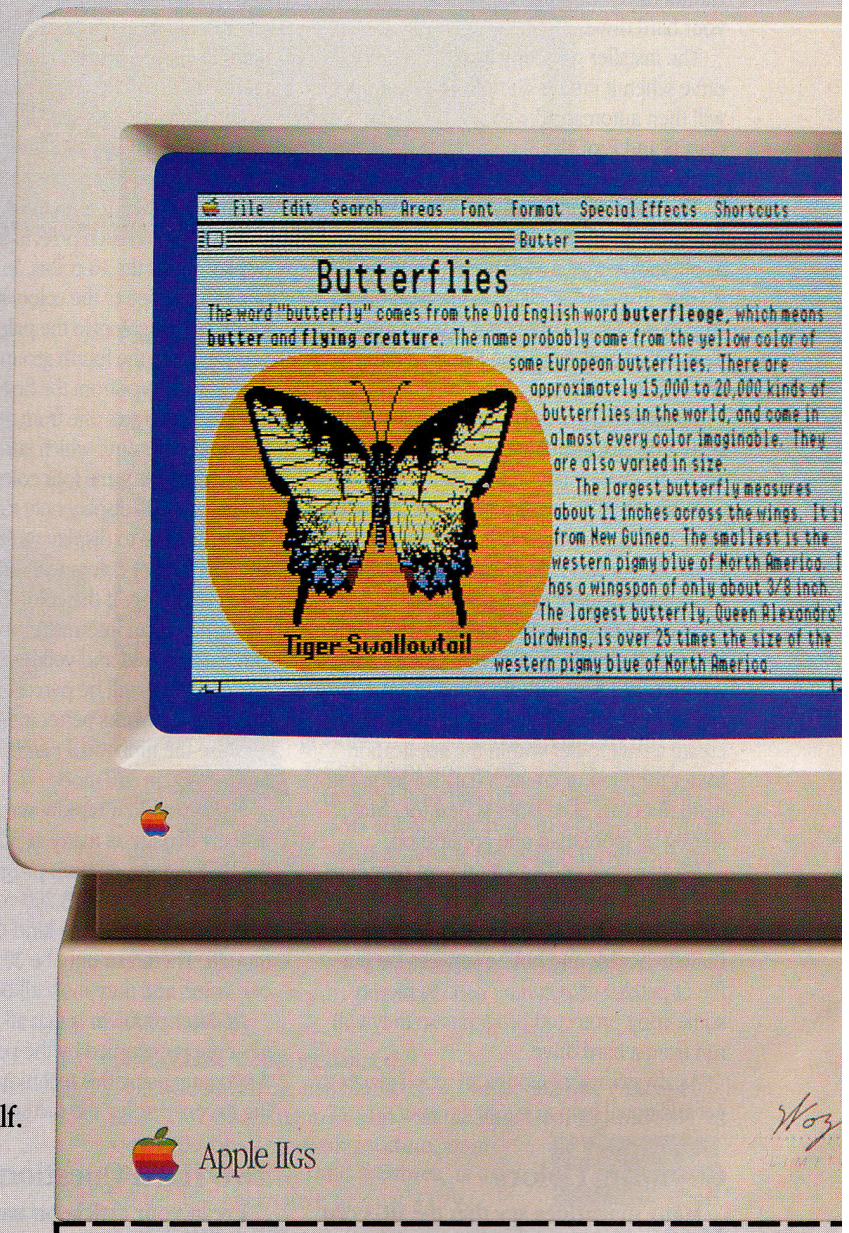
When you are setting up your system, you will have to make some compromises. With 1.25 MB of total memory, you are at the lower limit of what AppleWorks GS requires.

That means you can't use your RamKeeper to maintain a RAM disk and run AppleWorks GS at the same time. With that in mind, let's concentrate on setting up the hard drive for the most effective use.

The question of which operating system to use is a good place to start. The latest system from Apple is System 4.0. It's also known as GS/OS and is the operating system supplied with AppleWorks GS. If all you have is what came with AppleWorks GS, you don't have the whole package. You can visit your dealer and buy GS/OS in a package with two manuals. Dealers are also authorized (but not required) by Apple to make copies of System 4.0 for GS owners. GS/OS comes on two disks, but you only need the System Tools disk to add to what you have with AppleWorks GS.

Apple IIGS™ Desktop Publishing couldn't be easier–or better.

Medley™



One program that does everything

- Word Processing
- Page Layout
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If you have already purchased a productivity tool and think you have everything you need for desktop publishing, think again. Adding Medley to your productivity toolbox will allow you to break free from constraints of rectangle-based page layouts. Medley is the *only* desktop publishing program for the IIGS that allows you to wrap text around irregularly-shaped graphics. In this way, Medley opens up almost endless possibilities for new page layouts. Simply place a piece of artwork on top of your text, and watch the words wrap around it—*automatically.* A productivity tool should help you place your ideas on paper, not place limitations on what you can do.

Experience the creative power of Medley for yourself.

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Program price, complete– $195.00

Requires 1.25 Meg. of RAM

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Circle Reader Service Number 5

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MILLIKEN

Both the System Tools disk and the AppleWorks GS Utilities disk contain the Installer program and a script to put everything needed to boot GS/OS on your hard drive. You cannot have both ProDOS 16 and GS/OS on your hard drive.

The installer will copy ProDOS 8 onto the drive when it installs GS/OS. The computer will then automatically switch between GS/OS and ProDOS 8, depending on what application is run.

The main directory of a ProDOS disk will hold only 51 files, so it's a good idea to put applications on the hard drive in folders. To do this, just double-click on the hard drive's icon in the Finder to open it. Then type Apple-N or pull down the File menu and select New Folder.

The new folder will have the name "Untitled." You can double-click on the folder's name and type a new name for it.

Next, insert your application disk in the disk drive and open it. Select all the files except ProDOS, BASIC.SYSTEM and the System directory and drag them to the new folder.

To run a program in a folder, just open the folder and double-click the program's icon. If you use data files with the application, you can keep the files in the application's folder, create a data folder within the application folder for them or create a data folder in the main directory. The latter is best for data shared by more than one application.

Many games and entertainment programs will not run from the hard drive because of copy protection. Still, many user's groups, bulletin boards and online services keep a file of patches that can be used to modify some copy protected programs so they will run from a hard drive.

As always, user's groups are good places to get additional help in setting up your system.

Counting Colors

Many magazines say that the IIGS can display only 16 colors in 320 mode and four (or sometimes 16) colors in 640 mode. In your review of Image Master: Basic Paint, however, you said that this program can have 136 colors on screen at the same time and mix colors to get 8 million shades. How can this be?

Vishnu Menon
Los Angeles, CA

Most IIGS applications display only 16 colors in 320 pixel mode and four colors in 640 pixel mode, so it's easy to get the wrong impression and think that's all that can be displayed. In either mode, the IIGS can actually display as many as 256 colors at one time. There are some limitations on how these colors can be displayed, however.

Each line on the super-high-resolution graphics screen has a palette of 16 colors to display. There can also be 16 different palettes for an entire picture.

In 320 mode, each pixel in a line can easily display any of the 16 colors. In 640 mode, pixel one can use one of the colors in the third group of four colors in the palette. Pixel two gets one from the fourth group of four, pixel three gets a color from the first group of four and pixel four gets one from the second group. 640 mode software, which takes the easy way and repeats the same four colors throughout the palette, will display only four colors.

It's possible to display more than the available number of colors with a technique called dithering. If the color of adjacent pixels is alternated, an intermediate shade will be generated. If red and yellow pixels are alternated, orange will be perceived.

Dithering works better in 640 mode, because the individual pixels can be seen more easily in 320 mode.

A program that rapidly swaps palettes can actually display as many as 3,200 colors on the IIGS screen. A demo program that does this has been written; 3,200 colors at once isn't very useful for any kind of picture, though. There can only be 20 pixels of any one color, and they must all be on one line.

Another problem is that all of the computer's time is occupied by the palette switching. A program using this technique can do nothing except display the picture.

Two Hard Questions

I read your article on hard drives for the IIGS in the Spring 1988 issue. It left me with the impression that almost any hard drive that plugs into a Macintosh will also plug into an Apple SCSI board and work fine.

If I understand correctly, all I would have to do is reformat the drive using IIGS system software. Is this correct?

Would I need partitioning software to put programs that use ProDOS 8, ProDOS 16 and GS/OS onto the hard drive? Would the drive allow all three to reside without partitioning?

Howard McCollister
(via Compuserve)

Recently, I purchased a Wren III full-height, 155 MB SCSI hard drive. After a lot of confusion, I finally got the drive working with my IIGS by using Apple's SCSI card.

I used to get, at times, 2 MB to 32 MB partitions from the drive by using Apple's SCSI partitioning software. Now I have access to only one partition. Is there any reason for this?

Can I use another Apple SCSI card — two in total — in my IIGS to access the other 64 MB of the hard drive or would it be best to use a CMS controller card?

Todd Wilburn
Oklahoma City, OK

Many SCSI hard drives, including most drives for the Macintosh, will operate from an Apple SCSI card. Yet, if the instructions are for a different computer, getting one installed can be an adventure. If something goes wrong, the manufacturer may not be able to help you.

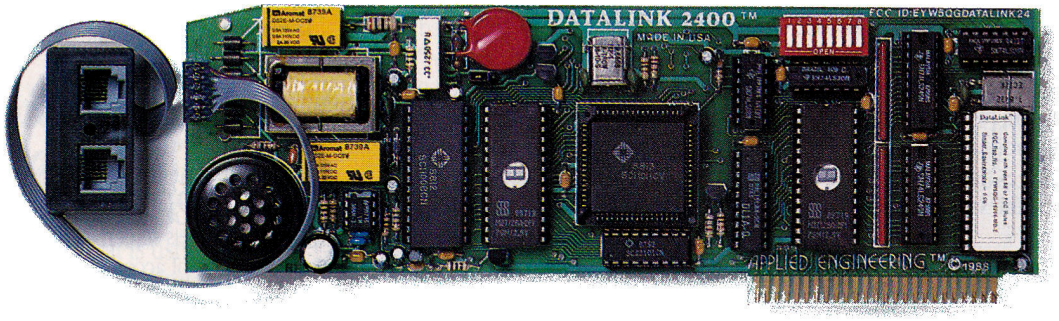
There are several problems that can cause a partition on a drive to disappear. If the area of the hard drive where the partitioning information is stored becomes damaged, some or all of the drive may become inaccessible.

If this is the problem, reformatting the drive with Apple System Utilities and rerunning the partition program should solve it.

ProDOS 8 can keep track of up to 14 volumes, but an online call — a request to ProDOS to give the slot number, drive number and volume name of all available volumes — can only display eight volumes at a time (and only seven reliably). On a IIGS with a hard drive, it's easy to have nine volumes, once you factor in all the attached 3.5-inch drives, 5.25-inch drives, ROM disks, RAM cards, the hard drive itself and so on.

One or more of these volumes may seem to disappear under ProDOS 8. It would still be there and accessible, even though it would not show up in a listing of volumes.

The new DataLink™ 2400 modem from Applied Engineering, it's a lot more than just twice as fast.



Applied Engineering's new DataLink™ 2400. Simply put, the finest modem on the market for your Apple IIGS, IIe or II+.

Bring home a world of information . . . from up to the minute flight information to whole libraries of resource materials. Even download free software and games.

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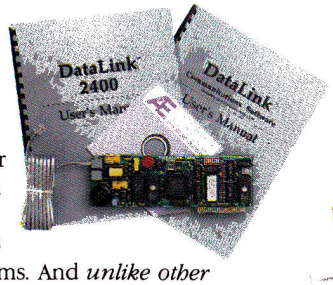

At transmission speeds up to 2400 bps (bits-per-second), Applied Engineering's new DataLink 2400 is capable of putting text on the screen faster than the human eye can follow. That means you can capture a great deal more material in less time than with 1200 bps modems. And *unlike other modems,* the DataLink 2400 comes complete with powerful, easy-to-use communications software.

Complete communications software included.

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Worldwide compatibility.

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- Non-volatile memory for modem configuration
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- Point-to-Point, ASCII Express, Access II compatibility, in addition to AE's included DataTerm and OnLine 64 software.
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Circle Reader Service Number 6

Another possible source of your problem is the Apple SCSI card. Three versions of its ROM have been issued. The latest version, Rev C, is the most reliable and is required to run Apple's latest system software.

It is possible to use two CMS SCSI controller cards installed in two slots and to set up jumpers on the cards to access all of a 115 MB drive. Two Apple SCSI cards in the same computer would see the same volumes on the hard drive.

The latest version of the IIGS system software, System 4.0 (also known as GS/OS), uses the same ProDOS file structure as ProDOS 8 and ProDOS 16 and can only access 32 MB per volume. It does remove the two-volume-per-slot restriction, however.

The Advanced Disk Utility program that comes with GS/OS can format and partition drives larger than 64 MB if they are connected to an Apple SCSI card. Files that ProDOS 8 *must* be able to access have to be placed in the first two partitions, because that's all ProDOS 8 will be able to "see."

There's a trade-off between the hardware partitioning system CMS uses — which requires the expense of a second SCSI card and takes up another slot in the computer — vs. the software partitioning of GS/OS. Apple's new system software is less expensive, but it doesn't allow ProDOS 8 to access all of a hard drive with more than two partitions.

Joyless Joysticks

My son and I have noticed a significant problem when playing competitive one-on-one sports games, such as Ping Pong with Indoor Sports by Mindscape and GBA Championship Basketball by Gamestar. When playing one against the other, player one uses the joystick while player two uses the keyboard.

With two players of similar ability, the player using the joystick will always win. To have any enjoyment, each player must play against the computer rather than against another player. Why can't two joysticks be attached for these games?

Jerry Gitt
Lafayette, CA

Our first Apple computer came 10 years ago with a pair of hand controls. Each unit had a knob and a button and they could be used by two players to play games against each other.

When joysticks came out for the Apple, the designers combined both hand controllers in one unit. Each knob became one axis of the joystick and both buttons were placed there.

It could have been done differently. With its four analog input lines, the game port on an Apple has enough inputs for two joysticks. The game port only supports three push button input lines, so a two-joystick set could have one button on each joystick and not use one input. Or the game port could put two buttons on one joystick and one on the other, but both joysticks could not have two independent fire buttons. A shared button would not be useful for much under the Apple system.

Why weren't joysticks like that made? There weren't any games to use with them. Why weren't there any two-joystick games? There weren't any two-joystick sets manufactured. It's a real chicken-and-egg situation. *(Editor's note: Before going to press, reader James Pangrazzi wrote to tell us about a product called Paddle-Adapple that accommodates two joysticks on a IIGS. Contact Southern California Research Group at 805-529-2082 for more information.)*

Cloning The Mac

I have an Apple IIGS and I see emulator and coprocessor boards for every computer except the Mac. Why isn't there anyone gutsy enough to try a Mac coprocessor?

Kevin Scott
Ashland, MT

There's an old saying, "Discretion is the better part of valor." All the technical problems of a coprocessor that might make a IIGS into a Mac could probably be overcome. Yet one big problem remains: the Macintosh ROMs.

They are complex enough to keep the Mac from being cloned. It would take so long to work out a ROM that didn't infringe on Apple Computer's copyrights, the clone ROM would be obsolete by the time it was developed.

There is one product for the Atari computer that allows it to run some Macintosh software. That product needs a set of Mac ROMs to work. Anyone buying it must obtain their own ROMs. As you might imagine, Apple doesn't make these readily available.

More Width Wanted

I would like to be able to do word processing and to scroll sideways on the screen. I would also like to be able to print sideways on my ImageWriter II. Finally, I want to make elongated charts and add labels to them. How can I do all this?

Mike McCutcheon
Norfolk, NE

Since the days of the 40-column Apple II+, people have wanted to view material wider than the Apple's screen. Horizontal scrolling was one way of accomplishing this feat.

When the IIe came out with its 80-column screen, interest in horizontal scrolling waned. Still, the AppleWriter program could use horizontal scrolling to display lines of up to 240 characters. Strangely enough, there wasn't that much interest in programs that could print anything sideways other than spreadsheets.

With the IIGS, it's easy to print sideways from desktop applications. Just pull down the File menu and open the Page Setup dialog box and click on the sideways page icon.

We don't know of any word processors that take advantage of the extra width gained by sideways scrolling. The next best thing is page-layout software such as GraphicWriter, Medley or the page-layout module in AppleWorks GS. Page-layout software can generally print a little wider than a sheet of paper.

If software a bit more removed from word processing might serve for producing your charts, a drawing program such as Draw Plus can print sideways as wide as several pages.

Spelling Checkers Revisited

I got a little excited with your product review of QuickSpell from the TimeOut series, but kept catching negative aspects. The article concludes with the statement that it isn't the most sophisticated spell checker available and leaves us there.

My question is directed to finding the most sophisticated spell checker. Sensible Speller is mentioned in your directory. This sounds more sophisticated and, at $125 vs. $69.96, it should be.

Elsewhere, I find a review of the Pinpoint spelling checker at $69 with the suggestion that Pinpoint is required — an additional $89.

What is the most sophisticated spell checker available for regular AppleWorks?

W. Arthur Milne
Kaneohe, HI

"To escape the many limits of Applesoft and take advantage of the full power of the IIGS, I have yet to see a better programming language for you than this one."

— Tom Weishaar, Open-Apple, November 1988

Introducing *Micol Advanced BASIC* for the Apple IIGS

...the language system that is ushering in a new era in Apple II programming.

Now, for the first time, you can program with:

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Micol Advanced BASIC finally throws open the full potential of your Apple IIGS...in a friendly environment that's both easy to learn and to use.

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If you literally want to add a spelling checker to AppleWorks, then only TimeOut QuickSpell from Beagle Bros. and Pinpoint Spelling Checker from Pinpoint will work. The Pinpoint product requires the Pinpoint Desktop Accessories package, and we cannot recommend it for that reason.

Pinpoint has moved toward other markets. As we write this, five months after the release of AppleWorks 2.1, Pinpoint has not decided whether to update its package to be compatible with the latest AppleWorks. Buying software that's almost obsolete and may never be upgraded is not a good idea.

If you don't mind leaving AppleWorks to check the spelling in your file, there is a different Pinpoint product available — the Pinpoint Document Checker. It is good and doesn't require the desktop accessories, so it may not be as risky a purchase.

Because it's the oldest and remains an excellent value, Sensible Speller is the program other spelling checkers are compared against. There are several other spelling checkers available that work as stand-alone packages.

Many word processors include a built-in spelling checker. WordPerfect, MultiScribe GS and AppleWorks GS all include a spelling checker, for example.

If we were buying a spelling checker for AppleWorks today, we'd lean toward QuickSpell because of its convenience. Otherwise, we'd want a word processor with a built-in spelling checker.

Hard Drives Vs. ROM Disks

I have a IIGS that I use strictly for home office and family entertainment. My system uses Applied Engineering's RamKeeper, supporting an Apple memory card with 1 MB of memory. I've installed the Finder, AppleWorks and miscellaneous files on the ROM disk, leaving 512K for other applications.

I love the speed in booting the Finder from the ROM disk and then AppleWorks from the Finder. If I want to run Paintworks Gold, MultiScribe IIGS — with spell checker and thesaurus — or any other of the large programs, I have to wipe out the ROM disk and reload it again later.

I can't boot any of my copy protected applications from the Finder. It seems that what I've gained in speed I've lost in flexibility, because I'm about out of memory on the ROM disk and I'm back to slow access of the floppy drives.

I was feeling that the only solution was to throw out the RamKeeper and purchase a hard disk. What advantage do you see in continuing to work from the ROM disk?

Paul Wood
Stratham, NH

As you have discovered, you don't have enough memory to make full use of your RamKeeper. You could buy another RAM card to attach to the other side of the RamKeeper. At the current price of RAM chips, it would cost as much for the necessary RAM as a hard drive. A hard drive isn't quite as fast as a RAM/ROM disk, but it is much faster than floppy drives and it will hold many applications that can benefit from the increased speed.

To decide whether a hard disk or more memory are what you need, consider how many large applications you have and how often you start them up — the only time the hard drive makes them any faster.

Also, think about how many programs you have that are copy protected and will not benefit from a hard drive or more memory. Note that most newer copy protected software for the IIGS can be started up from the Finder.

Think about how often you will have to reboot after running a copy protected program and whether you would benefit from the faster boot time of a ROM disk.

Then think about this: We have a RamKeeper, enough memory to have an effective ROM disk and a hard drive. We don't bother to maintain anything more than a small ROM disk for temporary files. We boot and run everything from the hard drive.

A friend of ours also has a RamKeeper, more memory than we have and a larger, faster hard drive. He keeps a large ROM disk and runs as much as he can from it.

It's all a matter of taste. Either more RAM or a hard drive will make your life easier. ■

The Apple IIGS Buyer's Guide *welcomes Larry Miller as a new columnist.*

A First Look At What's Shipping

It's got a word processor, it's got a database manager, it's got a spreadsheet, a telecommunications module, a graphics package and a page-layout module, but it hasn't yet won the hearts of Apple users.

The ink is hardly dry on the manuals, but already AppleWorks GS has generated an amazing amount of controversy. Like any new program, it has terrific features and frustrating bugs.

Giving this program the AppleWorks name may have been a mistake. Just about everyone who buys it expects to get a package as slick, easy, fast, powerful and problem-free as its namesake. Boy, are purchasers in for a surprise!

AppleWorks Classic is in its sixth incarnation or so, having had extensive revisions and bug fixes. Users who can think back to what life was like under AppleWorks Version 1.0 will have a better feel for how AppleWorks GS 1.0 performs.

Let's take a look at the individual modules.

Word Processor. Users of MultiScribe GS find this module familiar, which is not surprising. Both applications were written by StyleWare, which was acquired by Claris.

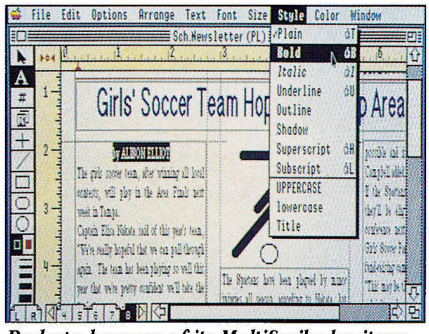
Still, AppleWorks GS offers a fairly powerful word processor with a graphic WYSIWYG display. Scrolling is slow, just as in every other IIGS product that uses Apple Toolbox routines for displaying graphics.

One strength is the ability to open several windows in different applications and move information from one window to another.

The first time we did this, we were surprised to notice that the Word Processor window lacks a horizontal scroll bar, and text off to the right of the window cannot be accessed. We learned to compress Word Processor windows vertically only. To be fair, the flaw is not unique to this program. (See the Word Processor article in this issue for more information.)

Database. This is another fairly strong module. Users can combine the usual text and numerical information and include graphics in each database record.

Setting up the display layout is easy and intuitive. To display a title in the label layout, however, users must define separate "label fields." Anyone who builds large database



Perhaps because of its MultiScribe heritage, the Page Layout module in AppleWorks GS works well and is easy to use.

files that have lots of fields may be adversely affected by this procedure.

Label fields are included in the total count, which reduces the number of available fields.

We were surprised to find we could only fit about 64 text characters in a field. As a comparison, AppleWorks Classic can handle almost 80 characters.

Printing mailing labels was easy to do, although there is no provision for printing multiple-across labels.

Our attempts to import large or complex AppleWorks database files didn't always work. Sometimes our data was lost or replaced with question marks.

Still, there are some very powerful capabilities present in the module. For example, full text formatting, including text color, is available for the display.

Time and dollar formats are very flexible, and changing the order in which columns are displayed in list format is simply a matter of dragging a column to the desired location.

Spreadsheet. This module is a fairly typical graphics-based spreadsheet. Horizontal and vertical scrolling can be easily controlled with the mouse, and operations on blocks of cells (as opposed to columns or rows) are available.

All usual math capabilities are present, including trigonometric, statistical and financial functions. There are also logic functions and some date functions.

Frustrated AppleWorks users will be happy to know that string functions are supported by the module.

Blocks of cells can be moved or copied, and formulas correct themselves in the new positions.

Column width can be easily adjusted, and users can redefine the default width if they wish. As users move deeper into the spreadsheet, titles can be locked in place so they don't scroll off the screen.

The spreadsheet, which has a built-in graphing and charting function, can produce pie charts, bar charts or graphs showing data points either connected or as separate dots. Once created, a chart can be transferred to the Graphics module for further editing.

Telecommunications. This module is the weak link in the chain. AppleWorks GS contains the basic capabilities needed to drive a modem, but not much more.

Users can dial out, connect to a bulletin board system — or other telecommunications service — and send and receive text. Users can also capture incoming text to a file and send text from a file. File transfers using Xmodem and Ymodem protocols are supported as well, as are Binary II transfers.

What's missing in the module is a script capability. Experienced users, especially users of commercial services, automate sessions to reduce the time spent online and the cost of telecommunicating. Doing so saves money and makes a session easier.

Automating the sessions also frees users from worrying about the various idiosyncrasies of different systems. An automated session takes care of all that.

Moreover, the display font Claris selected for this module is hard to read. The graphics-based text-scroll problem shows up again here, especially when using high-speed modems. There is no text loss, but operation does slow down a bit at times.

This module needs some upgrading.

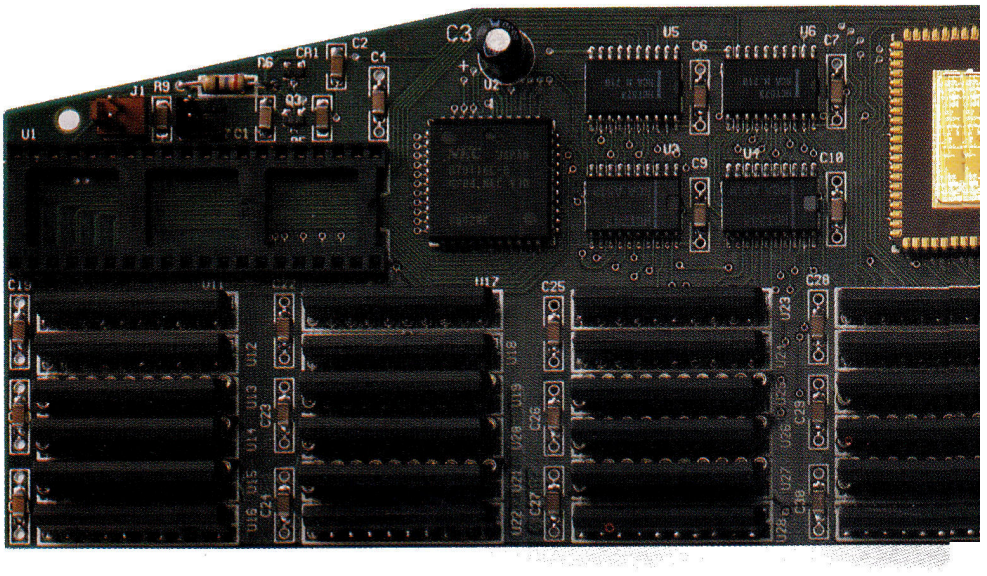
Graphics. This module is not Paintworks Gold, but it is a strong IIGS paint program with elements similar to Macintosh packages — such as SuperPaint.

Using the super-high-resolution 640 mode only, users can create graphics directly or import — and edit — graphics images from other sources, such as paint programs or digitizing scanners.

As they draw, each item that users create is treated like an object, which makes modification easy. Multiple objects can be grouped into a single object and moved easily into other applications.

(continued on page 18)

It's not what we think of PC



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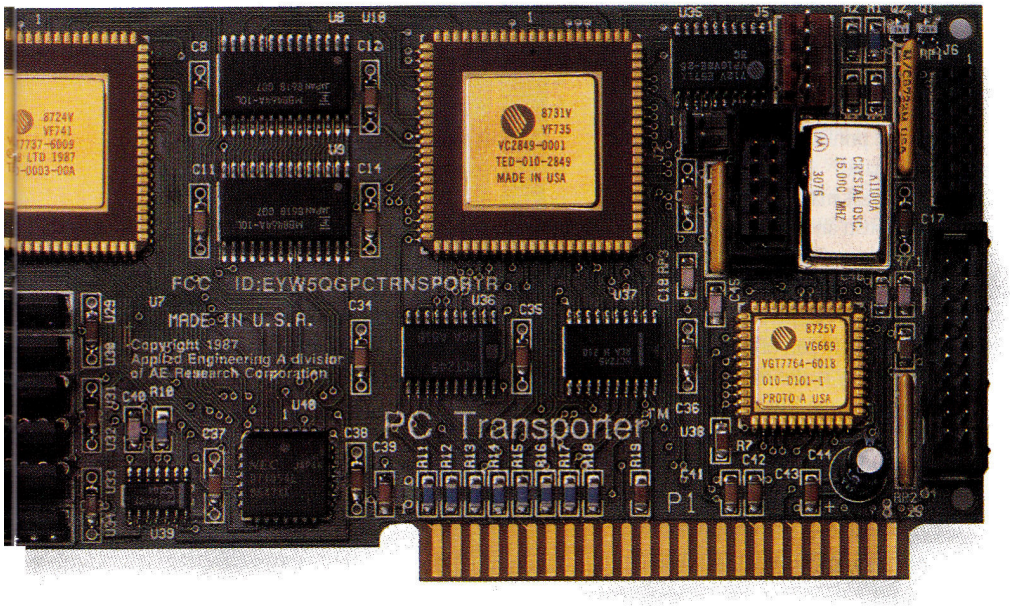

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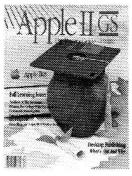

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(continued from page 15)

Page Layout. Here's the jewel. In this module you can bring together elements from all the other modules, arrange them onto one or more pages and print a final product using but one print command.

Linked text areas make it easy to insert graphics within text and have the text flow around the graphics. Objects on a page can be moved or resized easily.

A page is normally displayed at actual size, so users see only part of it on screen. A reduced-size display is also available, which displays the entire page. This feature makes it easy to move objects around the page.

A "master page" can be defined and saved. If there is a fixed format that users like — for example, the cover page of a newsletter — they need not start from scratch each time to assemble such a page.

Though there are a few tricks to learn, this module is easy to use and the most powerful in the package.

Overall. Like its namesake, the greatest strength of AppleWorks GS lies in its integration. With this package, users have the capability to run a single program and combine information of different types onto a single page.

AppleWorks GS takes a hit in the documentation and support area for the absence of a much-needed tutorial and the lack of any online help. There is a toll-free help line to Claris, however, and the manuals are for the most part clear. A quick-reference card is included, which helps during the learning phase.

Still, some items in the manuals are hard to find. For instance, users can stop a printout in progress, but it's hard to find the instructions to do so — simultaneously press the Apple and period keys — in the documentation.

We could only find two references, both under the specific "Print Merge" command.

AppleWorks power users who are used to having several extra functions available — through use of add-ons such as the TimeOut series from Beagle Bros. — will be happy to find that these kinds of functions are included in AppleWorks GS. There is a glaring exception, however. There is no macro language!

Existing IIGS packages, such as Roger Wagner's MacroMate (see review, this issue) and Diversified Software's Diversi-Key, allow users to build global macros. To avoid conflicts, they'll have to plan ahead as they design macro sets for AppleWorks GS.

AppleWorks GS uses the Apple key extensively. The Option key is also used for some features.

Reported Problems. There have been several reported problems, ranging from various printing difficulties to a tendency toward crashing on exit. Claris is aware of these situations and is working on solutions.

In some cases, solutions to known bugs are available. For instance, if users have trouble printing fully justified text in the Word Processor module, they can try printing using right justification, then print again with full justification.

Users have complained of long start-up times. In fact, once GS/OS has been booted and the Finder Desktop is displayed, AppleWorks GS should take under two minutes to load; less if users use a RAM disk or hard disk.

Several factors can slow this process down. For instance, configuring to load several AppleWorks GS modules at start-up will increase the start-up time.

Using the wrong interleave on a 3.5-inch disk can double the time it takes for any disk access. When using the Apple 3.5 Disk — the one with the pinhole in the eject button — users should format their AppleWorks GS program disks with a 2:1 interleave.

If they use a UniDisk 3.5 — the one with the pinhole beneath the eject button — they should use a 4:1 interleave.

How Good Is It? AppleWorks GS is not all things to all users.

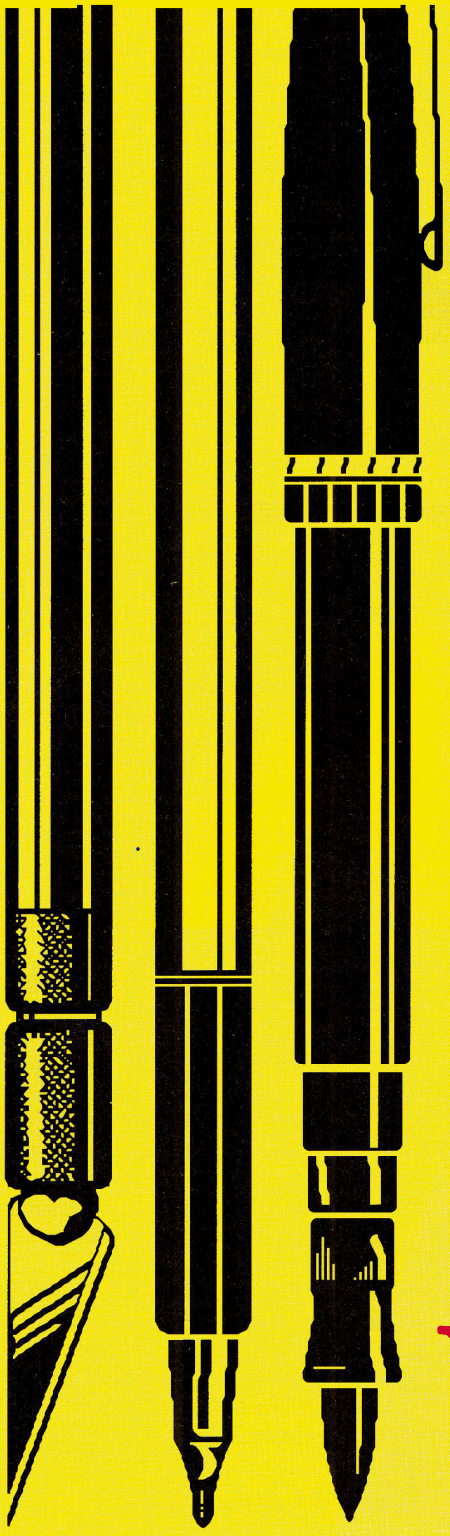
Users looking for the most powerful database manager, the most flexible page-layout package or the slickest graphics program won't find any of those items here. Users who want a single package that combines these functions in a way that lets them integrate and organize their output won't be disappointed.

There is much more to this program than we can cover in a single overview. Like any major purchase, we recommend that users "try before they buy."

"Inside AppleWorks GS," which will assist users in learning to use and exploit this program, will continue to keep readers posted on the application's progress as it develops and grows. ■

— Joe Walters

Columnist Joe Walters can be reached via electronic mail on Compuserve (72406,742).



Word Processing On The Apple IIGS

It didn't happen overnight, but now there's a vast selection of word processors for the Apple IIGS. Which one is right for you?

Does the world *really* need more word processors? Several Apple II software publishers seem to think so, resulting in a wide assortment of word processing packages available for the Apple IIGS.

This article looks at a representative sampling of these packages and compares their relative strengths and weaknesses. We'll examine the packages in detail, but first some general comments.

Factors In Common

None of the program disks are copy protected. Perhaps software vendors have at last learned that copy protection only harms legitimate users.

Any of these programs can be installed on a hard disk, which continues to gain importance as mass-storage devices become more popular among Apple IIGS users. The manuals for all but one of the packages reviewed in this article include instructions for carrying out that installation.

All of the programs can be used with one disk drive, though some of them will require disk swapping during a session if users don't have at least two drives. As always, a hard disk will make any of these programs more convenient.

All of the programs can store text in standard ASCII text files, so information can be moved freely between them.

Let's look at some specific titles, but first a hint: The first three packages are more than just word processors.

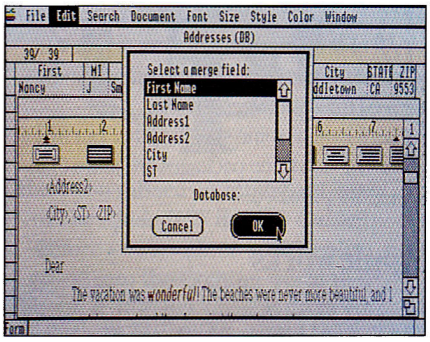
AppleWorks

The original AppleWorks, now often called AppleWorks Classic, seems to be the base of comparison for all other word processors in the Apple II world. This is interesting when you consider that AppleWorks is not a word processor at all. It's an integrated productivity package that happens to include a word processor as one of its modules.

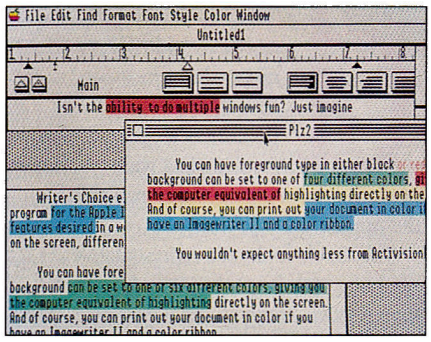
Unlike most other word processing and productivity packages, AppleWorks is text based rather than graphics based.

The great advantage is speed. A text screen can be updated more rapidly by the computer than can a graphics screen. The savings in time is passed on to users, who don't have to wait as long for their machines to display what they're looking for.

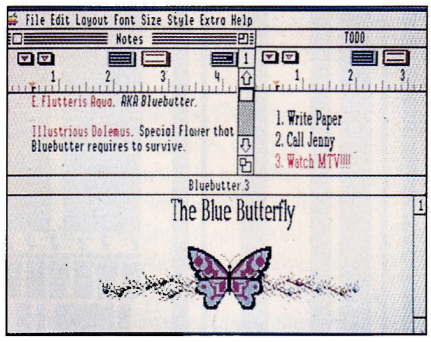
The AppleWorks word processor is hardly the most powerful, but it seems to have achieved optimization in the trade-off between ease of use, speed and features. Experienced AppleWorks users know they can fire up AppleWorks, create a document,



AppleWorks GS



Writer's Choice Elite



DeluxeWrite

print it out and be done in less time than some packages take to start up.

Most of this article was produced using AppleWorks.

Publishers are well aware of the program's popularity. All but one of the packages we reviewed can import AppleWorks word processor files, but none will export them.

The expectation is that many of us will continue to use AppleWorks to enter our text, even if it will eventually be processed by other packages.

AppleWorks GS

AppleWorks GS is another integrated productivity package that includes a word processor module. Like its predecessor, the word processor in AppleWorks GS is not the most powerful. For instance, it does not process footnotes, and headers and footers are still limited to one line of text each.

It is the only word processor we looked at that can print text in any color or combination of colors. The AppleWorks GS word processor and its integration with other modules adds up to put a lot of power in the hands of the user.

AppleWorks GS allows users to carry out every step in the desktop publishing process, including creating and importing graphics, file transfers by modem, integration of database and spreadsheet information, and even complete page layout.

This application wants to do it all, and the capability of upgrading to the package from various other word processors at reduced cost makes it very attractive. Upgrades are available currently from owners of AppleWorks 1.X, AppleWorks 2.X, Apple Writer, MultiScribe and MultiScribe GS.

One factor that may reduce the total number of potential AppleWorks GS users — in this day of high-priced memory — is the requirement of having at least 1.25 MB available. The percentage of Apple IIGS users with that much memory is still relatively small.

The program manual does not include hard disk installation instructions, but they may not be necessary. The entire program resides in one massive file, and users can simply copy that file from the original program disk to a folder on their hard disks.

They will also want to copy some fonts (listed in the manual) from the included Start-up disk to their hard disk's /SYSTEM/FONTS folder, and the icon file from the /ICONS folder on the same disk to their hard disk's /ICONS folder. A /DICTIONARIES folder should also be created for dictionary files, and the IMAGEWRITER.CL file should be moved into the /SYSTEM/DRIVERS folder. That's all there is to it.

GraphicWriter

GraphicWriter is a full desktop publishing package. A word processor with page-layout capabilities, GraphicWriter allows manipulation of graphics on a page and supports color printing on an ImageWriter II.

GraphicWriter Version 3.0, a major rewrite that was still in beta test at press time, is a marked improvement over earlier versions. Additional features and improved speed have made this an anxiously awaited upgrade.

Several crucial features were disabled in our beta version, but the known facts imply a strong package. For those who use a word processor to create page layouts, just about everything they could want is here.

Mastheads, for example, can be created for newsletters. Borders can be defined around a page or a masthead. GraphicWriter also allows a full-page display for previewing what an entire final printed page will look like. Control of the placement of page numbers is very flexible.

Text can be printed in multiple columns and a menu-selected spelling checker is included. And, like all good page-layout programs, GraphicWriter allows users to define linked areas so that text flows properly from column to column as they edit their work.

Graphics can be imported and will appear on screen as they do in final output, though the displayed colors may be incorrect. This "necessary evil" is attributed to the program's need to retain its own palette. Users can rest assured that their pictures will print out in the original colors.

Text can wrap around the graphics images.

Users who are into the nitty-gritty of typesetting will be pleased to know that GraphicWriter allows them to control the leading and kern in their text. They can also specify how much offset is used in superscripts and subscripts.

GraphicWriter is a word processor, paint program and page-layout system. It is worth noting that it does not come in three separate modules. It is one program with all these capabilities.

Rich in capabilities and flexible, GraphicWriter 3.0 promises to be one of the most powerful of the IIGS productivity packages. Hopefully, it will live up to that promise.

Now let's take a look at a couple of low-end word processors.

Writer's Choice Elite

We were disappointed with Writer's Choice Elite. This package, which comes from the maker of Draw Plus, List Plus and Paintworks Plus, suffers greatly from lack of speed and obvious design flaws.

Despite its appearance, which resembles most Apple standard graphics programs, Writer's Choice Elite responds with glacial speed to almost any given command or action. For example, if users try to erase a single character within a paragraph by using the Delete key, the wristwatch icon appears and they must wait for the program to carry out this action.

(continued on page 24)

Experts and users agree GraphicWriter 2.0 is the desktop publishing program for the Apple IIGS.

New Improved Version 3.0! Call for Details

inCider magazine says, "GraphicWriter 2.0 is a giant step forward for the Apple IIGS. It's a powerful way to produce exciting page layouts, and it's easy to do."

A+ magazine declares, "GraphicWriter facilitates a smooth blend of text and graphics, and the result is a tool that you can use for everything from writing a letter to creating page layouts with color separations."

Compute has this to say: "GraphicWriter really comes into its own when you want to integrate text and graphics." And 10,000 owners agree. Laurie Knight of Hemet, CA proclaimed, "Terrific program! It does everything I need to do." Roger Ruthberg of Philadelphia, PA thinks it's excellent, well worth twice the price."

GraphicWriter, which is color and laser printer compatible, combines word processing, graphics and page layout into one complete, easy-to-use package. The program needs only 512K of memory, and is not copy protected. And, most importantly, it's available NOW.

	GraphicWriter III	Medley v1.0	Publish It! v1.04
IIGS-Specific*	Yes	Yes	No (e, c, c+, GS)
Memory Requirements	512K	1.25MB	128K
Operating System (Included)	GS/OS™	ProDOS 16	ProDOS 8
Uses Color Display	Yes (640 mode)	Yes (640 mode)	No
Suggested Retail Price	$149.95	$195.00	$99.95
LaserWriter Printing	Included	Included	$39.95
Sample Templates	Included	Available	$39.95
Clip Art	Included	Included	Included
Spelling Checker	Included	Included	Not Available
Total Cost	$149.95	$195.00	$179.85

*All the programs use a Mac-like interface, but only GraphicWriter III and Medley are written specifically for the IIGS to take advantage of its powerful features.

Suggested retail only $149.95

Available from your local computer dealer.

Seven Hills Software

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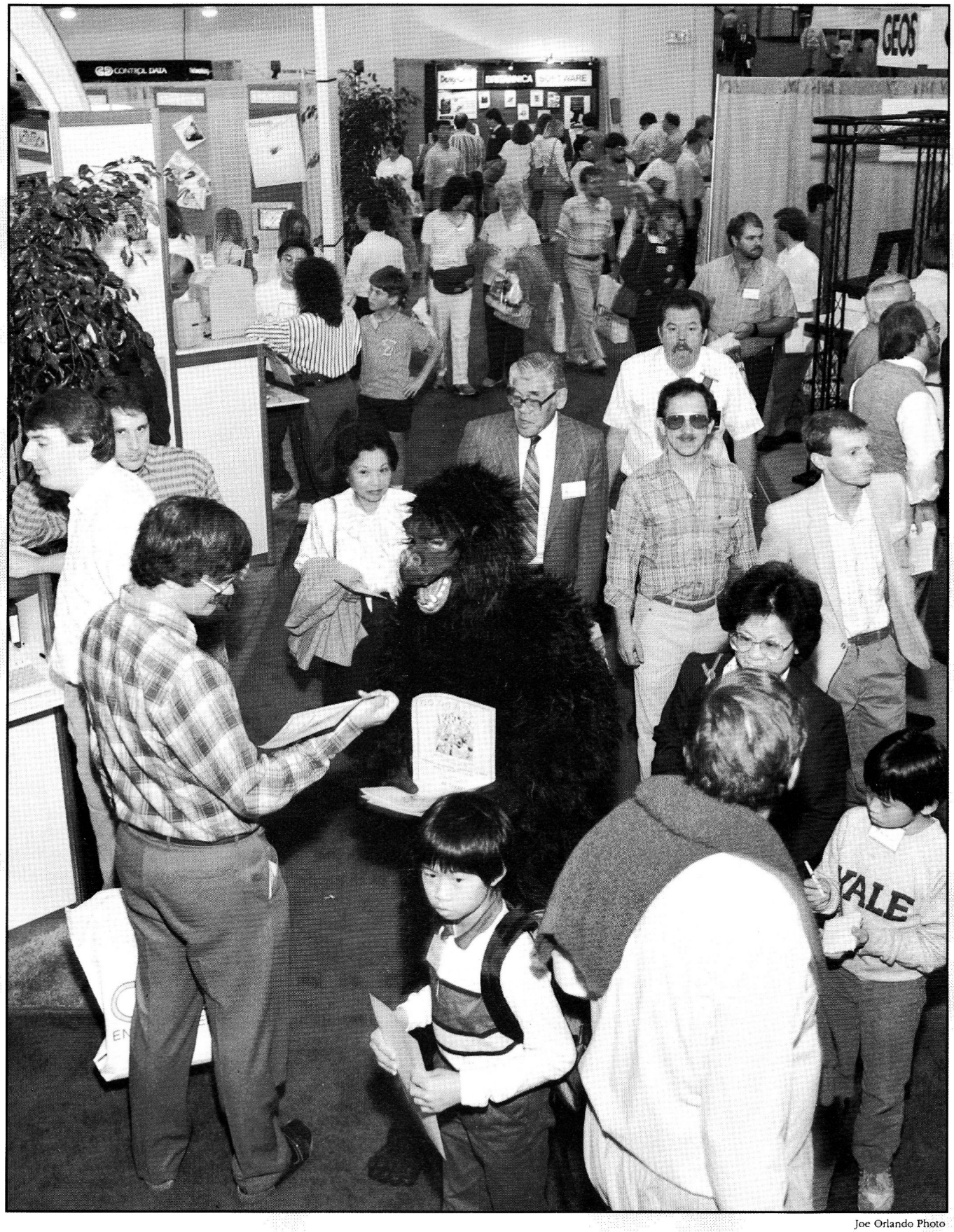
Circle Reader Service Number 11

Go Bananas.



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(continued from page 20)

A Word About Graphics-Based Word Processors

WYSIWYG, pronounced wizzy-wig, is a common term referring to word processors. An acronym standing for What You See Is What You Get, WYSIWYG specifically means that a document appears on screen exactly as it will look when printed.

Old English text, for example, appears on screen as Old English. Line and page breaks are correctly shown. Embedded graphics are visible and accurately represented.

WYSIWYG is a useful feature for visualizing a creation, but it results in slower screen movement than a simple text display. Fortunately, there are some user tricks that help speed up the process.

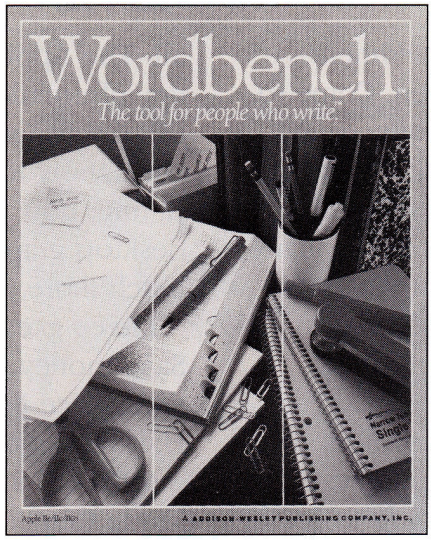
When using any IIGS graphics-based program, try resizing the document window to speed up scrolling. A short, wide window will scroll much faster than a full-screen one.

Shortening the window horizontally will have adverse effects — users can't see the right side of their documents.

None of the packages looked at in the related article have horizontal scroll bars. For scrolling more than a few lines, the slider is faster than the arrow keys.

If users have multiple documents open at a time, they can remove the ones they're finished with. Many programs work faster the more free memory that's available.

To speed up printing, remember that some word processors allow printing in draft mode. This replaces the slow-printing graphics fonts by using the typeface built into a printer. The result: quick printouts for proofreading.



Wordbench aims to assist writers in the creative process, but falls short because of its awkward user interface.

Users who start typing from within a paragraph will outrun the program easily. Even the slowest touch typists will find that the program "loses" about half the characters entered this way.

Writer's Choice Elite is just too busy to keep up with its users. This drawback makes the program virtually useless for any serious composition and editing.

Writer's Choice Elite imports graphics from Draw Plus and other IIGS paint programs, and it will print in color on an ImageWriter II. Yet, the program is the only word processor we examined that will not import AppleWorks files.

One of the application's more interesting features is its capability to use different colors in the background behind text. This is a convenient way for users to organize text and keep track of related sections. The effect is like using a highlighting pen in a book. The highlighting does not appear on a printout, however.

DeluxeWrite

Overall, DeluxeWrite is a nice package. It looks a lot like Writer's Choice Elite, but does not suffer as badly from the speed problems. Which is not to say that the application is blindingly fast.

Most graphics-based applications are limited by the speed of the screen-handling routines Apple supplies in its Toolbox. Still, DeluxeWrite is faster than some programs and it can keep up with rapid typing and insertion of text. Nothing is lost.

Reformatting of paragraphs, changing of margins and functions that require a computer to redraw the entire screen take place much faster than in Writer's Choice Elite, though such operations can still bog down in DeluxeWrite as a document increases in size.

Although the program generally conforms to the Apple graphics standard, there is one unusual anomaly. The Command key combination Apple-P, normally used to activate the Print command, is replaced by Apple-J.

Like Writer's Choice Elite, DeluxeWrite will import graphics, display them on screen and print in color on an ImageWriter II.

A nice DeluxeWrite feature is the Quick Reminder command located in the Help menu. This command opens a dialog box that displays the tiny symbols that appear in the ruler area and in a document.

This is a useful memory aid for those of us who sometimes have trouble differentiating between the margin and tab markers.

Another help command reminds users of the various Apple and Option-key commands that control cursor movement.

While it is not the most powerful of its kind in the Apple IIGS world, DeluxeWrite is a friendly, low-end word processor that will satisfy the needs of many users.

We also looked at a couple of high-end power word processors.

Wordbench

Wordbench is in a class by itself. Wordbench is not a IIGS-specific program and it will run on any 128K Apple II.

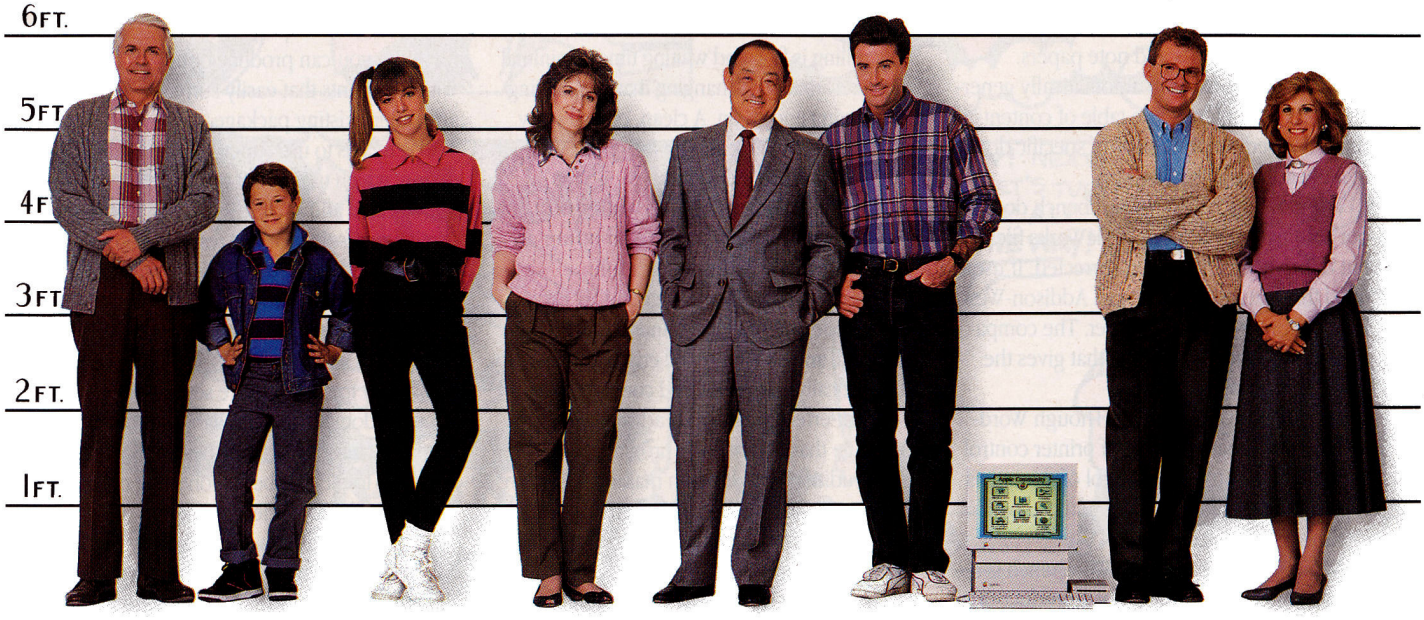
The program is not text based, but the graphics mode used for its display is the old Apple IIe and IIc double-high-resolution mode. This provides the most detailed display possible on an 8-bit Apple II, but, unfortunately, is the slowest form of display on any Apple II.

Screen updating is so slow users can watch the ripple as a document moves slowly along the screen, one scan line at a time.

The user interface employed in the program is like no other. Based on multiple levels of menus and submenus, several steps are often required to accomplish simple tasks, such as underlining or boldfacing text.

If users have experience with the old Bank Street Writer program, they'll find this operation familiar. It is no coincidence that the Wordbench manual lists the Bank Street

Break into Apple Headquarters. You'll get 30 days.



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College of Education first in its credits — functionally, this program *is* Bank Street Writer with lots of new features added.

A dictionary and thesaurus are built in. An outline processor, a brainstormer for helping develop ideas and a note taker require users to work their way through the menus to get to them, but they provide a handy way of replacing index cards and note papers.

The program can also automatically generate tables of contents. The table of contents is printed based on placement of specific document headings within the text.

The current version of Wordbench does not automatically import AppleWorks files, but this oversight has been corrected. If users need this feature, they can call Addison-Wesley's customer support number. The company will send them an add-on that gives the program this capability.

Printer control is minimal. Though Wordbench allows manual entry of printer control codes, there is little real control of a printer's capabilities. Fonts are limited to those built into the printer itself.

Addison-Wesley says that Wordbench is a process-oriented package, not a product-oriented one. In other words, it wasn't designed to create the prettiest documents or carry out desktop publishing. It was intended to assist writers in the creative processes.

Wordbench includes a powerful built-in macro language that allows users to automate complex or repetitive tasks. Macros in the program are called Shortcuts.

Wordbench is a powerful package for writers who are trying to organize their thoughts into fully prepared documents, but its nonstandard user interface, slowness and complex commands detract greatly from its value.

WordPerfect

WordPerfect is a popular package that offers almost every desirable word processor feature, with the glaring exception of graphic font control. Like Wordbench, WordPerfect sends only text to a printer, so users can use only the printer's built-in fonts.

If users have a letter-quality or good dot matrix printer, this may be satisfactory. But if they want to use all the fancy graphics fonts they see in other packages, this program may not be for them.

If users are writing books or doctoral dissertations, however, and want a professional, full-featured writing environment, they've come to the right place.

The lack of graphic font control is the only major flaw in this jewel. The loss is offset by a tremendous gain in speed. By writing its own screen-control routines, WordPerfect Corp. ended up with an Apple-standard program that outruns the competition by far in screen updating.

Scrolling is fast, and waiting time is minimal when reformatting, changing margins, cutting and pasting and so on. A clean, crisp display allows users to work at their full speed without having to wait on the computer.

WordPerfect is loaded with features, all of which operate rapidly. Speed and power are combined nicely in this application.

This word processor is intended for professional writers. A dictionary and thesaurus are included, and footnotes and end notes are automatically numbered and correctly placed.

WordPerfect includes an advanced macro language that even allows programming some rudimentary decision making. Users are given a choice of executing macros by either holding down the Apple or Option key and pressing a character key, or by selecting Macro Execute from a menu and then typing in a more descriptive macro name. For example, Option-P might invoke a macro that prints a document, saves it, then removes it from the desktop.

To invoke a macro in WordPerfect, users select Macro Execute from the menu labeled Special. A dialog box appears, and users type the name of the macro. Then it executes!

WordPerfect is the only graphics-based program we've seen that allows users to control the screen colors used for background, text and boldface. Users can set the parameters to any combination of 4,096 available colors, which permits them to customize their displays and use combinations that are pleasing to the eye.

WordPerfect is a richly endowed package. Users who write professionally or academically owe it to themselves to take a look at it.

Common Elements

There are several characteristics common to all of these word processors. Print speed and quality, for example, are limited not by the programs themselves, but by the state of the printer drivers supplied by Apple with the system software.

While this does offer hope for easy updating when new system software appears, we must content ourselves in the meantime with relatively coarse characters appearing slowly on printers that are capable of producing better-quality work.

To date, the best-looking output we've seen comes from AppleWorks, used in conjunction with an add-on by Beagle Bros., Inc. called TimeOut SuperFonts. Using this combination, you can produce dot matrix output with IIGS fonts that easily surpasses that of any other existing package.

The trick is to use SuperFonts' high-quality option, which uses a font twice the size of the one selected and squeezes it to half its size for maximum resolution. The result is so smooth and precise that it takes careful examination to make sure it's not laser output.

So far, none of the programs we've seen allow much flexibility for users who have a lot of different fonts. There are several megabytes of public domain fonts available, and heavy-duty users have found that they are limited greatly as to the number of fonts that can be selected in the font selection menu.

Basically, users can have as many fonts as will fit on the start-up disk. This gives some advantage to the hard disk user, who has space to add more fonts than will fit on a 3.5-inch disk. We'd like to see someone write a font-selection routine that would allow the loading of fonts from different disks.

All of the references to printed output so far have referred to dot matrix printers. Users of laser printers have noticed by now that the laser drivers supplied by Apple do not yet support the Apple II as well as they do the Macintosh. As yet, there are no laser fonts for the Apple II series.

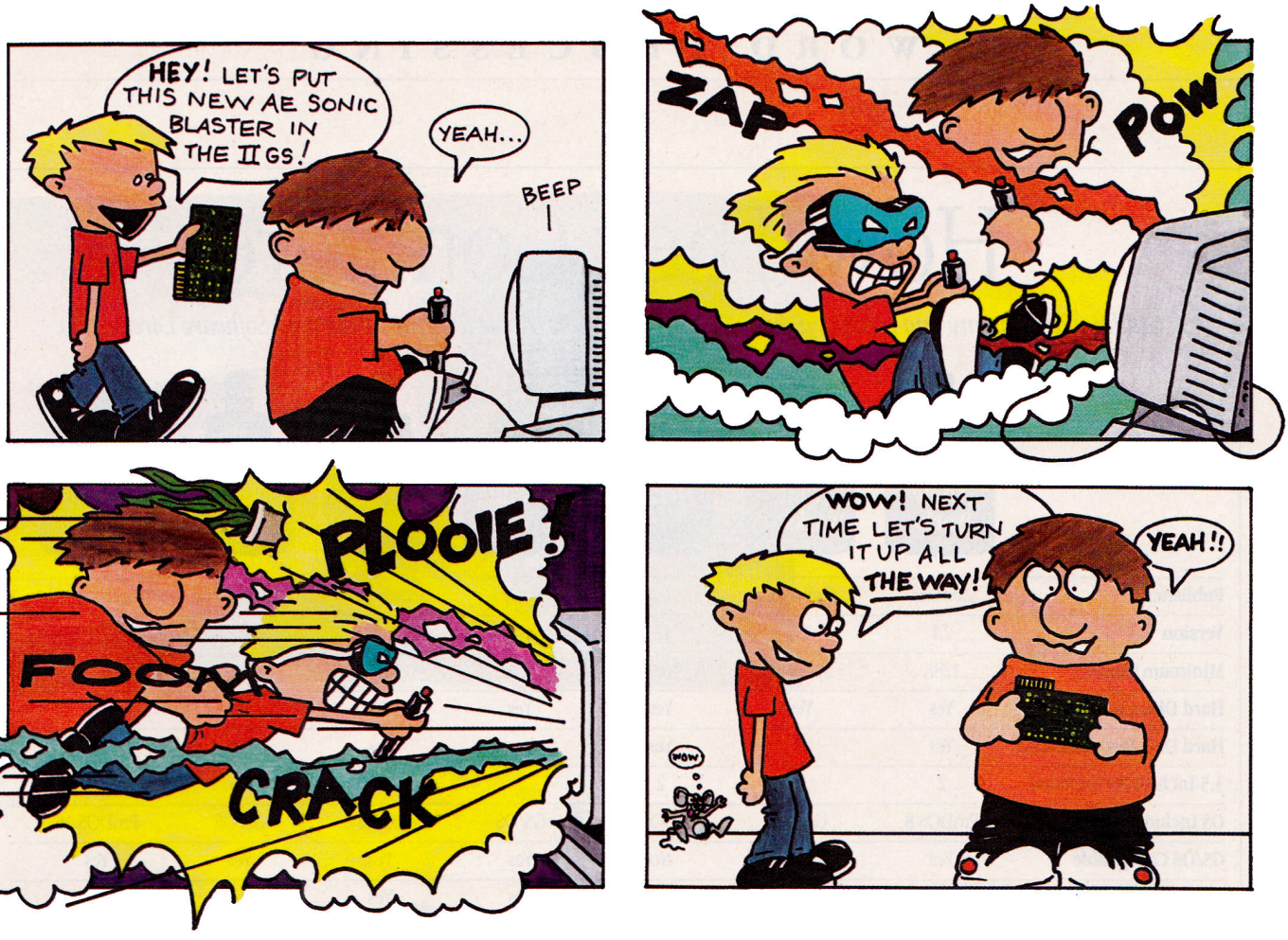
So, what's the best word processor? As usual with this type of question, there is no definitive answer. The best depends entirely on each user's needs and resources.

If users are looking for a low-cost, graphics-based program, DeluxeWrite will do the job and do it well. If they need a professional composition package for a book or other major project, we recommend WordPerfect. For all-around data management, AppleWorks is the choice. For complete desktop publishing, compare GraphicWriter 3.0 and AppleWorks GS.

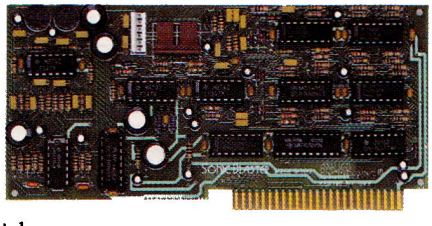
In all cases, we recommend that, wherever possible, users try before they buy. ■

(See Product Comparison Chart on page 28.)

— Joe Walters, contributing editor



Serious Fun



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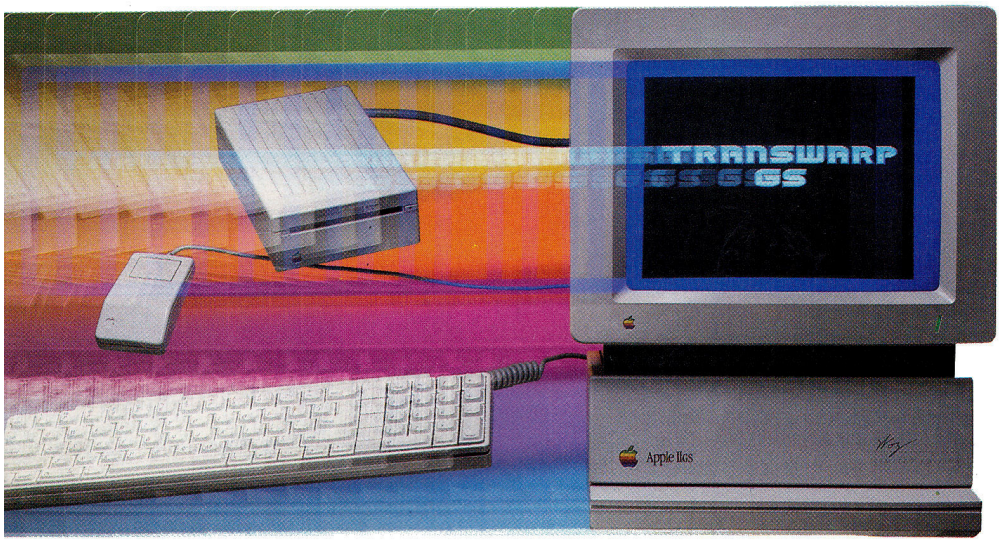
(Additional company and product information is listed in the "Apple IIGS Hardware And Software Directory.")

Publisher	Claris Corp.	Claris Corp.	Electronic Arts	Seven Hills	Addison-Wesley	WordPerfect Corp.	Mediagenic/Activision
Version	2.1	1.0	1.0	3.0b	1.0	2.1	1.1
Minimum Memory	128K	1.25 MB	768K	512K	128K	512K	512K
Hard Disk Compatible	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hard Disk Install Instruc.	Yes	No	Yes	Yes	Yes	Yes	Yes
3.5-Inch Disks Included	2	3	2	2	2	3	1
OS Included	ProDOS 8	GS/OS	ProDOS 16	GS/OS	ProDOS 8	GS/OS	ProDOS 16
GS/OS Compatible	Yes	Yes	No	Yes	Yes	Yes	Yes
Tutorial Included	Yes	No	Yes	Yes	Yes	Yes	No
On-Screen Help	Yes	No	Yes	No	Yes	Yes	No
Tech Support Number	Yes	Yes	No	Yes	Yes	Yes	Yes
Supports Mouse	No *	Yes	Yes	Yes	No	Yes	Yes
Supports NDAs	No	Yes	Yes	Yes	No	Yes	Yes
Supports CDAs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Imports/Exports ASCII Files	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Supports Graphics Fonts	No *	Yes	Yes	Yes	No **	No **	Yes
Embeds Graphics							
In Documents	No *	Yes ***	Yes	Yes	No	No	Yes
Supports Color Printing	No	Yes	Yes	Yes	No	No	Yes
Multiple Documents							
In Memory	Yes	Yes	Yes	Yes	No	Yes	Yes
Multiple Documents							
On Screen	No	Yes	Yes	Yes	No	Yes	Yes
Macros Included	No *	No	No	No	Yes	Yes	No
Footnotes & End Notes	No	No	No	No	F	F, E	No
Dictionary & Thesaurus	No *	D,T	D	D	D,T	D,T	No
Multiline Headers							
And Footers	No	No	Yes	No	Yes	Yes	Yes
WYSIWYG Display	No	Yes	Yes	Yes	No	No	Yes
Multiple Column Printout	No *	Yes ***	No	Yes	No	No	No
Reader Service Number	**35**	**36**	**37**	**38**	**39**	**40**	**41**

*Available as add-on from third-party publisher. **Uses printer's built-in font(s). ***Function of separate module.



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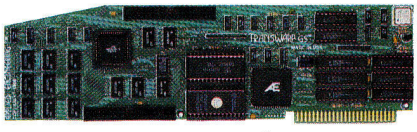

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Home Money Management

Is it time to get hold of your finances? Put aside the joystick and try firing up one or more of these packages.

Buying a costly piece of software just to balance your checkbook is like using a canon to exterminate a fly. It's plain overkill.

If all you want to do is keep an accurate running tally of checks and deposits on your Apple, you can use any spreadsheet. User groups and bulletin boards have plenty of public-domain templates for AppleWorks that will turn that program's spreadsheet into an electronic check register.

If you really want to get hold of your financial situation, the latest crop of personal finance programs for the Apple II can give you a tremendous edge. . . provided you're willing to spend the time each week or month to feed your financial data into the computer.

We'll take a look at three entries in the field: Dollars And Sense, from Monogram; Andrew Tobias' Managing Your Money, from MECA; and Personal Accountant, from Softsync.

Defining Personal Financial Software

Personal financial programs are essentially sophisticated specialized databases that take in all your financial information and spit out a complete picture of where your money comes from and where it goes.

With these programs, you can divide your income, expenses, assets and debts into scores of categories of your own invention. Then, depending on the program, you can see on screen or on a printout — at any point in the year — which categories are providing the most and least income or dominating your spending.

You can watch credit-card balances and finance charges climb or shrink and see if you're over or under the budget amounts you've set.

Some programs will tell you how your tax situation is shaping up and what your net worth is at any time. Some even track your investments, project college and retirement costs, and calculate future loan costs.

The latter programs can generate lovely looking bar and pie charts to show your financial condition. Some can even speed your weekly or monthly bill-paying chores by printing checks using special computer check forms.

A good personal finance program is a technical "accountant" on the inside, able to do all sorts of financial wizardry. On the face it presents to a user, the program strives to be clear and simple, making it possible for you to do such things as double-entry bookkeeping and amortization without knowing how they work or even knowing you're doing them.

These programs allow you to customize the way you (and they) analyze your financial life — even if you want to look at your money in a way that accountants would consider odd.

For instance, most people might set up a category called "groceries" to track their spending on food items. If you wish, these programs will let you separate your spending on ice cream from your outlays for corn flakes. Or they'll let you go the other way and dump that spending into a catch-all category called, say, "living expenses" or "routine spending."

The process is up to you. The computer will still pour out tables and graphs and calculations as if you were General Motors.

Costs And Benefits

What you gain from personal financial software is the power of real knowledge about your finances and the potential for better financial control, now and in the future.

Setting up a budget limit for spending in some area won't, of course, guarantee you'll change any bad habits. It will force you to confront regularly the fact that you're exceeding spending limits, that your pet project or investment isn't panning out or that you use your Visa card too much.

You'll no longer be able to kid yourself about money. The cost of this knowledge is time spent at the keyboard giving the computer the raw data it needs to keep you honest. This is neither as onerous as you may fear nor as insignificant as the software publishers imply.

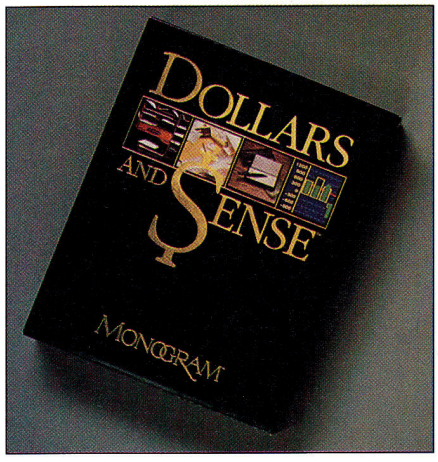
Setting up your categories, getting used to the programs and entering your starting data — what your house is worth and so on — will take a good three or four hours. After that, your data-entry time can be confined to an hour or two a month.

Many people find that data-entry time is a good investment, allowing them to finally gain a clear picture of their finances.

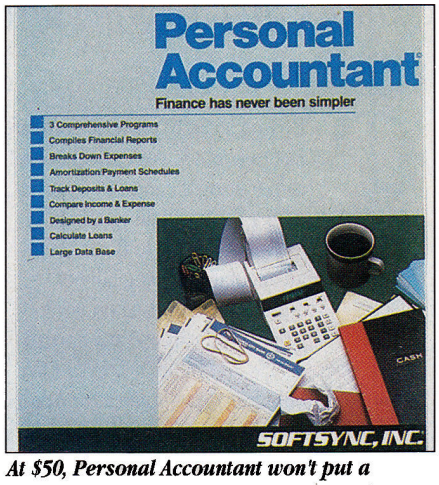
Managing Your Money

Of the three programs here, this is the cream of the crop. Managing Your Money (MYM) is the most comprehensive, the most powerful and the best documented and supported. It is also the most expensive, listing for $149.95, $30 more than Dollars And Sense and $100 more than Personal Accountant.

While it is definitely not hard to use, Managing Your Money is more of a challenge than its competitors, mainly because it does so much more. Some people may not need all the features packed into Managing Your Money, but those who use it will get a complete handle on their finances.



Although it offers few bells and whistles, Dollars And Sense is easy to use and excels at automatically recording routine transactions.



At $50, Personal Accountant won't put a large dent in your checking account — but the trade-off in features may not be worth it.

The program requires two disk drives if you're using 5.25-inch disks; two drives are recommended if you're using 3.5-inch disks (it comes with both). It also supports hard drives and RAM disks.

MYM is so large it requires nine sides of 5.25-inch disks, or two full 3.5-inch disks. The program isn't copy protected.

MYM is organized into nine main modules, accessible from a Main Menu. The heart of the program is the module called Budget and Checkbook, in which you establish earning and spending categories, write and print checks, keep track of loans and more.

Other modules allow users to plan insurance needs; ask to be reminded of important dates; estimate income taxes; calculate loans, investment returns and the costs of retirement and college; manage a portfolio of stocks, bonds or collectibles; establish a database of names, addresses and phone numbers; and determine net worth.

The program generates a host of different reports that can be printed out or saved to disk. It can also export data to spreadsheets, including AppleWorks.

One of MYM's most powerful attributes is that related modules are linked. If you make a change in your checking or savings accounts, or your paycheck changes, the program also changes the net worth and the tax estimation.

MYM contains an automatic transactions feature. With it you can set up a list of commonly entered transactions, such as utility bills and the like. Then, when you pay your bills monthly, you can merely select the ones from the list that you want to enter that day. The program will enter them without requiring you to type in all the information. It will also automatically calculate the split between principal and interest in future months' mortgage payments.

The Tax Estimator presents standard tax schedules and forms and will calculate your likely taxes using either the actual state of your finances or estimates that you enter. At tax time, MYM will print out reports that show any relevant spending or income category you've set up: medical, charity, mortgage, etc.

Program features include an online help screen system that's linked to pages in the manual and sample data so you can see how a mythical family might use MYM.

MECA offers help by phone. For an extra fee, the firm will send you newsletters with added tips. MYM bears the name of Andrew Tobias, the well-known financial writer. Tobias also wrote the program's thick, bound manual.

Tobias' work is the only computer manual we've ever seen that is actually fun to read, at least in parts. It adopts a breezy, friendly style that is designed to let users know they're not dumb if they don't understand certain money matters and to put them at ease by showing that even financial gurus are human.

For instance, in a discussion of printing checks to pay bills, Tobias writes: "Although everything is neatly synchronized alphabetically, I do try to keep my eyes open, having once dropped an envelope off the edge of my desk and found that I had thus placed the check for American Express in the Book of the Month Club envelope, Book of the Month in Care, Care in Citicorp Visa — and so on. This led to a lot of swearing, envelope reopening and Scotch taping."

(continued on page 36)

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Apple II GS
The Buyer's Guide

Circle Reader Service Number 16

(continued from page 32)

How They Compare

(More product information is available in the "Apple IIGS Hardware And Software Directory.")

Dollars And Sense

Company: Monogram
Performance: 6.0
Innovation: 5.0
Documentation: 7.0
Ease Of Use: 8.0
Value: 7.0
Overall: 6.6

Circle Reader Service Number 42

Managing Your Money

Company: MECA Ventures, Inc.
Performance: 8.0
Innovation: 9.0
Documentation: 9.0
Ease Of Use: 7.0
Value: 7.0
Overall: 8.0

Circle Reader Service Number 43

Personal Accountant

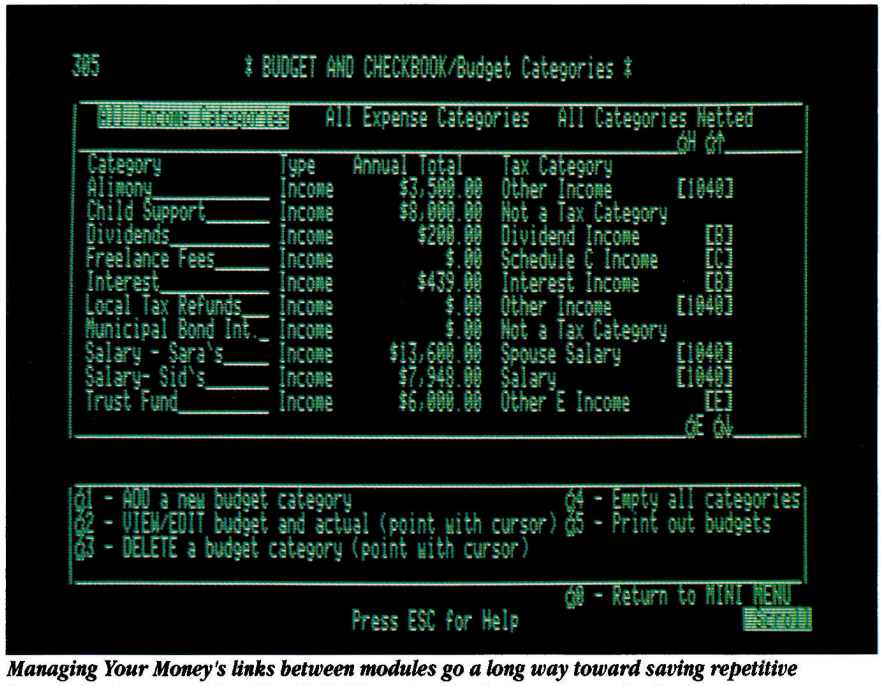
Company: Softsync, Inc.
Performance: 6.0
Innovation: 4.0
Documentation: 4.0
Ease Of Use: 6.0
Value: 5.0
Overall: 5.0

Circle Reader Service Number 44

TaxView

Company: SoftView, Inc.
Performance: 7.0
Innovation: 8.0
Documentation: 7.0
Ease Of Use: 8.0
Value: 8.0
Overall: 7.6

Circle Reader Service Number 45



Managing Your Money's links between modules go a long way toward saving repetitive keystrokes, but at a price. This $149.95 package is the most expensive in the group.

Managing Your Money will turn your Apple into a complete tool for overseeing every conceivable aspect of your finances. The program goes to great lengths to make all this power easy to use and friendly. It will also handle very simple and limited situations.

If you're not ready to deal with anything beyond your checking account, however, this program can cost more in money and time than you may want to spend.

Dollars And Sense

Dollars And Sense is a powerful and sophisticated program, but it is much less ambitious than Managing Your Money. It roughly corresponds to the budget-and-checkbook section of MYM, though it also computes net worth and has some limited ability to manage investment portfolios.

Like MYM, Dollars And Sense prints checks, generates printed reports and exports data to AppleWorks. In addition, it generates graphs of your financial situation, a feature MYM lacks.

Dollars And Sense doesn't estimate taxes, calculate loans or investments, plan for retirement or college, or do many other things that the more-expensive Tobias program does. It has fewer bells and whistles.

Nevertheless, Dollars And Sense is a solid package that is easy to learn and use. It's a bit faster than Managing Your Money in entering routine bills and checks. Its transaction entry system — the part of the program where you type in checks written, deposits made and so forth — operates easily and rapidly.

The program also keeps a register of previous check entries on screen while you're entering new ones.

Dollars And Sense has an excellent system for automatically recording routine transactions. In fact, it offers two approaches: You can set up preprepared sets of "automatic" transactions or establish "descriptors," which permit entire checks to be entered with just a couple of keystrokes.

The program is muscular enough to run the finances of a household or a small business and it isn't hard to master.

The program's 168-page manual, while neither as lengthy nor as entertaining as MYM's, is complete, and Monogram, the manufacturer, maintains technical support and a presence on Compuserve — where user questions are answered.

Dollars And Sense can be copied from 5.25-inch disks to a single 3.5-inch disk, which can hold both the program and its data. Depending on your circumstances, several years of data can be stored on a single 3.5-inch disk.

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CT-20	630.00
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APPLIED ENGINEERING Datalink 2400	175.00
EPIC TECHNOLOGY	
2400 Classic II w/Proterm	175.00
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PROMETHEUS Promodem 2400A	180.00
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Supra Modem 2400 External	135.00

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BLANK MEDIA (Bulk)	Call
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KURTA Apple IS/GS Tablet	320.00
MOUSE SYSTEMS	
Apple ADB Mouse	89.00

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CITIZEN MSP	
MSP 180D (80 col., 180 cps, NLQ)	210.00
LASER COMPUTER	
190 A (Imagwriter I comp) Serial	265.00
PANASONIC	
KX 1080i (80 col., 120 cps, NLQ)	194.00
KX-1091i (80 col., 160 cps, NLQ)	225.00
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For users who seek a serious, heavy-duty personal accounting program and don't need all the tax and planning features of MYM, Dollars And Sense is a first-rate buy.

Personal Accountant

Softsync's low-end personal financial software application does not offer the depth or power of either MYM or Dollars And Sense. Still, if you shudder at the more than $100 list prices of the other programs, Personal Accountant may be a good value at $50.

The program features three main modules: the basic transaction entry system; an amortization module for calculating loan costs and savings values; and a simple "phone book" database for keeping track of people.

Unlike the other two programs mentioned here, Personal Accountant employs a pull-down, Macintosh-like menu interface, though it doesn't make use of the IIGS' graphics-generated Desktop.

The program manual is very weak — a poorly printed 64 pages.

Though Personal Accountant is the simplest of the three programs, its transaction entry system may prove harder to use. Entries that decrease the total in asset accounts — like checking — must be typed in as negative numbers. Entries that increase the total of liability accounts — like credit cards — must be positive numbers.

Further, there isn't any method for automating the entry of frequently written checks, as there is in the other programs, which is a serious drawback.

Only four types of very simple reports can be produced — far fewer than in the other programs. But, like the other programs, Personal Accountant can export data in a form usable by some spreadsheets.

Its amortization feature is simple, straightforward and far less useful than the borrowing, savings and investment projections offered by MYM.

Overall, Personal Accountant is a minimal program that may be a low-priced value for people with simple needs. Because of the lack of an automated transaction feature, what you save in money may be expended in time.

To The Ledgers

If you want full power and can afford the money and time needed, Managing Your Money is the obvious choice. For a serious — but narrower — tool, Dollars And Sense makes sense. If you have more time than money, Personal Accountant does an adequate job for simple financial situations. ■

— Walter S. Mossberg

Taxes Made Easier

The programs reviewed here will help you prepare to do your taxes, but you'll still have to either turn the data they produce over to an accountant, or personally take the information and transfer it onto IRS forms, doing whatever math is required along the way. Even Managing Your Money, which does tax projections and uses a tax form format, doesn't fully do your taxes.

To The Rescue

But there's a separate software package that actually puts an exact graphic replica of the tax forms onto your screen, does all necessary computations as you jump from line to line filling it out and then prints out the forms on your ImageWriter or LaserWriter so perfectly that the IRS will accept these printouts as official filings. All you need do is sign and mail them.

This program is called TaxView and is a clone of a highly successful Macintosh program called MacInTax. To best replicate the Mac's WYSIWYG onscreen ability, TaxView's publisher, SoftView, Inc., Camarillo, Calif., wrote it only for the IIGS, not the less powerful members of the Apple II family. It uses the Mac's pull-down menu and mouse-driven interface.

With TaxView, all sections of all forms are dynamically linked. If you're working on your itemized deductions in the onscreen version of Schedule A (Itemized Deductions), the appropriate parts of Form 1040 — including the tax owed — recompute automatically. You can see how different ways of treating income and expenditures might affect the bottom line.

The linking is even more amazing. Double-clicking on the text portion of any entry brings up the official IRS instructions for that line — the whole IRS instruction booklet is baked into the program. And double-clicking on the data-entry portion of many items brings up either the supplementary form you need to fill out to derive the answer (like Schedule A), or an unofficial worksheet or itemization sheet to help you, say, add up all your sources of income, or all the interest you got from different banks.

IRS Approved

Printing the forms on an ImageWriter with sufficient quality so the IRS will accept them can take hours. But you can actually complete them during the day and save the printing for overnight, while you sleep. The manual (at least for the 1987 version) includes a reproduction of an IRS letter to SoftView granting approval to file TaxView printouts in place of official IRS forms.

TaxView comes on two 3.5-inch disks, and isn't copy protected. It requires a IIGS with at least 512K of memory and two 3.5-inch disk drives, or a hard drive. It can be run on a IIGS with only one 3.5-inch drive, if you have at least 1.25 MB of memory and create a 512K RAM disk to serve as a second drive. It retails for $119.

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

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

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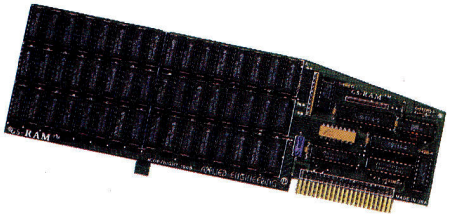

GS-RAM w/256K	$219
1 MEG	$639
1.5 MEG	$919

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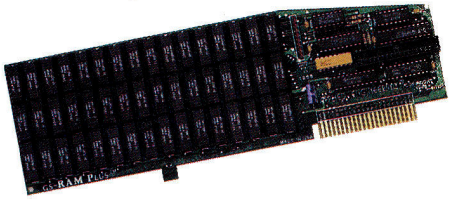
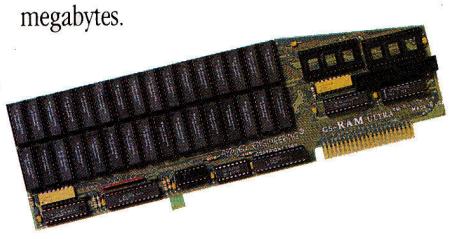


GS-RAM PLUS w/1 MEG	$599
2 MEG	$1,049
3-6 MEG	CALL

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



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GS/OS

And Alternatives To The Finder

The Apple IIGS world is buzzing over GS/OS. Should you upgrade? And what are your alternatives?

A new operating system is like a new car, a new house or a new member of the family — exciting, but potentially traumatic.

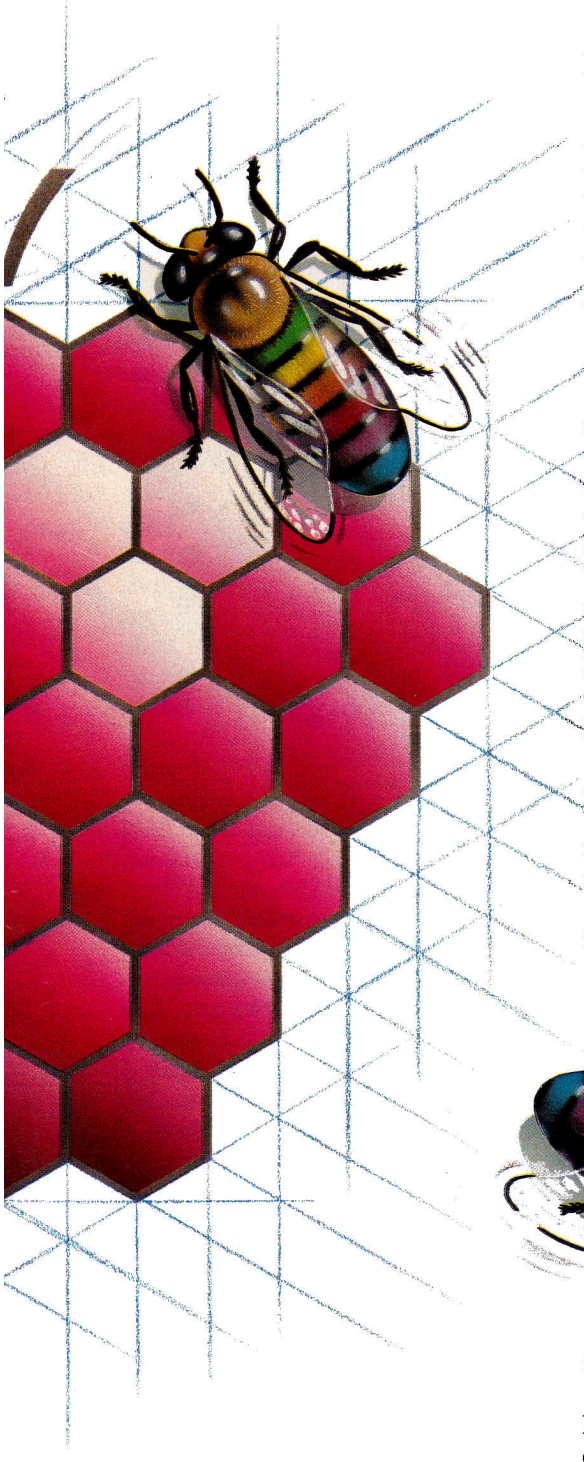
A computer's disk operating system is intimately involved in every detail of what happens when software meets hardware. Even minor revisions and updates can create spreading ripples of incompatibility.

GS/OS, Apple's new operating system for the IIGS, is no minor revision — it's a complete rewrite. It's the true 16-bit operating system the IIGS was meant to have, but it's certainly not the only alternative for IIGS owners.

GS/OS is so big that it has outgrown the limits of one 800K disk. Present are the System Disk and a utility disk, called System Tools. Most users will not need all these files, but even a minimal, slimmed-down system file will take a big chunk out of a volume.

We took the two new 3.5-inch disks in hand with a mixture of awe and trepidation. The disks carry the version number 4.0. The numbering starts with the very first IIGS system software, which was issued back in September 1986.

In the world of software, anything that carries a version number ending in a zero is likely to have bugs, and the Apple special-interest-group bulletin boards have been buzzing with GS/OS bug reports. When we



see Version 4.0.1, or 4.1, we can start feeling more comfortable about GS/OS.

On the surface, the look and feel of GS/OS are comfortingly familiar, but under the hood it's a new ball game. New IIGS buyers will have nothing to unlearn and will receive the hefty documentation package along with their new computers.

IIGS veterans who choose to copy the new software free of charge from authorized Apple dealers will have to learn the old-fashioned way — by trial and error, without much in the way of documentation or guidance. Both documentation and disks are available in a $39 package from Apple dealers.

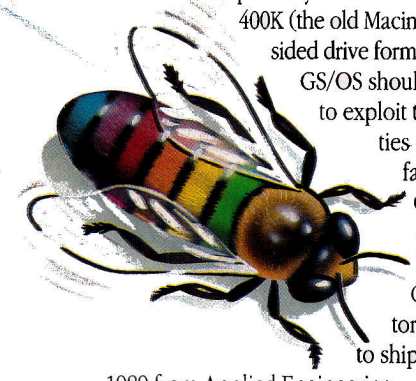
Advantages Of GS/OS

Earlier versions of ProDOS 16 were merely shells that sat on top of ProDOS 8, running disk input/output transactions at the slow 1 MHz clock rate of the old Apple II. GS/OS, on the other hand, can handle disk I/O at the fast 2.8 MHz speed of your IIGS.

The difference in loading time is noticeable: From a cold-boot you reach the Desktop in about 47 seconds — even less with a hard disk. Big programs that require intensive disk access will show impressive speed improvements under GS/OS.

GS/OS can format 3.5-inch disks more efficiently, using a 2:1 interleave (see sidebar). This means that the drive head can read a full track in only two disk revolutions, rather than the four required by ProDOS 16.

When you initialize a disk under GS/OS you have a choice: 800K at 2:1, 800K at 4:1 (for compatibility with older software) or 400K (the old Macintosh single-sided drive format).



GS/OS should be able to exploit the capabilities of even faster 65816 CPU chips, such as the Transwarp GS accelerator expected to ship early in 1989 from Applied Engineering.

GS/OS overcomes many of the technical limitations of ProDOS 16. The number of online devices, open files and interrupt handlers is limited only by total memory size.

A remarkable new feature of GS/OS is its provision for file system translators (FSTs). An FST allows the computer to directly read a foreign file format by converting it into a native format. This is done immediately, "on the fly," without having to convert and save the entire file.

The only FST currently provided is for the standard High Sierra format used on text-only CD-ROMs. FSTs for MS-DOS and the Macintosh Hierarchical File System would greatly increase the IIGS' usefulness, but Apple seems to be in no hurry to develop such things.

Disadvantages Of GS/OS

At this writing, only one major application, AppleWorks GS, requires GS/OS. In many ways, both GS/OS and AppleWorks GS have outrun the present capabilities of the hardware — they are being positioned in expectation of faster systems with more affordable mass storage.

You can launch most ProDOS 8 applications directly from the GS/OS Desktop by double-clicking the appropriate icon, but there is no provision for launching Apple DOS 3.3 or "funny" customized DOS programs. Copy protected games are a good example.

A good work-around is to launch BASIC.SYSTEM from GS/OS and then, at the BASIC prompt ( ]), type PR#6 (or some other slot designation) to boot the desired disk.

Although GS/OS nominally requires only 512K of RAM, you need a hefty 1.25 MB to run AppleWorks GS. Other GS/OS applications should have similar requirements.

If you plan to do anything ambitious with graphics, such as using the Clipboard to move complex images between applications, you are going to need a lot of memory beyond the minimum requirements.

GS/OS provides a very sophisticated disk-caching feature. Using a New Desk Accessory, you can designate any amount of RAM in 32K increments as a kind of fast RAM disk.

Those few lucky users who bought lots of memory when it was affordable will benefit most from this feature. Many of the IIGS systems in schools, however, will be stuck at 512K for a long time. How would you like to be a teacher trying to explain to a computer-illiterate school board why you need all that money for RAM chips this year?

One limitation of the IIGS that GS/OS cannot overcome is the commonly used 320 by 200 pixel video display. To ensure that Desktop icons are legible at this resolution, they have to be pretty big, which limits the

How They Compare

GS/OS

Performance: 6.0
Innovation: 6.0
Documentation: 3.0
Ease Of Use: 7.0
Value: 6.0
Overall: 5.6
Price: $39.95 retail (software is free without documentation)
Company: Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010
Circle Reader Service Number 46

HyperLaunch

Performance: 9.0
Innovation: 6.0
Documentation: 5.0
Ease Of Use: 8.0
Value: 8.0
Overall: 7.2
Price: $34.95 retail
Company: Golden West Technology; 1271 Carl St.; Anaheim, CA 92806; 714-635-2226
Circle Reader Service Number 47

MouseFiler

Performance: 8.0
Innovation: 6.0
Documentation: 6.0
Ease Of Use: 7.0
Value: 8.5
Overall: 7.1
Price: $69.95 retail
Company: Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton, MA 01720; 508-263-1870
Circle Reader Service Number 48

Notes: GS/OS gets a low rating for documentation (3.0) because many users will not purchase the very good Apple manuals and will have to figure things out from the sketchy online help — or by painful trial and error.

MouseFiler would have had a higher rating for innovation when it was new — two years ago — but today MouseText is fairly common.

The ratings for Value assume the buyer owns a hard disk. For users without a hard disk, the value of any program selector is much less.

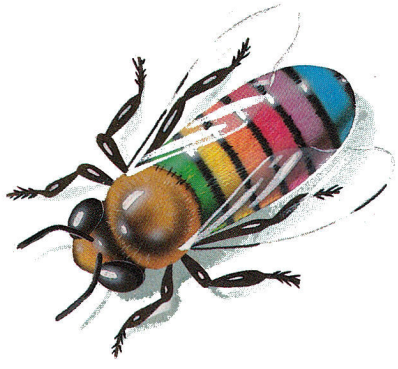
amount of information that can be displayed at one time.

As a result, you cannot see the contents of a big volume or folder all at once. You have to scroll around a lot and sharply limit the number of windows you have open at one time.

Alternatives To GS/OS

You don't need a 16-bit operating system if 8-bit Apple II software meets all your productivity, education or entertainment needs. If you don't have a hard disk, you may not even need the Finder (the program that creates and manages the desktop metaphor). You might only need a few storage boxes for your floppy disks and some blank disk labels.

Even without a hard disk, however, some users find it convenient to use some kind of program launcher.



Program launchers, which range from the very simple to the very elaborate, are an unusual category of Apple software. A program launcher allows you to have many different programs on one disk. You select the program you want by making a simple menu choice.

The need for program launchers derives from the user-hostile interface of most operating systems. ProDOS 8 is a classic example. When you Quit from a ProDOS 8 program, the system tells you to ENTER PREFIX and prompts you, unhelpfully, with the current volume name.

What? You don't know the prefix? Don't feel bad. Most ProDOS users are in the same boat.

If you get past that screen, ProDOS asks you to ENTER PATHNAME OF NEXT APPLICATION. The odds are slim that you can remember the pathname of the next application. The odds are even slimmer that you can type it without making an error.

ProDOS expects a file name that ends with the suffix .SYSTEM (ProDOS won't help you if you don't know the file name).

One of the simplest program launchers is Bird's Better Bye, a patched version of ProDOS, which was programmed by Alan Bird and is found on the excellent TimeOut series of AppleWorks enhancements from Beagle Bros., Inc.

Bird's Better Bye lets you toggle through all the disk devices on your computer. It displays all the launchable system files, as well as the subdirectories where further system files might be hiding.

Squirt, a shareware program found in most Apple user group libraries and online services, is one of many similar utilities. It is a small program that resides on your disks, intercepts the Quit code and displays a menu of launchable items.

A more elaborate program launcher is Prosel, by Glen Bredon, which also includes an extensive array of disk and file utilities.

All these are text-based programs. Graphics-based program launchers, using the Macintosh Desktop metaphor for 8-bit Apple software, have a dismal history.

MouseDesk (1984), developed in France by Version Soft and later adapted by Apple for the original IIGS system disk, was too sluggish and quirky to be widely accepted. An interesting alternative combining the convenience of the mouse with the quick response of the text-based screen is MouseFiler (1986) from Harbor Software.

MouseFiler

This program uses MouseText, Apple's extended character set, which can create windows, pull-down menus, scroll bars, dialog boxes and simple icons as text characters.

The name MouseFiler might mislead some potential buyers into thinking that this is some sort of database or list management program. It is actually a quick, efficient and highly functional Desktop manager that combines disk and file utilities with a program launcher.

When MouseFiler is launched, it displays a window listing the name and slot location of all online ProDOS volumes. Selecting a volume will open a directory window, listing all the files and subdirectories.

Provided on an unprotected 5.25-inch ProDOS disk, MouseFiler can be readily copied to any 3.5-inch or hard disk volume. Purchasers can also request a copy on a 3.5-inch disk.

Although it duplicates many of the functions of the GS/OS or the ProDOS 16 Finder, MouseFiler can coexist with them, as long as you

launch MouseFiler itself from the GS Finder (or the old GS Launcher from system disk 2.1).

You also have to create a "dummy" file named CATALYSTDESKTOP in the root directory of the disk. This tells MouseFiler to quit to the Finder, rather than rebooting itself, when you quit from it.

A very powerful feature of the program is Find File, which searches rapidly through all the directories (or folders) on a disk for a given file name. You can search for an exact match or for any name that contains a given string of characters. You go directly to where the file is located by clicking a button.

It's easy to misplace a file on a large disk that has many subdirectories. Find File, therefore, can be a real labor saver. (Macintosh users enjoy a similar capability as a desk accessory.)

Although MouseFiler can display the contents of a text file — about two paragraphs at a time — it cannot print anything. This is the only feature we missed. According to the vendor, there is simply no room for the wide variety of printer drivers that would be required.

One of the pull-down menu items is Programs, which is a run list that allows you to store the pathnames for up to 10 programs and launch them by making a selection.

MouseFiler is written in assembly language (more than 16,000 lines of code) and — when running — takes up nearly 128K of RAM. The program's files are extremely compact, requiring only about 61.5K of disk space. An illustrated 24-page manual is supplemented by eight pages of update notes in a text file on the program disk.

Harbor Software has also developed a network version of MouseFiler that is compatible with the AppleShare file server.

MouseFiler is the kind of 8-bit user interface that Apple should have developed as part of the ProDOS system software. It is fast, friendly and bug free. GS owners who are impatient with the slowness of the graphics-based Desktop will be impressed with the instant response of this MouseText application.

HyperLaunch

HyperLaunch is a solution for "Finder-phobics." That is, those who enjoy the high-resolution graphics of the IIGS and hate slogging through folders and icons to locate programs. HyperLaunch is a high-speed program launcher that replaces the standard Apple Desktop screen with a kind of giant dialog box.

The main HyperLaunch screen includes a block of 16 programmable launch buttons, a scrollable directory window and more than a dozen other controls. A pair of radio buttons, for example, allows you to switch between Normal and Fast system speeds without having to access the IIGS Control Panel.

A drive button toggles the directory window between all the ProDOS devices online.

Another pair of radio buttons lets you display all the files on a device or only the launchable applications. There are buttons that let you cold-boot a drive in any active slot. This is especially important for IIGS

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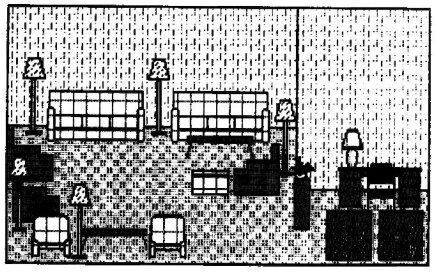

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users who need to run DOS 3.3, CP/M, Pascal or copy protected games.

Our system has a small permanent ROM disk, so a Boot ROM button automatically appears on the HyperLaunch screen.

By clicking on the HyperLaunch icon, you access an Options menu, which allows you to install the program on a disk, program the buttons, change button colors and modify various default settings.

Because HyperLaunch does not have a standard Desktop menu bar, one button is preprogrammed as "Use NDAs." Clicking this button displays a strangely naked Desktop, with only the Apple menu and a Quit option.

All the New Desk Accessories in your system folder can be accessed from here in the usual manner. Another button, labeled Finder, serves as an escape hatch, dropping you into the GS/OS desktop environment.

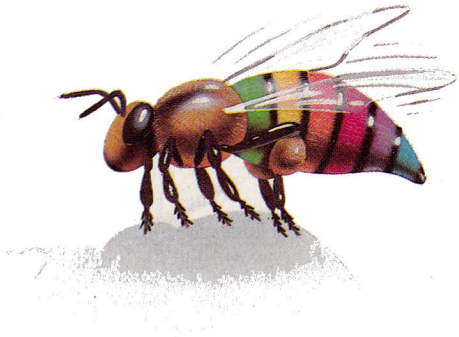
A 30-page illustrated manual was supplemented with two pages of updated notes and a small READ.ME file on the disk. We reviewed Version 1.5 and concluded that it is time to revise the manual.

The program was pleasant to use, worked as advertised and we encountered no bugs of any kind. The only feature we missed was the ability to dump a directory listing or text file to the printer. Because the printer drivers already reside in the System Folder, this missing capability should not be too difficult to implement in a future version.

HyperLaunch is a big program that requires a IIGS with at least 512K of RAM. The program files, which include a modified version of GS/OS, total 663K on disk. A small (20K) segment of the program remains resident in memory while other programs are running, providing an instant return to HyperLaunch when you quit.

Unless you have a hard disk with a number of different programs you use frequently, there is really no reason to use HyperLaunch. Priced at only $34.95 (plus $2 shipping and handling) this is a time-saving tool for power users. ■

— Mike Markowitz, contributing editor



An Interleave Intermission

Since the introduction of GS/OS last September, you may have been hearing the word "interleave" in discussions about disk formats.

Interleave is the technical term used to describe the order in which blocks of data are stored on disk. These blocks (512 bytes each) are not stored and accessed sequentially. Rather, a certain amount of processing must be done by the computer between block read operations, so by the time the computer is ready to read the next block, the disk has spun past it.

A Big Difference

Under the ProDOS 8 and now superseded ProDOS 16 systems, 3.5-inch disks were formatted with a 4:1 interleave. That is, blocks were stored in sequence four "real" blocks apart.

When the computer was ready to read in another block, the next one available was the fourth block past the last block read. Thus, it took four complete revolutions of the disk for the computer to read one track from the disk.

The new GS/OS works faster than the previous systems. In fact, it's fast enough to support a 2:1 interleave, where sequential blocks are stored on every other real block.

Under GS/OS, an entire disk track can be read in only two disk revolutions. There is some other overhead involved, but disk access speed is almost doubled.

The Catch

The catch, of course, is that GS/OS can only support the 2:1 interleave on the Apple 3.5 Drive, not the older UniDisk 3.5. Using a 2:1 formatted disk on a UniDisk 3.5 will result in much slower access time — again, almost doubled.

If you are using a UniDisk 3.5 with your Apple IIGS, you should only use 4:1 formatted disks. If you use the Apple 3.5 Drive, you can use 2:1.

The Finder that comes with GS/OS can format disks in either interleave; you are given the choice.

The System disk itself, AppleWorks GS and most other packages now shipping with GS/OS are on 2:1 formatted disks.

You've Got It

If you bought your IIGS as a complete system, you almost certainly have the Apple 3.5 Drive. If you upgraded from a previous Apple II, you may have the UniDisk 3.5.

If you were using a 3.5-inch disk drive with your older Apple, it is almost certainly the UniDisk 3.5; the Apple 3.5 Drive only works on the Apple IIGS and the new Apple IIc+; and the UniDisk 3.5 is intended for use with the IIe and IIc (though it can be used on the Apple IIGS).

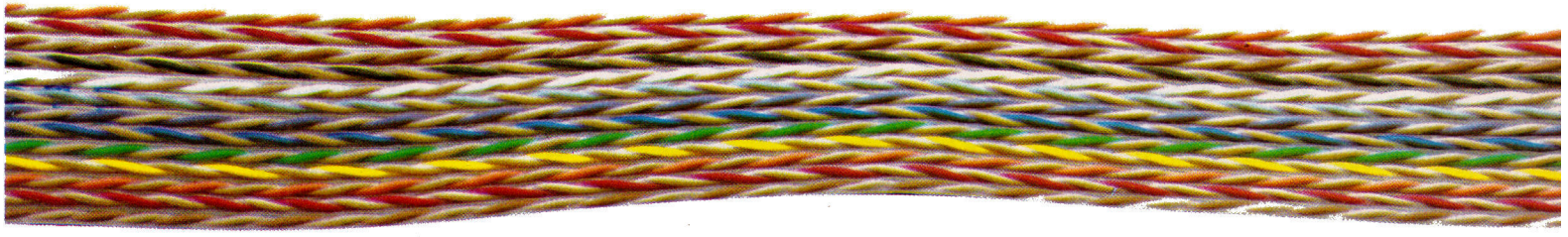
The most obvious visual difference between the two drive types is that the Apple 3.5 Drive has a little disk-eject pinhole in the eject button. The UniDisk 3.5 sports a pinhole directly under the button.

Please note that this discussion refers only to 3.5-inch disk drives. 5.25-inch disk access is not changed by GS/OS, and hard disks have their own individual rules.

— Joe Walters

Apple To Apple:

Exchanging Data Between The IIGS And Macintosh



Their brains are different and the operating systems don't match, but establishing communications between these two Apples is getting easier all the time.

The Apple IIGS and the Macintosh are made by the same computer company, but they are based on completely different system architectures. As a result, the machines cannot "speak" directly to one another.

The IIGS' brain is a 65C816, 16-bit microprocessor. The central processing unit of the 32-bit Macintosh belongs to the family of Motorola 68000 chips, and the computers' operating systems have little in common besides the Finder's appearance.

Can We Talk?

There are several ways to transfer documents between a IIGS and a Mac. All these methods require more than simply copying files from one machine disk to the other.

One of the most common techniques is to exchange data over telephone lines. This requires outfitting each computer with a modem and communications software. Then you must convert the data you wish to send to ASCII text files and transmit it via telephone wires.

Modems are neat and efficient, but they — and the communications software they require — are relatively expensive. And, unless you download to your own mailbox on an information service and upload from your mailbox when you're at the other computer, you will need someone at the receiving end during the actual file transfer.

What are the alternatives?

Apple File Exchange

Apple File Exchange (AFX) is a software utility that comes free on current Macintosh system disks. The program is designed to translate Mac documents into Apple II ProDOS files, and vice versa, so the documents make sense when transferred from one operating system to the other.

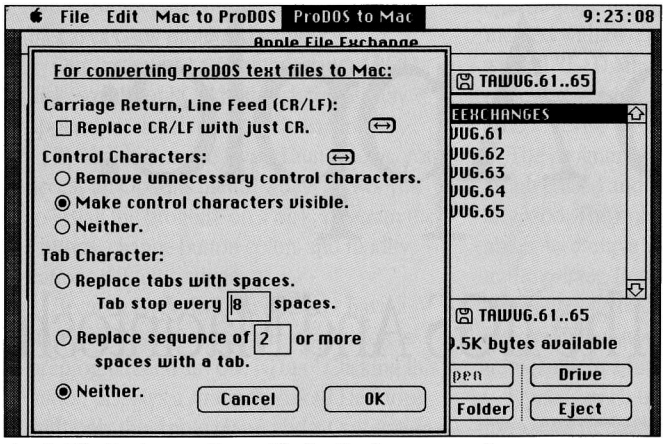
AFX also contains several translator files for use with MS-DOS applications.

AFX is completely software dependent. It requires no additional modems, cables or communications software.

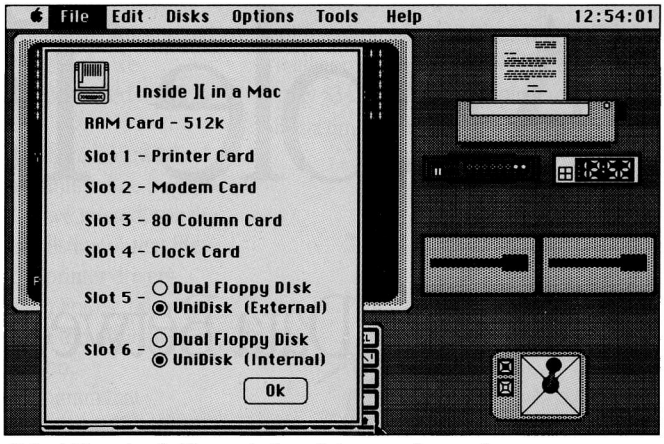
To get started, you simply copy the entire AFX folder from the Mac System Utilities disk to a hard disk or another 3.5-inch 800K disk. Then open the folder and click on the AFX application.

The AFX utility runs on any Mac equipped with an 800K drive. If you want to transfer files between a Mac and a ProDOS 3.5-inch disk, AFX works best when the Mac has two or more disk drives. Otherwise, file translation requires frequent disk swapping.

The transfer process is quite simple. Insert your 3.5-inch ProDOS source disk into the



Apple File Exchange: Free with the Mac's system software.



II In A Mac: Apple IIe emulation, data transfers and more.

800K Mac drive and select the files or folders you wish to translate. Normally, all non-Macintosh disks are ejected. Once you are working in AFX, however, the Mac does not eject the ProDOS disk.

Insert a Mac-formatted destination disk. Because you are exchanging files between a Mac and a ProDOS disk, the translation menus appearing at the top of the Mac screen show the translators as "Mac to ProDOS" and "ProDOS to Mac."

Each translator menu contains a text translator for transferring text files and a default translator for transferring other applications.

While the default translator allows you to transfer non-text files from one operating system to the other, AFX currently has no translators capable of transforming the files into something either machine can read. Therefore, to transfer a document from one format to the other, you must first convert it to a text file.

Specify where you want to put the translated files. For example, you could put them in an existing folder, a new folder or in the disk-level directory.

Select as many files or folders as necessary. Then click on Translate, and the files automatically transfer from the source disk to the destination disk.

When you quit the AFX application, the ProDOS disk immediately ejects from the Mac 3.5 disk drive. You can now open the translated files on the appropriate computer.

Remember, straight ASCII text files contain no formatting, so boldfaced text, italics, fancy margins or fonts will be lost. Be prepared to spend some time reformatting the text.

Mac.Transfer

AFX, which works only with ProDOS text files, will not let you transfer DOS 3.3 files to the Mac. In addition, ProDOS files must be saved on a 3.5-inch disk.

The Mac.Transfer utility enables you to exchange both DOS 3.3 and ProDOS text files with a Macintosh. The utility includes an application for modifying AppleSoft files for transfer.

The Apple II files you wish to transfer may be saved either on 5.25- or 3.5-inch disks. Finally, Mac text files may be sent to either DOS 3.3 or ProDOS destinations.

Mac.Transfer handles file exchanges in several ways. When the computers are in different locations, you may connect them via modem and transfer your data by phone.

The communications software packaged with Mac.Transfer will facilitate the process. The package contains an 800K Macintosh disk and a double-sided, 5.25-inch Apple II floppy disk, with DOS 3.3 and ProDOS applications on alternate sides.

When the computers are in the same location, link them through their respective modems. This direct connection won't tie up the phone lines.

If there isn't a modem on each computer, simply connect the machines by attaching a cable to their individual modem ports.

If you have a Mac SE and an ImageWriter, you won't have to purchase a separate cable. Disconnect the cable currently linking the computer to the printer, then insert one cable end into the Mac modem port and the other end into the IIGS modem port. (Adaptor cables with a male DIN8 connector on one end and a female DB9 connector on the other can be used to convert Mac 512 printer cables so they work with the new Mac Plus and Mac SE serial port connectors.)

Configure slot 2 of the IIGS Control Panel to read Modem Port. Then make sure the documents you wish to transfer are saved as text files. You're now ready to begin the transfer process.

The first time you run Mac.Transfer on your IIGS, you have to configure the software for your IIGS setup. This is true for both the DOS 3.3 and ProDOS versions.

Set the drive from which the data will be sent and the baud rate at which to transfer the file. The baud rate configuration on the Mac must match that of the IIGS.

Next, run Mac.Transfer and indicate whether you wish to send or receive a file. The IIGS will wait for a signal from the Mac before it begins transmission.

Once your file is transferred to the Mac, open the Mac.Transfer utility called FileConvert. The utility enables you to modify transferred Apple II word processor or database text files into Mac format.

The word processing application removes a single carriage return from the end of each line in a text file, leaving intact the pair of carriage returns that indicate separate paragraphs. Database file conversion lets you specify how many fields there are per record and whether to separate fields with tabs or commas. Expect to do some reformatting in either case.

If your goal is to transfer an AppleWorks database file, boot AppleWorks, then add the database file to the Desktop. Choose to print the file in Labels Format to determine the number of fields in each record entry.

Then print the document to an ASCII text file, send it to the Mac via cable — with the help of Mac.Transfer — and select Convert Database File (under the FileConvert menu), indicating the number of fields in the original AppleWorks file.

II In A Mac

II In A Mac is a multipurpose application. The package comes with two Mac 800K disks. One disk contains an Apple II emulator; the other Mac communications software.

The package also contains a 5.25-inch Apple II communications disk, which contains files to facilitate disk transfers to and from an Apple II.

You can transfer DOS 3.3 and ProDOS text files from the Apple IIGS to the Macintosh, and vice versa, by modem. If you wish, you can transfer the contents of an *entire* Apple II disk by cable, providing you have an Apple Super Serial card installed in slot 2 of the IIGS and a cable connected from the serial card to the Mac modem port. (Connecting a cable from the IIGS modem port to the Mac modem port won't work.)

Once the Apple II emulator is operational, it's even possible to insert a ProDOS Apple II 3.5-inch disk directly into a Mac 800K drive and carry on as if you were working on an Apple IIe.

When the Apple II emulator is launched, it opens directly to the ProDOS 8 (Version 1.2) operating system. Before you insert the ProDOS application to run on the Mac, configure "Inside II in a Mac" (under the File menu) to match your Mac hardware setup.

When the emulator disk ejects, insert the ProDOS Apple II application. Select B for AppleSoft Basic and type PR#6. The ProDOS disk will run as if it were booted from an Apple II.

The Apple II emulator behaves almost identical to an Apple IIe, but runs at 40 percent the IIe's speed. This is noticeable when working with a program such as AppleWorks.

The emulator only boots the original version of AppleWorks. Any AppleWorks modified with an expander patch or with the TimeOut desk accessories will bomb.

We were able to run Copy II+, AppleWriter 2.1, the Spinnaker Homework Helper series and AppleWorks successfully. We had difficulty running programs that required input from either a joystick or a mouse or applications that used mouse text characters for display.

It's not possible to run DOS 3.3 programs.

II In A Mac will come in handy if you want to transfer the contents of entire Apple II disks to and from the Macintosh. Its serviceability as an Apple II in Mac's clothing is questionable.

The program does not support ProDOS 16 and it won't let you take advantage of available AppleWorks add-ons. If your IIGS is in the shop and you absolutely have to work in AppleWorks, however, then II In A Mac is the program for you. ■

— Carol S. Holzberg, Ph.D., contributing editor

Products Mentioned:

Apple File Exchange (Version 1.0.1)

Transfers ProDOS text files between the IIGS and the Macintosh
$49 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010
Circle Reader Service Number 49

II In A Mac (Version 2.53)

Boots an Apple II ProDOS disk directly from a Macintosh drive or transfers the entire contents of an Apple II disk to and from the Mac
$149.95 retail
$24.95 retail; optional cable
Computer Applications, Inc; 12813 Lindley Dr.; Raleigh, NC 27614; 919-846-1411
Circle Reader Service Number 50

Mac.Transfer (Version 1.3)

Makes the Macintosh-Apple connection and transfers DOS 3.3 or ProDOS text files to and from the Mac
$60 retail
$22 retail; optional cable
Southeastern Software; 7743 Briarwood Dr.; New Orleans, LA 70128; 504-246-8438 or 504-246-7937
Circle Reader Service Number 51

EDITOR'S CHOICES

Find Out Why The Best IIGS Software Is Priced Under $10

A+ Mag's $9 Winners — February '89 Issue
☐ **GS86** WHEEL: Vanna's game is now on the IIgs! **$9**
☐ **GS87** ICONED: Design, edit, and color your own icons (SHAREWARE) **$9**
☐ **GS27** BOUNCE-IT!: IIgs adaptation of Little BrickOut game (SHAREWARE), plus Submarine, Simon Sez, etc. . . **$9**
☐ **GS85** CONTROL PANEL NDA: Get to the Control Panel from the Apple menu, plus 20 other DA's **$9**
☐ **GS58** F1 RACE: Formula One racing game (SHAREWARE), plus Mastermind & War game **$9**
☐ **All 5 Editor's Choices for only $29.95**

Print Shop Graphics
☐ **GS47,48** 300 b/w graphics for use w/Print Shop™ (2 DISK SET) . **$18**
☐ **GS61,62** 200+ holiday color and b/w graphics, fonts & borders for use w/Print Shop™ (2 DISK SET) **$18**

P.D.E.'s Best Disk
☐ **GS63** CheapPaint—a commercial-like color graphics program (768K RAM required) for only **$9**

Communication
☐ **GS6** Freeterm telecom—rated A+ Mag's "All Stars," needs 512K . . . **$9**

Desk Accessories
☐ **GS2** Notepad, Calendar, Diskinfo, RPN calculator **$9**
☐ **GS3** Save currently displayed picture, Setspeed **$9**
☐ **GS4** Watch screen melt! Display time & date, + 5 DA's . . **$9**
☐ **GS29** 20 DA's: Send type to printer after carriage return . . **$9**

Fonts
☐ **GS25, GS26** 100 fonts formal to fancy for all your documents and Christmas cards (2 DISK SET) **$18**

Games
☐ **GS15** Towers of Hanoi puzzle, Othello, need 512K RAM . . . **$9**
☐ **GS28** 7 challenging courses to play with your Mean 18™golf . **$9**
☐ **GS36** Play the open but treacherous fairways of Jax and more games w/your Mean 18™ **$9**

Graphics/Utilities
☐ **GS5** Convert pictures from any computer to IIGS format, need 512K RAM **$9**
☐ **GS7, GS8, GS9*** Lots of pics: Santa, Enterprise, MaxHeadroom, Moonlighting, etc. (3 DISK SET) **$27**
☐ **GS30** Customize your startup screen; color Print Shop™ graphics, to use with your Print Shop™ **$9**
☐ **GS45*** Borders to frame Xmas cards, stationery, certificates plus color pictures **$9**
*Requires a Paint program to print, i.e. PaintWorks Plus, Deluxe Paint II or GS63.

Music
☐ **GS20*** 40 songs to play w/your Music Studio™ incl. "Flash Dance," MASH theme, etc. **$9**
☐ **GS21*** More Music Studio™ Songs: Rock 'n Roll, TV themes, Broadway, classical, jazz, "Star Wars" **$9**
*512K RAM memory minimum required

Sounds
☐ **GS16, GS17** Digitized sounds for Startups and Sys beeps: Pee Wee Herman, 3 Stooges etc. (2 DISK SET) **$18**
☐ **GS19** Jet planes taking off, the Evil Wizard from Time Bandits, and much more **$9**

Utilities
☐ **GS1** DiversiCache/Copy/Key: shareware, plus Diversi-Hack 1.6 (needs 512K memory, 1 meg recommended) **$9**
☐ **GS32** Change the size, shape + color of icons **$9**
☐ **GS68** Mailing Labels (sorts), cassette labeler, virus detector . . **$9**
☐ **GS73** Fast disk copier, quick program launcher, Fkeys, etc. **$9**

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Circle Reader Service Number 19

Desktop Publishing Gets IIGS Specific

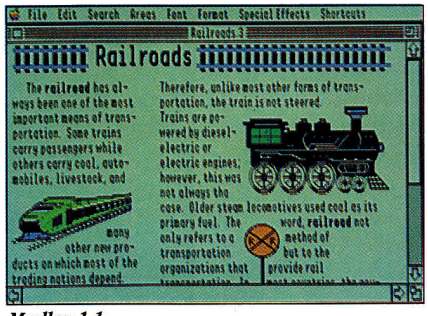
If you still haven't taken the leap into desktop publishing on your IIGS, Medley 1.1 and GraphicWriter 3.0 are two programs that might encourage you to do so. Based on the beta copies we received, both programs offer powerful text editing, page layout and graphics capabilities.

Which program is right for you will have to do with the complexity of the projects that you wish to tackle, how much memory you have in your IIGS and the kinds of graphics you want to print.

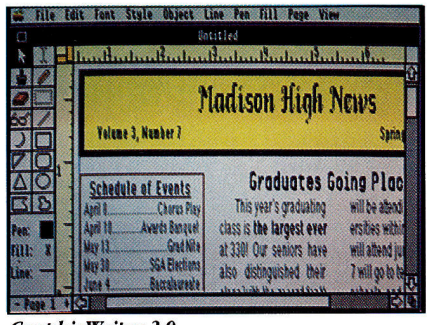
GraphicWriter 3.0 requires 512K of memory, whereas Medley 1.1 requires 1.25 megabytes (MB). The manufacturers of both programs suggest having more memory on board.

GraphicWriter 3.0 had quite a few features that were not functioning and several major bugs. Still, more than enough functions were operating to convince us that the program will be a significant advance over Version 2.0.

The programmers have managed to preserve the sophistication of the former version and still streamline and enhance the operation of the program. Meanwhile, Medley 1.1 now supports full paged condensed printing and operates faster than the original version.



Medley 1.1



GraphicWriter 3.0

Side By Side

Here's how they compare in the early innings. Both Medley and GraphicWriter 3.0 can alter character spacing and adjust line spacing. They can also import AppleWorks word processing files directly while retaining much of the original formatting. Horizontal and vertical rulers are provided. Global or master pages can be created and multiple documents can be loaded to the Desktop.

An online spell checker is included with both programs, but only Medley has an online thesaurus. Medley also boasts automatic hyphenation.

Each program has advanced methods of wrapping text on a page, although the techniques used vary dramatically. Both programs can wrap text across, down, through, or over and under a region/area.

Medley's word-wrap routine affects the entire page and all objects on the page, whereas GraphicWriter 3.0's routine allows each individual object to have its own word-wrap characteristic. This means that it's possible to have text wrap across one object on a page and through another object on the same page, a definite plus. Even with the increased speed of Medley 1.1, GraphicWriter 3.0 has faster screen updates and text entry.

Text Flow

Medley is intended to be used in a linear way. If you were preparing a layout for a newsletter, it would be best to start with one article — finish it — then start on the next article.

GraphicWriter 3.0, on the other hand, supports text flowing into many regions and pages. You merely create rectangular text regions, then connect the regions together to have text flow from one region to another. It is possible to simulate something similar with Medley, but the program was designed to use art areas to separate rather than contain text. To have text flow into an art area, it must first be converted to a text area.

The manual for Medley suggests that you speed up the process by typing in all the text, then divide the page into columns by adding long, thin art areas that act as gutters between the columns. The text will then automatically wrap to fill the spaces where no art areas have been placed. This procedure does not lend itself easily to complex layouts.

Even though both programs let you show an entire page, only GraphicWriter 3.0 allows you to draw, create regions and move regions while the page is displayed on the screen. Medley does allow you to move areas while a complete page is displayed, but the process requires that you enter numeric data in a dialog box, rather than merely clicking on a region and moving it to a new location.

The main unit of measurement used by typesetters to measure the height of a letter is a point. A point is 1/72nd of an inch. Erroneously, Medley defines a point as twice that size. If you are accustomed to working with points, then you should know that Medley will print out a letter that is twice as tall as you expected.

With the new version of Medley, you can compensate for this problem by printing your document condensed. Unfortunately, you will have to be careful when creating graphics or importing pictures. It is best to import pictures before you select condensed printing or your graphics will be condensed along with the text.

Even though text on the screen appears too tall, GraphicWriter 3.0 defines point sizes appropriately and does print out full pages of correctly proportioned type without altering the height of graphics.

Paint Power

As far as painting capabilities are concerned, both Medley and GraphicWriter 3.0 have all the standard tools, such as various sized brushes, pencil, straight lines, marquee, magnifying glass and an eraser. Both also have filled and hollow oval, rectangle, freehand and polygon tools.

Neither program will allow you to select different colors than those already in their respective palettes. Each program can import graphics created in either 320 or 640 super-high-resolution mode.

Medley has more extensive painting tools, including a lasso, a paint bucket and a wide variety of brush shapes. You can edit patterns, brushes and vary the quality of the spray

created by the spray can. Text can also be entered into a painting area. GraphicWriter 3.0 has triangle and arc tools that you won't find in Medley.

Most of the same tools that GraphicWriter 3.0 uses for painting are also used for drawing. The drawing tools do not compare with those found in programs such as TopDraw or Draw Plus, but they can be adequate for simple images. Medley's few drawing tools are only intended to be used to create borders for art areas.

Unfortunately, Medley's impressive painting capabilities do not take full advantage of the LaserWriter. Only text and borders utilize its superior resolution. All other graphics print out as an exact reproduction of the screen, pixel by pixel.

If you only intend to output to an ImageWriter, then you probably won't find this a deterrent. GraphicWriter 3.0's drawing features, on the other hand, do take advantage of the LaserWriter's resolution.

Both Medley and GraphicWriter 3.0 are powerful programs for creating documents. The serious desktop publisher will find GraphicWriter 3.0 a workhorse that can produce complex layouts of extremely high quality. The casual user will find Medley more convenient because of its linear approach to layout and numerous painting tools. Either program will convince you that desktop publishing has arrived for the IIGS environment. ■

—Gary Ramey

The Apple IIGS Buyer's Guide *welcomes Gary Ramey as a new columnist. He can be reached via electronic mail on Compuserve (72247, 2312).*

Products Mentioned

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

GraphicWriter 3.0
Seven Hills Software Corp.
Circle Reader Service Number 52

Medley 1.1
Milliken Publishing Co.
Circle Reader Service Number 53

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Circle Reader Service Number 20

'Never-Be-Board' Games For The Apple IIGS

Have you ever found yourself relaxing at home, eager to play a challenging strategic board or card game? Such games usually call for a real-life opponent, which is not always convenient.

With the Apple IIGS, you can play against your friendly computer. But what board games are available?

During the early days of the IIGS, Activision (now Mediagenic) released Shanghai, the first strategic board game for the machine. Loosely based on the oriental game of mah-jongg, Shanghai is a simple strategy game in which you match pairs of identical tiles, eliminating them until no tiles remain. The game can be played by one or two players.

Shanghai was an instant success and it is still popular. Additional user-created designer tiles in the public domain are available for downloading from many bulletin board systems.

OK, you may ask, What else is there?

Chess. The Software Toolworks' Fidelity Chessmaster 2100 — originally seen on the Apple IIe and IIc as Chessmaster 2000 — is an excellent computer chess game. In fact, it won first place in the U.S. Open Computer Chess Championship, beating personal and mainframe computer chess programs.

The IIGS version of the program takes advantage of the computer's improved graphics capabilities. Chess can be displayed in a 2-D or 3-D view, and you can rotate the chessboard in 90-degree increments.

The mouse makes moving chess pieces simple, and you can play against the Chessmaster (the computer itself) or a human opponent. You can even let the Chessmaster play against itself.

Chessmaster 2100 has it all — power, ease of use and plenty of extras. If you are a chess master or just want to play a relaxing game, this is the program of choice.

Backgammon. Club Backgammon from California Dreams, uses the power, graphics and user interface of the IIGS to full advantage. If you are already an advanced backgammon player, this game will help you brush up on tactics and probability.

Club Backgammon even includes dice, in case you don't trust the dice roll of the computer. This way, you can roll the dice and enter the results by hand.

IIGS board games such as Chessmaster 2100 can put even mainframe programs to shame.

Blackjack. Microillusions' BlackJack Academy is not just another blackjack game. It teaches the rules and play of blackjack and provides lessons concerning casino rules.

By playing against the computer or with a friend, you'll soon learn all there is to know about the game of blackjack.

Learn From It. Even if you are a newcomer to the above board and card games, you can still enjoy them. The program manuals include all the necessary rules and instructions on game play.

In case you become uncertain or stuck, some games have a help or hint mode to aid you in making your next move. This feature in Chessmaster 2100 tells you the next legal and best chess move. If you make a mistake, some games even let you take back a move.

The flexibility of these programs helps you learn and sharpen your playing skills and develop good game strategy, which is useful for playing against a human opponent.

Other fine strategic games, such as Othello and Yahtzee!, are available, but not always from commercial sources. Try the online bulletin board systems. For a minimal online access charge, commercial systems, such as Compuserve, Genie and AppleLink Personal Edition, have many of these programs available for downloading.

If you don't have a modem, many local user groups have these contributed programs available in their software libraries.

With the continuing increase in the number of expert IIGS programmers, we can look forward to even more strategic games coming from all sources for the Apple IIGS. Future additions of this column will explore public domain as well as commercial packages.

Copy Protection. In recent months, more companies have begun using an off-disk copy protection method. Here's how it works: Before a game commences, you must answer a question about a particular letter or word found on a certain page and line in the user's manual. In this way, the manual cannot be put away or lost.

It seems that many companies have realized people want to install their games on hard drives for easy access or make duplicate backup copies. An on-disk copy protection method defeats any form of copying to disk.

Chessmaster 2100 and Club Backgammon are produced by manufacturers that are moving away from on-disk copy protection. While this is a step in the right direction, you are still required to always have your manual readily available.

This method is a nuisance to legitimate users, because illegal users will find ways to bypass the protection.

In my opinion, companies should stop using copy protection altogether. Copy protection hasn't stop illegal copying. It only slows down the legal purchaser of the software. ■

— Peter Chin

The Apple IIGS Buyer's Guide *welcomes game enthusiast Peter Chin as a new columnist. You can reach him via electronic mail on Compuserve (71076,606) or Genie (P.CHIN).*

Products Mentioned

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

BlackJack Academy
Microillusions
Circle Reader Service Number 52

Club Backgammon
California Dreams
Circle Reader Service Number 53

Fidelity Chessmaster 2100
The Software Toolworks
Circle Reader Service Number 54

Shanghai
Mediagenic
Circle Reader Service Number 55

A Sound Investment

Why sound on a computer? Educational researchers find that talking software enhances a child's learning abilities, facilitates development of reading skills and provides valuable assistance in teaching the disabled. As a result, more software developers are producing programs that take advantage of the high-quality sound potential of the Apple IIGS.

With it's built-in Ensoniq chip, the IIGS is as natural as a speech-based microcomputer. The chip provides the circuitry necessary to create sophisticated musical compositions, reproduce the human voice and convert text to speech without requiring additional equipment.

Sound Advice

From an educator's point of view, sound-assisted computerized instruction is a powerful teaching aid. Sound should not be incorporated into a program just because the technology makes it possible, however.

Sound must figure prominently as a means to an educational objective. Moreover, it should be accompanied by colorful graphics and supplemented by written text.

Sound does more than facilitate learning. Spoken feedback expedites the writing process.

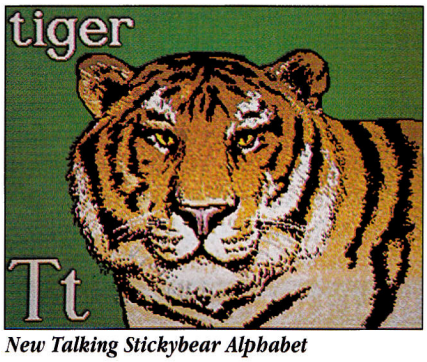
Researchers at the University of Wisconsin (Madison) discovered the significance of adding a speech synthesizer to a word processor for second-graders and fifth-graders. When the children heard a computer "speak" their own written words, they became motivated to do significantly more editing, correcting grammatical errors and modifying story content.

Beginning readers appreciate a talking program, because it gives them a feeling of increased independence. When an application "speaks" the program instructions, its users do not have to ask their teacher for help as often as when instructions are presented in written form.

If kids can turn the sound on or off, or make the spoken output louder or softer, they feel more in control of a computer.

Talking software adds a new dimension to computer-based sound. Verbal cues and spoken reinforcements personalize a child's learning involvement. Youngsters don't care if a computer's voice sounds like a robot or a human. They enjoy hearing the computer speak.

Talking Math And Me



New Talking Stickybear Alphabet

The Old School

Before the IIGS, speech-based software required additional equipment. Many programs used speech generated by an Echo or Cricket board from Street Electronics or compatible products.

These speech synthesizers generate spoken words in two distinct ways. They offer an unlimited text-to-speech vocabulary in a robotic male voice and a limited vocabulary in a high-quality female voice.

Products such as Dr. Peet's Talk/Writer, Talking Text Writer and Talking Text Spelling take advantage of the Echo/Cricket technology to generate speech from text. These talking programs enable a computer to say anything that a child can spell.

Scholastic also offers Talking Text Libraries designed especially for beginning and struggling readers. The talking disks read aloud stories with literature, history and science themes, highlighting each word so a

Products Mentioned

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

Bose Roommate Speakers
Bose Corp.
Circle Reader Service Number 56

Echo IIb
Street Electronics Corp.
Circle Reader Service Number 57

Building Blocks
For Learning Series
Talking Notebook Series
First Byte
Circle Reader Service Number 58

Designasaurus
Britannica Software
Circle Reader Service Number 59

Dr. Peet's Talk/Writer
Hartley Courseware, Inc.
Circle Reader Service Number 60

Easy Street
Mindplay, Inc.
Circle Reader Service Number 61

KidsTime II
Great Wave Software
Circle Reader Service Number 62

New Talking Stickybear Alphabet
Weekly Reader Software from Optimum Resource, Inc.
Circle Reader Service Number 63

Reader Rabbit
The Learning Co.
Circle Reader Service Number 64

Sea Strike
PBI Software, Inc.
Circle Reader Service Number 65

Taking Math And Me
Talking Reading And Me
Davidson & Associates, Inc.
Circle Reader Service Number 66

Talking Text Libraries
Talking Text Spelling
Scholastic, Inc.
Circle Reader Service Number 67

student can follow along. Colorful graphics enhance the interactive appeal.

Easy Street is an adventure game for beginning readers. It teaches numbers, letters, shapes and counting. While Easy Street functions on its own in a speechless environment without an Echo/Cricket board, children who use the board during play receive verbal cues and reinforcements and they get to hear the instructions spoken.

The children cannot take advantage of the board to type in their own words to produce speech from text, but the synthesizer adds high-quality speech to reinforce the concepts taught.

Sound Reasoning

Sound software designed to take advantage of the IIGS does not require any additional equipment. Of course, users *could* purchase a IIGS stereo card and combine it with a set of Bose Roommate stereo speakers.

With the right application, the Ensoniq chip can emulate a modern jazz quartet or a small symphony orchestra.

The Bose speakers make the IIGS sound terrific, even without a stereo card. Hook them up and check out the musical overtures on the IIGS version of Designasaurus or Sea Strike for some listening enjoyment.

Sounds Great

The current crop of IIGS software does a great job of demonstrating the computer's magnificent sound potential. Some of these programs include: Reader Rabbit; Talking Reading and Me; Talking Math and Me; the Building Blocks for Learning Series and Talking Notebook Series; KidsTime II; and the New Talking Stickybear Alphabet.

It's not a coincidence that the majority (if not all) of these applications are designed for elementary school kids.

There is a positive correlation between the use of speech and the development of reading and writing skills. Talking software, coupled with the colorful brilliance of IIGS graphics, can provide a rich, almost magical interactive electronic environment. Test drive a IIGS talking program soon and listen for yourself! ■

— Carol Holzberg, Ph.D.

The Apple IIGS Buyer's Guide *welcomes educator and writer Carol Holzberg as a new columnist.*

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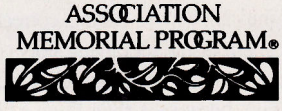

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Inner Drive

Inside The Apple IIGS

Performance: 7.0
Innovation: 9.0
Documentation/Support: 6.5
Ease Of Use: 7.0
Value: 7.0
Overall: 7.3

A review following the usual cliche would tell how the Inner Drive is built like a tank. Well, we used to work around tanks, which for the most part were noisy, unreliable and badly engineered. The Inner Drive, however, is quiet, dependable and friendly.

The Apple IIGS makes a very compact first impression, being only a bit more than 11 inches wide (28.5 cm.). This impression is quickly dispelled once you add a couple of disk drives, a mouse pad and a few peripherals. The system starts to sprawl over the table top, consuming all the space it can find.

Unlike the PC and its clones, the Apple II family was never designed to accommodate a hard disk. It isn't simply a matter of room inside the case — the disk controller, the system bus, the power supply and other key features of the computer's architecture evolved at a time when low-cost, high-speed mass storage was still a distant dream.

For a PC, a hard disk can be a simple, dumb plug-in device. You can even get one on a card and snap it into a slot.

For an Apple II, a hard disk must be a fairly intelligent subsystem that has its own embedded controller. Apple's own solution is the SCSI card, a $129 adapter that (more or less) allows Apple II computers to use hard drives designed for the Macintosh.

Some third-party designs simply use the floppy-disk interface (Smartport), accepting the inevitable data-transfer-rate penalty.

The Inner Drive, which is another alternative, completely replaces the IIGS power supply with a box that contains the hard disk, a cooling fan and a smaller, more powerful power supply.

A computer's power supply takes the 120-volt AC current from your wall socket and converts it into the precise DC voltages required (+12v, -12v, +5v and -5v). The power supply looks like a steel brick and is covered with warning labels.

Because they are subject to frequent cycles of heating and cooling, power supplies are usually high-failure-rate components in electronic systems. Nevertheless, Apple's power supply was very well designed and has proven to be highly reliable during the past 10 years.

Only time will tell if the Inner Drive's power supply, made by Computer Power Products, Inc., is equally rugged.

To install the Inner Drive, you first remove the IIGS power supply by unplugging the power cord from the back of the computer, opening the case and carefully pulling the "power harness" connector from its socket on the motherboard. When you pull back on a plastic tab at the front of the computer, the power supply lifts out.

Simply snap the Inner Drive into the same spot, reconnect the power cord and power harness, and install a controller card, which is connected to the drive by a broad ribbon cable. The drive does not block the neighboring slot 1, which is used by some IIGS owners to install a parallel printer interface.

The way the IIGS handles slots and ports creates a dilemma. To use a slot, you must usually give up a port.

Most IIGS users put the controller in slot 7, which is often the only free slot in the computer. We had to give up a 1 MB RAM disk card to use slot 7 for the Inner Drive.

Setting the Control Panel to Scan the slots allows the computer to boot up automatically from the hard disk. You could also put the controller in slot 6, giving up the use of any 5.25-inch disk drives when the hard disk is enabled.

The Inner Drive is shipped already formatted with the latest release of the GS/OS operating system. The 40 MB drive is partitioned into two 20 MB volumes.

There is also a folder that contains four utility programs: to park the drive heads when the computer is to be transported; to install any new Applied Ingenuity driver; to erase and partition the drive; and to check for bad blocks on the disk.

We encountered some bugs in an early version of the utility software, but these teething troubles should be overcome by the time you read this.

To keep down costs, Applied Ingenuity has a truly minimalist approach to documentation: A two-page leaflet that includes a simple diagram tells you how to install the hardware, lists the utility programs and recommends Glen Bredon's excellent public domain shareware program, Prosel.

There is a product registration card included in the package. The one-year limited warranty is much better than the industry standard 90 days, and we had no trouble phoning the vendor for support and information.

The hard drive itself is made by Western Digital in Irvine, California, which has a reputation for high quality. The drive uses a 4:1 interleave ratio and can transfer data at 40 kilobytes per second.

From a cold start, it took 32 seconds to open the GS/OS Desktop and 104 seconds to launch AppleWorks GS. A new "native mode" driver, which was still being written at press time, will effectively triple the access speed of the Inner Drive, according to sources at Applied Ingenuity.

Early versions of the controller card use a battery-backed static RAM chip, rather than the more conventional ROM, to store the card's firmware (the basic low-level instructions that control the hardware). This is an expensive solution that makes it possible to easily upgrade the controller with software loaded from a floppy disk, rather than replacing a ROM chip.

Static RAM is sensitive to damage from static electricity, so the card should be handled with reasonable care. Once the drive firmware reaches a final configuration, Applied Ingenuity plans to switch over to a conventional ROM on the controller card.

A good word to describe Applied Ingenuity is "brash." These young engineers have done something that Apple Computer, Inc. implied was impossible.

An internal hard disk is one of the distinguishing features of a productivity computer. Less than 5 percent of the installed base of Apple IIs have a hard disk of any kind.

A IIGS with an Inner Drive and an accelerator card (like the long-awaited Transwarp GS from Applied Engineering) could be a powerful system for a wide variety of serious business applications. And it wouldn't take up all the space on your desk, either.

— Mike Markowitz

Product: Inner Drive
Price: $499 retail; 20 MB version
$650 retail; 40 MB version
Company: Applied Ingenuity; 14922M Ramona Blvd.; Baldwin Park, CA 91706; 800-346-0811 or 818-960-1485
Requirements: Apple IIGS
Circle Reader Service Number 68

Sonic Blaster

The IIGS That Roars

Performance: 7.5
Innovation: 8.0
Documentation/Support: 5.0
Ease Of Use: 7.5
Value: 7.0
Overall: 7.0

Sonic Blaster is Applied Engineering's entry into the Apple IIGS sound enhancement market. The board adds to the Apple IIGS stereo output and the ability to digitally record music, voices and other sounds. While there are some rough spots, the Sonic Blaster is an excellent way to capitalize upon the sound potential of the Apple IIGS.

The board installs in one of the seven peripheral expansion slots; Applied Engineering recommends slots 1, 2 or 6. The documentation provides clear instructions and helpful illustrations for installation.

The documentation instructs you to remove a plastic plate from the IIGS' back panel, plug the board into a slot, then connect the mounting plate (containing the stereo In and Out jacks) to the opening.

Because the cables that connect the board to the mounting plate are too short, however, installation could not be performed as outlined in the documentation. We had to detach the cables from the board, attach the mounting plate to the back panel, then reattach the cables to the board's connector. Doing so caused the board to flex slightly.

The cables also render unusable the slot immediately to the right; installing the Sonic Blaster in slot 6 was infeasible in our IIGS because of the hard drive interface board in slot 7.

The final part of the installation is to attach a cable from the board to the 7-pin Molex connector on the motherboard, next to the sound chip and the memory expansion slot. This is the sound input/output port of the IIGS. Because of the location of the connector, it is necessary to temporarily remove the RAM board to attach it.

The next step is to connect the stereo Out jack of the Sonic Blaster to your speakers, either amplified or non-amplified, or through a stereo. To digitize sounds, connect the In jack of the Sonic Blaster to the Out jack of your CD player, VCR, stereo or whatever sound device you plan to digitize from.

To make these connections, an adapter may be needed. The vendor lists the Radio Shack catalog number of an adapter that plugs into the Sonic Blaster and provides two phono jacks. Once the installation is done, the final step is to use the Control Panel desk accessory to set the slot setting for the Sonic Blaster's slot to Your Board, if you want to play and record.

The Sonic Blaster produces stereo output whether or not the slot in the board is activated, a fact not mentioned anywhere in the documentation.

After the installation is complete, the next step is to test the sound output. The name Sonic Blaster is fitting; the board produces excellent sound, which can be raised to very loud levels effortlessly. We used Diversified Software Research's Diversi-Tune (see review, this issue) to perform our evaluation of the Sonic Blaster's stereo output.

Playing a Bach sonata, we were impressed by the sound quality of the Sonic Blaster. We then turned our attention toward games and played Datasoft's Tomahawk and Accolade's 4th & Inches.

We were impressed by the quality of the music and sound effects. You really start to appreciate spiffy sound effects when you hear them through the Sonic Blaster. Any game written to take advantage of the sound capability of the IIGS' Ensoniq chip will perform nicely with this product.

While the playback capability of the Sonic Blaster is impressive, its ability to digitize sounds is equally so. Software is included that allows the user to digitize, play, save and edit sounds. The program follows Apple's Human Interface Guidelines for the most part and takes full advantage of pull-down menus, windows and dialog boxes.

The program is fashioned after a tape deck, with play, record, pause and stop buttons. An on-screen cassette symbolizes the current sample (digitally recorded sounds). When playing samples, the cassette's wheels even turn, adding to the feeling of using a tape recorder.

Because most people already know how to use a tape recorder, they also know how to use the software. The software comes with samples on the disk. Our favorite is called "Priests," which is a sample of singing priests.

Loading prerecorded samples is easy. Just pull down the File menu, click on Open and select the sample. The software uses the thermometer, something that anyone who's ever booted GS/OS should be familiar with, to keep the user abreast of the loading status of the sample. Because samples are often large files, it is a nice touch to keep the user informed.

The thermometer is used anytime the software performs a time-consuming task. The program supports Apple's standard sound file format and sound files compressed using the Audio Compression and Expansion tool recently introduced by Apple. It will also load raw data in straight binary format.

We downloaded several public domain samples created with other digitizers and had no problems loading and playing them. After the sample is loaded, a window at the bottom of the screen opens, displaying a graph of what the sample looks like. Clicking the Play button plays the sample.

A nice feature is that the user can change the playback rate or volume while the sample is playing, without having to replay the sample to hear it at a different rate or volume. Using the buttons, the user can stop, pause or replay the sample anytime the sample is playing.

The default is to play the entire sample. Yet by pointing, clicking and selecting part of the graph, the user can select any part of the sample to play. Using the Zoom feature, a user can get a more detailed view of the graph.

The program supports easy-to-use special effects that allow you to amplify, play backward, echo, silence or fade up or down a sample. To "undim" these selections on the Effects menu, the entire sample or a part of it must be selected.

Amplify lets you make part of the sample louder; the user can set how much louder it gets. Backward lets you reverse the sample. Echo makes the sample echo. Fade up starts the sample at the default amplitude and steadily increases it; fade down does the opposite. Silence replaces whatever part of the sample that is selected with silence.

The program is written so that any special effect can be undone. As a result, the user can experiment with a sample without worrying about changing it beyond recognition.

Sampling sounds is also easy to do. The user clicks the Record button and the program then displays a dialog box asking you to press any key to begin recording. Unfortunately, there is no way to cancel this if you decide you don't want to sample anything.

The program allows you to select the channel you wish to digitize from, either

channel 1 or 2, or both, which is stereo. Other parameters that can be set are the sampling rate and recording level.

The recording level is set by either using a VU meter to gauge the sound input or an oscilloscope to adjust the recording level slide control. Or the software can set the recording level automatically by using the Auto Gain option.

The Sampling documentation could use improvement, because it neglects to say much about sampling rate. It also fails to mention under what circumstances the user should opt for a mono recording rather than stereo. Or tell how to strike a balance between sampling rate and memory usage.

A tutorial about digitizing would have helped to explain the technical terms. Instead, most of the manual is a reference guide to using the software.

We should mention that the manual we received was "very much beta," with an attempt to provide appendices that address some of the more esoteric aspects of digitizing. We hope that completed appendices will be ready by the time you read this.

On our 1 MB IIGS, the software had about 700K of memory available to hold samples. When you pull down a menu for the first time, the amount of available memory decreases because of menu caching. After each menu is cached, you are left with about 650K.

We had two desk accessories active with the software. To have the maximum amount of memory available, all desk accessories should be deactivated, which can be done from the Finder. Up to eight samples can be in memory at one time.

The program allows the user to create new sounds by cutting and pasting different samples together, although there is no way to hear what is on the Clipboard.

The program is crash-proof, but occasionally it hangs up when sampling, usually when other samples are in memory. This is apparently caused from running out of memory, which is a frustrating experience when you have several good samples in RAM. The software we tested was still in beta, so things can only improve on this front.

In summary, the Sonic Blaster is an excellent piece of hardware, which will enhance the sound output of your IIGS by adding stereo output and volumes as loud as you can bear. The software is also first class, making the digitizing of sound easy to do. Those who want to find out why Apple put the "S" in GS will be quite pleased after using the Sonic Blaster.

— Albert Willis

Product: Sonic Blaster
Price: $129 retail
Company: Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060
Requirements: Apple IIGS; 512K
Circle Reader Service Number 69

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By Bill Basham **inCider Editors' Choice**

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SoundAce

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Performance: 7.5
Innovation: 8.0
Documentation/Support: 8.0
Ease Of Use: 9.0
Value: 7.0
Overall: 7.9

If the "sound" was an important reason for your purchase of a IIGS, then a digitizer is an addition you'll want to include in your system. SoundAce is one such product to consider.

A digitizer allows users to take an audio source, such as a radio, tape player or a human voice, and record it. Then the fun begins, because the recording can be edited, played back and stored on disk.

A programmer can include spooky music in a mystery game, and computers can welcome users in their own voices when booting — or say "oops" instead of the infamous "boink" when an error occurs.

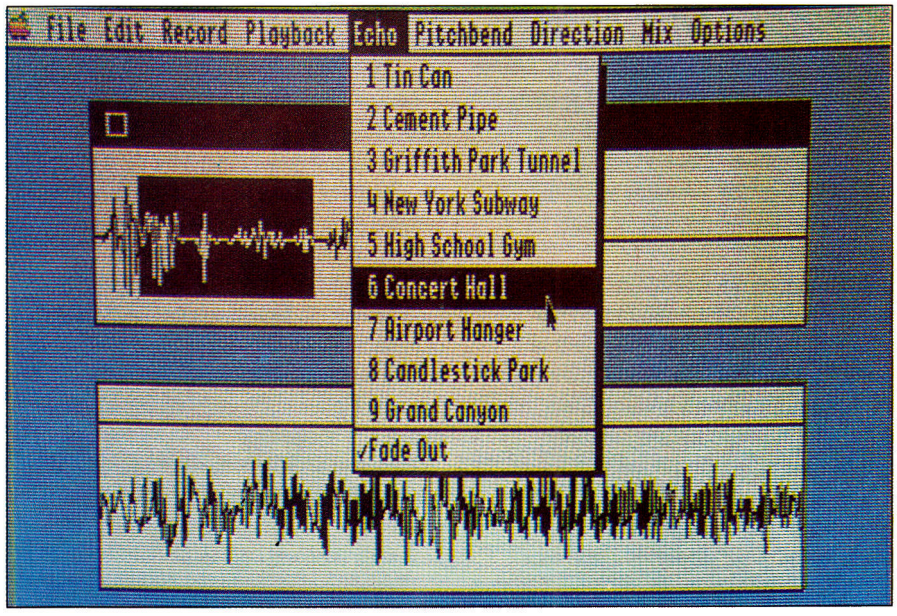
What the users decide to do with the recordings is limited only by their imaginations. Do they want to know if playing a Beatles' song backwards has Satanic messages? They can just reverse a recorded sound and see for themselves.

Theoretically, installing SoundAce is simple. Getting the top off the machine and finding an available slot (which is needed for power) may be the most difficult procedure. As with any hardware installation, users must be very careful of their other boards. Accidentally flexing a RamKeeper's Slot Mover or MemorySaver's Extender board can easily destroy them.

Bear in mind that it is necessary to remove such boards to connect the SoundAce to the IIGS' seven-pin Molex connector, which is inconveniently located on the front of the motherboard near the auxiliary slot.

Once the board (it measures approximately 2 inches square) is plugged into a slot and the SoundAce's connector is attached to the computer's audio input, users should place the wires underneath any other boards they may have in their IIGS computers.

A stereo board can be attached to the SoundAce and the MDIdeas digitizer will work with the software, which is available separately for that reason. Both digitizers cannot be attached at the same time, however, because that only confuses the software.



Cutting and pasting music tracks is just one feature provided by SoundAce's superior Mac-like software.

Because a microphone is included and already plugged in, nothing else is necessary to get started. Even so, users may wish to add a 1/8-inch miniature phono plug to the other input so a CD player or other outside sound source can be connected simultaneously. If users are recording from such a source, the sound will be clearer than using the microphone. That's because there's no outside interference from background noise.

External speakers also add to the enjoyment of any sound product.

The included manual is excellent. It clearly explains the installation and all functions of the board and software. Once users have read the manual and begun to use the software, they will probably no longer refer to it, because all the functions appear on the software's menu.

The non-copy protected software is what makes SoundAce really shine. The software offers the typical Macintosh "look" and runs from GS/OS.

When first booted there is a message on screen that says how many Undos are available, depending on how much free memory exists. Choosing About SoundAce from the Apple menu gives a "Hello There" audio greeting from the company president. Several sounds are on the disk, so users may begin by playing them or running the demo.

Most common commands can be chosen from the menu or with Open Apple keys, such as "R" for Record and "P" for Play. There are three speeds available, none of which allows more than eight seconds of recording. (It is possible that this will be changed in a future release.) This restriction is the greatest limitation of the package. In comparison, file size in the MDIdeas board is restricted only by the amount of available memory.

Faster speeds yield better quality sound but decrease the amount of recording time. Recording at one speed and playing back at another will dramatically affect the sound. Varying speeds can give interesting effects, as can changing the pitch or echo. Cutting and pasting parts of one or more tracks adds to the variety of possibilities. This process works much like a word processor when editing.

There are four pitch changes: from Martian to Cheerleaders From Hell (high pitch to low). Nine different echoes with interesting names and effects (Cement Pipe, New York Subway, etc.) are also available, but once users have selected one there is no way to tell what it is by looking at the menu.

A check mark by the selected pitch would be helpful, because the differences between some of them are not particularly obvious.

Fade-out and auto-repeat functions are also optional. The menu allows users to choose if a stereo board is to be used and to control it with a sliding volume scale. Settings must be made each time the software is booted, however, because the information is not saved to disk.

Experimentation will determine what volume should be chosen — both within the software and from the audio source — bearing in mind that an echo has the effect of lowering the volume.

It is also possible to mix sounds. If users have enough memory, two tracks are shown on screen at one time rather than just one, and the graphic representation of their sound changes to reflect any editing they may have done.

To select an area to edit, users just highlight it using the mouse, or Select All. When choosing Undo, the menu specifies what function it will undo, reverting to the state prior to the most recent change made.

There are four Save options: Binary, Compressed Binary, Start-up File and Audio Interchange File Format. Binary sound files are the most common type and can be used with Guy Rice's Startsound program. Compressed files are similar, but lack high fidelity and take up less space. Start-up files will play automatically when placed in the SYSTEM.STARTUP folder.

If the users do not plan to incorporate their sounds in a program, they can still have fun learning about sound and "playing" with it. Because SoundAce takes full advantage of a IIGS' unique sound capabilities, it is a welcome addition to any collection of hardware and software.

— Merry Perry

Product: SoundAce (includes digitizer, software and microphone)
Price: $79.95 retail
$34.95 retail (software only)
Company: Parallax, Inc.; 5249 Locust Ave.; Carmichael, CA 95608;
916-481-6331 or 916-721-8217
Requirements: Apple IIGS; 768K
Circle Reader Service Number 70

ThunderScan

Low-Cost Scanner

Performance: 6.0
Innovation: 6.0
Documentation/Support: 6.0
Ease Of Use: 9.0
Value: 7.0
Overall: 6.8

Apple II and IIGS users have many ways to create stunning graphics images using their computers. But what do they do when they have images on paper they wish to transform into computer graphics?

The Apple II has always been known for its graphics capabilities, and the Apple IIGS is the recognized king of graphics in the Apple II family. Another tool, ThunderScan, represents one of the first in a much needed product line for the Apple II: image scanners.

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Circle Reader Service Number 25

Able to work on an Apple IIe, IIc or IIGS, ThunderScan requires either an ImageWriter I or ImageWriter II printer. ThunderScan resembles the ImageWriter ribbon cartridge and, in fact, replaces the cartridge for scanning.

Installation is easy: Users must remove the ImageWriter ribbon cartridge and replace it with ThunderScan; then connect the cable leading from the side of the product to the game port connector on the back panel of their systems. Finally, they must add a strip of white tape (provided) to the left side of the platen.

ThunderScan requires a clean, white left edge for scanning. We found that the white tape quickly becomes ink smudged and requires frequent replacement. This problem increases when using an ImageWriter for printing between scanning sessions.

A better method is to mount each picture on clean white paper so that the paper forms a left margin approximately 1 inch from the left edge of the picture to be scanned.

Once the white tape has been mounted, users are ready to boot the ThunderScan software (provided on both 3.5- and 5.25-inch floppy disks) and begin scanning.

The software is easy to use. After booting, users are presented with a main menu of activities (New Scan, Save Scan, Online Volumes, Load File, Display Image, Print Image, Configure and Quit).

Selecting Configure allows users to indicate which ImageWriter (I or II) they have and in which slot/port it resides. This configuration is saved to disk.

To scan an image, the users select New Scan from the main menu. An image of a blank page (8 inches by 8.5 inches) is presented, with a solid-line rectangle and dotted-line rectangle and several options listed at the bottom of the screen.

Using the arrow keys, users select the size or portion of an image to be scanned by changing the size of a solid-line rectangle. Using the up/down arrow keys in conjunction with the Option key, they can alter the size of the image visible on screen, as well as the dots per inch of the scanned digitized image, by altering the size of the dotted-line rectangle.

Available options include: Format (High Resolution, Double High Resolution, Super High Resolution, Ultra High Resolution and Special); Mode (Halftone or simulated Color); Quality (Normal or High); Edge (left edge Even or Rough); and the Scanfile volume to which a scanned image file will be saved.

Users may also review Online volumes available for saving scanned image files and the number of ProDOS blocks the scanned image file will require. Users are told if there is not enough free disk space to save an image, and the total free disk space is displayed.

One limitation that hard disk drive owners will find annoying is the inability to save Scanfiles to subdirectories. All Scanfiles must be saved to volume directories. Thus, users may spend a lot of time copying files from the volume directory to subdirectories.

Once set parameters are established, users press Return and are taken to the Focus screen. With their printers off, the users move the ThunderScan to the lightest portion of their pictures and rotate the scanner's focus dial. When the users obtain the highest number, they press Return.

After adjusting the picture so that the top is aligned with the ThunderScan scanner head, the users press Return. Scanning begins immediately.

The several 4.5-inches wide by 2.5-inches long pictures we scanned took approximately 8 to 9 minutes to scan.

When a scan is complete, users may display the image and, if the image is larger than their screens, use the arrow keys to move the screen window around the image.

Pressing the "B" key allows the users to use the left/right arrow keys to alter the brightness; pressing "C" allows them to alter the contrast using the left/right arrow keys. They may save an image in ThunderScan format (BIN file type), Paintworks Plus or DeluxePaint II file formats or print the image.

Image quality can vary greatly depending upon several factors, foremost is the quality of the picture being scanned.

Pictures with high contrasts and brilliant colors give better images than those with low contrasts and pastel colors. Photocopying magazine pictures and then scanning the photocopies gives slightly better results.

Image quality was improved when the area around a printer was darkened and no direct light was shinning on the platen while scanning. Despite these problems, ThunderScan's performance while scanning pictures is good.

ThunderScan images are composed of pixels (dots); tiny squares of the image. ThunderScan pixels may have one of 16 values, each representing a different shade of gray ranging from 0 (pure white) to 15 (pure black). Thus, ThunderScan images are gray-scale images, each color being represented by a different shade of gray.

Images may be edited using Paintworks Plus, DeluxePaint II or many other Apple IIGS paint programs, allowing users to colorize the images by replacing the gray-scale palette with a color palette of their choice.

Users may also edit images using a paint program's bit-editing function to smooth rough edges in the images, change the color of selected objects and so forth.

Although the quality of ThunderScan pictures is good, there were several disappointments, the biggest being in the scanning of text and line drawings, such as road maps and cartoons. Scanned text quality ranges from very poor to unreadable, and scanned line drawings range from mediocre to poor. When not in active use, ThunderScan must be unplugged from the back of a computer. It apparently causes some conflicts with other software and hardware.

We found that a few applications, such as Prosel and Point-to-Point, would not function properly with ThunderScan connected. Also, with ThunderScan connected, we would not recommend using any software that writes to a disk.

The need to constantly connect and disconnect ThunderScan from the back panel is annoying, especially considering all the cables and connectors already plugged into the back panel of many users' machines.

For users whose primary interest in scanning images resides in text and line drawings, ThunderScan is not a good choice. But if their interest is in digitizing picture images, ThunderScan can provide very good results and may be an ideal choice.

With a little practice, some high-quality photographs and a good paint program, ThunderScan allows users to create some impressive images in full color.

— Kenneth Buchholz, Ph.D.

Product: ThunderScan
Price: $219 retail
Company: Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94663; 415-254-6581
Requirements: Any Apple II; ImageWriter printer recommended
Circle Reader Service Number 71

The Children's Writing And Publishing Center

A Publishing Program For Kids

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

Children love to write and illustrate stories, especially with a computer. Yet many word processors and desktop publishing programs are too complicated for children to master. The Children's Writing and Publishing Center isn't. Any child who can read should be able to easily use this program.

In fact, we think anyone who wants to produce and publish illustrated documents will appreciate this program. Although it's designed for children ages nine and up, adults can also easily create a variety of attractive documents without having to learn dozens of commands.

The program is menu driven. You can use either a mouse or the keyboard to make selections, and many selections are accompanied by pictures to help guide your choice. For example, upon booting the disk, you have the choice of two formats: Newsletter or Report, Story or Letter. Both formats are illustrated on the menu screen.

The Newsletter format offers small type, two columns and limits document length to one page. The Report, Story or Letter format uses somewhat larger type, no columns and limits document length to two pages. Either format may be designed with or without a heading.

If a document is to have a heading, you create that first, either from scratch or by choosing from more than 20 predesigned headings. In either case, the heading space is predefined and may not be changed.

It is also not possible to flow text between a heading and the body copy. You can, however, change the text in a predesigned heading. You can even superimpose text over pictures, but only in a heading.

After you create a heading, it's time to work on the body. There is much more flexibility here, partly because there is more space to work with.

Wherever you are in a document, a menu bar is displayed at the top of the screen. This menu bar includes five selections: Font, Picture, Next, File and Print. You move back and forth between the document and the menu bar with the Escape key or the mouse. From the keyboard, the arrow keys allow movement between selections.

Children can easily produce attractive and readable documents using The Children's Writing and Publishing Center.

Selecting Fonts brings to the screen a sampler of eight available font styles and sizes. You can choose what you want while you're looking at it.

Choosing Pictures allows you to select a picture to illustrate a document. The program includes about 130 pictures in many categories.

Pictures may be chosen by number, name or category. If you want to draw your own illustration, an Anything option allows you to leave sufficient space.

One of the nicest features of The Children's Writing and Publishing Center is the way the program handles pictures. The process of selecting and placing pictures is very easy. Though the program limits picture placement to the right and left sides of the document, once a location is selected, the text automatically moves to make room for it.

If the picture is moved, the text moves again. While you can't change its size, you can flip a picture both horizontally and vertically.

Compatible picture disks, such as The Print Shop Graphics Library, can be used with The Children's Writing and Publishing Center. We were disappointed, though, that the list of compatible disks does not include any programs that use the IIGS' special graphics capabilities.

The reason for this is simple. Although the program runs on the Apple IIGS and is available in a 3.5-inch disk version, The Children's Writing and Publishing Center works on all 128K Apple II machines and is not IIGS specific.

The third item on the menu bar is Next, which allows you to move between the heading, the body and the main menu.

File offers such utilities as saving, formatting a storage disk, viewing a catalog or deleting files. We liked the fact that the File option uses plain English rather than computer jargon to name the selections. Thus, a child can simply ask to "see names of saved work."

The Print feature controls such printing functions as changing the system setup and testing the printer, as well as selecting options for a particular job. You can specify the number of copies and opt for bold print, a border around a page or page numbers.

You can also specify the starting page number, which can be any number up to 20. This is necessary for long stories, because documents are limited to one or two pages in length.

The Children's Writing and Publishing Center displays both text and pictures in color and will print in color on an ImageWriter II. The LaserWriter is not supported.

The 3.5-inch disk version of the program we looked at includes two disks: the program and picture disk and a preformatted storage disk. The storage disk contains a sample letter used in the tutorial and plenty of room for new stories.

We are impressed by how easy The Children's Writing and Publishing Center is to use. In addition to the menus, helpful instructions remain on screen all the time.

One of these instructions is the Help command, which accesses help concerning any operation you're working on. For example, if you're working in the body of a letter, typing Apple-? brings up a screen of the cursor commands.

While The Children's Writing and Publishing Center is easy to use without the accompanying documentation, the instruction book deserves special mention. In addition to a well-designed tutorial, the manual contains excellent ideas for using the program. These ideas can be a great starting point for children who need a little inspiration.

We like The Children's Writing and Publishing Center. The program is easy for children to use and does not overwhelm them with a long list of commands.

We offer this advice to adults who may try to judge the program by adult standards: This software is designed for children, who do not need features such as full justification, special margin settings and variable line spacing. What children do need is an easy way to turn out attractive, readable documents, which The Children's Writing and Publishing Center allows them to do.

Educators agree that the more children write, the better writers they are likely to become. An important part of the writing process is publishing one's work in final form, whether anyone reads it or not.

This program makes it easy for children to write and publish. Many adults will find it just right for their purposes, too.

— *Sandra Irish*

Product: The Children's Writing and Publishing Center
Price: $59.95 retail
Company: The Learning Company; 6493 Kaiser Dr.; Fremont, CA 94555; 800-852-2255 or 415-792-2101
Requirements: Any Apple II; 128K
Circle Reader Service Number 72

Diversi-Tune

Computerized Player Piano

Performance: 9.0
Innovation: 9.0
Documentation: 7.0
Ease Of Use: 8.0
Value: 9.0
Overall: 8.4

What the VCR has done for television viewing, Diversi-Tune is doing for computer music. This latest entry in Bill Basham's Diversi series of programs allows users to inexpensively enter the world of Apple IIGS music with a very powerful MIDI recorder and sequencer.

Diversi-Tune is an entertainment program and a workhorse MIDI tool. You won't see fancy musical notes scrolling across the screen, nor will you be able to print nice musical scores.

What you will see is a simple, easy-to-understand menu. What you are able to do is quickly and easily play songs from disks or MIDI instruments and display them in a way the whole family will enjoy. What you will hear is some of the greatest sounding music on the IIGS.

Diversi-Tune's sound quality is unmatched in any other IIGS program — whether using the internal speaker, external speakers or a stereo card and stereo system. The music is crisp, clear and — most noticeably — avoids the typical static heard on more expensive programs.

The instruments that come on the disk are a combination of digitized and synthesized sounds. Currently, there are six instruments available, including piano, harpsichord, organ, banjo and drums.

Each instrument has been assigned to a track. If your MIDI device is an electric piano and you want to hear a song using the banjo, you can simply alter the original song by recording your tune on the track that has the banjo instrument assigned to it. These built-in sounds are only present using the Ensoniq chip and will not interfere with MIDI output.

If you are used to the typical IIGS Desktop display, you may be disappointed for a short time, because Diversi-Tune uses a very simple menu bar system for selections. To go from one option to another you type the number of the selection and hit Return.

You can control all of the menu selections using the direction arrows and Return key — it's that simple.

Graphics are not ignored, either. They are just used in areas where they are needed.

There's no extra window dressing. The display modes show you the best of the graphics. They range from a piano keyboard that shows which keys are pressed to a fantastic bouncing-ball lyrics presentation. Pure entertainment, that's what the bouncing ball is.

Diversi-Tune allows you to enter the lyrics to your favorite songs and have them displayed by themselves or in conjunction with a song. Entering the lyrics is as easy as typing text in AppleWorks. In fact, that's where you do it.

By using a few commands, you can control the movements of the bouncing ball. By combining the bouncing-ball display, the music (either from Diversi-Tune or your favorite tape) and, lastly, a VCR, you can make sing-along videos of all your favorites tunes.

The program disk comes with a variety of prerecorded songs that will begin playing immediately upon booting. A single keystroke will stop the playback at any time or you can skip songs.

Six song disks are available from the vendor, with each containing up to 26 songs. They are grouped in themes — Christmas, Gospel, Jewish, Gay Nineties, American Folk/Patriotic and Nathen Page Live. You can use these by themselves, or by combining the songs from these disks and your own, create a Diversi-Tune "concert," complete with visual effects.

Inputting songs is as easy as playing them. With the addition of a MIDI input port, such as Apple's MIDI interface, and a MIDI device, such as a keyboard, you can record, edit and play back your own songs. This is where the program's true power comes to light.

Bill Basham's background is in music and sound studio production. Probably because of this, Diversi-Tune resembles a multitrack tape recorder.

Each MIDI channel is like a track on a tape recorder. You can record on one track, two tracks or go all out and record on all 32 of the tracks available. Just like a tape recorder, you can save the songs to disk for future use.

Editing a recorded song can, at times, be difficult, especially with other music programs. Diversi-Tune has made this process an easy matter of playing your song, selecting the bad part and inserting the new.

There are some fancy words to describe this technique, such as overdubbing, sequencing, punching in, punching out and so on. All of these commands are done either with a single keystroke or a combination using the Open Apple key, most of which are keypad strokes.

Think of Diversi-Tune as two machines: one for playback and one for recording. Once you have recorded your song and want to edit it or add other parts, you switch the two machines around. Now the recorder is the player and what was the playing machine becomes the recorder.

These two modes switch back and forth constantly whenever you select Record. This way, no matter what you do, you never erase what you have done without specifically selecting the Erase function.

Sequencing is recording bits and pieces of music to combine later or to insert into existing songs. Diversi-Tune allows you to do this two ways. One method, overdubbing, has already been mentioned. The other method is to manually enter the segment using a MIDI device.

The manual method often results in your needing two more hands. You set up your recording, pause it, then begin playing your MIDI instrument. The program will automatically start recording. All you have to do is play your part.

Even though the program makes this process easier than it might otherwise be, the manual method takes practice to get really good results.

Unlike a tape recorder, Diversi-Tune has a few features that only a computer can use. When overdubbing and using a MIDI device, the MIDI device has precedence. That is to say, if a key is pressed on a MIDI keyboard and Diversi-Tune attempts to play the same key, the keyboard is the boss.

This technique is helpful if you want to change the durations of notes in a song. To make a note longer, just hold down the corresponding key longer. To make the note shorter, play the corresponding note and release it sooner.

Other features not found on most tape recorders are fast forward and reverse while recording. With long songs, it's nice to be able to zip forward to where you need to edit. Went too far? Use the Rewind feature and zero in on the offending portions.

You can adjust the tempo of a song, transpose the key and bounce MIDI tracks to take advantage of your own MIDI instrument's built-in sounds.

Programs that combine entertainment with productivity are hard to find. A program written for the Apple IIGS that does this and only requires 512K of memory is even more rare. Diversi-Tune has accomplished both in a most innovative way that is sure to please entire families and musicians alike.

— Dennis Keppner

Product: Diversi-Tune
Price: $75 retail
Additional song disks: $19.95 retail
Company: Diversified Software Research, Inc.; 34880 Bunker Hill; Farmington, MI 48331-3236; 313-553-9460
Requirements: Apple IIGS; 512K; optional MIDI instruments and tape equipment
Circle Reader Service Number 73

Iconix GS And Sonix GS:

Basic Enhancements

Iconix:

Performance: 8.0
Innovation: 6.0
Documentation/Support: 5.0
Ease Of Use: 5.0
Value: 6.0
Overall: 6.0

Sonix:

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

Iconix GS and Sonix GS are Basic programming utilities that allow you to take advantage of the IIGS' color graphics and Ensoniq sound capabilities in AppleSoft programs. Neither are applications programs per se.

Iconix GS is *not* a painting or drawing program like Paintworks Plus or Draw Plus. And Sonix GS is *not* a music program in the genre of Music Studio. Rather, each is a programming language enhancement, providing extended graphics and sound commands to AppleSoft Basic.

Iconix GS. Graphics is an area that has magical appeal to many of us. While paint and draw programs are handy, they are stand-alone applications that are not accessible from within Basic.

What are you to do if you want to write a Basic program that produces high-quality graphics equivalent to paint and draw programs? Iconix GS is the answer.

Iconix GS is a library of graphics routines that installs itself between the IIGS and BASIC.SYSTEM. Once installed, the program lets you program in Basic as before. What you don't see is important.

Iconix GS allows you to plot colored text, change the super-high-resolution graphics screen to any color, plot bars and lines in color, plot and edit icons, create color palettes, load and display color graphics images and easily use the mouse within Basic programs.

Iconix GS allows a total of 256 colors (16 true colors and 240 mixtures of those 16 colors) on screen simultaneously, thus allowing you to create some very stunning and detailed graphics.

To use the Iconix GS graphics commands, you Poke data values into memory locations and perform Calls to the Iconix GS routines to act on that data. For example, to create a colored bar on screen, the general syntax statement is:

```
10 POKE CL,C : POKE VI,V : POKE HI,H :
POKE WI,W : POKE HT,T
20 CALL CB
```

Those new to AppleSoft programming may have some difficulty understanding what Pokes and Calls are all about, and the manual doesn't go into a lot of detail.

The manual assumes a good working knowledge of graphics programming and lacks specific examples that can be run and observed. Examples are provided via the several Basic programs on disk, but there is no integration with the manual. This could be a drawback for a novice user.

Iconix GS comes on one 3.5-inch disk with a disk-based manual that you print out on your own printer (this method helps keep the cost down). The disk is not copy protected, and Iconix GS may be easily copied to a RAM disk, ROM device or hard disk drive.

Sonix GS. Sonix GS is the sound counterpart to the graphics Iconix GS. It enhances AppleSoft Basic with extended routines for sound programming.

Like Iconix GS, you program various sounds via Poking various parameters (data) into memory locations and then making Calls to the Sonix GS sound routines to act on the data.

Sonix GS goes beyond the Basic interface by accepting sound input from a diversity of devices (microphones, tape decks, compact disc players, etc.), as well as sound files from other commercial programs. It provides a full complement of sound utility applications for working with sound files.

The WaveForm Editor utility allows you to load sound files from disk or create new sound files from scratch. Sound waveforms can also be edited and saved and then accessed from within a Basic program.

The Music Editor is a useful utility that allows you to create songs and speech that can be played back via Basic programs or through its counterpart utility, the Note Engine. These utilities function well.

The diversity of sound input devices supported by Sonix GS and the AppleSoft Basic interface comprise a comprehensive package of utilities to supplement your Basic programming environment.

Similar to Iconix GS, the documentation for Sonix GS is disk based. You print out a hard copy on your own printer.

Unlike the sketchy documentation of Iconix GS, however, the Sonix GS manual is comprehensive and provides an excellent tutorial for learning sound programming, as well as an excellent future reference text.

Sound programming is not an easy task to learn and master, but the documentation provided helps make a difficult learning task easier.

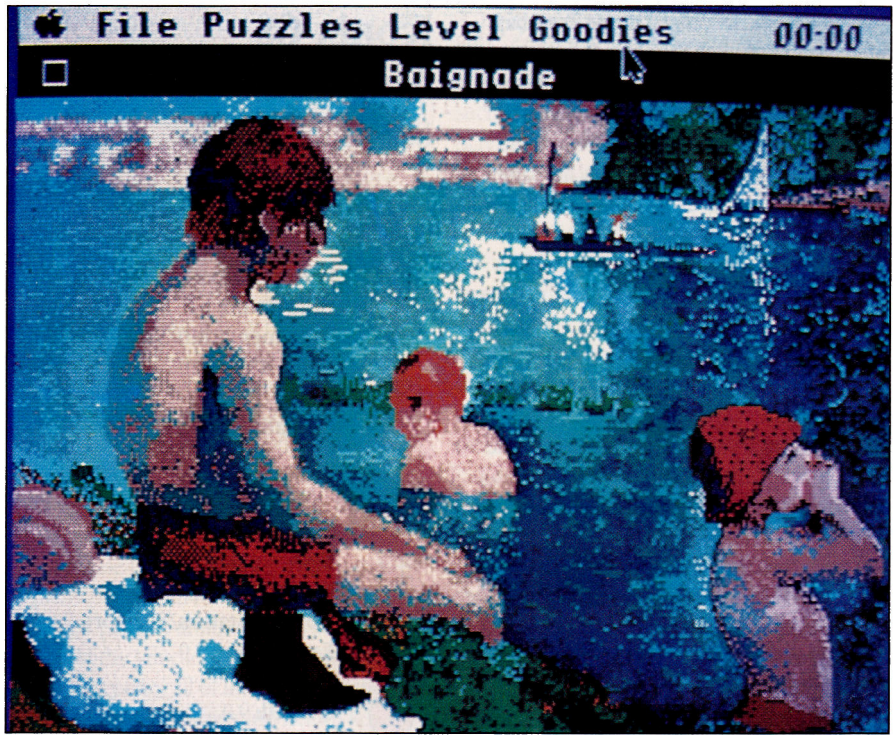
The combination of Iconix GS and Sonix GS provides a powerful extension to AppleSoft Basic, allowing you to take full advantage of the advanced sound and graphics capabilities of the Apple IIGS from within your own Basic programs.

But are these utilities for you? Sonix GS is a comprehensive sound application that allows you to create, edit and play back sound files through a series of easy-to-use utilities. Coupled with the excellent documentation, Sonix GS allows even novice users to quickly master sound creation.

Iconix GS, in contrast, is primarily a Basic interface for graphics with no paint, drawing or graphics editing utilities included. Graphics programming on the Apple IIGS is not an easy task to learn and master, and the overly brief documentation may not be enough for a novice user.

— Kenneth Buchholz, Ph. D.

Products: Iconix GS; Sonix GS
Price: $49.95 retail; Iconix GS
$59.95 retail; Sonix GS
Company: So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298
Requirements: Apple IIGS; 512K (Iconix); 1 MB (Sonix)
Circle Reader Service Number 74



After the IIGS scrambles the screen, the race begins as Jigsaw! users put the puzzle back together again.

Jigsaw!

Make Piece, Not War

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

The "ultimate electronic puzzle" arrives at your computer on two 3.5-inch 800K floppies. It sports the new GS/OS operating system, reducing IIGS launch time to less than 90 seconds.

Equipped with a Mac-like user interface, you can navigate intuitively through the program with point and click mouse control, assisted by scroll bars, dialog boxes, icons, windows and alert boxes.

Jigsaw! is entertainment, pure and simple. It offers 25 puzzles and four levels of play to wile away cold winter nights in front of the computer.

Your IIGS requires 1 MB of memory to take full advantage of the application's sound capabilities. You must increase the Sound volume in the Control Panel to a few settings above the default for maximum listening enjoyment.

With only 512K (the new IIGS standard), however, you won't be able to hear all of Jigsaw!'s sound effects.

Youngsters and novices alike can play with ease. At Level 1, the puzzles have only eight pieces. My five-year-old helper mastered this first level without adult assistance. You can work your way from eight pieces up to 15, 40 and, finally, the supreme challenge of 60 puzzle elements.

A timer records how long it takes to find the solution, giving you an added incentive to solve a puzzle quickly.

Before you start to work on a puzzle, pull down the Level menu and select the number of pieces you would like your puzzle to include. Then click on Open under the File menu and choose a picture from the Imagedisk.

Study the screen to memorize it as best as possible. The timer won't begin until you scramble the picture. When you're ready, click anywhere on the image to break it up into the preset number of pieces.

To move the puzzle elements, click on one of them. It will begin to flash. Then click

on another. The two pieces will exchange places. Continue shuffling elements around the screen until the puzzle is solved.

Keep an eye on the Percent Complete display in the upper right corner of the screen. It tallies how close you are to completion.

Every time you place a picture element correctly, you get audio reinforcement. On more than one occasion, however, the program responded with an audio tone even when a puzzle piece was incorrectly placed.

The real experts, of course, are those adventurous souls who turn the sound off and play in silence. If you need a visual hint, click on See Picture under the Puzzles menu. The clock still ticks away while you take a look, but at least you get a chance to refresh your memory. This feature is particularly helpful at more advanced levels where all pieces look alike.

When you find yourself working on a puzzle that is too difficult, enter the Level menu and opt for a lower level. Then go to the Puzzles menu and click on Restart. The timer resets to "0," so you can begin again without penalty.

Jigsaw! includes a Save Game option, making it possible to stop a game in the heat of play, save it to disk and return at a more convenient time. There is room on disk for only one saved game. Click on Restore under the Puzzle menu to begin exactly where you left off.

Solving the jigsaw allows you to enter your name in the High-Scores window for that level, but only if your time is among the top five. You'll have to work hard to beat some of the puzzle-solving records set by the Britannica development team.

You can print a hard copy of the puzzle on an ImageWriter I or II. Jigsaw! can generate a printout of any puzzle on screen, even in scrambled form. The program will let you print in color if you have the appropriate ribbon.

Use Paintworks Plus, Paintworks Gold or the desk accessory on DeluxePaint II to create and save additional full-screen Jigsaw! puzzles. Paintworks Gold has a wonderful screen shot of the Taj Mahal that Jigsaw! will load automatically.

When a paint image is on screen, it's ready to scramble. Simply click on the mouse button and start shuffling!

Jigsaw! is mildly addictive because it's so easy to do well at the lowest levels. Play the game competitively or try to improve your thinking skills by using the clock as your opponent.

The IIGS graphics are a joy to see. The musical accompaniment, brief as it may be, tantalizes a listener with the power of the Ensoniq chip.

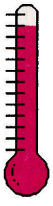
Well done Britannica! You've harnessed the power of the IIGS for fun-filled, high-tech entertainment.

— Carol S. Holzberg, Ph.D.

Product: Jigsaw!
Price: $39.95 retail
Company: Britannica Software;
PO Box 77186; San Francisco, CA 94107;
800-572-2272 or 415-546-1866
Requirements: Apple IIGS; 3.5-inch disk; 1 MB for sound (512K without sound); RGB monitor recommended; printer optional; copy protected
Circle Reader Service Number 75

MusicShapes

Music Education Set Free



Performance: 9.0
Innovation: 8.0
Documentation: 8.0
Ease Of Use: 9.0
Value: 7.0
Overall: 8.2

As a music education tool, the Apple IIGS has relied on the more traditional method of teaching: drill and practice.

This method may result in frustration for beginning students, as their curiosity is daunted by the amount of knowledge needed to play a simple scale. To overcome such frustration, students need software that allows them to create melodies and explore the infinite sound possibilities.

MusicShapes is that kind of program. It combines composition and theory in a way that frees the imagination and raw creative power students bring to a music class.

The concept behind MusicShapes is to get students to actively use sounds to create melodies. There are no notes, staves, keys or anything else that has to do with traditional music education involved in this process.

What is available is a wide selection of instruments and endless potential ways that students can use them.

All ideas are entered, adjusted and produced using a mouse, which means simple, straightforward commands and menu selections.

The program is made up of six different activity areas. Students can be divided up, allowing individuals to work on separate areas. With experience, the students will find themselves working together to achieve their goals.

MusicShapes melodies are built along the same lines as regular musical compositions. Students select the instruments, rhythms, notes and the duration of the notes, then combine them into coherent sequences.

It is the method and order of events that make MusicShapes unique. The program sets up individual events in "rooms." Each room controls a portion of the composition process, even though a composition can begin in any of the rooms.

Instruments are chosen in the Sound room, for example. Up to four instruments can be used in a completed melody, so advanced creations are possible.

There are also two subrooms available. In the Amp room, students can modify the sound envelope, creating entirely different sounds.

The sound file library is accessed through the Library subroom. All sounds are in the standard interchange format (IIF, ASIF and AIIF), so conceivably other sounds can be imported if they adhere to the program requirements.

Each individual note is created in the Pitch room. Students select the pitch of the notes by simply moving a slider up and down. Up to seven notes can be used in each segment box and rudimentary melodies are possible.

Overall note duration and tempo adjustments are made in the Time room. Each music box can have its own individual rhythm, which is a feature that is seldom found in other composition software. This ability imparts a more "live" feeling to the music creations.

Once the basic notes and tempos have been created, construction of final melodies can be accomplished in the Lifts, Flips and Shelves rooms.

The Flips room allows students to reverse, invert or reverse and invert each of the music boxes.

The Lifts room acts like multiple elevator shafts, each shaft controlling the overall pitch of the box assigned to the lift. This room is one of the more powerful sections of MusicShapes.

Students can make a series of the smaller boxes — each box with a different pitch, tempo and structure — and then combine them into a large music box. This versatility comes to light better in the Shelves room, where small and large boxes are combined to produce final compositions.

Actually, the Shelves room combines the boxes into the final melody and reinforces the concept of vertical and horizontal relationships in music.

Stacking the music boxes directly on top of one another creates chords. By offsetting the boxes, an intricate intertwining is realized. Stretching the boxes out horizontally forms the overall melody and — by offsetting the two boxes— greater variety is achieved.

MusicShapes will probably confuse traditional musicians. As mentioned, there are no quarter notes, keys or staffs anywhere. Music is built from sounds and practical experience, not theory.

Children with little or no experience can quickly grasp the ideas of harmony and timing by "playing" the melodies they create. Although mastery of the program's use is accomplished in minutes, the challenge continues on into advanced concepts.

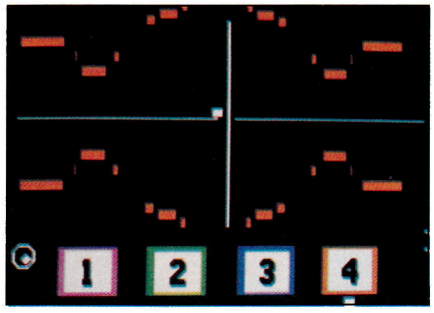
MusicShapes has progressed through several versions. The latest IIGS version is really two programs.

The basic MusicShapes program uses the Ensoniq chip. Sound files for the instruments are in the ASIF format, so sound files from other programs can be used with it.

The second program, which more closely relates to the Apple IIe version, takes advantage of MIDI interfacing. Through this interface, the output of MusicShapes can drive a MIDI music studio, making even more instruments available.

Melody files are interchangeable between the two programs, so students working on the Ensoniq version will still be able to hear their creations through MIDI devices.

MusicShapes is a strong educational tool for teachers and parents. It is founded on sound educational philosophies that allow students to respond to objectives set by their teachers, while still being free to explore and develop on their own.



MusicShapes dispenses with traditional quarter notes, keys and staffs and allows children to follow a more direct path to music education.

MusicShapes can be considered a game, an educational resource and a tool. Most importantly, it is an open invitation into the wide world of sound and music.

— Dennis Keppner

Product: MusicShapes
Price: $175 retail; IIGS version
Company: Music Systems for Learning, Inc.; 311 East 38th St., Ste. 20C; New York, NY 10016; 212-661-6096
Requirements: Apple IIGS; 512K; stereo board and MIDI port optional. Apple IIe version requires a MIDI interface
Circle Reader Service Number 76

MacroMate

It Never Forgets

Performance: 9.0
Innovation: 8.5
Documentation/Support: 8.5
Ease Of Use: 7.0
Value: 8.0
Overall: 8.2

Macros, short for macro instructions, are a convenient way to save time and take the tedium out of repetitive computer tasks. A macro can best be described as a computer shortcut; an automated process to save users from having to manually enter a series of keystrokes.

Macros can be predefined by users to automate keyboard input while using application programs.

Macros allow a series of commands to be stored on disk and then executed with only two keystrokes. Generally, macros are invoked by pressing either the Option, the Open Apple or the Control key, in combination with another key.

MacroMate is a Classic Desk Accessory (CDA) macro program. All CDAs are stored on your ProDOS 16 or GS/OS start-up disks and are located within the /SYSTEM/DESK.ACCS folder. Upon booting a disk that contains CDAs, the CDAs are automatically installed and are accessible from the same Open Apple-Control-Esc sequence that is used to enter the IIGS Control Panel.

Like all CDAs, MacroMate — once loaded and active — is always operating in the background and accessible for use from within most programs that run under DOS 3.3, Pascal, ProDOS 8, ProDOS 16 or GS/OS, including AppleWorks and AppleWorks GS.

MacroMate is supplied on a single 3.5-inch, non-copy protected disk. The program manual is well organized and provides detailed, step-by-step instructions on how to create custom macros, as well as descriptions of how to use the many specialized macro definition files provided.

The predefined macros found on the MacroMate disk fall into two categories: macros that can be used with AppleWorks, and those that can be used with AppleSoft Basic.

The AppleSoft macros offer some helpful programming functions. As an example, pressing the combination of Option-Return will LIST your program; Option-1 will catalog a disk in drive 1. In general, the predefined macros contain many of the most commonly used AppleSoft Basic commands.

Because AppleWorks doesn't have any commands that use the Option key, all AppleWorks macro definitions use it. Predefined macros include cursor control commands, as well as ones that force page breaks, control printer options, set justification or print files.

Because there are a number of other commercially available keyboard macro programs that can be used with AppleWorks, MacroMate macros have been predefined to be as similar as possible to those other macro programs, such as Super Macro Works, Ultra Macro Works and Key Player.

Like similar AppleWorks add-on programs, MacroMate comes with many predefined, two-keystroke shortcuts that can be used instead of entering long sequences of commands. Many of AppleWorks most commonly-used sequences have been predefined by the program authors. However, the user of

MacroMate does have the ability to edit, change or customize any of these predefined macros, as well as create an entirely new set of additional macros.

A total of 384 macros can be defined using different combinations of keys. In addition, MacroMate provides two different means to define macros: a manual procedure and an automated procedure.

Manually, users can easily enter the MacroMate Editor and enter the keys they want to define. Then they can enter the actual keystroke sequences that will be represented by the macros they are creating. This task is fairly straightforward.

The program manual covers the procedure well, and users can use the Editor to examine the already predefined macros.

MacroMate's true power lies in its ability to create macros via an automated process called Record Mode. Through this keystroke recording mode, very sophisticated and complex macros can be created by anyone, and no programming skills are required.

Also, using the Record Mode, macros can be defined at any time and from within any program. Once activated, the Record Mode actually records every keystroke entered and stores them for later use. This feature allows even novices to start using macros.

All of this power allows MacroMate to perform very complex procedures. As an example, it's possible to create an Auto Boot macro that will boot a disk into a program selector; run a utility program from that selector to format /RAM5; and then copy application programs into that RAM disk.

In a similar manner, you can create an AppleWorks auto start-up macro to boot AppleWorks, skip the Press Space Bar and date prompt messages, and automatically load in the last document used.

MacroMate has the ability to create the sophisticated macros to work with, or work from within, any program — or combination of programs — that uses keyboard-based commands. Provisions are even included to slow down the execution of a macro while it is accessing a disk or copying files from one disk to another.

Normally, CDAs such as MacroMate can only be installed by ProDOS 16 or GS/OS when a disk is started up. However, another product sold by Roger Wagner Publishing — P8 CDA — allows for the installation of Classic Desk Accessories from any ProDOS 8 disk, including AppleWorks.

Using MacroMate in combination with that utility, it is possible to have the power of CDA macros available, but without having to go through the slow process of booting up a ProDOS 16 or GS/OS disk.

Roger Wagner provides telephone technical support for MacroMate. The tech support staff understands the program thoroughly and provides fast answers.

Although MacroMate is one of several macro utilities available, it is IIGS specific and is the only one that's a CDA.

MacroMate is a versatile program, relatively easy to use and it can be copied to any start-up disk for use with a wide range of programs. Combined with a 30-day money-back guarantee, the program should be considered by serious Apple IIGS users who want to further customize their systems.

— Joe Kohn

Product: MacroMate
Price: $49.95 retail
$29.95 retail; P8 CDA
Company: Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522
Requirements: Apple IIGS
Circle Reader Service Number 77

MagnaCharta users can produce stunning color printouts using a standard ImageWriter II.

MagnaCharta

Presentations By Mouse

Performance: 8.0
Innovation: 7.0
Documentation/Support: 9.0
Ease Of Use: 8.0
Value: 9.0
Overall: 8.2

If you haven't already guessed, MagnaCharta Version 3.0 is a program that allows you to easily create charts and graphs. The package comes with an understandable manual and one unprotected 5.25-inch disk.

We had no problems copying the program to a bootable 3.5-inch disk by following the directions in the manual. Those of you who prefer to keep your hands on the keyboard will appreciate that either a keyboard or a mouse can be used to select the program's pull-down menu items.

MagnaCharta supports more than 60 dot matrix printers and more than 40 printer interface cards, but it does not currently support the LaserWriter or AppleTalk. And color output can only be accomplished with an ImageWriter II.

The program can use all ProDOS-recognized storage devices, such as RAM disks or hard drives.

MagnaCharta offers a full range of chart types, including: Column; Column/Stacked; Bar; Line; Line/Column; Scatter; Area; 3D Chart; and Pie Chart. The most visually interesting of these is the 3D Chart.

Even though high-low charts are not directly supported, the manual suggests entering high and low values into separate rows of a spreadsheet, then selecting the Scatter chart type.

It is possible to quickly customize a chart to your needs by adding a title, changing the space between columns and swapping the axis. You can also label the X and Y axis.

A Help menu is available, so you don't have to refer to the manual often. Keyboard shortcuts are also included, but the Option (Closed-Apple) key is used rather than the Command (Open-Apple) key.

If the numeric information contained in a chart is close in value, it is often difficult to see differences in data when they are charted. MagnaCharta comes to the rescue by visually increasing the minimum to maximum distribution of the information. This feature makes it easy to create an effective chart from data that would otherwise appear unvarying.

One feature not supported is the ability to separate the wedges of a pie chart to emphasize information. Also, it is not possible to make changes to a chart while it is displayed. Rather than being able to see changes instantaneously, you must go back and forth between a spreadsheet and the chart.

The trade-off here is between speed and convenience. Other programs that allow you to make changes while a chart is displayed usually redraw the screen very slowly. MagnaCharta's refresh rate is amazingly fast by comparison. Part of this trade-off is that placement of the title, legend and labels is limited with MagnaCharta.

When using MagnaCharta on a IIGS, it is best to make sure that you first enter the Control Panel and select Monochrome as your display type. Otherwise, text will be almost impossible to read when displaying a chart. Menus will be legible, because they are displayed on an 80-column text screen. If you follow our advice, you won't see any color while the Display Color option is selected, but your ImageWriter II will still print in color.

Printer output is outstanding. MagnaCharta is able to generate excellent-quality color output on an ImageWriter II by first printing black, reversing the paper, then printing all the colored areas. Double Height, Double Strike, Rotate and Double Width options are supported.

It would have been a nice touch if AppleWorks files could be imported directly into MagnaCharta. Unfortunately, only text files can be imported.

To use information from an AppleWorks spreadsheet, you must first print a text file to disk then quit AppleWorks and start up MagnaCharta. When the text file is imported into the program, the number of rows and columns needed for the spreadsheet must be designated before the file can be loaded. This procedure makes it possible to use information originating from a wide variety of programs.

The program manual is clearly written and displays a sense of humor reminiscent of the early Beagle Bros., Inc. manuals. For those of us not familiar with the advantages of the various chart types, the manual offers examples and clearly describes the kinds of information that each chart type displays best.

For IIGS users, the only difficulty we see with MagnaCharta is that the program uses the double-high-resolution graphics mode. It does not support the super-high-resolution graphics mode of the IIGS. Therefore, you won't be able to export your charts into IIGS-specific programs, such as Paintworks Gold, DeluxePaint II, Medley or GraphicWriter 2.0.

Still, MagnaCharta is an excellent program at an excellent price. It offers many powerful charting features that allow you to easily use graphics to clarify spreadsheet information.

— Gary Ramey

Product: MagnaCharta
Price: $59.95 retail
Company: Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44135; 800-233-WAVE or 216-671-8991
Requirements: Any Apple II; 5.25-inch drive
Circle Reader Service Number 78

ShowOff

Graphic Excitement

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

Presentation graphics provide a means for you to astound, inspire, stimulate, dramatize and illustrate your ideas in a graphics-based format that can be presented to groups, business associates, students, customers and other Apple IIGS users. Now your IIGS can be in on the action, too.

ShowOff is the first presentation graphics package for the Apple IIGS. It could, potentially, usher in a new way of using computers that may be to the 1990s what paint programs and drawing programs were to the '80s.

ShowOff allows you to easily, quickly and cost-effectively create innovative graphics that can be shown on screen in a video slide-show format, printed on paper for dramatic results, printed on acetate for overhead transparencies, or even interfaced with a carousel-type slide projector that contains a serial interface device.

The program is supplied on two 3.5-inch, copy protected disks (a key disk protection scheme allows installation on a hard drive). Disk 1 is the Program disk; Disk 2 is the Slide Show disk.

ShowOff requires an Apple IIGS with a minimum of 512K. If you wish to print your creations using the higher quality print mode on an ImageWriter, however, 768K is recommended. The program works fine with a single 3.5-inch disk drive.

The Program disk contains almost 400 graphics, 128 borders and a powerful graphics editor. In addition, ShowOff allows you to import graphics created by Broderbund's other successful graphics program, The Print Shop, or you can import graphics created with IIGS paint programs.

The Slide Show disk contains a module for creating an Auto Run slide slow that can be viewed on another IIGS without using the Program disk.

ShowOff allows you to create Frames, which are screens containing graphics and/or text. Using the Sequence Editor, you can link frames together to present a unified slide show on your computer.

The show can be run automatically or interactively. Using an interactive mode, you can specify which frame is to be shown when a particular action is taken.

When first running ShowOff, the IIGS Desktop appears with a number of graphics Toolbox routines available on the left side of the screen and some pull-down editing menus available at the top. The manual is excellent and a "Guided Tour" of the program is provided.

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You create your first sequence within an hour's use, using most of the program's features.

ShowOff has potential for the business community, but it is in no way limited to that group. A graphing function allows bar, line and pie charts to be created and then used in any frame.

Up to 12 data points can be entered into the Graph Editor, and graphs are produced very quickly.

Several types of graphics formats are found in ShowOff. For example, Icons are small graphics; 380 of them are supplied on the Program Disk in the following categories: Letters of the Alphabet; Animals; Activities; Buildings; Computers; Flags; Maps; Nutrition; People; Sports; and Transportation.

Stickers are almost twice as large as Icons and can be created with The Print Shop. In addition to those supplied with the Program Disk, ShowOff can load in Stickers from a IIGS Print Shop disk or any IIGS Print Shop graphics library.

With a little work, you can also use graphics created for the older 8-bit DOS 3.3 version of The Print Shop. One hundred twenty-six Borders are supplied. Some are graphics representations of real objects; others are artistic designs.

Finally, there are eight Backgrounds that are essentially full-screen graphics. Any of the graphics previously mentioned can be mixed and matched within any frame.

The Sequence Editor ties all your work together. With it, you can specify how long each frame is to appear on screen and in which manner it is to fade out into the next frame. You can do several different transitions — including screen wipes — or simply have the frame dissolve into thousands of tiny pixels.

No matter how you go from frame to frame, you're bound to have fun experimenting with all the different ways you can present graphics on screen.

Broderbund provides toll-free telephone technical support. We called to ask about the slide-projector interface capabilities and found the tech support rep to be friendly, knowledgeable and efficient.

An add-on graphics collection containing more than 200 additional Icons, Stickers and Backgrounds is also available. This package has a business flavor, including Icons in the following categories: Economics; Medicine; Crises; People; and Symbols. The Stickers contain maps and general interest graphics, and the six Backgrounds are for general purpose use.

ShowOff's combined ease of use and ability to create stunning visual aids will certainly help raise the level of Apple IIGS artistic creativity to new heights. ■

— Joe Kohn and *Shiva Schulz*

Product: ShowOff
Prices: $59.95 retail; ShowOff
$34.95 retail; ShowOff Graphics Collection: World Events
$69.95 retail; School Edition (includes Teacher's Guide)
$139.95 retail; Lab Pack (Teacher's Guide, four backup disks)
Company: Broderbund Software; 17 Paul Dr.; San Rafael, CA 94903; 415-492-3500 or 800-527-6263
Requirements: Apple IIGS; 512K
Circle Reader Service Number 79

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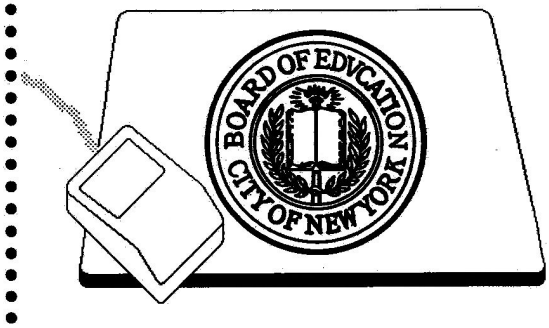


As the largest supplier of imprinted mousepads, we supply over 100 major university bookstores. 100% satisfaction guaranteed.

To Order, Call: **1-800-443-8278**

Computer Expressions, Philadelphia, PA

Circle Reader Service Number 31

Apple IIGS Hardware And Software Directory

About This Directory

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

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

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

An electronic version of the Apple IIGS Hardware And Software Directory can be found on The Source. Type Applesig at any system prompt for additional information.

Accessories

A-B Box
Lets users connect two peripherals to one serial port or share one peripheral between two computers
Apple IIGS.
$99.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Analog Edge; Analog Plus
Joysticks using Injected Resistor Technology
Apple IIGS; other Apple II models.
$29.99 retail; Analog Edge
$39.99 retail; Analog Plus
Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

Anti-Glare Screen MFM12
Anti-glare screen featuring a fine crosshatch weave
Apple IIGS.
$23.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Apple IconTroller
Keyboard mounted joystick
Apple IIGS; other Apple II models.
$49.99 retail; available spring 1989
Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

Apple IIGS Armor
Security system
Apple IIGS.
$165.95 retail
Omni Tech Corp.; 21850 Watertown Rd.; Waukesha, WI 53186; 414-784-4112

Apple IIGS Dust Cover
Cover for Apple IIGS computer, monitor and keyboard
Apple IIGS.
$13.75 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

■ Apple IIGS Dust Cover
Custom-sewn rip-stop nylon covers
Apple IIGS.
Each computer dust cover is made of durable, triple-stitched, machine-washable, lint-free, water-resistant, anti-static rip-stop nylon. Each cover is custom sewn to fit the IIGS monitor, keyboard and compatible printers.
$24.95 retail
Computer Covers Unlimited; 7969 Engineer Rd., Ste. 113; San Diego, CA 92111; 619-277-0622

■ Apple IIGS Soft Keyboard Protector
Clear, precision-molded keyboard protector
Apple IIGS.
Keyboard Protectors are clear, precision-molded keyboard protectors that stay in place while a user works and protect against liquid spills, ashes, food, dirty hands and dust. Each cover hugs the keyboard for proper fitting. This unique design allows smooth, natural operation of the IIGS keyboard.
$29.95 retail
Computer Covers Unlimited; 7969 Engineer Rd., Ste. 113; San Diego, CA 92111; 619-277-0622

Apple Security System
Complete security kit that uses Apple's built-in security slots
Apple IIGS.
$49.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

AppleCenter Plus
Physical security system
Apple IIGS.
$69.95 retail
Doss Industries; 1224 Mariposa St.; San Francisco, CA 94107; 415-861-2223

AppleTalk Clips
Secures AppleTalk network connections
Apple IIGS; AppleTalk network.
$25 retail; 25 clips for plain cables
$13.75 retail; three clips for connection boxes, four clips for plain cables
$25 retail; 25 clips for connection boxes
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Bose RoomMate Powered Speaker System (Special Platinum Edition)
Digital sound speakers with full range drivers, a dual-channel amplifier, an equalization network and distortion-limiting circuitry
Apple IIGS (plugs into headphone jack).
$229 retail; per system
Bose Corp.; The Mountain; Framingham, MA 01701; 508-879-7330

Cable Assemblies
Cable connections for the IIGS and peripherals
Apple IIGS.
$9.95 to $28.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Computer Accessories Cables
Cables
Apple IIGS.
$19.95 retail; C252-2 (Mini-DIN 8 to DB25 adapter)
$24.95 retail; C250-9 (IIGS to ImageWriter II; Apple modem)
$29.95 retail; C255-2 (IIGS to SCSI disk drive)
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Computer Expressions Imprinted Mouse Pads
Customized with Apple-generated artwork or school/company logos
Apple IIGS; mouse.
$9.50 each; 12 pieces
$6.90 each; 72 pieces
$4.70 each; 144 pieces
Quantity discounts available
Computer Expressions; 3833 Chestnut St.; Philadelphia, PA 19104; 800-443-8278

Desktop Printer Stands
Modular, adjustable desktop printer stands available in beige (PRT-1B) or gray (PRT-1G)
$13.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

■ Dilly Dolly Computer Cart

Two-wheel portable cart
Apple IIGS; other Apple II models.

The Dilly Dolly is a two-wheel portable cart with a welded tubular frame securely supported by a 15- by 18-inch wooden base. Two Formica-covered shelves hold equipment. The lower shelf is 25 inches high and allows the unit to be used as a workstation. The computer and disk drive are anchored in place with removable stainless steel brackets. The monitor is secured by an adjustable nylon strap. A six-outlet electric strip with a self-contained power-surge suppressor allows the computer and all accessories to be connected to a single outlet. An optional printer shelf is available.
$185 retail
The Dilly Dolly Co.; 2957 Mariposa Dr.; Burlingame, CA 94010; 415-697-9272

Disk Drive Cleaner Model DSK156

3.5-inch disk drive cleaner
Apple IIGS; disk drive.
$8.99 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

DisKeeper

Organization product that stores 3.5-inch disks in a three-ring binder
$6.95 retail; three pages
$19.95 retail; black binder with five pages
DisKeeper Systems, A Cobar Company; 301 Highland Rd.; Cheltenham, PA 19012; 215-379-2440

DSM802 And DSM804

Two- and four-way compact data switches with 8-pin mini DIN connectors
Apple IIGS; peripherals.
$49.95 retail; DSM802
$59.95 retail; DSM804
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Dust Covers

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

■ Extra Long ADB Keyboard Cable

Eight-foot replacement keyboard cable
Apple IIGS.

Eight feet long, this convenient replacement keyboard cable is four feet longer than the standard Apple keyboard cable. Built to Apple specifications for dependability, the cable is compatible with the Apple IIGS, Macintosh SE and Macintosh II.
$39.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Flightstick

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

IIGS Anti-Glare Filter

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

JuiceBox

Surge suppressor and fan
Apple IIGS.
$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.
$39.95 retail
Secure-It, Inc.; 18 Maple Ct.; E. Longmeadow, MA 01095; 413-525-7039 or 800-451-7592

Kensington Disk Accessories

Disk drive cleaning kit and disk holder
Apple IIGS.
$29.95 retail; Disk Drive Cleaning Kit
$9.95 retail; Disk Pocket
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Kensington Printer Accessories

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

Keyboard/Computer Vacuum Model MV5

Portable vacuum featuring a high-power motor and including brush/nozzle attachments
Apple IIGS.
$18.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Kraft Joysticks

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

Kraft Premium II

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

Kurta IS/GS

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

Lynx Turbo Trackball

Input device; an alternative to the mouse
Apple IIGS; other computers.
$99 retail
Asher Engineering Corp.; 15115 Ramona Blvd.; Baldwin Park, CA 91706; 818-960-4839 or 800-824-3522

Mac-Kit 3A

Security kit
Apple IIGS or Macintosh II.
$39.95 to $49.95 retail
Qualtec Data Products, Inc.; 47767 Warm Springs Blvd.; Fremont, CA 94536; 415-490-8911

Mach I And Mach I Plus

Analog joysticks
Apple IIGS.
$28.95 retail; Mach I
$34.95 retail; Mach I Plus
CH Products; 1225 Stone Dr.; San Marcos, CA 92069; 619-744-8546

Mach II And Mach III Joysticks

Two- and three-button joysticks
Apple IIGS.
$39.95 retail; Mach II Joystick
$54.95 retail; Mach III Joystick
CH Products; 1225 Stone Dr.; San Marcos, CA 92069; 619-744-8546

Mach IV Plus

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

MacPack

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

MicroClene And FloppiClene

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

Mirage

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

Modunet
Networking connectors
Apple IIGS; AppleTalk network.
$37.95 to $47.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Mouse Cleaning Kit With Mouse Pocket
Everything needed for 25 cleanings, more than a full year's supply, includes a mouse pocket
Apple IIGS; mouse.
$24.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

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

MousePouch
Mouse container that carries eight 3.5-inch disks
Apple IIGS.
$5.95 retail
H&H Enterprises; 4069 Renate; Las Vegas, NV 89103; 702-876-6292

Mousetrap
Copy stand; storage space
Apple IIGS; mouse.
$39.95 retail
Gered Corp.; 2401 N.E. Cornell Rd., Ste. 125; Hillsboro, OR 97124; 503-591-8658

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

■ RamStar Group Disk Valets And Body Shields
Disk holders and body shields

Made of Cordura nylon on the outside and 200 Denier nylon on the inside, the Meeting Folder holds an 8.5- by 11-inch writing pad and four 3.5-inch disks. The 12 Pak, 6 Pak and 3 Pak hold 12, six and three 3.5-inch disks, respectively.

The Body Shield Apron and Cobbler are designed to reduce the risks caused by radiation emissions from computers. The inside of the apron is a specially treated insert that shields a wearer and reduces the electromagnetic waves that penetrate the body. They are available in navy, maroon, brown and black.
$17.50 retail; Meeting Folder
$13.50 retail; 12 Pak
$8.50 retail; 6 Pak
$5 retail; 3 Pak
$39.50 retail; Body Shield Apron
$49.50 retail; Body Shield Cobbler
RamStar Group, Inc.; 5996 Paradise Point Dr.; Miami, FL 33157; 305-233-1991 or 800-327-2303

Smart Connector SMC25
Universal serial printer connector
Apple IIGS.
$39.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Sta-Blk Ribbon Cartridge For ImageWriter I And II
Ribbon cartridge
ImageWriter I or II.
$39.95 retail
Chronos Computers; 4186 Sorrento Valley Blvd., Ste. H; San Diego, CA 92121; 619-455-8200

Star Fighter For Apple
Analog joystick
Apple IIGS; other Apple II models.
$26.99 retail
Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

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

System Saver IIGS
Power control center offering four outlets, surge suppression, noise filtering and a whisper-quiet cooling fan
Apple IIGS.
$99.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Tac1+
Joystick used with games and graphics
Apple IIGS; other Apple II models.
$29.99 retail
Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

Tilt Swivel Base Model W30
Twelve-inch tilt swivel base
$24.95 retail
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Turbo Mouse ADB
Trackball offering auto-acceleration feature, 200 CPI pinpoint precision and two mouse buttons
Apple IIGS.
$169.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Universal Copy Stand
Adjustable stand that attaches to the side of any monitor to place working copy next to the screen, directly in a user's line of vision
Apple IIGS.
$29.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Universal Security Kit
Physical security system for the IIGS
Apple IIGS.
$49.95 retail
Grimes Co.; 115 S. Arovista Circle; Brea, CA 92621; 714-671-3931

Whimsical Computer Stationery
Computer stationery featuring boats, bears, butterflies, dinosaurs, holidays, sea gulls and more
$12.95 retail
Computer Sensations, Inc.; PO Box 3744; Long Beach, CA 90803; 213-434-2655 or 800-848-9001

Animation

Animation Station For Apple
Computer design pad and graphics program; useful as an educational tool or for creating business and school presentations
Apple IIGS; other Apple II models; 48K; ProDOS 8; not copy protected.
$99.95 retail
Suncom, Inc.; 290 Palatine Rd.; Wheeling, IL 60090; 312-459-8000

Art And Film Director
Full-featured paint and animation package
Apple IIGS; 512K; ProDOS 16; not copy protected.
$79.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Fantavision IIGS
Animation and special effects program; supports Apple IIGS sound capabilities
Apple IIGS; color monitor; 256K; ProDOS 8; copy protected.
$59.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500 or 800-527-6263

The Graphics Studio
Easy-to-use paint program with animation
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Iconix IIGS
Super-high-resolution graphics and animation interface for AppleSoft Basic and the Apple IIGS
Apple IIGS; two drives; RGB monitor; 512K; ProDOS 8; not copy protected.
$49.95 retail
So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298 or 714-963-3392

VCR Companion
Creates colorful titles, credits, introductions, intermissions and endings for videotapes
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$49.95 retail
$59.95 retail; school edition
$119.95 retail; lab pack
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500 or 800-527-6263

Video Link
Provides access to video laser players while inside another software program
Apple IIGS; laser disc player; 512K; ProDOS 16; not copy protected.
$79 retail
Knowledgeware; PO Box 2292; Paso Robles, CA 93447; 805-238-5233

Video Shop
Allows text additions to videotape productions; for use in the home, schools and cable companies
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$19.99 retail
Jagware; PO Box 41; Orange City, IA 51041; 712-737-4531

Viva Presents!
Interactive video authoring system
Apple IIGS; videodisc player; 512K; ProDOS 16; not copy protected.
$179 retail
Knowledgeware; PO Box 2292; Paso Robles, CA 93447; 805-238-5233

AppleWorks

1040Works-X
Integrated templates for preparing individual tax returns
Apple IIGS; other Apple II models; AppleWorks; 256K; ProDOS 8; not copy protected.
$27.95 retail; $3 for 3.5-inch disk
Personal Financial Services; PO Box 1401; Melville, NY 11747; 516-757-3201

1985 To 1988 Collectors Guide — Topps And Donruss Baseball Cards
Hobby software
Apple IIGS; other Apple II computers; AppleWorks; 128K; ProDOS 8; not copy protected.
$19.95 retail
$6 retail; updates
Pop-Fly Software, Division of Product Control, Inc.; 345-B N. McLean Blvd.; S. Elgin, IL 60177; 312-741-5915

Agent Organizer Program
Insurance templates
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$69.95 retail
Info-Med; PO Box 24412; Jacksonville, FL 32241-4412; 904-723-2771

■ AppleWorks Forum
Monthly newsletter

The AppleWorks Forum is a 28-page monthly newsletter that is filled with useful tips and techniques for AppleWorks users. According to the Users Group, the Forum is the largest periodical for AppleWorks support.
$3 retail; each monthly issue
$27 retail; one-year subscription
National AppleWorks Users Group; PO Box 87453; Canton, MI 48187; 313-454-1115

AppleWorks; AppleWorks/Network
Provides word processing, database management, mail merge and spreadsheet analysis; extends to the AppleTalk Network System
Apple IIGS; other Apple II models.
$249 retail; AppleWorks
$1,414 retail; AppleWorks 10-pack
$1,616 retail; AppleWorks/Network
(For AppleWorks upgrade information call 800-544-8554)
Claris Corp.; 440 Clyde Ave.; Mountain View, CA 94043; 415-962-8946

FactWorks Volumes I — IV
More than 120 AppleWorks databases designed for student research
Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.
$32.95 retail; per volume
ImagiMedia Software; 16640 Roscoe Pl.; Sepulveda, CA 91343; 818-894-1131 or 800-544-3228

Federal Tax Forms, 1988 Edition
AppleWorks spreadsheet templates used for preparing tax forms
Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; copy protected.
$39.95 retail
Sky Computer Resources; PO Box 204; Portland, OR 97207; 503-234-7291

Graphic Edge
Creates color charts and graphs within AppleWorks spreadsheets
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$89 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

■ The Kula Index
A series of AppleWorks database files, which allow users to find articles and reviews that appeared in various computer publications
Apple IIGS; 128K; ProDOS 8; AppleWorks; not copy protected.

The Kula Index is an AppleWorks database covering articles and reviews from Apple II publications, as well as selected Macintosh and other publications. Among the publications covered in this edition are the major Apple publications A+, Call-A.P.P.L.E., InCider, Nibble and Open-Apple; as well as smaller publications, such as APDAlog, Scarlett and Reboot.
$6.95 retail
Kula Software; 2118 Kula St.; Honolulu, HI 96817; 808-595-8131

Loan Qualifier
Spreadsheet template designed for mortgage brokers, loan officers and real estate agents
Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.
$99 retail
Financial Microware; PO Box 40; Cupertino, CA 95015; 408-446-5639

Sports Scheduler
Creates league schedules for any sport
Apple IIGS; other Apple II models; 80 column card; 128K; ProDOS 8; copy protected.
$89.99 retail; introductory price
$119.95 retail; list price
Sports Software Associates; 75 Recreation Park Dr.; Hingham, MA 02043; 617-749-7880

The TimeOut Series
AppleWorks enhancements
Apple IIGS; other Apple II models; AppleWorks; each program requires 128K; ProDOS 8; not copy protected.
$49.95 retail; GS Font Editor
$49.95 retail; Program Writer
$49.95 retail; TimeOut DeskTools
$49.95 retail; TimeOut DeskTools II
$49.95 retail; TimeOut FileMaster
$89.95 retail; TimeOut Graph
$25.00 retail; TimeOut MacroTools
$25.00 retail; TimeOut MacroTools II
$49.95 retail; TimeOut PowerPack
$69.95 retail; TimeOut QuickSpell
$49.95 retail; TimeOut SideSpread
$59.95 retail; TimeOut SpreadTools
$69.95 retail; TimeOut SuperFonts
$49.95 retail; TimeOut Thesaurus
$59.95 retail; TimeOut UltraMacros
Beagle Bros., Inc.; 6215 Ferris Sq., Ste. 100; San Diego, CA 92121; 619-452-5500, 800-345-1570 (orders) or 800-992-4022 in CA (orders)

Vacation Orlando
Travel software series featuring hotel and resort listings, area attractions and shopping and dining guides for Orlando and Disney World
Apple IIGS; other Apple II models; AppleWorks; 128K; ProDOS 8; not copy protected.
$19.95 retail
Pop-Fly Software, Division of Product Control, Inc.; 345-B N. McLean Blvd.; S. Elgin, IL 60177; 312-741-5915

WriteWorks
Makes the AppleWorks word processor a more powerful, flexible word processing system
Apple IIGS; other Apple II models; 256K; ProDOS 8; not copy protected.
$29.95 retail
Michael Crane; 1110 W. Alamos; Fresno, CA 93705; 209-225-1394

Books And Publications

1001 Things To Do With Your Apple IIGS
Useful activities for an Apple IIGS user
$12.95 retail; paperback
$18.95 retail; hardbound (book number 2886)
Tab Books, Inc.; PO Box 40; Blue Ridge Summit, PA 17294-0850; 800-233-1128

Advanced AppleWorks — 2nd Edition
Insight into AppleWorks
$17.95 retail (book number 3048)
Tab Books, Inc.; PO Box 40; Blue Ridge Summit, PA 17294-0850; 800-233-1128

■ Apple IIGS Assembler Toolbox Quick Reference; C Toolbox Quick Reference
Summaries of the toolbox calls

The Apple IIGS Assembler Toolbox Quick Reference and the Apple IIGS C Toolbox Quick Reference are

summaries of the toolbox calls, shown as used from assembly language and C (respectively), up-to-date for System Disk 3.2 (the interfaces supplied in APW 1.0.1 and MPW IIGS 1.0).

The entries include the call name, parameters and a short description of the call. These Quick References summarize the 1,300 pages in the Toolbox Reference into a compact document. They do not replace it, however, because not enough detail is supplied to use these references stand alone.
$20 each retail
APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

Apple IIGS Assembly Language Programming
Assembly language tutorial
$24.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

The Apple IIGS Book
Chronicles the Apple IIGS computer from conception to development
$19.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

Apple IIGS Firmware Reference
Technical guide for programmers and hardware designers
$24.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS Hardware Reference
Provides an extensive description of the mechanisms and internal operations of an Apple IIGS
$24.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS Machine Language For Beginners
Assembly language tutorial for use with the Merlin 8/16 assembler
Apple IIGS; 512K for disk portion; ProDOS 16; not copy protected.
$19.95 retail; book
$15.95 retail; disk for book
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

Apple IIGS ProDOS 16 Reference
Technical reference source packaged with ProDOS 16 software and the System Loader
$29.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Apple IIGS Technical Reference
Apple IIGS architecture overview
$19.95 retail
Osborne/McGraw-Hill; 2600 Tenth St.; Berkeley, CA 94710; 415-548-2805 or 800-227-0900

■ Apple IIGS Toolbox Reference Update
Update to the two-volume Apple IIGS Toolbox Reference

The Apple IIGS Toolbox Reference Update is the final draft of a manual that contains new material describing numerous changes to the Toolbox since the two-volume Apple IIGS Toolbox Reference set was compiled, facts about the Apple IIGS Toolbox that were not available to get into the Apple IIGS Toolbox Reference and corrections to the Apple IIGS Toolbox Reference. There are four previously undocumented tool sets (Audio Compression and Expansion, Note Synthesizer, Note Sequencer and MIDI Tools), 65 new tool calls and numerous corrections and additions. There is also considerable new descriptive material. In addition to an index to this manual there is an index to all tool calls, both in this manual and in the Toolbox Reference.
$30 retail
APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732 •

Apple IIGS Toolbox Reference, Vols. I And II
Toolbox description book in two volumes
$26.95 each retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

The Apple IIGS Toolbox Revealed
Introduces a reader to the Toolbox and other IIGS circuits
$21.95 retail
Bantam Books, Inc.; 666 Fifth Ave.; New York, NY 10103; 212-765-6500

Discovering Science On Your Apple II, II+, IIc And IIGS
Guidebook designed for individual student use or as a supplemental text for use in middle or junior high school science classes
$14.95 retail; paperback
Tab Books, Inc.; PO Box 40; Blue Ridge Summit, PA 17294-0850; 800-233-1128

■ Exploring Apple GS/OS And ProDOS 8
Provides programming techniques for the GS/OS and ProDOS 8 operating systems

Written by an expert Apple programmer, Exploring Apple GS/OS And ProDOS 8 presents sophisticated programming techniques for the new GS/OS operating system for the Apple IIGS, as well as the ProDOS 8 operating system for the Apple IIe and IIc.
$21.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Exploring The Apple IIGS
Graphics and sound programming guide
$22.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

■ GS/OS Reference, Volume I And II
Technical references to GS/OS

The beta draft of Volume I of the technical reference to GS/OS describes how applications interact with GS/OS, details all application-level GS/OS calls and documents the file system translators (FSTs).

The beta draft of Volume II of the technical reference to GS/OS describes GS/OS's application interface to drivers. It also describes the driver interface to GS/OS and describes how to write and install GS/OS interrupt handles and signal handlers — code segments that execute automatically in response to hardware or software requests.
$35 each retail
APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

Human Interface Guidelines
Defines the desktop interface used in Apple IIGS-specific programs
$14.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

ImageWriter LQ Reference
Technical reference source for printer
$22.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Inside ProDOS 16
Examines the latest version of ProDOS 16
$24.95 retail; paperback
Tab Books, Inc.; PO Box 40; Blue Ridge Summit, PA 17294-0850; 800-233-1128

LaserWriter Reference
Technical resource for laser printers
$19.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Programmer's Introduction To The Apple IIGS
Essential concepts for programming the Apple IIGS
$32.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Programming The 65816
Teaching manual and reference guide for the 65816
$24.95 retail
Brady Books/Simon & Schuster; 1 Gulf + Western Plaza, 14th Fl.; New York, NY 10023; 212-373-8500

■ Programming The Apple IIGS In Assembly Language
Shows how to program the Apple IIGS in a step-by-step manner

This step-by-step approach provides the fundamental tools necessary each time an Apple IIGS application is created in 65816 assembly language.

This reference can be used to learn about: 65816 assembly language programming concepts; using the Apple IIGS Programmer's Workshop development environment to develop for the Apple IIGS toolbox; and Apple IIGS system architecture for advanced project development.
$21.95 retail; book
$20 retail; disk (available from: Ron Lichty, Author; PO Box 27262; San Francisco, CA 94127; 415-564-2697)
$39 retail; book and disk
Brady Books/Simon & Schuster; 1 Gulf + Western Plaza, 14th Fl.; New York, NY 10023; 212-373-8500

Programming The Apple IIGS In C And Assembly Language
Source for programmers who want to program in C and to integrate assembly language routines into their programs

$18.95 retail
Howard W. Sams & Co.; 4300 W. 62nd St.; Indianapolis, IN 46268; 317-298-5400 or 800-928-7267

Public Domain Catalog
Public domain software catalog
Apple IIGS; other Apple II models; 512K; ProDOS 8 or ProDOS 16; not copy protected.
$7.50 each; disk
Catalog free on request
Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

Technical Introduction To The Apple IIGS
Overview of the IIGS for programmers
$9.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

■ Using AppleWorks GS
Comprehensive guide to using the six integrated applications of AppleWorks GS

Using AppleWorks GS covers the features, functions and commands for the six applications included in AppleWorks GS. The initial chapters provide introductory material on the AppleWorks GS desktop interface and how to launch the program. The book then discusses each application, with a description of basic features, shortcuts and sample applications.
$19.95 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

Business Productivity

BusinessWorks
General Ledger, Accounts Payable, Accounts Receivable, Inventory Control, Payroll and the System Manager
Apple IIGS; two 3.5-inch disks or hard disk; 80-column printer; 128K; ProDOS 8; not copy protected.
$195 retail; each module
$95 retail; System Manager
$495 retail; complete system bundle (includes all except Payroll)
Manzanita Software Systems; One Sierra Gate Plaza, Ste. 200-A; Roseville, CA 95678; 800-531-3552 or 800-447-5700 in CA

CADApple 3.5
Contains sophisticated precision drafting tools for educational and professional use
Apple IIGS; Apple IIc and IIe; 128K; Pascal 1.3; not copy protected.
$395 retail
Versacad Corp.; 2124 Main St.; Huntington Beach, CA 92648; 714-960-7720

Calendar Crafter
Creates customized calendars
Apple IIGS; printer; 512K; ProDOS 16; copy protected.
$89 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Darad IIe
Database and report generator that features search mode, edit mode and print mode
Apple IIGS; 256K; ProDOS 8; not copy protected.
$54.95 retail; Darad IIe
$74.95 retail; Darad IIe with Self Teaching Manual
$34.95 retail; Darad IIe Report Generator (for custom reports)
DAR Systems International; PO Box 16-4933; Miami, FL 33116-4933; 305-529-3572

DB Master Version 5; DB Master Professional
Versatile database management systems; DB Master Professional brings multifile, relational capability to the DB Master user
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$179 retail; DB Master Version 5
$295 retail; DB Master Professional
$500 retail; DB Master Version 5/Multiuser
$500 retail; DB Master Version 5/Classroom
Stone Edge Technologies, Inc.; PO Box 3200; Maple Glen, PA 19002; 215-641-1825

Dental Office Management IIP
Integrated application for patient billing, claim-form preparation, appointment scheduling and more
Apple IIGS; SCSI hard drive; 3.5-inch disk drive; 130-column printer; 512K; ProDOS 16; not copy protected.
$1,995.95 retail
CMA Micro Computer; 55888 Yucca Trail; PO Box 2080; Yucca Valley, CA 92286-2080; 619-365-9718

GS File
Graphical database management system designed for the IIGS
Apple IIGS; 768K; ProDOS 16; not copy protected.
$99.95 retail
Softwood Co.; PO Box 90331; Santa Barbara, CA 93190; 805-964-8622

List Plus
Database and report generator for business or personal records, mailing lists, labels and more
Apple IIGS; 768K; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Medical Office Management IIP
Medical office system for patient billing, claim-form preparation, appointment scheduling and more
Apple IIGS; SCSI card; SCSI hard disk; 130-column printer; 512K; ProDOS 16; not copy protected.
$1,995.95 retail
CMA Micro Computer; 55888 Yucca Trail; PO Box 2080; Yucca Valley, CA 92286-2080; 619-365-9718

Notes 'N Files
Database filing system with a word processor-like editor and powerful mail merge
Apple IIGS; 512K; ProDOS 16; not copy protected.
$95 retail
DataPak Software, Inc.; 14011 Ventura Blvd., Ste. 507; Sherman Oaks, CA 91423; 818-905-6419 or 800-327-6703

P.D.E.
Total of 62 disks of public domain shareware and software
Apple IIGS; 512K; ProDOS 16; not copy protected.
$39.95 retail; set of the Best of GS (includes DAs, songs, games, graphics and fonts)
Write for free catalog
P.D.E.; 2074C Walsh Ave., Dept. 71; Santa Clara, CA 95050; 408-496-0624 or 800-331-8125

Profiler 4.0
Flexible database management system; uses both a textual and mouse-based interface
Apple IIGS; other Apple II models; hard disk drive recommended; 128K; ProDOS 8; not copy protected.
$129 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Public Domain Software On File CD-ROM
CD-ROM public domain software
Apple IIGS; other Apple II models; color or monochrome monitor; Apple II SCSI Card Rev C; CD-ROM drive with compatible SCSI interface; printer optional; 64K; ProDOS 8 or ProDOS 16; not copy protected.
$195 retail
Facts On File, Inc.; 460 Park Ave. S; New York, NY 10016; 212-683-2244

Salary Magic
Spreadsheet/database program for the management of negotiation process/salary schedules
Apple IIGS; 512K; ProDOS 8; not copy protected.
$395 retail
Magic Software, Inc.; 1706 Galvin Rd. S; Bellevue, NE 68005; 402-291-0670 or 800-342-6243

Tax Preparer
Fully automated tax preparation software designed to simplify tax calculations for professional tax preparers and individuals with involved returns
Apple IIGS; other Apple II models; 128K minimum; ProDOS 8; not copy protected.
$250 retail
$75 retail; annual updates
HowardSoft; 1224 Prospect St., Ste. 150; La Jolla, CA 92037; 619-454-0121

ThunderView
Low-cost program for creating personalized slide shows; designed for users of painting software and scanners
Apple IIGS; other Apple II models; RGB monitor recommended; 64K; ProDOS 8; not copy protected.
$29 retail
Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94563; 415-254-6581

Trio Plus
Integrated word processor, database, spreadsheet, desk accessories
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$29.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

VIP Professional
Lotus 1-2-3-compatible spreadsheet with database and graphics features
Apple IIGS; extended memory card recommended; 512K; ProDOS 8; not copy protected.
$199.95 retail
ISD Marketing, Inc.; 2651 John St., Unit 3; Markham, Ontario, Canada L3R 2W5; 416-479-1880

Visualizer
Business graphics program
Apple IIGS; 512K; ProDOS 16; not copy protected.
$99.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Creative

816/Paint
Color graphics program that supports all Apple color graphics modes
Apple IIGS; other Apple II models; color monitor; 512K; ProDOS 16; not copy protected.
$75 retail
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49508; 616-698-0888

Award Maker Plus
Graphics software for creating awards, certificates, licenses, coupons and more
Apple IIGS; printer; 64K; ProDOS 8; not copy protected.
$39.95 retail; Award Maker Plus
$24.95 retail; Sports Award Library
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49508; 616-698-0888

Car Builder
Scientific simulation program for designing, constructing, modifying and testing cars; ages 8 to adult
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

■ Cartooners
Cartoon studio for children ages 6 to 12
Apple IIGS; 1 MB; ProDOS 16; ImageWriter optional; not copy protected.

Cartooners is a cartoon studio in which users can create and animate colorful characters and scenery to produce musically accompanied stories.

Children can choose from a library of characters to star in their cartoons, such as dogs, cats, bunnies and crackling fires. Characters can then be animated in a variety of ways, including dancing, walking and moon walking. Children can apply speech balloons to each character to create all kinds of imaginative stories and reports for friends and classmates. Cartooners also contains a printing option for children to create their own full-color, illustrated storybooks.
$59.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Clip Art Gallery
Database of more than 650 images designed for use with several Apple IIGS graphics programs
Apple IIGS; graphics program; 512K; ProDOS 16; not copy protected.
$29.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Deluxe Library
Color clip art disks for DeluxePaint II
Apple IIGS: DeluxePaint II; 768K; ProDOS 16; copy protected.
$29.95 each retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

DeluxePaint II
Paint software containing more than 90 painting tools and effects; optional 30 minute videotape of tips and techniques for using DeluxePaint II
Apple IIGS; color monitor; 768K; ProDOS 16; not copy protected.
$99.95 retail; DeluxePaint II
$19.95 retail; Video Guide to DeluxePaint II
$129.95 retail; DeluxeWrite/DeluxePaint II
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Design Your Own Home, Architecture
Allows users to draw floor plans, elevations and structural details
Apple IIGS; 768K; ProDOS 16; not copy protected.
$89.95 retail
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Design Your Own Home, Interiors
Allows users to design room interiors with color, patterns, shapes and furnishings
Apple IIGS; 768K; ProDOS 16; not copy protected.
$89.95 retail
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Design Your Own Home, Landscape
Allows users to plan the grounds around home or office
Apple IIGS; 768K; ProDOS 16; not copy protected.
$89.95 retail; available Spring 1989
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Design Your Own Home, Libraries
Seven disk libraries containing four-dozen house plans, interior or landscape designs
Apple IIGS; one of the Design Your Own Home programs; 768K or more; ProDOS 16; not copy protected.
$29.95 each retail
Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

Draw Plus
Drawing program for use with Paintworks Plus, Writer's Choice Elite and Clip Art Gallery
Apple IIGS; 512K; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Image Master: Basic Paint
Paint program with up to 136 colors on screen at one time and 8 million possible color mixtures
Apple IIGS; 512K; ProDOS 16; not copy protected.
$44.95 retail
Jada Graphics, Inc.; 7615 S. 48th St.; Omaha, NE 68157; 800-634-4552

Paint Write Draw
Three programs in one: Paintworks Plus, Writer's Choice Elite and Draw Plus
Apple IIGS; color monitor; 1.25 MB suggested when using Writer's Choice Elite; 512K; ProDOS 16; not copy protected.
$129.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Paintworks Gold
Sophisticated paint program
Apple IIGS; RGB monitor; 1.25 MB; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Paintworks Plus
Paint program containing clip art gallery of more than 650 images
Apple IIGS; 512K; ProDOS 16; not copy protected.
$79.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Postcards
Creative paint and print product for making postcards, invitations and more
Apple IIGS; Paintworks Plus; 512K; ProDOS 16; not copy protected.
$29.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

ShowOff
Produces professional-looking overhead transparencies, 16-color printed sheets and IIGS interactive video slide shows (includes more than 380 graphics, 126 borders and an icon editor lets users create their own graphics)
Apple IIGS; 512K; ProDOS 16; copy protected

$59.95 retail; consumer edition
$69.95 retail; school edition
$139.95 retail; Lab Pack
$10 retail; teacher's guide
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500 or 800-527-6263

Desk Accessories

CDA Power: Volume 1

Classic desk accessories: Text File Editor, ASCII Table, 65816 Reference Chart, KeyCaps, Scientific Calculator, Mini-GS/OS Shell and Communications Program
Apple IIGS; 150K RAM in addition to the memory requirements of the primary application; not copy protected.
$59.95 retail
360 MicroSystems; 12272 Fox Hound Ln.; Orlando, FL 32826; 407-365-4714

DeskPak Desk Accessories

File tools, calculator, system security lock, file printer, appointment calendar, scrapbook and more under the Apple icon
Apple IIGS; 10K per accessory; ProDOS 16; not copy protected.
$99.95 retail
SSSI, Inc.; 4612 N. Landing Dr.; Marietta, GA 30066; 404-924-2667

The Desktop Manager

Accessories include: note pad; calculator; printer manager; envelope labeler; ASCII chart; screen print; cut and paste; appointment calendar; disk manager; communications manager and macro manager
Apple IIGS; 512K; ProDOS 16; not copy protected.
$39.95 retail
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

■ GS Calendar DA

Installs a calendar on start-up disks
Apple IIGS; 512K; ProDOS 16; not copy protected.

GS Calendar DA lets users install a calendar on any of their start-up disks. The calendar can be brought up at any time, and the window shows the date and time, current month, day and year.

On the right half of the calendar window are nine lines that can be used to enter appointments. Then, on the calendar, whenever a day has an appointment, its box will show a little character as a reminder.
$25 retail
DataPak Software, Inc.; 14011 Ventura Blvd., Ste. 507; Sherman Oaks, CA 91423; 818-905-6419 or 800-327-6703

Pinpoint Desktop Accessories

Includes appointment calender, calculator, communications window, telephone dialer, graphmerge, notepad, quicklabel and typewriter
Apple IIGS; other Apple II models; two disk drives; AppleWorks 1.3 or later version or selected ProDOS applications; extended memory card recommended; 128K; ProDOS 8; not copy protected.
$89 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Pinpoint Starter Pak

Combines Pinpoint Desktop Accessories, Spell 816 and KeyPlayer macro keys on one disk
Apple IIGS; 512K; ProDOS 8; not copy protected.
$149 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Softswitch

Desk accessory that allows users to switch among several applications loaded into RAM
Apple IIGS; 768K; ProDOS 16; copy protected.
$59.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

TDM Super Accessories #1

Add-on ProDOS accessories: file type changer; character ruler; regular file viewer/printer; keyboard lock-out; a clock with job timer capabilities; and more
Apple IIGS; The Desktop Manager; 512K; ProDOS 16; not copy protected.
$39.95 retail
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

TDM Toolkit

Contains information needed to create a user's own desk accessories that work under The Desktop Manager
Apple IIGS; The Desktop Manager; APW assembler; 512K; ProDOS 16; not copy protected.
$39.95 retail
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

Desktop Communications

ASCII Express

Advanced telecommunications program that supports data transfer speeds up to 9,600 baud
Apple IIGS; other Apple II models; modem; 64K; ProDOS 8; not copy protected.
$129.95 retail
United Software Industries; 8399 Topanga Canyon Blvd., Ste. 200; Canoga Park, CA 91304; 818-887-5800 or 800-332-7244

■ Burple

Hardware/software attachment for the Apple IIGS that allows the micro to communicate with the mainframe computer using the Burroughs "poll select" protocol
Apple IIGS; DOS 3.3; not copy protected.

Burple is a hardware/software communications system that unlocks valuable information stored in a mainframe, allowing an Apple user to tap into large databases and process the data on a local level, in a stand-alone environment. It also permits the transmission of data to the Burroughs computer.

Burple transforms an Apple into three distinct systems: Online Microcomputer, for Apple disk to Burroughs file transfer; Intelligent Terminal, for offline data collection and subsequent transfer; and Terminal Emulator, for TD830 or MT983 emulation.
$495 retail
Midwest Data Source, Inc.; 1615 Burney Ave.; Cincinnati, OH 45230; 513-231-2023

Let's Talk

Electronic mail and simultaneous bulletin board system
Apple IIGS; other Apple II models; Hayes AT compatible modem; 512K; ProDOS 8; not copy protected.
$179 retail
$795 retail; File server license
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Mac.Transfer

Transfers data back and forth from Apple II and IBM PC computers to the Macintosh or Apple IIGS
Apple IIGS; other computer; cables or modem; 256K; ProDOS 8; not copy protected.
$60 retail; Mac.Transfer
$22 retail; cables
Southeastern Software; 7743 Briarwood Dr.; New Orleans, LA 70128; 504-246-8438

MouseTalk

Telecommunications product with Mac-like user interface and pull-down menus that accommodates data transfer speeds up to 19,200 bits per second; mouse optional
Apple IIGS; other Apple II models; modem; 128K; ProDOS 8; not copy protected.
$119.95 retail
United Software Industries; 8399 Topanga Canyon Blvd., Ste. 200; Canoga Park, CA 91304; 818-887-5800 or 800-332-7244

Point-To-Point

Versatile telecommunications program
Apple IIGS; other Apple II models; two disk drives; extended memory card recommended; 128K; ProDOS 8; not copy protected.
$129 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Proterm

Telecommunications program featuring scrollback buffer for capturing text on screen
Apple IIGS; other Apple II models; 128K.
$129 retail
Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 602-966-5802 or 800-325-7347

Talk Is Cheap

Communications program; has powerful scripting capability
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$40 retail
Carolina System Software; 3207 Berkeley Forest Dr.; Columbia, SC 29209-4111; 803-776-3936 (bulletin board system support line)

Teleworks Plus

IIGS-specific telecommunications program
Apple IIGS; 512K; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Desktop Publishing

FingerPrint Slide-Show
Desktop presentation and computer slide-show software
Apple IIGS; FingerPrint GSi Version II; 256K; ProDOS 16; not copy protected.
$25 retail
Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

Font Disks 1 And 2
Add-on printer fonts for use with Print-Quick's Quick-Font utility
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
$24.95 retail; Font Disk 1
$24.95 retail; Font Disk 2
Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44111; 216-671-8991

Graphics And Pictures Converter
Allows users to transfer a wide variety of graphic formats between Apple II programs
Apple IIGS; other Apple II models; 512K; ProDOS 8; not copy protected.
$9.95 retail
Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

GraphicWriter Version 3.0
Desktop publisher with combination page layout, graphics and word processing
Apple IIGS; 512K; GS/OS; not copy protected.
$149.95 retail
Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 800-627-3836

GS07 And GS08 Graphics For Print Shop IIGS
Two disks containing multicolor graphics, borders and fonts compatible with The Print Shop IIGS
Apple IIGS; 512K; ProDOS 8; not copy protected.
$7.50 each retail
Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

Labels, Labels, Labels
Makes labels, badges, postcards, name tags, price tags and more
Apple IIGS; other Apple II models; one disk drive; dot matrix printer; 128K; ProDOS 8; not copy protected.
$39.95 retail
Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

MagnaCharta
Presentation graphics program with Macintosh-like user interface
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$64.95 retail
Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44111; 216-671-8991

Medley
IIGS-specific integrated desktop publishing program combining word processing, artwork and page layout capabilities
Apple IIGS; color monitor recommended; 1.25 MB; ProDOS 16; not copy protected.
$195 retail
Milliken Publishing Co.; 1100 Research Blvd.; PO Box 21579; St. Louis, MO 63132-0579; 314-991-4220 or 800-643-0008

Personal Newsletter
Graphics and page composition program
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$59.95 retail
$69.95 retail; academic
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

Print-Quick
Five printer support programs used with word processors, databases and spreadsheets
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
$54.95 retail
Third Wave Technology, Inc.; 11934 Lorain Ave.; Cleveland, OH 44111; 216-671-8991

The Print Shop Graphics Library Sampler Edition
Clip art for The Print Shop IIGS
Apple IIGS; The Print Shop IIGS; 512K; ProDOS 16; not copy protected.
$34.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500 or 800-527-6263

The Print Shop IIGS
Personal publishing program with multicolor graphics editor that allows users to create, design and print out multicolor custom cards, signs, banners and letterheads
Apple IIGS; printer; 512K; ProDOS 8; copy protected.
$59.95 retail
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500 or 800-527-6263

Printrix 1.1
Typesetter of word processing text files
Apple IIGS; printer; 128K; ProDOS 8; not copy protected.
$65 retail
Data Transforms, Inc.; 616 Washington St.; Denver, CO 80203; 303-832-1501

PS Lovers' Utility Set
Makes charts of Print Shop graphics, borders and fonts; also makes bookmarks, mailing labels and envelope cachets
Apple IIGS; other Apple II models; one disk drive; dot matrix printer; 256K; ProDOS 8; not copy protected.
$39.95 retail
Big Red Computer Club; 423 Norfolk Ave.; Norfolk, NE 68701; 402-379-4680

Publish-It! 2
Desktop publishing program that allows users to edit, design, layout and print documents
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$129.95 retail
Timeworks, Inc.; 444 Lake Cook Rd.; Deerfield, IL 60015; 312-948-9200

Springboard Publisher
Desktop publishing program with full-featured page layout, word processor and graphics tools
Apple IIGS; other Apple II models; 128K minimum and 768K optimum; ProDOS 8; not copy protected.
$139.95 retail
Springboard Software, Inc.; 7808 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3915

Springboard Publisher Library
Add-on products to extend the capability of Springboard Publisher
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$39.95 each retail; Works of Art (Assortment Series, Education and Holidays)
$29.95 retail; Springboard Publisher Style Sheets - Newsletters
$29.95 retail; Springboard Publisher Fonts
Springboard Software, Inc.; 7808 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3915

Education

Ant Farm
Helps students examine assumptions using trial and error
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$65 retail; includes backup
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Bounce!
Introduces the concept of pattern and helps develop recognition skills
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$65 retail; includes backup
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Checkerboard Trails
Game involving mathematical and problem-solving skills for grades 3 to 8
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$49 retail
Focus Media, Inc.; PO Box 865; 839 Stewart Ave.; Garden City, NY 11530; 516-794-8900 or 800-645-8989

The Children's Writing And Publishing Center

Word processing and desktop publishing for ages 9 and up
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59.95 retail; home edition
$79.95 retail; school edition
$139.95 retail; lab pack
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Computer Mad Libs

Strategic word and party game using SmoothTalker
Apple IIGS; 768K; ProDOS 16; not copy protected.
$19.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Conquering Decimals (+,-)

Mathematics; grades 4 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Conquering Fractions (+,-)

Mathematics; grades 5 through 8
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Coordinate Math

Teaches graphing points in a Cartesian coordinate system for grades 4 through 12
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

CSL Marks

Grading software for teachers
Apple IIGS; 128K; ProDOS 8; not copy protected.
$75 retail; individual teacher license
$250 retail; school site license
Chancery Software, Ltd.; 500-1168 Hamilton St.; Vancouver, BC, Canada V6B 2S2; 604-685-2041

■ Curious George Goes Shopping

Learning adventure
Apple IIGS; 64K; ProDOS 8; copy protected.

Curious George goes shopping is a fun-filled learning adventure for children. The Interactive Story, created exclusively for this software, features the classic storybook character. Difficulty levels give additional experience with classification skills, and worksheets provide additional opportunities to further explore and classify objects.
$24.95 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 214-727-3346

■ Curious George In Outer Space

Explores comparison skills
Apple IIGS; 64K; ProDOS 8; copy protected.

Children travel with George to a strange planet in a fun-filled learning adventure. The Interactive Story, created exclusively for this software, features the classic storybook character. Children follow along as George climbs aboard a spaceship that takes him to a planet inhabited by lovable space friends of various sizes. The children help George return home by comparing tall and short, long and short and big and small.

The program includes educational activities that extend the learning process. Two levels of difficulty are available. The package includes a Curious George poster and four reproducible worksheets that provide extra practice with size comparison concepts.
$24.95 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 214-727-3346

■ Curious George Visits The Library

Explores position concepts
Apple IIGS; 64K; ProDOS 8; copy protected.

George becomes lost while visiting the library with the man in the yellow hat. In his search to find his friend, he introduces children to position words and concepts presented in the unique Interactive Story. Children participate in the adventure while practicing these position words: on, off, in back of, next to, in, out, over, under, on top of, in front of and up and down.

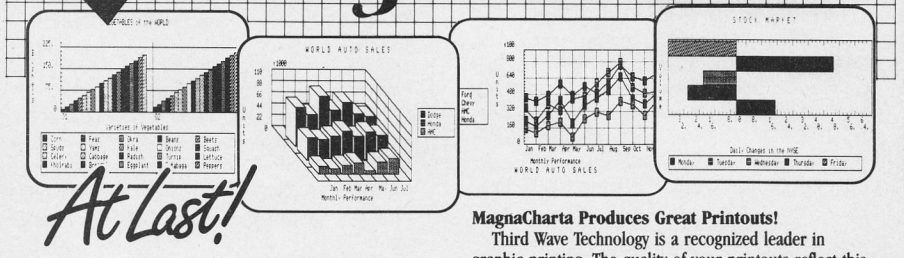
The program includes educational activities that help reinforce the position concepts. The package includes a Curious George poster and four reproducible worksheets that extend the educational value of the program.
$24.95 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 214-727-3346

Dataflo Math Duo

First Math, an introduction to number concepts and more; Flash Math, tutorials for addition, subtraction and multiplication; features additional speech capability
Apple IIGS; other Apple II models; Applied Engineering's Phasor board for added speech capability; 64K; ProDOS 8; not copy protected.
$49.95 each retail
Dataflo Computer Services, Inc.; HC 32 - Box 1; Enfield, NH 03748; 603-448-2223

New! Version 3.0!

MagnaCharta™



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11934 Lorain Ave • Cleveland OH 44111 • (216) 671-8991

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AppleWorks® Apple Computer Inc. DB Master® Stone Edge Technology, Inc.
Dazzle Draw® Broderbund, Inc. Publish It!® TimeWorks, Inc.

Important Note: MagnaCharta is supplied on a 5.25" floppy disk. Instructions are provided for installation on 3.5" disks and other ProDOS storage devices.

Dataflo Spelling And Vocabulary Trio
Lelps, a word Scrambler; Spell and Tell, a series of blank spaces that, when filled, reveal the correct word; and Tell and Spell, a classic spelling bee simulation; available in English and Spanish; all feature additional speech capability
Apple IIGS; other Apple II models; Applied Engineering's Phasor board for additional speech capability; 64K; ProDOS 8; not copy protected.
$49.95 each retail
Dataflo Computer Services, Inc.; HC 32 - Box 1; Enfield, NH 03748; 603-448-2223

Decimal Concepts
Mathematics
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Designasaurus
Primary education program; composed of Walk-A-Dinosaur, Build-A-Dinosaur and Print-A-Dinosaur
Apple IIGS; 768K; ProDOS 8; not copy protected.
$49.95 retail
Britannica Software; 345 4th St.; San Francisco, CA 94107; 415-546-1866

Dr. Peet's Talk/Writer
From letter recognition to word processing, "reads" all text and "sings" all menu items for children in grades Pre-K to 2
Apple IIGS; other Apple II models; 64K; Echo speech synthesizer; copy protected.
$69.95 retail
Hartley Courseware, Inc.; Box 419; Dimondale, MI 48821; 517-646-6458 or 800-247-1380

Dueling Questions
Educational game where students compete to answer questions from selected categories
Apple IIGS; 512K; ProDOS 16; not copy protected.
$39.95 each retail
Coyote Computing; PO Box 265; Dewitt, NY 13214; 315-446-1035

Easy Street
Shape and number recognition with optional speech for children ages 4 to 7
Apple IIGS; other Apple II models; color monitor recommended; 64K; DOS 3.3; Echo IIb board optional; copy protected.
$49.99 retail
Mindplay; 100 Conifer Hill Dr., Bldg. 3, Ste. 301; Danvers, MA 01923; 617-774-1760

Electric Crayon Deluxe - Dinosaurs Are Forever
Teaches dinosaur evolution
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$29.95 retail
Polarware, Inc.; 1055 Paramount Pkwy., Ste. A; Batavia, IL 60510; 312-232-1984

Electric Crayon Deluxe - Holidays And Seasons
Computer coloring book that offers custom banner, calendar and poster-making capabilities
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$29.95 retail
Polarware, Inc.; 1055 Paramount Pkwy., Ste. A; Batavia, IL 60510; 312-232-1984

Elfe
Grammar for French students
Apple IIGS; 512K; ProDOS 8; copy protected.
$440 retail; complete set
Conduit; The University of Iowa, Oakdale Campus; Iowa City, IA 52242; 319-335-4100

Equation Math
Plotting algebraic equations
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

ESC System
Integrated learning system that features a comprehensive K through 8 reading, language arts and mathematics software curriculum; works in a networked environment
Apple IIGS; 1.25 MB per workstation; ProDOS 16; copy protected.
Call for pricing
Education Systems Corp.; 6170 Cornerstone Ct. E; San Diego, CA 92121; 619-587-0087

Explore-A-Science
Offers elementary and middle school students exciting and realistic reading/writing based scientific investigations
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$75 retail; academic
$39.95 retail; home version (available from William K. Bradford, Inc.; 800-421-2009 or 617-862-2570
D.C. Heath and Co.; 2700 N. Richardt Ave.; Indianapolis, IN 46219; 800-334-3284

Explore-A-Story
Reading and writing skills environment for elementary and middle school students; includes 12 titles based on an original storybook
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$75 retail; academic
$39.95 retail; home version (available from William K. Bradford, Inc.; 800-421-2009 or 617-862-2570 in MA)
D.C. Heath and Co.; 2700 N. Richardt Ave.; Indianapolis, IN 46219; 800-334-3284

■ Fact Blaster
Helps students learn facts; accommodates any subject
Apple IIGS; 64K; ProDOS 8; copy protected.

Designed to help students in the cognitive learning domain, Fact Blaster presents a user with questions, answers and a challenge to reach the peak. The object is to manipulate the Fact Blaster figure horizontally and then to blast a user through the correct answer. With each correct response, the figure moves to the next level. Once a user reaches the highest level, he or she is rewarded with a short educational game.

Fact Blaster will accommodate any type of question and is suitable for any subject area in which facts must be learned.

$24.95 retail
DEC Software; 5307 Lynnwood Dr.; West Lafayette, IN 47906

File-Talk And Word-Talk
Talking database and word processor
Apple IIGS; other Apple II models; synthesizer; 128K each program (512K preferred); ProDOS 16; not copy protected.
$195 retail; File-Talk
$195 retail; Word-Talk
Access Unlimited-Speech Enterprises; 9039 Katy Freeway, Ste. 414; Houston, TX 77024; 713-461-0006

First Letters And Words
Alphabet learning program with talking narrator for children ages 3 through 6
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

First Shapes
Basic geometric shapes recognition program; ages 3 through 8
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Fractal Explorer
High-resolution color graphic fractal generation program
Apple IIGS; 256K; ProDOS 8; not copy protected.
$39.95 retail
Eclat Microproducts; PO Box 570-756; Miami, FL 33257-0756; 305-233-4666

Fraction Practice Unlimited
Develop fraction skills for children in grades 4 through 6
Apple IIGS; other Apple II models; 128K; CDOS; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Fractions Concepts, Inc.
Introduction to fractions for grades 4 through 6
Apple IIGS; other Apple II models; 128K; CDOS; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Geometry
Interactive educational program designed to serve as an extension of classroom work, a refresher or a private tutor
Apple IIGS; 512K; ProDOS 16; copy protected.
$79.95 retail; consumer version
$89.95 retail; School Edition (includes backup disk and Teacher's Guide)
$179.95 retail; Lab Pack (includes Teacher's Guide and five disks)
Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-492-3500 or 800-527-6263

Gertrude's Secrets
Builds basic thinking and problem-solving abilities for children ages 4 to 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$39.95 retail; home version
$59.95 retail; academic (includes backup disk, teacher's guide, online and offline student activities)
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Gradebook Plus ProDOS Edition
Teachers' student management program
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$59.95 retail; individual version
$199.95 retail; school site license
E.M.A. Software; PO Box 339; Los Altos, CA 94023; 415-969-4679

Heath Reading Program's Read, Write And Publish
Writing skills environment for grades K through 8; includes eight levels in each grade level package
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$75 retail; academic
D.C. Heath and Co.; 2700 N. Richardt Ave.; Indianapolis, IN 46219; 800-334-3284

Hide And Find
Memory game designed to reinforce recognition of the alphabetic and numeric characters and basic math symbols
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
$29.95 retail
Dataflo Computer Services, Inc.; HC 32 - Box 1; Enfield, NH 03748; 603-448-2223

Homework Helper-Math Word Problems
Solving math word problems by building equations; grades 7 through 12
Apple IIGS; 64K; ProDOS 8; copy protected.
$49.95 retail
Spinnaker Software Corp.; 1 Kendall Sq.; Cambridge, MA 02139; 617-494-1200

Homework Helper-Writing
Term paper program for students in grades 7 through 12
Apple IIGS; 64K; ProDOS 8; copy protected.
$49.95 retail
Spinnaker Software Corp.; 1 Kendall Sq.; Cambridge, MA 02139; 617-494-1200

Homeworker
Secondary education program providing Word Processor, Outliner, Flash Card Maker, Grade Keeper, Calendar and Calculator
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59.95 retail; Home Edition
$179.95 retail; Classroom Edition with 10 disks
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Information Laboratory Software: Earth Science IIGS
Research database of comprehensive earth science information and interesting facts; includes interactive graphics
Apple IIGS; 512K; ProDOS 16; not copy protected.
$96 retail; consumer
$77.76 retail; academic
Addison-Wesley Publishing Co., Inc.-Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Information Laboratory Software: Life Science IIGS
Research database of comprehensive life science information and interesting facts; features interactive graphics; includes tutorial and problem-solving situations
Apple IIGS; color monitor; 512K; ProDOS 16; not copy protected.
$72 retail; school
$77.76 retail; consumer
Addison-Wesley Publishing Co., Inc.-Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Information Laboratory Software: Physical Science IIGS
Research database
Apple IIGS; 512K; GS/OS; not copy protected.
$72 retail; consumer
$77.76 retail; academic
Addison-Wesley Publishing Co., Inc.-Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

■ Information Laboratory Software: World History IIGS
Research database
Apple IIGS; 512K; GS/OS; not copy protected.
Information Laboratory Software: World History IIGS is a dedicated database that provides historical information needed for the analysis of problems posed in the accompanying search sheets. Information is linked graphically and conceptually through maps and time lines so that universal concerns, such as resources, industry and communications, can be explored in relation to time and place.
$96 retail; consumer
$77.76 retail; academic
(available May 1989)
Addison-Wesley Publishing Co., Inc.-Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Information Laboratory: Chemistry IIGS
Research database
Apple IIGS; 512K; GS/OS; not copy protected.
$96 retail; consumer
$77.76 retail; academic
Addison-Wesley Publishing Co., Inc.-Electronic Publishing; 2725 Sand Hill Rd.; Menlo Park, CA 94025; 415-854-0300 or 800-227-1936

Joshua's Reading Machine
Reading program for ages 4 to 7
Apple IIGS; other Apple II models; color monitor; 128K; ProDOS 8; not copy protected.
$39.95 retail
$79.95 retail; academic (contains five sets of disks, scope and sequence chart and an instruction manual)
Compu-Teach Corp.; 78 Olive St.; New Haven, CT 06511; 203-777-7738 or 800-448-3224

KidsTime II
Letter-recognition, keyboard skills and introductory music programs for ages 3 to 8
Apple IIGS; color monitor; 512K; ProDOS 16; not copy protected.
$39.95 retail
Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

KidTalk
Talking notebook with word-oriented and picture-oriented pull-down menus
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Logo Plus
Allows students to create maps, animated stories, improved adventure games, detailed charts and graphs and more complex and realistic pictures
Apple IIGS; other Apple II models; 128K; ProDOS 8; single unit and lab packs copy protected; site license not copy protected.
$119.95 retail; single unit
$299.95 retail; lab pack (includes 10)
$399.95 retail; lab pack (includes 20)
$399 retail; site license
Terrapin, Inc.; 376 Washington St.; Malden, MA 02148; 617-322-4800

Magic Spells
Sharpen spelling skills for children ages 6 to 12
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$39.95 retail; home edition
$59.95 retail; school edition (includes backup disk, teacher's guide and online and offline activities)
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

■ Map Skills

Teaches and reinforces map reading skills; ages 8 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Map Skills, for ages 8 and up, effectively teaches and reinforces map reading skills while enhancing other important skills, including planning, revising, problem solving and hypothesizing. Students follow trip instructions around maps of five different communities, each of which has a different scale and flavor. Users "drive" on screen, freely scrolling across a map that is up to six times larger than the screen display. They face realistic situations, such as searching for the shortest route, avoiding busy intersections, getting lost or having sketchy instructions.

Map Skills contains 100 prestructured trips on 10 difficulty levels (20 trips for each of five maps). Trip instructions are simple at the earliest levels, but become complex and even mysterious at later levels.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Math And Me

Builds early math skills for children ages 3 to 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$39.95 retail
$129.95 retail; school lab pack (contains five disks)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Math Blaster Plus

Addition and subtraction, multiplication and division, fractions, decimals and percents; for grades 1 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$49.95 retail
$149.95 retail; school lab pack (contains five disks)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Math Masters

Consists of two programs that cover basic mathematical operations for numbers from 0 through 25
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$46 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 214-727-3346

Math Rabbit

Introduces key math concepts in a series of four image games; ages 4 to 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$39.95 retail; home edition
$59.95 retail; academic edition
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Math Word Problems

Provides practice at analyzing and solving math word problems for children ages 8 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

MathTalk

Talking notebook featuring math tutorials, simulations and games
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

MathTalk Fractions

Talking notebook featuring decimals, fractions and percents
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Mavis Beacon Teaches Typing!

Expert-system typing teacher
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
The Software Toolworks; One Toolworks Plaza; 13557 Ventura Blvd.; Sherman Oaks, CA 91423; 818-907-6789

Miner's Cave

Physical Science; grades 4 through 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Modular Management System For Schools (MMS)

Complete educational management system
Apple IIGS; monitor and printer; 256K; ProDOS 16; not copy protected.
$399 retail; Student Master File System
$449 retail; Attendance Reporting System
$349 retail; Discipline Reporting System
$949 retail; Grade Reporting System
$1,099 retail; Student Scheduling System
$449 retail; Tuition/Fee Accounting System
Computer Resources, Inc.; Barrington Office Mall; PO Box D; Barrington, NH 03825; 603-664-5811

Money Works

Teaches money recognition, counting and more; grades 1 through 4
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

More Teasers From Tobbs

Decimal and fractions practice for grades 5 through 12
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$65 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

The Muppet Series

Develops skills in sorting and classifying, determining likenesses and differences and more; grades K through 1
Apple IIGS; other Apple II models; works with regular keyboard, Muppet Learning Keys, or Touch Window; 64K; ProDOS 8; copy protected.
$65 retail; Muppets On Stage (includes backup)
$65 retail; Muppetville (includes backup)
$65 retail; Muppet Word Book (includes backup)
$195 retail; Muppet Word Book lab pack (contains 10 programs)
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Mystery Objects

Physical Science; grade 2 through 4
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

The New Talking Stickybear Alphabet

Talking upper and lowercase letter recognition for children ages 3 to 6
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Newbery Adventures

Adventure series
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$65 retail; Mrs. Frisby and the Rats of NIMH
$65 retail; Island of the Blue Dolphins
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Numeric Concept And Memory Skills

Used with individuals (ages 6 to adult) who have head injuries and learning disabilities, stroke, mental retardation or for early learning
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$395 retail; includes seven programs
Intuit Computing; 1915 Huguenot Rd.; Richmond, VA 23235; 804-379-2253

Once Upon A Time...

Desktop publishing program for ages 6 to 12
Apple IIGS; color monitor; 512K; GS/OS; not copy protected.
$39.95 retail
$79.95 retail; academic
Compu-Teach Corp.; 78 Olive St.; New Haven, CT 06511; 203-777-7738 or 800-448-3224

One For The Books

Program that generates personalized book lists and motivates students to read; for grades 3 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$149 retail
Focus Media, Inc.; PO Box 865; 839 Stewart Ave.; Garden City, NY 11530; 516-794-8900 or 800-645-8989

Patterns

Language arts; preschool
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Pfs: Write And Pfs: File/Report

Programs designed to help students in grades 7 through 12 master word processing, filing and reporting skills
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$124.95 each retail; consumer
$99.95 each retail; academic
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

ProWords And ProBraille

Word processor and translator for the blind
Apple IIGS; other Apple II models; synthesizer (Echo or Slotbuster II); 128K per program (512K preferred); ProDOS 16; not copy protected.
$150 retail; ProBraille
$195 retail; ProWords
Access Unlimited-Speech Enterprises; 9039 Katy Freeway, Ste. 414; Houston, TX 77024; 713-461-0006

■ Punctuation Rules

Teaches and reinforces the proper use of punctuation; ages 8 to 11
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Punctuation Rules, intended for students ages 8 to 11, is a versatile, multilevel program that teaches and reinforces the proper use of periods, question marks, commas, quotation marks, apostrophes, colons and hyphens. The program contains a series of high-interest, multiple-choice question and answer exercises to help students learn correct punctuation in a variety of situations — addresses, contractions, possessives, friendly and business letters, compound sentences, dates, series of words or phrases, abbreviations and others.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

■ QuickTests

Test generator
Apple IIGS; 128K; ProDOS 8; not copy protected.

QuickTests takes the drudgery out of producing valid tests and worksheets. Any type of question (true/false, essay, etc.) may be added or edited in the large free-form area provided. The program lets users decide what kind of questions and tests to use in the classroom. Questions can be identified by two topics, a question type and a code. QuickTests can automatically arrange questions and answers in different sequences to reduce cheating.
$180 retail; single user
$450 retail; unlimited copies per school or college department
Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 800-627-3836

Read 'N Roll

Reading comprehension program for grades 3 through 6
Apple IIGS; other Apple II models;128K; ProDOS 8; copy protected.
$49.95 retail
$149.95 retail; school lab pack (contains five disks)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Reader Rabbit

Talking early education program that reinforces reading, spelling and vocabulary skills; ages 4 to 7
Apple IIGS; color monitor recommended; 256K; ProDOS 16; copy protected.
$59.95 retail; home edition
$79.95 retail; school edition
$139.95 retail; lab pack
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Reading And Me

Prepares children ages 3 through 6 for reading
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$39.95 retail
$129.95 retail; school lab pack (contains five disks)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Reading Comprehension

Includes 29 high-interest story and question sets designed to help children learn important reading skills; ages 9 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Recycling Logic

Teaches basic principles of logic
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$65 retail; include backup
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

■ Report Card II

Teacher's grading system
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

Report Card II automatically records, analyzes and ranks student marks with accurate and up-to-date results. Grading is more flexible by allowing users to weigh activities according to importance, and users have the ability to show student grades instantly as they progress through the school year.

Features include: each class can hold up to 100 students, 90 activities and 10 groups of activities; handles incomplete grades; displays or prints the contents of a user's gradebook in many ways; identifies each student by name, as well as an additional identification code; ranks students by first or last name, grades on selected activities, overall grade on all activities or ID codes; and more.
$59.95 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

The Right Turn

Students learn mathematical concepts of rotation and transformation
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$65 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Rocky's Boots

Develops logical thinking and problem-solving skills for ages 9 and up
Apple IIGS; other Apple II models; color monitor; 128K; ProDOS 8; copy protected.
$49.95 retail; home edition
$69.95 retail; school edition
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Scorekeeper

Gradebook management
Apple IIGS; other Apple II models; 128K; ProDOS 8.
$79.95 retail
Stokes Publishing Company; 1125 Robin Way, Ste. C; Sunnyvale, CA 94087; 408-736-4637

■ Sesame Street Series

Introduce children to ABCs, numbers and opposites
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

Polarware and Children's Television Workshop have joined together to add the excitement of the Sesame Street characters to the Electric Crayon. The series, which includes Letters For You, Numbers Count and Opposites Attract, will especially appeal to preschool and primary-aged children. Big Bird, Cookie Monster, Grover, Bert and Ernie introduce children to ABCs, numbers and opposites.
$17.95 each retail; Letters For You, Numbers Count, Opposites Attract
Polarware, Inc.; 1055 Paramount Pkwy., Ste. A; Batavia, IL 60510; 312-232-1984

Sky Travel
Astronomy database program featuring 1,200 stars, 88 constellations and more
Apple IIGS; 256K; ProDOS 8; not copy protected.
$52.95 retail
MicroIllusions; 17408 Chatsworth St.; Grenada Hills, CA 91344; 818-360-3715

SmoothTalker
Software-only speech synthesizer that converts text into speech
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

■ Solve It!
Teaches students how to search for information in a database; exercise logical thinking; organize and analyze data; and to enhance language art skills
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Student detectives at the Solve It Detective Agency become efficient database searches and put on their best thinking caps as they solve one exciting case after another. After reading a "case history," students enter into the Solve It Computer Database the names of those persons, places or things they think will lead them to good clues. Clues, in the form of and/or/not logic statements, are worked with to eliminate suspects until the mystery is solved. There are three levels of difficulty.
$65 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Space Waste Race
An animated storybook with learning games; preschool through grade 2
Apple IIGS; other Apple II models; 48K; ProDOS 8; copy protected.
$65 retail
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

SpaceLace
An interactive kaleidoscope and Basic tutorial
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
$29.95 retail
Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

Speller Bee
Incorporates talking notebook and graphics to improve spelling skills; for children ages 5 through 13
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006 or distributed by Electronic Arts

Spellevator
Spelling; grades 1 through 6
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Stickybear Math
Basic addition and subtraction; ages 6 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Math 2
Basic multiplication and division for ages 7 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Numbers
Counting and number recognition program; ages 3 to 6
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Opposites
Teaches beginning learners about opposites; helps build reasoning skills; ages 3 to 6
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Parts Of Speech
Helps children recognize parts of speech
Apple IIGS; other Apple II models; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Reading
Builds word and reading skills; ages 5 to 8
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Reading Comprehension
Multilevel reading program containing 30 stories; ages 7 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Shapes
Helps children ages 3 to 6 identify shapes
Apple IIGS; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Spellgrabber
Builds spelling and vocabulary skills; ages 6 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

■ Stickybear Town Builder
Teaches basic map reading skills to children ages 6 to 9
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.

Stickybear Town Builder teaches basic map reading skills to children ages 6 to 9. Children enjoy building their own towns, complete with roads, parks, bridges, airports and other structures.

The towns they build can be stored on disk and then used to work with the other program activities, Take A Drive and Find The Keys. Three prebuilt towns are provided for children who wish to start driving immediately. Children learn a number of specific skills, such as compass reading, directions, map-reading, positioning and more.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Typing
Typing instruction for all ages
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Stickybear Word Problems
Provides beginning practice at analyzing and solving math word problems for children ages 7 and up; rewards correct answers with animation
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Super Factory
Problem-solving strategies learned from observing a 3-D cube
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$65 retail; includes backup
Sunburst Communications, Inc.; 39 Washington Ave.; Pleasantville, NY 10570; 914-769-5030 or 800-431-1934

Super Story Tree
Interactive story maker that allows students in grades 4 through 12 to illustrate their stories with exciting graphics, music and sound effects
Apple IIGS; other Apple II models; joystick, mouse or Koala Pad; Epson or Scribe printer; 128K; ProDOS 8; copy protected.
$87.45 retail; consumer
$69.95 retail; academic
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

■ Talking Math And Me
Builds early math skills using digitized speech; ages 3 to 6
Apple IIGS; 512K; ProDOS 16; copy protected.

Talking Math And Me features digitized speech to assist children in building early learning skills, as well as enhanced, colorful graphics to capture a child's attention and imagination. The program, for children ages 3 through 6, is designed to build early math skills in four areas of math: Shapes, Numbers, Patterns and Single-Digit Addition.
$49.95 retail
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

■ Talking Reading And Me
Prepares children for reading using digitized speech; ages 3 to 6
Apple IIGS; 512K; ProDOS 16; copy protected.

Talking Reading And Me features digitized speech to assist children in building early learning skills, as well as enhanced, colorful graphics to capture a child's attention and imagination. The program prepares children for reading and focuses on building early reading skills by helping children to classify objects, recognize letters, understand phonics, learn words and read simple sentences.
$49.95 retail
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Talking Text Libraries
Synthesized speech that reads stories aloud for young readers
Apple IIGS; other Apple II models; 128K; ProDOS 8; Echo IIb board; copy protected.
$59.95 each retail; Beginning Classics (Grades K to 1), Classics for Young Readers (Grades 2 to 3), Discover History (Grades 2 to 4), Explore Science (Grades 2 to 4)
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Talking Text Spelling
Talking spelling tutor
Apple IIGS; other Apple II models; Echo IIb board; 128K; ProDOS 8; copy protected.
$99.95 retail; (without board) for grade specific core package
$199.90 retail; with board
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Talking Text Writer
Combines word processing with the Echo board from Street Electronics
Apple IIGS; Echo, Cricket or PC2 speech synthesizer board; 512K; ProDOS; copy protected.
$149.95 retail; to educators
$249.95 retail; home version (includes Echo board)
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Test It! Deluxe
Allows teachers to create customized tests
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$59.95 retail
EduSoft; PO Box 2560; Berkeley, CA 94702; 415-548-2304 or 800-338-7638

■ The Thinking Machine
Educational system designed to help students use their brain more effectively
Apple IIGS; printer optional; 64K; ProDOS 8; copy protected.

The Thinking Machine is designed to help students use both sides of their brain. According to the vendor, after students have completed the exercises, they will be able to think and study more effectively, solve problems more readily, read faster and more efficiently and memorize more easily. Students will have a better insight into how their mind works and how to use it to the best advantage.

The program is filled with many exercises to help students overcome many negative thinking and learning habits. It can be considered a total learning system, not that it covers absolutely every aspect of education, but it covers many essential and basic principles of learning.
$89.50 retail
Psychological Psoftware Co.; 312 Los Altos Dr.; Aptos, CA 95003; 408-688-6808

Think Quick!
Fast-paced adventure game that helps develop thinking skills for ages 7 to 14
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$49.95 retail
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

To Preserve, Protect And Defend
U.S. Constitution lesson
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Tutor-Tech 2.2
Apple IIGS hypermedia tool for educators featuring a toolbox of writing and drawing tools, text fonts, various buttons similar to HyperCard and more
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$195 retail; (basic)
$295 retail; (complete with grade-book manager)
Techware Corp.; PO Box 151085; Altamonte Springs, FL 32715-1085; 407-695-9000

Typing Tutor IV
Customized keyboard instruction
Apple IIGS; RGB color monitor recommended; 512K; ProDOS 16; not copy protected.
$54.95 retail
Simon and Schuster Software; 1 Gulf & Western Plaza, 14th Fl.; New York, NY 10023; 800-624-0023 or 800-624-0024 in NJ

Vocabulary Development
Increases vocabularies and strengthens reading skills; for ages 8 and up
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Wood Car Rally
Physical Science; grades 4 through 7
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Word Attack Plus
Teaches students 700 new words and their definitions; for grades 4 through 12
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$49.95 retail
$149.95 retail; school lab pack (contains five disks)
Davidson & Associates, Inc.; 3135 Kashiwa St.; Torrance, CA 90505; 213-534-2250 or 800-556-6141

Writer Rabbit
Builds reading comprehension and writing skills for ages 7 to 10
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$49.95 retail; home edition
$69.95 retail; school edition
The Learning Co.; 6493 Kaiser Dr.; Fremont, CA 94555; 415-792-2101

Zoyon Patrol
Game-like simulation that provides an environment for learning the scientific method
Apple IIGS; other Apple II models; 128K; MDOS; copy protected.
$59 retail
MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126-8097; 612-481-3500

Entertainment

4th & Inches
Football simulation featuring 20 plays and 11 different formations
Apple IIGS; keyboard, joystick or mouse; 512K; ProDOS 16; copy protected.
$44.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Alien Mind
Space arcade adventure game that challenges users to neutralize adversaries and regain control of a research space station
Apple IIGS; RGB monitor; SuperSonic stereo card recommended; 512K; copy protected.
$54.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Bad Street Brawler
Excursion into the streets of the big city to save the grannies from gangsters, muggers and madmen
Apple IIGS; 256K; ProDOS 16; not copy protected.
$34.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

The Bard's Tale
Medieval adventure; goal is to halt the evil magic spell spread by the wizard Mangar the Lionhearted
Apple IIGS; 512K; ProDOS 8; copy protected.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

The Bard's Tale II: The Destiny Knight
Features new story line
Apple IIGS; 512K; ProDOS 8; copy protected.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

BattleTech
Computer role-playing game full of animation
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Beyond Zork
Adventure into the Great Underground Empire
Apple IIGS; 512K; ProDOS 16; not copy protected.
$44.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Black Jack Academy
Card game on disk
Apple IIGS; 256K; ProDOS 16; copy protected.
$39.95 retail
Microloglusions; 17408 Chatsworth St.; Grenada Hills, CA 91344; 818-360-3715

Bubble Ghost
Bubble-blowing arcade action
Apple IIGS; keyboard or mouse; 512K; ProDOS 16; copy protected.
$34.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

California Games
Games of skill: surfing; half pipe skateboarding; roller skating and more
Apple IIGS; 512K; ProDOS 16; copy protected.
$44.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Cavern Cobra
Fast action arcade game involving a mission to destroy the world's most dangerous terrorist
Apple IIGS; 768K; ProDOS 16; copy protected.
$49.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

■ Club Backgammon
Accurate simulation of backgammon
Apple IIGS; 512K; ProDOS; not copy protected.

Club Backgammon is a simulation of Backgammon designed to be identical to the board version of the game. As an option, users may roll the complimentary pair of dice and enter their own numbers. Users can play against any one of five computer opponents or against a friend.

$39.95 retail
California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Defender Of The Crown
Adventure into the Age of Chivalry; battle against the Normans to save England
Apple IIGS; 768K; ProDOS 16; not copy protected.
$49.95 retail
Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake Village, CA 91362; 805-495-6515

■ Deja Vu II: Lost In Las Vegas
Mystery
Apple IIGS; 768K; ProDOS 16; RGB monitor; copy protected.

In Deja Vu II: Lost In Las Vegas, a user has been abducted by two thugs from Chicago and tossed into a bathtub in a cheap Vegas hotel. It couldn't possibly get any worse than this — or could it?

$49.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Deja Vu: A Nightmare Comes True
Murder mystery
Apple IIGS; 768K; ProDOS 16; RGB monitor; copy protected.
$49.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Destroyer
Action and simulation game involving a Navy destroyer
Apple IIGS; 512K; ProDOS 16; copy protected.
$44.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Dondra: A New Beginning...
An animated graphics quest for the Apple IIGS
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Microloglusions; 17408 Chatsworth St.; Grenada Hills, CA 91344; 818-360-3715

Dream Zone
Graphic adventure game with stereo sound
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Baudville, Inc.; 5380 52nd St. SE; Grand Rapids, MI 49508; 616-698-0888

Famous Course Volume II
Three golf courses for Mean 18
Apple IIGS; mouse; Mean 18; 512K; ProDOS 16; copy protected.
$19.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Famous Course Volume III & IV
Six golf course simulations for Mean 18
Apple IIGS; mouse; Mean 18; 512K; ProDOS 16; copy protected.
$34.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

■ The Fidelity Chessmaster 2100
Computer chess
Apple IIGS; 512K; not copy protected.

The Fidelity Chessmaster 2100 has all of the options and features of the Chessmaster 2000, as well as stronger and more varied play with an unlimited number of levels, more and different classic games and "blindfold" chess. The special "War Room" mode allows users to view the board, move list, captured pieces, clocks and the "Show Thinking" window all at the same time.

$49.95 retail
The Software Toolworks; One Toolworks Plaza; 13557 Ventura Blvd.; Sherman Oaks, CA 91423; 818-907-6789

Final Assault
A mountain climbing adventure
Apple IIGS; 512K; ProDOS 16; copy protected.
$44.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Fire Power
Arcade tank battle game
Apple IIGS; 512K; ProDOS 16; copy protected.
$29.95 retail
Microloglusions; 17408 Chatsworth St.; Grenada Hills, CA 91344; 818-360-3715

■ Garfield Trivia Game
Mind-teasing questions about the world's favorite fat cat
Apple IIGS; printer; 64K; ProDOS 8; copy protected.

Garfield Trivia Game offers hours of enjoyment as users try to answer 300 hilarious and intriguing questions about everyone's favorite cat. There are six categories to choose from, with hundreds of questions about Garfield and his friends. Users can play alone or with teams. There is even an editor to create a user's own trivia questions.
$24.95 retail
DLM Teaching Resources; One DLM Park; Allen, TX 75002; 214-727-3346

Gauntlet
Arcade game featuring attacks by ghosts, grunts, demons and sorcerers
Apple IIGS; 256K; ProDOS 16; copy protected.
$44.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Hacker II: The Doomsday Papers
Strategic adventure to save the world
Apple IIGS; 512K; ProDOS 16; copy protected.
$19.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

HardBall!
Baseball simulation
Apple IIGS; keyboard, joystick or mouse; color monitor; 512K; ProDOS 16; copy protected.
$44.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Hunt For Red October
Submarine combat simulation based on Tom Clancy's best-selling novel
Apple IIGS; 768K; ProDOS 16; not copy protected.
$49.95 retail
Datasoft/IntelliCreations, Inc.; 19808 Nordhoff Pl.; Chatsworth, CA 91311; 818-886-5922

Jigsaw! The Ultimate Electronic Puzzle
Puzzle game
Apple IIGS; color monitor; 512K; ProDOS.
$39.95 retail; includes 20 image disks
$24.95 retail; additional image disks
Britannica Software; 345 4th St.; San Francisco, CA 94107; 415-546-1866

Journey
Game featuring new genre of interactive storytelling: Role-Play Chronicle
Apple IIGS; 512K; ProDOS 16; not copy protected.
$49.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

King Of Chicago
Struggle for power
Apple IIGS; 768K; ProDOS 16; copy protected.
$49.95 retail
Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake Village, CA 91362; 805-495-6515

King's Quest I
3-D medieval adventure that takes Sir Graham on a journey to find the magical items that will save the kingdom of Daventry
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

King's Quest II: Romancing The Throne
3-D animated adventure
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

The Last Ninja
Action/adventure martial arts game
Apple IIGS; 512K; ProDOS 16; copy protected.
$44.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Leisure Suit Larry
3-D animated adventure game featuring Larry, the nerd, in Lost Wages
Apple IIGS; 512K; ProDOS 16; copy protected.
$39.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

■ Mancala
Comprehensive simulation of the national game of Africa
Apple IIGS; 512K; ProDOS; not copy protected.

Mancala, a simulation of Africa's national game, is a game of native strategy, wit and cunning. Played with one player or two, it allows a user to challenge his or her rival with calculated moves, masterful distribution and coy maneuvers. It employs concentration and shrewdness, but rewards the skillful. An artful selection and clever determination of which cups to empty and which cups to fill can determine the outcome of the game.
$39.95 retail
California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Marble Madness
Six levels of 3-D runway mazes
Apple IIGS; 512K; ProDOS 8; copy protected.
$14.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Mean 18
Realistic golf simulation
Apple IIGS; mouse; 512K; ProDOS 16; copy protected.
$44.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Mini-Putt
Miniature golf simulation
Apple IIGS; mouse; 512K; ProDOS 16; copy protected.
$39.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

Mixed-Up Mother Goose
Transports children to an "adventure in Mother Gooseland"; for the home, nursery school and kindergarten class
Apple IIGS; 512K; ProDOS 16; not copy protected.
$29.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Monte Carlo
Blackjack, roulette, craps, baccarat, poker and trente-et-quarante
Apple IIGS; 512K; ProDOS 16; copy protected.
$39.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Paperboy
Paper route packed with the unexpected
Apple IIGS; joystick; 256K; ProDOS 16; copy protected.
$39.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Pirates! IIGS
17th century Spanish adventure on and around the Caribbean Sea
Apple IIGS; 256K; ProDOS 8; copy protected.
$39.95 retail
MicroProse Software, Inc.; 180 Lakefront Dr.; Hunt Valley, MD 21030; 301-771-1151

Police Quest
3-D animated adventure featuring Sonny Bonds in an attempt to stop the flood of illegal drugs into his community
Apple IIGS; color monitor (SuperSonic stereo card optional); 512K; ProDOS 16; not copy protected.
$49.95 retail
Sierra On-Line, Inc,; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Questron II
Sequel to Questron
Apple IIGS; 512K; ProDOS 16; not copy protected.
$44.95 retail
Strategic Simulations, Inc.; 1046 N. Rengstorff Ave.; Mountain View, CA 94043; 415-964-1353

Realm Of Altair Series
Trilogy of all-text adventures
Apple IIGS; 256K; ProDOS 8; not copy protected.
$89.95 retail
DAR Systems International; PO Box 16-4933; Miami, FL 33116-4933; 305-529-3572

Roadwar 2000
Futuristic war game
Apple IIGS; 512K; ProDOS 16; not copy protected.
$44.95 retail
Strategic Simulations, Inc.; 1046 N. Rengstorff Ave.; Mountain View, CA 94043; 415-964-1353

Rocket Ranger
Movie tale involving time travel, vile Nazis, mind control machines and a jet propelled rocket suit
Apple IIGS; 768K; ProDOS 16; not copy protected.
$49.95 retail; available February 1989
Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake Village, CA 91362; 805-495-6515

Sea Strike
Arcade game involving oil tankers under attack
Apple IIGS; 512K; ProDOS 16; copy protected.
$39.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Serve & Volley
Action/strategy tennis simulation
Apple IIGS; keyboard; 512K; ProDOS 16; copy protected.
$39.95 retail
Accolade, Inc.; 550 S. Winchester Blvd., Ste. 200; San Jose, CA 95128; 408-296-8400

■ Shadowgate
Fantasy
Apple IIGS; 768K; ProDOS 16; RGB monitor; copy protected.
In Shadowgate, users enter a diabolical fantasy world filled with dragons, demons, wizards, trolls and more than a little mayhem. What was once a shining fortress is now an evil, dark, moldering ruin. The game is complete with animated graphics, sounds and adventure.
$49.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Shanghai
Derived from an ancient oriental game called Mah Jongg
Apple IIGS; 512K; ProDOS 16; copy protected.
$44.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

Shogun
An interactive tale of intrigue
Apple IIGS; 512K; ProDOS 16; not copy protected.
$59.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Silent Service
World War II submarine simulation game
Apple IIGS; color monitor recommended; 256K; ProDOS 8; copy protected.
$39.95 retail
MicroProse Software, Inc.; 180 Lakefront Dr.; Hunt Valley, MD 21030; 301-771-1151

Sinbad And The Throne Of The Falcon
Epic seafaring quest in a search for the Caliph
Apple IIGS; 768K; ProDOS 16; copy protected.
$49.95 retail
Cinemaware Corp.; 4165 Thousand Oaks Blvd.; Westlake Village, CA 91362; 805-495-6515

Skate Or Die
Skating simulation
Apple IIGS; 512K; ProDOS 16; copy protected.
$39.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

■ Solitaire
Card game
Apple IIGS; 256K; ProDOS 8; not copy protected.
Solitaire contains five addictive versions of the most popular card games. It features pull-down menus, repeat last deal, change colors of cards and table, use mouse or keyboard and an alarm clock to bring users back to reality.
$34.95 retail
Computek; 28278 Enderly St.; Canyon Country, CA 91351; 805-252-4244

Space Quest I - The Sarien Encounter
Animated 3-D adventure game that features Roger Wilco, sanitation engineer turned space-age swashbuckler
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Space Quest II - Vohaul's Revenge
3-D animated space adventure game with quality graphics
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Star Saga: One
An interstellar, interactive, role-playing space opera set 800 years in the future
Apple IIGS; monitor; 512K; ProDOS 16; not copy protected.
$79.95 retail
Masterplay Publishing Corp.; 8417 Sun State St.; Tampa, FL 33614; 813-888-7773

Stickybear Basketbounce
A multilevel game with bright graphics and animation for the entire family
Apple IIGS; other Apple II models; 64K; ProDOS 8; copy protected.
$39.95 retail
Weekly Reader Software From Optimum Resource, Inc.; 10 Station Pl.; Norfolk, CT 06058; 203-542-5553 or 800-327-1473

Strategic Conquest II
Strategy war game with two billion different world maps and 15 levels of play
Apple IIGS; 128K; ProDOS 8; copy protected.
$49.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

Street Sports Soccer
Playing soccer with the old neighborhood gang
Apple IIGS; 512K; ProDOS 16; copy protected.
$19.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Strip Poker II
Five-card draw poker game with some different stakes; for 18 years and older
Apple IIGS; 512K; ProDOS 16; copy protected.
$39.95 retail; master disk
$19.95 each retail; data disk
Artworx Software Co., Inc.; 1844 Penfield Rd.; Penfield, NY 14526; 800-828-6573

Sub Battle Simulator
Command a Navy sub or German Kreigsmarine U-Boat between 1939 and 1945
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

Superstar Ice Hockey
Multilevel ice hockey simulation
Apple IIGS; 512K; ProDOS 16; copy protected.
$44.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

Tetris IIGS
Game for developing quick reflexes
Apple IIGS; 512K; ProDOS 16; not copy protected.
$39.95 retail
Spectrum Holobyte; A Division of Sphere, Inc.; 2601 Challenger Dr.; Alameda, CA 94501; 415-522-3584

Thexder
Pilot an armored robot through multiple attack scenarios and more
Apple IIGS; 512K; ProDOS 16; copy protected.
$34.95 retail
Sierra On-Line, Inc.; PO Box 485; Coarsegold, CA 93614; 209-683-6858

Tomahawk
Simulates the cockpit of the U.S. Army's AH-64A Apache helicopter
Apple IIGS; joystick; 768K; ProDOS 16; copy protected.
$39.95 retail
Datasoft/IntelliCreations, Inc.; 19808 Nordhoff Pl.; Chatsworth, CA 91311; 818-886-5922

The Tower of Myraglen
Adventure action game; revolves around a dying world known as Myraglen
Apple IIGS; 512K; ProDOS 16; copy protected.
$54.95 retail
PBI Software, Inc.; 1155A Chess Dr., Ste. I; Foster City, CA 94404; 415-349-8765

■ TrianGo
Futuristic game of strategy and cunning based on the ancient oriental game of "Go"
Apple IIGS; 512K; ProDOS; not copy protected.
TrianGo is a strategy-filled game that is played by placing brightly colored stones on the unique, hexagon-shaped playing field in an attempt to create triangles, control territory and capture an opponent's stones. The object of the game is to be the last player able to make a move. The game can be played against the computer or with a friend.
$39.95 retail
California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

Trilogy
Sophisticated adventure game involving many intricate plot twists
Apple IIGS; 256K; ProDOS 8; not copy protected.
$79.95 retail
DAR Systems International; PO Box 16-4933; Miami, FL 33116-4933; 305-529-3572

■ Uninvited
Supernatural graphic adventure
Apple IIGS; 768K; ProDOS 16; RGB monitor; copy protected.

Enter into the world of Uninvited, a mansion controlled by the supernatural. This graphic adventure requires almost no typing because the action is controlled by the mouse, icons and windows.
$49.95 retail
Mindscape, Inc.; 3444 Dundee Rd.; Northbrook, IL 60062; 312-480-7667

■ Vegas Craps
Accurate simulation of craps as it's played in big Vegas casinos
Apple IIGS; 512K; ProDOS; not copy protected.

Vegas Craps is an accurate simulation of the game as it's played in Las Vegas. Users can place their favorite bets and go with or against the shooter. Because the game is designed to be identical to Craps at a Las Vegas casino, the bets, odds and payoffs are all the same. The game also lets users learn all about the rules and bets involved in the game and then try them out for themselves.
$39.95 retail
California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

■ Vegas Gambler
Enter the exciting world of a Las Vegas casino
Apple IIGS; 512K; ProDOS; not copy protected.

Vegas Gambler gives users a chance to test their gambling skills without losing their shirts. It takes four popular casino games — Slot Machine, Blackjack, Poker and Roulette — and makes them available to users in their own homes.
$39.95 retail
California Dreams; 780 Montague Expwy., #403; San Jose, CA 95131; 408-435-1445

■ Warlock
Arcade adventure that combines clever animation and humor
Apple IIGS; 512K; ProDOS 16.

Featuring 20 different and increasingly difficult levels, Warlock is an arcade adventure that requires minimal hand/eye coordination. A combination of quick payoffs and endearing characters challenge players to continue the quest for the stolen Karna, the Warlock's ultimate goal.
$39.95 retail
Three-Sixty, Inc.; 2105 S. Bascom Ave., Ste. 290; Campbell, CA 95008; 408-879-9144

Winter Games
Bobsledding, downhill skiing, ice skating, ski jump and more
Apple IIGS; 512K; ProDOS 16; copy protected.
$19.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

World Games
International games
Apple IIGS; 512K; ProDOS 16; copy protected.
$19.95 retail
Epyx, Inc.; 600 Galveston Dr.; PO Box 8020; Redwood City, CA 94063; 415-366-0606

World Tour Golf
Features the world's great courses, complete with hills, trees, sand traps and weather
Apple IIGS; 512K; ProDOS 16; not copy protected.
$14.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Zany Golf
A wacky fantasy into miniature golf
Apple IIGS; other Apple II models; 512K; ProDOS 8; copy protected.
$39.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Zork Zero
Interactive fiction game
Apple IIGS; 512K; ProDOS 16; not copy protected.
$59.95 retail
Infocom, Inc.; 125 Cambridge Park Dr.; Cambridge, MA 02140; 617-492-6000

Hardware And Peripherals

Apollo PC Presenters For Apple IIGS
Allows users to display large-screen presentations
Model PC-9600 requires the PC-9685 Apple IIGS interface.
$1,369 retail; PC-9100GS (add-on)
$2,189 retail; PC-9600 (add-on)
$220 retail; PC-9685 interface
$2,318 retail; PC-9601 (add-on)
$1,709 retail; PC-9250GS (built-in)
$2,583 retail; PC-9296 (built-in)
$2,498 retail; PC-9350GS (built-in and portable)
$3,250 retail; PC-9396 (built-in and portable)
Apollo Audio Visual; 60 Trade Zone Ct.; Ronkonkoma, NY 11779; 516-467-8033

Apple 3.5 Drive
The IIGS standard drive; provides 800K of program and file storage
Apple IIGS.
$429 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple 5.25 Drive
Runs earlier Apple II software released on 5.25-inch disks
Apple IIGS.
$329 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple Hard Disk 20SC And 40SC
Provides 20 and 40 MB of storage
Apple IIGS; Apple SCSI Card.
$1,099 retail; 20SC
$1,699 retail; 40SC
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple II SCSI Interface Card Revision C
Provides compatibility with high-performance peripherals that use the SCSI standard, including Apple's CD-ROM
Apple IIGS; SCSI System Cable.
$129 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS Memory Expansion Card
Extended memory board expandable to 1 MB using additional memory in 256K increments
Apple IIGS.
$229 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS System Fan
Cools Apple IIGS with three or more expansion cards
Apple IIGS.
$49 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple IIGS Upgrade
Transformer kit for Apple IIe; includes 256K of built-in memory, with RAM that is expandable to 8 MB
Apple IIe.
$499 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple MIDI Interface
Musical instrument digital interface (MIDI); includes one MIDI-In plug and one MIDI-Out plug
Apple IIGS; MIDI-equipped instrument; compatible software.
$99 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleCD SC
Optical disc storage device
Apple IIGS; Apple SCSI Card (Rev C).
$1,199 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleColor RGB Monitor
Displays high-resolution text and color graphics
Apple IIGS.
$599 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Audio Animator
MIDI device, stereo digitizer and stereo playback machine combined; includes software and external connector box
Apple IIGS; 768K; GS/OS; software not copy protected.
$239 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Central Point 3.5 Drive
Disk drive providing 800K of storage on an Apple IIGS
Apple IIGS; Universal Disk Controller.
$225 retail; 3.5-inch drive
$90 retail; Universal Disk Controller
Laser Computers; 15220 NW Greenbrier Pkwy., Ste. 200; Beaverton, OR 97006; 503-690-8090

CommLink 2400
Full-featured 2,400/1,200/300-baud Hayes-compatible external modem
Apple IIGS; RS-232 serial cable.
$249.95 retail
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

ComputerEyes IIGS
Color video digitizer that captures images for use in popular desktop publishing and paint programs
Apple IIGS; video source; 512K; ProDOS 8; software not copy protected.
$249.95 retail
Digital Vision, Inc.; 66 Eastern Ave.; Dedham, MA 02026; 617-329-5400

ComputerEyes/2
Video digitizer with GS software support that captures images for use in popular desktop publishing and paint programs
Apple IIGS; video source; 256K; ProDOS 8; not copy protected.
$129.95 retail; ComputerEyes/2
$19.95 retail; ComputerEyes/2 GS Support Package
Digital Vision, Inc.; 66 Eastern Ave.; Dedham, MA 02026; 617-329-5400

Conserver
Surge suppressing unit providing six AC outlets, surge protection and a fan
Apple IIGS.
$149.95 retail
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

The CrystalPrint Publisher
PostScript-compatible page printer
Apple IIGS.
$4,499 retail
Qume Corp.; 500 Yosemite Dr.; Milpitas, CA 95035; 408-942-4000

CT20; CT30
20 and 30 MB external hard disk drives
Apple IIGS.
$650 retail; CT20
$750 retail; CT30
Chinook Technology, Inc.; 601 Main St., #635; Longmont, CO 80501; 303-678-5544 or 800-727-5544

Data Display A200SC
LCD display panel that projects computer images via an overhead projector
Apple IIGS; included software is not copy protected.
$1,499 retail
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

DataLink 1200 And DataLink 2400
Internal 1,200 bps and 2,400 bps modem boards complete with communications software
Apple IIGS; other Apple II models.
$179 retail; DataLink 1200
$239 retail; DataLink 2400
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

DCA1000
Six outlet strip with surge suppressors and phone/modem protection
Apple IIGS.
$59.95 retail
Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-993-1202

Deluxe Power Console-Plus Surge Suppressor And Noise Filter
Surge suppressor and noise filter
Apple IIGS.
$125.95 retail
Kalglo Electronics Co., Inc.; 6584 Ruch Rd.; E. Allen Township; Bethlehem, PA 18017-9359; 215-837-0700 or 800-524-0400

Digitizer And Digitizer Professional
Two-channel multifunction audio digitizer; plugs directly into the Supersonic stereo card expansion connector
Apple IIGS; 512K; ProDOS 16; not copy protected.
$59.95 retail; Digitizer
$189.95 retail; Digitizer Professional
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

Disk Pack
Removable hard disk that combines the speed and power of a fixed drive with the portability of a floppy
Apple IIGS, other Apple II models.
$799 retail; central unit
$899 retail; 21 MB hard disk
$1,299 retail; 42 MB hard disk
$1,699 retail; 84 MB hard disk
Call for pricing; 125 MB hard disk
Mega Drive Systems; 1801 Avenue of the Stars, Ste. 507; Los Angeles, CA 90067; 800-322-4744

Echo IIb Speech Synthesizer
Text-to-speech board compatible with software written for the Echo II and Echo+ boards
Apple IIGS; 256K; ProDOS 8 and DOS 3.3; not copy protected.
$129.95 retail
Street Electronics Corp.; 6420 Via Real; Carpinteria, CA 93013; 805-684-4593

Epic 2400Mini And Classic II Modems
External and internal modems that operate at 300/1,200/2,400-baud rates
Apple IIGS.
$219 retail; Classic II (includes software)
$219 retail; Epic 2400Mini
Epic Technology, Inc.; 5680 Stewart Ave.; Fremont, CA 94538; 415-683-0932 or 800-634-9992

FingerPrint G+
Parallel graphic interface for parallel printers
Apple IIGS; printer.
$79 retail
Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FingerPrint GSi Version II
Screen dump graphic utility card
Apple IIGS; printer.
$129 retail
Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FingerPrint SuperSerial
Enhanced serial graphic printer interface card
Apple IIGS; printer.
$79 retail
Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-592-7522

FutureSound
Stereo output/digital recorder with sound editor that records from direct line or included microphone
Apple IIGS; 512K RAM (1 MB recommended); ProDOS 16; software not copy protected.
$279 retail
Applied Visions, Inc.; 1 Kendall Sq., Ste. 2200; Cambridge, MA 02139; 617-494-5417

FX/20
External SCSI hard disk drive; contains FX System Software on 3.5-inch disk
Apple IIGS; SCSI board.
$999 retail; FX/20
$30 retail; conversion kit
GCC Technologies, Inc.; 580 Winter St.; Waltham, MA 02154; 617-890-0880

Grappler C/Mac/GS
Universal parallel printer interface for Epson, Okidata, Star and other printers
Apple IIGS; parallel printer.
$119 retail
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

GS Juice Plus

Memory cards that provide 0K to 4 MB of memory expansion
Apple IIGS.
$59 retail; OK
$399 retail; 1 MB
Applied Ingenuity; 14922 Ramona Blvd., Unit M; Baldwin Park, CA 91706; 818-960-1485 or 800-346-0811

GS-RAM And GS-RAM Plus

Extended memory boards; come with AppleWorks enhancement, graphic memory test and disk caching software
Apple IIGS; ProDOS 8.
$139 retail; 0K GS-RAM
$249 retail; 256K GS-RAM
$399 retail; 512K GS-RAM
$699 retail; 1 MB GS-RAM
$999 retail; 1.5 MB GS-RAM
$169 retail; 0 MB GS-RAM Plus
$699 retail; 1 MB GS-RAM Plus
$1,249 retail; 2 MB GS-RAM Plus
Call for pricing; GS-RAM 3-8 MB
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

■ GStereo

Internal FM radio
Apple IIGS.

The GStereo is an internal FM radio for the Apple IIGS. Users can select their favorite station and control the volume through the control panel. Existing powered speakers can be used to listen to news, music or sports events while using a favorite IIGS program.
$39 retail
Applied Ingenuity; 14922 Ramona Blvd., Unit M; Baldwin Park, CA 91706; 818-960-1485 or 800-346-0811

ImageBuffer

ImageWriter II printer buffer providing 64K (expandable to 128K) of buffer storage
Apple IIGS; other Apple models; ImageWriter II.
$59 retail
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

ImageWorks II Board

Gives the Apple IIGS advanced imaging and graphics capabilities
Apple IIGS; other Apple II models; 64K; not copy protected.
$350 retail; ImageWorks Board
$150 retail; ImageWorks II Color Adapter
Redshift Limited; PO Box 4335; Mountain View, CA 94040; 415-322-7373

ImageWriter II

Apple standard printer
Apple IIGS; other Apple models.
$595 retail; ImageWriter II
$99 retail; ImageWriter II 32K Memory Option
$225 retail; Sheet Feeder
$63 retail; Black Ribbon (pack of six)
$83.70 retail; Color Ribbon (pack of six)
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

ImageWriter LQ

Letter-quality, wide-carriage, dot matrix printer
Apple IIGS; other Apple models.
$1,399 retail; ImageWriter LQ
$299 retail; Sheet Feeder
$169 retail; Additional Bins
$49 retail; Envelope Feed
$114 retail; Black Ribbon (pack of six)
$150 retail; Color Ribbon (pack of six)
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

■ Inner Drive

Internal hard disk drives
Apple IIGS.

The Inner Drive is an internal hard disk drive available in 20 and 40 MB capacities. Inner Drive's exclusive features include automatic head parking on power down, heavy-duty power supply, system-saving cooling fan and automatically adapts to any line voltage from 80 to 264, 50 or 60 cycles. Completely internal, plug-in installation requires no tools.
$450 retail; 20 MB
$675 retail; 40 MB
Applied Ingenuity; 14922 Ramona Blvd., Unit M; Baldwin Park, CA 91706; 818-960-1485 or 800-346-0811

■ J/L 910

14-inch high-resolution color monitor on swivel; 1,120 by 750 pixels
Apple IIGS.

The J/L 910 is a 14-inch color CRT display for the Apple IIGS. It has a multiscan system and tilt-controlled base and features a built-in anti-glare filter that minimizes eye fatigue, shields electromagnetic radiation and neutralizes static.

The J/L 910 has a super high resolution with 1,120 by 750 pixels and does not require video cards.
Call for pricing
J/L International Trading Co., USA, Inc.; 8730 Sunset Blvd.; Los Angeles, CA 90069; 213-657-1836

KoalaPad+

Graphics input system for the Apple II family of computers
Apple IIGS; 48K; DOS 3.3.
$139.50 retail
Koala Technologies/A Pentron Company; 269 Mt. Hermon Rd.; Scotts Valley, CA 95066; 408-438-0946

Line-Saver Uninterruptible Power Systems (UPS)

Provide emergency power when the utility power fails or is unstable
Apple IIGS; other Apple II models.
$549 retail; starting price
Kalglo Electronics Co., Inc.; 6584 Ruch Rd.; E. Allen Township; Bethlehem, PA 18017-9359; 215-837-0700 or 800-524-0400

■ M300

3.5-inch 800K floppy disk drive
Apple IIGS.

The M300 is a 3.5-inch floppy disk drive that is compatible with the Apple 3.5 Drive. The M300 plugs directly into the disk port of the host system or the daisy chain port of the Apple 3.5 Drive and provides an additional port on the back of the unit to daisy chain other disk drives. The M300 features a microprocessor-controlled, variable-speed spindle motor (394-590 RPM) and a software-controlled disk auto-ejection.

The M300's dimensions are 1 inch (height) by 4 inches (width) by 7.87 inches (depth). It weighs 1.5 pounds and features a one-year limited warranty.
$259 retail
SystemGate, Inc.; 318 N. Chandler Ave., #4; Monterey Park, CA 91754; 818-282-4720

■ MagniView 200

Computer-data display panel
Apple IIGS.

The MagniView 200 is an LCD panel that provides crisp, clear projection of real-time text and graphics. Placed on top of any transmissive overhead projector, the panel functions as an electronic transparency, allowing monitor data to be projected onto any large screen. Users can easily modify projected images during presentations by accessing the host computer's keyboard.
$1,095 retail
Dukane Corp.; 2900 Dukane Dr.; St. Charles, IL 60174; 312-584-2300, 800-634-2800 or 800-356-6540

■ Master Piece Remote

Two-part power center (outlet strip and remote control) with five outlets, surge, noise and modem protection
Apple IIGS.

Especially designed for personal computer users whose CPUs are not on the desktop, or are built into special workstations, Master Piece Remote has all of the power organization and protection features of the Master Piece Plus, including individual and master switching, surge suppression, noise filtering, static protection and modem surge suppression.

What makes Master Piece Remote unique is its design. It comes in two parts: an outlet strip that hides behind a user's desk and a remote control that keeps switches (and a handy digital clock) in easy reach.
$199.95 retail
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

Meirick Stand-By UPS Systems

Stand-by, uninterruptible power system (UPS) that provides continuous computer-grade power during power failures, brownouts and surges
Apple IIGS; other Apple II models.
$549 retail; Meirick 350 Slimline
$749 retail; Meirick 700 Slimline and Expandable
$995 retail; Meirick 1000 Expandable
$1,195 retail; Meirick 1400 Expandable
Meirick, Inc.; Box 298; Frisco, CO 80443; 303-668-3251

MemorySaver

Hardware/software system that transforms standard IIGS memory boards into instant-access ROM disks
Apple IIGS; compatible memory card.
$149.95 retail
Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 602-966-5802 or 800-325-7347

MultiRam GS
Extended memory board adding from 256K to 2 MB of memory
Apple IIGS; 256K.
$254 retail; 256K
$399 retail; 512K
$689 retail; 1 MB
$1,238 retail; 2 MB
$7.95 retail; MemorySaver Adapter
$39.95 retail; MemorySaver Extender
Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 602-966-5802 or 800-325-7347

OctoRam And OctoRam ESP
Extended memory boards; available with an optional Extended Static Ram Pack (ESP board)
Apple IIGS.
$199.95 retail; OctoRam with 256K
$899.95 retail; OctoRam with 2 MB (other configurations available)
$179.95 retail; 128K OctoRam ESP (requires OctoRam board)
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

On-Board
Extended memory board that provides up to 4 MB of memory
Apple IIGS.
$149.95 retail; 0K
$449.95 retail; 1,024K
$749.95 retail; 2,048K
$1,349.95 retail; 4,096K
On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

Parallel Pro And Buffer Pro
Parallel printer interface and buffer
Apple IIGS; other Apple II models.
$99 retail; Parallel Pro
$109 retail; Buffer Pro Option with 32-page buffer
$169 retail; Buffer Pro Option with 128-page buffer
$239 retail; Buffer Pro Option with 256-page buffer
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Passport MIDI Interface For IIGS (Serial Port)
Provides one MIDI In and one MIDI Out
Apple IIGS; any MIDI equipped synthesizer or drum machine.
$129.95 retail
Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

Passport MIDI Interface With Drum Sync (Plug-In Card)
Provides industry standard MIDI In, MIDI Out and drum out connections
Apple IIGS.
$129.95 retail
Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

Passport MIDI Interface With Tape Sync (Plug-In Card)
Provides industry standard MIDI In, MIDI Out, drum out and tape sync connections
Apple IIGS.
$199.95 retail
Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

PC Transporter
Board that brings MS-DOS capabilities to the Apple IIGS
Apple IIGS; other Apple II models; 64K; ProDOS 8; software not copy protected.
$679 retail; PC Transporter with 768K
$259 retail; 5.25" 360K Drive
$399 retail; Dual-Drive 5.25" System
$139 retail; optional IBM-style keyboard
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Phasor
Speech and sound board that runs many sound-oriented software programs written for Apple II computers
Apple IIGS; 64K; ProDOS 8; software not copy protected.
$169 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Power Director Model 25
Power protection and surge suppression with four-outlet power control center
Apple IIGS.
$99.95 retail
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Power Saver Plus
Standby power supply
Apple IIGS.
$649.95 retail; Power Saver Plus Model U4
$749.95 retail; Power Saver Plus Model U5
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

Power Tree
Surge suppressors
Apple IIGS.
$29.95 retail; Power Tree 10
$49.95 retail; Power Tree 20
$99.95 retail; Power Tree 50
Kensington Microware Ltd.; 251 Park Ave. S; New York, NY 10010; 212-475-5200 or 800-535-4242

PowerLine
Three surge suppressors
Apple IIGS.
$14.95 retail; PowerLine One Model S1
$29.95 retail; PowerLine Four Model S4A
$49.95 retail; PowerLine Strip Model S10
Computer Accessories Corp.; 6610 Nancy Ridge Dr.; San Diego, CA 92121; 619-457-5500

■ Professional Plus
MIDI interface
Apple IIGS; any MIDI-equipped synthesizer.
The Professional Plus interface attaches to either the modem or printer port on an Apple IIGS. It provides one MIDI In and three MIDI Outs that may be connected to any synthesizer, drum machine or other MIDI device using standard MIDI cables.
$125 retail
Opcode Systems; 1024 Hamilton Ct.; Menlo Park, CA 94025; 415-321-8977

ProGrappler
Parallel printer interface
Apple IIGS; Apple IIe.
$119 retail
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

ProModem 1200A/2
Hayes-compatible 300/1,200-baud internal modem with built-in ROM software that supports 80 columns and all modem functions
Apple IIGS; communications software; 64K; software not copy protected.
$169 retail
Prometheus Products, Inc.; 7225 SW Bonita; Tigard, OR 97223; 503-624-0571

ProModem 2400A
Internal modem
Apple IIGS; other Apple II models; communications software; 64K; software not copy protected.
$239 retail
Prometheus Products, Inc.; 7225 SW Bonita; Tigard, OR 97223; 503-624-0571

RamKeeper
Constant power for RAM boards; provides instant access to programs
Apple IIGS; 256K; extended memory board.
$189 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

RamPak 4GS
Extended memory board; standard 512K of memory expandable to 4 MB
Apple IIGS.
$279 retail; 512K RamPak 4GS
Call for pricing; 256K Expansion Kit
Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

RAMTalker
A SmoothTalking speech card
Apple IIGS; Apple IIe; 64K; ProDOS 8; software not copy protected.
$159.95 retail
Electronic Learning Systems, Inc.; 2630 NW 39th Ave.; Gainesville, FL 32605; 800-443-7971

RAMTalker Plus
All-in-one multifunction speech board that combines a battery-protected RAM disk, high-quality SmoothTalker speech and a clock/calendar
Apple IIGS; IIe; 64K; ProDOS 8; not copy protected.
$299.95 retail
Electronic Learning Systems, Inc.; 2630 NW 39th Ave.; Gainesville, FL 32605; 800-443-7971

Serial Pro
Multifunction board combining a serial port with a functioning clock/calendar board
Apple IIGS; other Apple II computers.
$139 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Sider
External hard disk drive and tape backup subsystem
Apple IIGS; IIe.
$595 retail; Sider Model D2 (20 MB/65ms)
$795 retail; Sider Model D4A (40 MB/61ms)
$995 retail; Sider Model D4F (40 MB/25ms)
$895 retail; Sider Model T6 Tape (60 MB/89 ips)
$1,695 retail; Sider Model D9 (87 MB/18ms)
$2,495 retail; Sider Model C96 (87/60 MB combo)
First Class Peripherals; 3579 Hwy. 50 E; Carson City, NV 89701-2826; 800-982-3232

Smartmodem 1200A
Provides 1,200-baud communications and more
Apple IIGS; communications software.
$349 estimated retail; Smartmodem 1200A
$119 retail; Smartcom software
Hayes Microcomputer Products, Inc.; PO Box 105203; Atlanta, GA 30348; 404-449-8791

Sonic Blaster
Stereo digitizer that records, amplifies, allows editing and plays back in full stereo; includes software
Apple IIGS; 512K; GS/OS; included software is not copy protected.
$129 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

SoundAce 2.0
Audio digitizer that uses powerful Mac-like software to record and edit sounds
Apple IIGS; 512K; GS/OS; software is not copy protected.
$34.95 retail; software only
$79.95 retail; with microphone and hardware
Parallax, Inc.; 6200 Desimone Ln., #69A; Citrus Heights, CA 95621; 916-721-8217

■ Studio Plus Two
MIDI interface
Apple IIGS; any MIDI-equipped synthesizer.

Studio Plus Two is a MIDI interface that provides an Apple IIGS with two independent MIDI Ins and six MIDI Outs. The two MIDI Ins allow users to record from two keyboards simultaneously, or even to record through one MIDI In while users sync to tape with the other.

The six MIDI Outs let users fully utilize both the modem and printer ports of a IIGS, sending data out either side to multiple instruments. Modem and printer "thru" switches allow users to connect all MIDI cables, yet easily print or use the modem. Users can also use MIDI "thru" when there is no computer attached to the interface or when running non-MIDI applications. A third switch allows users to pool all six MIDI Outs together on a single port.
$225 retail
Opcode Systems; 1024 Hamilton Ct.; Menlo Park, CA 94025; 415-321-8977

■ Super-Comm
Serial interface card that makes communications possible between any Apple or Franklin computer and a variety of devices
Apple IIGS; other Apple II models.

Super-Comm is a serial interface card that is fully compatible with Apple's Super Serial Card. The Super-Comm makes communications possible between any Apple II, II+, IIe, IIGS or Franklin computer and a variety of devices, including modems, graphic tablets, plotters and printers.

Designed for easy installation and use, the Super-Comm comes complete with the ability to customize the card for a user's communications needs. Other features include Grappler-compatible graphics and keystroke screen dumping.
$89.95 retail
Sequential Systems; 1200 Diamond Cir., Ste. M-2; Lafayette, CO 80026; 303-666-4549

Supersonic
Digitized stereo board; supports Ensoniq sound chip
Apple IIGS; 512K; ProDOS 16; not copy protected.
$59.95 retail
MDIdeas, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-573-0580

ThunderScan
Replaces an ImageWriter's ribbon cartridge with a digitizing scanning cartridge
Apple IIGS; 64K.
$219 retail
Thunderware, Inc.; 21 Orinda Way; Orinda, CA 94563; 415-254-6581

■ TransWarp GS
Accelerator card
Apple IIGS.

The TransWarp GS is an accelerator card that increases the IIGS' processing speed 2.5 times. It plugs into slot three without sacrificing the 80-column display. Speed is easily adjustable through the IIGS Control Panel with no preboot disk necessary. TransWarp GS is totally compatible with all standard IIGS software and hardware and accelerates the IIGS from 2.8 MHz to about 7 MHz.
$399 retail
Applied Engineering; PO Box 5100; Carrollton, TX 75011; 214-241-6060

Universal Disk Controller Card
Connecting card for combinations of disk drives
Apple IIGS; compatible drives.
$90 retail
Laser Computers; 15220 NW Greenbrier Pkwy., Ste. 200; Beaverton, OR 97006; 503-690-8090

Music

■ A Guide To Computer Music
Introductory resource about musical electronics

In A Guide To Computer Music, specific product references have been reserved for the Apple II, IIGS and Macintosh computers and MIDI products. Through this reference guide, a beginner will learn about the basic evolution of musical electronics, common applications, what components are used to make music with a computer-based music workstation, helpful guidelines and buying tips, setup illustrations and computer-based music system recommendations. For more experienced MIDI users, the guide becomes a complete resource of major suppliers and dealers of electronic music products offering catalogs, support and electronic music software and hardware.
$12.95 retail
Sound Management; 100 Lynn St., Ste. 133; Peabody, MA 01960; 800-548-4907

Diversi-Tune
Turns the Apple IIGS into a MIDI synthesizer and recorder; plays up to 32 channels simultaneously
Apple IIGS; MIDI interface optional; 512K; ProDOS 8; not copy protected.
$75 retail
Diversified Software Research, Inc.; 34880 Bunker Hill; Farmington, MI 48331-3236; 313-553-9460

ECS Music Training Programs
Family of music training products
Apple IIGS; MIDI card; synthesizer; 512K; DOS 3.3; copy protected.
$39.95 retail; Keyboard Tutor-MIDI
$39.95 retail; Early Music Skills-MIDI
$79.95 retail; Keyboard Extended Jazz Harmonies-MIDI
$79.95 retail; Keyboard Fingerings-MIDI
$79.95 retail; Keyboard Chords-MIDI
$79.95 retail; Keyboard Arpeggios-MIDI
$79.95 retail; Keyboard Speed Reading-MIDI
$39.95 retail; Musical Stairs-MIDI
$39.95 retail; Note Speller
$99.95 retail; Elements Of Music
$99.95 retail; Music Flash Cards
$99.95 retail; Patterns In Pitch
$79.95 to $99.95 retail; 21st Century Music Series
Electronic Courseware Systems, Inc.; 1210 Lancaster Dr.; Champaign, IL 61821; 217-359-7099

Instant Music
Music creativity tool; up to four instruments can be played at once
Apple IIGS; 512K; ProDOS 16; copy protected.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Master Tracks Jr. For IIGS
Personal MIDI recording studio that provides tools for composing, recording and editing music with a graphical interface
Apple IIGS; 256K; MIDI interface; MIDI equipped instrument.
$149.95 retail
Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94109; 415-726-0280

Music Construction Set
Music composition system; 33 digitized instruments; MIDI output; and stereo music capability
Apple IIGS; stereo card and speakers recommended; 256K; ProDOS 8; copy protected.
$49.95 retail
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Music, Midi And Your Apple II
Informational newsletter
$14.95 retail; one-year subscription
$26 retail; two-year subscription
MMP Systems; 20681 Celeste Cir.; Cupertino, CA 95014

The Music Studio 2.0
Music creation program with pull-down menus, music paintbox and more
Apple IIGS; 512K; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

MusicShapes
Creative learning environment that involves a user in the process of music making and idea development; uses Ensoniq sound chip; MIDI compatible — Apple MIDI device MIDI card
Apple IIGS; 512K; ProDOS 16; not copy protected.
$175 retail
Music Systems for Learning, Inc.; 311 E. 38th St., Ste. 20C; New York, NY 10016; 212-661-6096

Pyware Instrument Designer
Sound wave designer
Apple IIGS; synthesizer and printer optional; 512K; ProDOS 16; not copy protected.
$129 retail
Pygraphics Corp.; PO Box 639; Grapevine, TX 76051; 817-481-7536 or 800-222-7536

Pyware MIDI Translator
Converts sequencer files into notation files to be used with Pyware Music Writer
Apple IIGS; synthesizer and sequencer program; 768K; ProDOS 16; not copy protected.
$79 retail
Pygraphics Corp.; PO Box 639; Grapevine, TX 76051; 817-481-7536 or 800-222-7536

Pyware Music Writer
Professional music writing program designed for the IIGS
Apple IIGS; printer; optional MIDI-compatible synthesizer; 768K; ProDOS 16; not copy protected.
$119 retail; Limited Edition
$295 retail; Special Edition
$595 retail; Professional Model
Pygraphics Corp.; PO Box 639; Grapevine, TX 76051; 817-481-7536 or 800-222-7536

Sonix
Music interface for BASIC programs
Apple IIGS; two drives; RGB monitor; 1 MB; ProDOS 8; not copy protected.
$59.95 retail
So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298 or 714-963-3392

Networking

AppleShare File Server V. 2.0
Workgroup file server software
Apple IIGS; other Apple computers.
$799 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleShare IIGS Workstation Software
Workgroup software
Apple IIGS; other Apple models.
$99 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleShare Print Server
Network print server; enhanced version of LaserShare
Apple IIGS; other Apple computers.
$299 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Aristotle
Provides educational institutions with access to ProDOS applications stored on an AppleShare File Server
Apple IIGS; other Apple II models.
$199 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

■ ELAN Networking System
Educational Local Area Network (ELAN)
Apple IIGS; other Apple II models; 128K; ProDOS 8; DOS 3.3; one Satellite board; one expander card; twisted pair cable; AROS III software; copy protected.

ELAN network provides for a number of students, working on Apple II computers, the ability to share programs and data files located on a hard disk residing at one computer (Central). Students may also print-out reports to any one of four printers located at the Central computer. Students may also save their work on the hard disk drive in a private area, accessible only with an appropriate account. While students operate on the network, they can either work together on the same program (independently), or each student can execute a different program.

With students working on a network, a teacher has complete control of the students' activity.

$267 retail; per remote station
Lan-Tech, Inc.; 11811 N. Tatum Blvd., Ste. P-150; Phoenix, AZ 85028; 602-953-6300

Inter•Poll Network Administrator's Utility
Contains tools that an AppleTalk network administrator can use to implement a network support program
Apple IIGS; workstation software.
$129 retail
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

MouseFiler Network Utilities
Enables an Apple II user to work with an AppleShare server over the AppleTalk network; Macintosh-style desktop using windows, pull-down menus and the mouse
Apple IIGS; AppleShare Server, AppleTalk Network and Apple II Workstation board; 128K; ProDOS 8; not copy protected.
$199.95 retail; institutional POs accepted
Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton, MA 01720; 508-263-1870

Online Databases

AppleLink - Personal Edition
Allows users to access Apple-specific and general online information and resources
Apple IIGS; other Apple II models; one disk drive.
$35 retail; includes software, user guide, first year's subscription and the monthly AppleLink Update magazine
$35 retail; annual subscription fee
$6 retail; per hour (6 p.m. to 7 a.m. weekdays and all day on weekends)
$15 retail; per hour (prime time use)
Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Boston CitiNet
Free online information service
ASCII terminal with modem.
Free to access
Boston CitiNet; Ste. 717, World Trade Center; Boston, MA 02210; 617-439-5678 or 617-439-5699 (modem)

CompuServe Information Service
Online telecommunications with MAUG, an Apple II forum
Apple IIGS; modem; communications software.
$39.95 retail; Subscription Kit
CompuServe Information Service; PO Box 20212; Columbus, OH 43220; 614-457-0802 (in Ohio and outside U.S.) or 800-848-8199

Genie
Online database with an Apple II special interest group
Apple IIGS; modem.
$5 per hour retail; after hours
$35 per hour retail; prime time
General Electric Information Services Co.; 401 N. Washington St.; Rockville, MD 20850; 800-638-9636

The Source/Applesig

Telecomputing network; includes Apple II forum (Applesig); only place one can electronically access *The Apple IIGS Buyer's Guide* database, in which this database version is more extensive than the magazine version
Apple IIGS; other Apple II models; 64K system and a ProDOS terminal program is necessary to download software from Applesig's library; modem; communications software.
$29.95 retail; one-time membership dues
$6.00 per hour; 300-baud on evenings and weekends
$7.80 per hour; 1,200-baud on evenings and weekends
$9.00 per hour; 2,400-baud on evenings and weekends
The Source; 1616 Anderson Rd.; McLean, VA 22102; 703-821-6666 (membership), 703-734-7500 (business office) or 800-336-3366

Personal Productivity

■ Address Master

Integrated name and address database
Apple IIGS; printer optional; 512K; ProDOS 16; not copy protected.

Address Master provides an easy to use system that enables users to maintain a file of the names and addresses of people and businesses that they want to keep track of and more. Users can also keep track of birthdays, anniversaries and relationships. Mailing lists and labels can be printed, including mailing labels in Zip code order for bulk mailings.

While primarily directed for use by individuals and families, the program can be used by small businesses, clubs, churches, etc. for customer or member tracking. Address Master can also be used to keep track of credit card numbers and their issuing companies.
$49.95 retail; available May 1989
Prelude Software, Inc.; 3134 Limerick Ln.; Costa Mesa, CA 92626; 714-751-5736

■ Board Feet Made Easy

Teaches students to become proficient with board feet calculations
Apple IIGS; 128K; ProDOS 8; copy protected.

Board Feet Made Easy starts with the basics by providing definitions using plug-in type formulas and graphic representations for clarity. When prompted, the computer draws examples of lumber and shows graphically the number of board feet contained therein. Solutions are displayed in decimal and fractional formats.

Built-in problem and testing sessions are specially designed to improve a student's confidence and ability to handle board feet mathematics. The computer will generate more than 250,000 different problems from seven different severity categories.
$69.99 retail
Builders Software; PO Box 1823; Independence, MO 64055; 816-229-0139

Dollars And Sense

Financial management package
Apple IIGS; ProDOS 8.
$119.95 retail
Monogram; 531 Van Ness Way; Torrance, CA 90501; 213-533-5120

The Food Processor II

Nutrition and diet analysis with 2,400 foods and 30 nutrients
Apple IIGS; other Apple II models; one or two disk drives; 128K; ProDOS 8; not copy protected.
$250 retail; free demo available
ESHA Research; PO Box 13028; Salem, OR 97309; 503-585-6242

Genealogical Data Base System (GDBS)

Genealogical software
Apple IIGS; other Apple II models; 48K; ProDOS 8 and DOS 3.3; not copy protected.
$99.95 retail
Data Base Systems; PO Box 7263; Huntsville, AL 35807; 205-881-6957

L.I.F.E. Diary

Stands for "Learn/Improve from Experience"
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
$24.95 retail
Maretech; 325 Newell St., Dept. A3; Walla Walla, WA 99362; 509-529-1894

Managing Your Money 4.0

Financial planning and small business package combining nine integrated programs into one
Apple IIGS; two disk drives; 256K; ProDOS 8; not copy protected.
$149.95 retail
MECA Ventures, Inc.; 355 Riverside Ave.; Westport, CT 06880; 203-226-2400

■ Nutriplan

Diet and nutritional advice
Apple IIGS; printer optional; 128K; ProDOS 8; not copy protected.

Nutriplan provides users with diet and nutritional advice. After a user types in the foods and the amount of each chosen for that meal, the program will analyze it for nutritional content, including calories, protein, carbohydrates, saturated and polyunsaturated fats, cholesterol, fiber, vitamins and minerals. The program will also analyze what percentage of a user's recommended daily allowance (RDA) of key nutrients the meal supplies.

Nutriplan allows users to compare the nutritional content of two foods, and a user can also refer to a built-in directory for more than 400 common foods. Each listing includes caloric and nutritional content. The program also permits users to add 200 more foods to the database for the analytical portions of the program. The program provides an online tutorial and a table of equivalent measures.
$75 retail
Micromedx Computer Software Corp.; 187 Gardiners Ave.; Levittown, NY 11756; 516-579-6392

Personal Accountant 2.0

Personal accounting system for personal and small business use
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$49.95 retail
Softsync, Inc.; 162 Madison Ave.; New York, NY 10016; 212-685-2080

Quicken

Single-entry bookkeeping software for small business and personal use
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$49.95 retail
Intuit, Inc.; 540 University Ave.; Palo Alto, CA 94301; 415-322-0573

TaxView

Tax preparation and planning
Apple IIGS; 512K; ProDOS 16; two 2.5-inch disk drives or hard disk drive; not copy protected.
$119 retail
SoftView, Inc.; 4820 Adohr Ln., Ste. F; Camarillo, CA 93010; 805-388-2626 or 800-662-6829

■ Total Stress Management System

Covers many techniques to reduce stress and tension
Apple IIGS; printer optional; 64K; ProDOS 8; copy protected.

The Total Stress Management System covers many techniques to reduce stress and tension. The computer becomes a therapist and guides a user through each stress reducing exercise.

The system consists of two major parts. The first part deals with stress in general and offers the Stress Quotient (to evaluate how much stress is in a user's life), What Is Stress (a tutorial), Your Stress Graph, a Self Evaluation, a Friendly Talk (an interactive program) and the Nidorf Stress Scale (itemizes various stress inducing situations).

The second part deals with symptoms and remedies and offers complete exercises in the following areas of stress reduction: Assertiveness Training, Breathing, Desensitization, Exercise (isometric exercises at the computer), Imagery, Meditation, Behavior Modification (for weight loss), Self Hypnosis, Relaxation, Time Management and Thought Control.
$89.50 retail
Psychological Psoftware Co.; 312 Los Altos Dr.; Aptos, CA 95003; 408-688-6808

Programming And Utilities

360 Text Toolkit V2.0

System library for APW/ORCA based languages
Apple IIGS; APW or ORCA development environments; GS/OS; not copy protected.
$64.95 retail; Library with Assembly Macros
$24.95 retail; ORCA/Pascal Interface (requires Library)
$24.95 retail; APW C Interface (requires Library)
360 MicroSystems; 12272 Fox Hound Ln.; Orlando, FL 32826; 407-365-4714

AC/Basic Compiler

Basic compiler
Apple IIGS; 512K; ProDOS 16; not copy protected.
$125 retail
Absoft Corp.; 2781 Bond St.; Auburn Hills, MI 48057; 313-853-0050

■ Apple IIGS Debugger

Machine-level debugger

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

The Apple IIGS Debugger is a machine-level debugger that lets a user trace or step through programs or insert breakpoints. It can display registers, memory locations, the direct page and stack and let's a user switch between the application's and the debugger's display screens. It also includes Memory Mangler and Loader Dumper desk accessories, which allow a user to peek at Memory Manager and System Loader data during execution of a program.

$25 retail

APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

■ Apple IIGS Icon Editor

Tool to create and modify icons

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

The Apple IIGS Icon Editor is a tool for creating and modifying icons for display by the Apple IIGS Finder. Icons can be created for applications or for documents. Using the Icon Editor, a programmer can match application icons to document icons so that when a user opens a document from the Finder, the appropriate application is launched.

$25 retail

APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

■ Apple IIGS Source Code Sampler, Volume I

Contains source code for IIGS applications that use the desktop interface

Apple IIGS; ProDOS 16; APW native or MPW IIGS cross development system; not copy protected.

The Apple IIGS Source Code Sampler, Volume I contains source code for Apple IIGS applications that use the desktop interface. Assembly source code samples include an empty shell application, an animation demo, a custom control, custom windows, dialogs, window caching, list handling, a sampled sound player, a Print Manager record spy, custom menus and a math function grapher that uses SANE. C source code samples include an empty shell application and a program lister that can print to the ImageWriter and LaserWriter.

Source code is included for both the APW native development system and the MPW IIGS cross development system, in both assembly and C.

$30 retail; includes two 3.5-inch Apple II disks and one 3.5-inch Macintosh disk

APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

■ Apple IIGS System Software (GS/OS) Version 4.0

Increases speed and performance of Apple IIGS

Apple IIGS; 512K.

Apple IIGS System Software (GS/OS) is a 16-bit, native-mode operating system that speeds disk access, boot time and program launch time. It has two new utilities: Advanced Disk Utility and the Installer. Advanced Disk Utility provides the ability to partition, initialize and erase hard disks. With the Installer, startup disks can be customized to match users' system configurations.

$39 retail; documentation and disks

(Software available separately free of charge from Authorized Apple Dealers)

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

APW C: Apple IIGS Programmer's Workshop C V1.0.2

APW C compiler

Apple IIGS; APW; 1.25 MB; ProDOS 16; two 3.5-inch disk drives or one 3.5-inch disk drive and a hard disk drive; hard disk drive highly recommended; not copy protected.

$100 retail

APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

APW: Apple IIGS Programmer's Workshop V1.0.2

Software development system

Apple IIGS; 1.25 MB; ProDOS 16; two 3.5-inch disk drives or one 3.5-inch disk drive and a hard disk drive; hard disk drive highly recommended; not copy protected.

$100 retail

APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

Copy II Plus 8.3

Backs up copy protected disks

Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.

$39.95 retail

Central Point Software, Inc.; 15220 NW Greenbrier Pkwy., Ste. 200; Beaverton, OR 97006; 503-690-8090

■ Cross-Works

Utility that exchanges AppleWorks with IBM PC software

Apple IIGS; 128K; not copy protected.

Cross-Works is a utility that transfers and converts files between Apple IIGS and IBM PC-compatible computers. A universal 8-foot cable exchanges files in either direction at 19,200 baud between the computers.

The transferred files are automatically converted for compatibility with popular programs. ASCII text files may also be transferred. The inverse conversions are supported for sending files from the IBM to the Apple.

For computers too far apart for direct connection, remote transfers can be made using 1,200 baud Hayes-compatible modems.

$79.95 retail

SoftSpoken Co.; PO Box 97623; Raleigh, NC 27624; 919-878-7725

Disc Commander

ProDOS disk editor

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

$39.95 retail

So What Software; 10221 Slater Ave., Ste. 103; Fountain Valley, CA 92708; 714-964-4298 or 714-963-3392

Disk Util II

Backs up copy protected software

Apple IIGS; 3.5 inch disk drive; 512K; ProDOS 16; not copy protected.

$59.95 retail

FWB, Inc.; 2040 Polk St., Ste. 215; San Francisco, CA 94109; 415-474-8055

The Diversi Series

Family of utility software designed to enhance performance of the Apple IIGS and disk drives

Apple IIGS; ProDOS 8; not copy protected.

$45 retail; Diversi-Key (requires 512K)

$35 retail; Diversi-Cache (requires 512K)

$30 retail; Diversi-Copy (any Apple II)

Diversified Software Research, Inc.; 34880 Bunker Hill; Farmington, MI 48331-3236; 313-553-9460

Fasthouse

Software program for controlling the X-10 Powerhouse

Apple IIGS; other Apple II models; disk drive; X-10 Home Control interface; 64K; ProDOS 8; not copy protected.

$34.95 retail; includes cable

KADO Systems; PO Box 1115; Pflugerville, TX 78660; 512-990-2390

File Utilities I

Shell utilities for APW/ORCA programming environments

Apple IIGS; APW or ORCA development system; GS/OS; not copy protected.

$34.95 retail

360 MicroSystems; 12272 Fox Hound Ln.; Orlando, FL 32826; 407-365-4714

Graphic Environment Operating System (GEOS)

Operating system that brings a Macintosh-like graphic interface to all Apple II computers

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

$129.95 retail

Berkeley Softworks; 2150 Shattuck Ave.; Berkeley, CA 94704; 415-644-0883

■ The Graphic Exchange

Universal graphics conversion utility

Apple IIGS; 768K.

The Graphic Exchange allows Apple IIGS users to convert virtually any Apple II image between different application programs.

The Graphic Exchange loads a picture in any format, converts all or a portion of the screen (even re-scaled if desired) to any other format and then saves the new file to disk. It can also directly read Macintosh disks (400K, 800K, MFS or HFS).

$49.95 retail

Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

Graphics Supermarket

Paint/animation program that also converts images into assembly or C source code

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

$49.95 retail; program only

$149.95 retail; program and source code

Abracadata; PO Box 2440; Eugene, OR 97402; 503-342-3030

GS Memory Test

Performs diagnostic tests on extended memory boards

Apple IIGS; extended memory card; 512K; ProDOS 8; not copy protected.

$19.95 retail

On Three, Inc.; 8920 Yolanda Ave.; Northridge, CA 91324; 800-443-8877

HyperLaunch
High-speed program launcher and switcher
Apple IIGS; hard disk recommended; 256K; ProDOS 16; not copy protected.
$34.95 retail
GoldenWest Technology; 1271 Carl St.; Anaheim, CA 92806; 714-635-2226

■ HyperStudio
Hypermedia authoring system
Apple IIGS; 1.25 MB.

HyperStudio is a hypermedia authoring system that lets users create their own hypermedia applications. It can integrate Super Hi-Res graphics, text and digitized sound files. The package also includes the Sound Shop digitizing software to record, edit and save sound samples, and the Sight 'n Sound utility that lets users set up a disk to bring up a Super Hi-Res picture and/or sound file while a disk is starting up.

HyperStudio comes complete with an amplified speaker, a sound digitizing hardware card and a microphone. The system allows users to add their own voice or sound effects to stacks while they're creating them.
$129.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

II/6502 System
6502 in-circuit cross development system; uses Apple IIGS/IIe as host computer to cross develop software for any 6502-based computer
Apple IIGS; IIe; ProDOS 8 and DOS 3.3; 128K; not copy protected.
$427 retail; II/6502 System
$219 retail; Baby II/6502 System
Parallax, Inc.; 6200 Desimone Ln., #69A; Citrus Heights, CA 95621; 916-721-8217

KeyLISP
LISP programming language
Apple IIGS; other Apple II models; 64K; ProDOS 8; not copy protected.
$149 retail
XPrime Corp.; 10835 Santa Monica Blvd., Ste. 204A; Los Angeles, CA 90025-4656; 213-470-4663

LifeGuard
File recovery software for files deleted under ProDOS 8 and ProDOS 16
Apple IIGS; 256K; ProDOS 16; not copy protected.
$29.95 retail
MicroSparc, Inc.; 52 Domino Dr.; Concord, MA 01742; 508-371-1660

Lisa 816 V5.0
Apple IIGS native mode release of the Lisa interactive assembly language development system
Apple IIGS; 512K; 1 MB recommended; ProDOS 16; not copy protected.
$70 retail
H.A.L. Labs; 9472 Magnolia Ave.; Riverside, CA 92503; 714-359-8480

Logo Writer Software
Integrates word processing and graphics in the Logo programming environment
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$450 retail; site license (intermediate and primary)
$299 retail; primary lab pack
$299 retail; intermediate lab pack
$169 retail; primary set
$169 retail; intermediate set
$549 retail; LCSI Logo II site license
$399 retail; LCSI Logo II lab pack
$99 retail; LCSI Logo II single-user
Logo Computer Systems, Inc. (LCSI); 1000 Roche Blvd., 9th Floor; Vaudreuil, Quebec, Canada J7V 6B3; 514-455-5636 or 800-321-5646

■ LogoWriter Home Edition
Integrates word processing, graphics and music in the Logo programming environment
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.

LogoWriter Home Edition allows users to create almost anything — from greeting cards to video games — with words, pictures, animation and music. It comes with an introductory book that shows users how to make invitations, adventure stories, animated cartoons and more. Features include 25 predefined turtle shapes and a shape editor to create shapes, easy save features, word processing functions, turtle graphics and Logo programming capabilities.
$99 retail
Logo Computer Systems, Inc. (LCSI); 1000 Roche Blvd., 9th Floor; Vaudreuil, Quebec, Canada J7V 6B3; 514-455-5636 or 800-321-5646

■ MacroMate
Universal macro program
Apple IIGS; 768K.

MacroMate is a universal keyboard macro program that allows users to assign text and/or program keyboard commands (up to 10,000 characters) to a single command key. It works with AppleWorks (package includes a predefined macro library specifically for AppleWorks), as well as most other Apple IIGS programs. MacroMate works with programs written in virtually any environment (ProDOS 16, ProDOS 8, DOS 3.3 and Pascal), including many copy protected programs.
$49.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

MACtoGS Assembler/Linker
Allows a user to develop Apple IIGS assembly language programs on the Macintosh
Apple IIGS; Macintosh.
$195 retail
Consulair Corp.; PO Box 2192; Ketchum, ID 83340; 208-726-5846

Merlin 8/16
Includes two versions of Merlin 8 for assembling 8-bit ProDOS and DOS 3.3 programs and Merlin 16 for assembling 8- and 16-bit ProDOS programs
Apple IIGS; other Apple II models; 128K; ProDOS 8, ProDOS 16 or DOS 3.3; not copy protected.
$124.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

Micol Advanced Basic
Allows programmers to write Basic programs that operate specifically for the IIGS
Apple IIGS; not copy protected.
$145 retail
Micol Systems; 9 Lynch Rd.; Willowdale, Ontario, Canada M2J 2V6; 416-495-6864

Micol Macro
Integrated text editor, monitor/shell and self-relocating macro-assembler; designed for programmers working in assembly language
Apple IIGS; 512K; ProDOS 16; not copy protected.
$89.95 retail
Micol Systems; 9 Lynch Rd.; Willowdale, Ontario, Canada M2J 2V6; 416-495-6864

MouseFiler 2.0
Replaces the Finder in the Apple IIGS with a much faster desktop; includes program selector, find file searching and more
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$69.95 retail
Harbor Software, Inc.; 403 Great Rd., Ste. 8; Acton, MA 01720; 508-263-1870

MPW IIGS
Cross development system; development environment; cross development system assembler; cross development C compiler; cross development system Pascal compiler
Apple IIGS; 2 MB; MPW IIGS Tools requires MPW 2.0.2 or later; MPW IIGS Assembler requires MPW 2.0.2 or later and MPW IIGS Tools; MPW IIGS C requires MPW 2.0.2 or later and MPW IIGS Tools; MPW IIGS Pascal requires MPW 2.0.2 or later and MPW IIGS Tools; not copy protected.
$50 retail; MPW IIGS Tools V1.0
$100 retail; MPW V3.0
$100 retail; MPW IIGS Assembler V1.0
$150 retail; MPW IIGS C V1.0.1
$175 retail; MPW IIGS Pascal V1.0B1
APDA — Apple Computer, Inc.; 20525 Mariani Ave., M/S 33G; Cupertino, CA 95014; 800-282-2732

ORCA/Desktop For The IIGS
Programming environment for APW compatible languages
Apple IIGS; memory depends on language used; ProDOS 16; not copy protected.
$60 retail
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/M Assembler For The Apple IIGS
Complete development environment for assembly language programming
Apple IIGS; 512K; ProDOS 16; not copy protected.
$69.95 retail
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/M Support Programs
Adds 12 new commands to the ORCA/M, ORCA/Pascal or Apple Programmer's Workshop shell; library contains the source code to the ORCA/M and ORCA/Pascal; takes Merlin source code and translates it to ORCA/M source code
Apple IIGS; ORCA/M For The Apple IIGS; 512K each; ProDOS 16; not copy protected.
$39.95 retail; Utility Package #1
$39.95 retail; Subroutine Library Source
$29.95 retail; Merlin to ORCA Source Code Translator
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

ORCA/Pascal For The IIGS
Pascal programming language with desktop programming environment and source level debugger
Apple IIGS; 768K for text environment; 1,024K for desktop environment; ProDOS 16; not copy protected.
$150 retail; ORCA/Pascal with desktop and debugger
The Byte Works, Inc.; 4700 Irving Blvd. NW, Ste. 207; Albuquerque, NM 87114; 505-898-8183

The Power System
Programming systems: UCSD Pascal; Modula-2; Fortran 77; Basic and C
Apple IIGS; other Apple II models.
$129.95 retail
Pecan Software Systems, Inc.; 1410 39th St.; Brooklyn, NY 11218; 718-851-3100 or 800-637-3226

TML Basic V.2.0
Full-featured 16-bit Basic compiler
Apple IIGS; 512K; 768K recommended; ProDOS 16; not copy protected.
$125 retail; TML Basic
$69 retail; TML Speech Toolkit
TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

TML Pascal Family V.2.0
Complete Pascal programming environment
Apple IIGS; extended memory board recommended; 512K; 768K recommended; ProDOS 16; not copy protected.
$125 retail; TML Pascal
$125 retail; TML Pascal APW
$49 retail; The Source Code Library
$69 retail; TML Speech Toolkit
TML Systems, Inc.; 8837-B Goodbys Executive Dr.; Jacksonville, FL 32217; 904-636-8592

■ UniDOS Plus
Formats 3.5-inch disks that automatically boot up Apple's DOS 3.3
Apple IIGS; 256K; DOS 3.3; not copy protected.

The 800K disk drives for the Apple II give users five times the storage capacity of floppy disks, but are not compatible with DOS 3.3. UniDOS Plus formats 3.5-inch disks that automatically boot up Apple's DOS 3.3.

With UniDOS Plus, users can use existing DOS 3.3 software and files. It is fully compatible with Applesoft programs that do not modify HIMEM. UniDOS Plus may not operate correctly with machine language utility programs that directly use or modify DOS 3.3 internal routines. This means that most copy protected software is not compatible with UniDOS.
$39.95 retail
MicroSparc, Inc.; 52 Domino Dr.; Concord, MA 01742; 508-371-1660

ZBasic 4.2
ProDOS compiled Basic
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$69.95 retail
Zedcor, Inc.; 4500 E. Speedway, Ste. 22; Tucson, AZ 85712; 602-881-8101 or 800-482-4567

Word Processing

//Write
Full-featured word processor with Macintosh simplicity
Apple IIGS; 128K; ProDOS 8; copy protected.
$59.95 retail
Random House, Inc.; 400 Hahn Rd.; Westminster, MD 21157; 800-638-6460

AppleWorks GS
Integrated software package
Apple IIGS; 1.25 MB; GS/OS; not copy protected.
$299 retail
(For AppleWorks GS upgrade information, call 800-544-8554)
Claris Corp.; 440 Clyde Ave.; Mountain View, CA 94043; 415-962-8946

Bank Street Writer III
Word processing program featuring integrated 60,000 word spelling checker and a 50,000-synonym thesaurus; processing for primary and high school students
Apple IIGS; other Apple II models; 128K; ProDOS 8; copy protected.
$99.95 retail
$79.95 retail; academic
Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

■ The Character Family
Lets users print special characters used in math, science, foreign languages, etc.
Apple IIGS; 64K; ProDOS 8; not copy protected.

The Character Factory lets users print special characters, such as those used in math, science, foreign languages and other subject areas. If used with AppleWorks, AppleWriter or any other program (DOS or ProDOS) that allows entry of "control codes," users can now print the characters they need.

The almost 400 characters provided can be easily edited and, by using just a few keys, users can design a new character, typeface or graphic design. Up to 94 special characters can be placed anywhere on the keyboard. Because the standard characters aren't replaced, users can put a symbol on the key that is most logical to them.
$24.95 retail; single user
$49.95 retail; unlimited copies per school or college department
Seven Hills Software Corp.; 2310 Oxford Rd.; Tallahassee, FL 32304; 800-627-3836

DeluxeWrite
Word processor that combines text and graphics to create documents for letters, school reports, business reports and more
Apple IIGS; 768K; ProDOS 16; not copy protected.
$79.95 retail
$129.95 retail; DeluxeWrite/DeluxePaint II
Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

MouseWrite Version 2.6
ProDOS moused-based word processor with print spooling, spelling checker, mail merge, AppleWorks conversion and more
Apple IIGS; other Apple II models; extended memory card recommended for expanded desktop (384K); two disk drives; 128K; ProDOS 8; not copy protected.
$149.95 retail
Roger Wagner Publishing, Inc.; 1050 Pioneer Way, Ste. P; El Cajon, CA 92020; 619-442-0522

Sensible Grammar
Proofreading program that checks word processing files for common writing errors
Apple IIGS; word processing program; 128K; ProDOS 8; copy protected
$99.95 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Sensible Speller For ProDOS
Electronic dictionary containing the 80,000-word Concise Edition of the Random House Dictionary on disk
Apple IIGS; word processing program; 64K; ProDOS 8; copy protected.
$125 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Sensible Writer
Word processor featuring built-in mail merge and automatic envelope addressing; shares data with AppleWorks
Apple IIGS; 128K; ProDOS 8; not copy protected.
$99.95 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Wordbench
Word processing program
Apple IIGS; other Apple II models; 128K; ProDOS 8; not copy protected.
$149 retail
Addison-Wesley Publishing Co., Inc.; 1 Jacob Way; Reading, MA 01867; 617-944-3700

WordPerfect For The Apple IIGS
Full-featured word processor with more than 110 features
Apple IIGS; two disk drives or a hard disk drive recommended; additional memory card recommended; 512K; GS/OS; not copy protected.
$179 retail
WordPerfect Corp.; 1555 N. Technology Way; Orem, UT 84057; 801-225-5000

Writer's Choice Elite
Graphics/text word processor for use with Paintworks Plus, Draw Plus, Clip Art Gallery and more
Apple IIGS; 512K; 1 MB recommended; ProDOS 16; not copy protected.
$99.95 retail
Activision; 3885 Bohannon Dr.; Menlo Park, CA 94025; 415-329-0500

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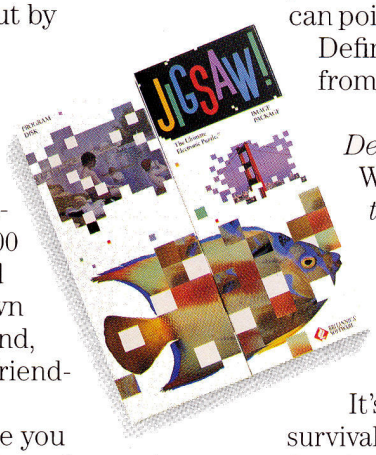

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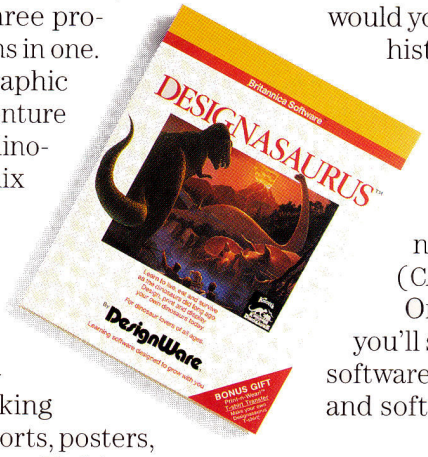

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