

Apple II GS

The Buyer's Guide

A Redgate Publication
Fall, 1987 \$5.00 U.S.



Great Graphics
On The Apple II GS

Educational
Software Roundup

Gourmet Gaming

Reviews Of
New Hardware And Software

More Than 125
Apple II GS
Product Descriptions



Premiere Issue

The most powerful Apple II in history.



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

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

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

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

And every other subject.



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

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

Interested?

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

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

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Apple II GS

The Buyer's Guide

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The cover photo is a triple exposure simulating a floating computer and mouse. Tass Times in Tonetown, from Activision, Inc. is on the computer screen. Photo by Greg Leary. Designed by Patti Walker.

Other photography in this issue by: Rob Downey

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Editor's Window

The Shopping Syndrome



It's not easy pricing a home computer. You can call every dealer in town, circle ads in the paper all day and still not have any idea what your total investment will be. Why? Anybody who knows anything about computers will tell you that your initial hardware investment is just a starting point. The real expense—the one that can threaten your bank book in dribs and drabs all year—is software and accessories.

The Apple IIGS is a wonderful computer, but it takes software to unlock the sound, graphics and animation capabilities that seem so seductive on the showroom floor. Even then, great software will not be enough. Stereo sound may be sealed inside the Apple IIGS, but a special stereo board is required to get it out. Moreover, some of the more powerful packages may not operate up to par without extra memory (translation: prepare to purchase an extended memory board). So it pays to shop around, ask questions and be convinced that each additional purchase will be used and not forgotten.

Where do you start? We think right here is as good a place as any. We're launching this magazine, the premiere issue of *The Apple IIGS Buyer's Guide*, because we want you to understand the Apple IIGS hardware and software market—what programs are available, who the major players are, what's hot, what's not. After all, no other magazine caters just to Apple IIGS users.

A lot has happened since the Apple IIGS was introduced one year ago. Some truly spectacular products have been created along with some mediocre ones. Others that were predicted to appear never materialized. Meanwhile, a lot of confusion has been generated over products designed specifically for the Apple IIGS versus those designed for earlier Apple IIs that just happen to run on the Apple IIGS.

We believe this, and future issues of *The Apple IIGS Buyer's Guide*, will help you cut through the confusion. In our comprehensive directory, you'll find listed every Apple IIGS hardware and software product we were able to verify at press time. You'll also find a number of hands-on product reviews and some basic "how to" buying advice to help you along.

If you detect a quiet enthusiasm for the Apple IIGS when paging through this magazine, please understand that we're cautious but not without spirit. I'm personally a long-time Apple II user, as are all the contributing editors you see listed on the masthead. We appreciate a machine that allows us access to the hundreds of Apple II programs we've collected over the years and eagerly anticipate each new hardware and software product specifically targeted for you, the Apple IIGS user.

Are you ready to go shopping? If so, we're eager to help you along.

—Paul Pinella, Editor-In-Chief

The Apple IIGS Buyer's Guide

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Leveraging The Printed Page

Orange Micro, Inc.



Art Scotten

For seven years, Anaheim, California-based Orange Micro, Inc. has produced accessory products for Apple, IBM and Commodore computers. The company now sees itself heading in an "Apple-only" direction, however. This includes two products for the Apple IIGS—ProGrappler and RamPak 4GS—introduced late last year.

"Our GS products are beginning to do well in the market," says Orange Micro President Art Scotten. "ProGrappler is one of a kind, and phone orders have been pouring in for the JuiceBox, a new power supply system."

The ProGrappler board has been Orange Micro's biggest Apple IIGS seller. Made specifically for an Apple IIGS and replacing the Grappler+, ProGrappler allows users to take "snapshot" pictures of anything that appears on screen.

According to Scotten, ProGrappler offers a lot of special features that can be accessed through a IIGS' Desk Accessory menu. "The main improvement over the old version," he says, "is that ProGrappler permits you to interrupt a program, take a snapshot and print it. Without missing a beat, you return to the exact point in the program you left off."

The RamPak 4GS memory card, expandable to 4 megabytes, is made by Orange Micro. Although there are several competing cards on the market, Scotten feels confident his will succeed. "This card is not a 'dumb memory card.' It provides useful utilities," he says.

One such utility is cache memory, which sets aside an area of memory where often used routines or programs are preserved. If you wish to access a certain program or routine in main memory, it can be taken from cache storage without accessing or loading a disk.

RamPak was one of the first third-party IIGS cards available. Although Apple's memory card outsells it, Scotten says he has been pleased by consumer acceptance.

Orange Micro plans to reveal a few new IIGS products in the near future. One of these is JuiceBox, a hardware device that provides protection against power fluctuations, heat and dust. "One switch turns on a fan, the computer and two AC outlets, such as for a printer and a monitor," says Scotten, adding that the fan brings a IIGS' operating temperature below 100 degrees and extends its working life.

Scotten believes the IIGS market is finally taking off. "The hoopla at the beginning died out because there was no extensive advertising," he says. Scotten feels Orange Micro's sales will increase steadily, especially with a major promotion pending from Apple targeted at back-to-school and Christmas purchasers.

Orange Micro was founded in 1980 by Scotten as a reseller of printers for personal computers and terminals. In 1981, the company introduced the original Grappler. It followed that up with the Grappler+ card for the Apple II family. Scotten formed a division in 1984 to create new products for printer-related markets. By 1985, Orange Micro's printer reselling business had expanded to 11 retail stores in the western U.S.

To leverage its printing expertise, Orange Micro entered the desktop publishing market last year with *Ragtime*, an "integrated page processing" program for the Macintosh. Last summer, Scotten announced Orange Micro had passed the half-million mark in terms of units sold.

According to Scotten, "Orange Micro will not be branching out to make products for any computer other than Apple. The Apple line, with the IIGS, provides plenty of opportunities." ■

—Eric Tenbus

The IIGS Commitment

StyleWare, Inc.

The importance of ease of use is not lost on Apple IIGS developer StyleWare, Inc. "Some companies try to make the most powerful software available. We try to make software that is easy to use," says StyleWare President Kevin Harvey.

For a IIGS-specific software manufacturing company that is doubling its sales every four months, this philosophy has been successful. "Our growth this year has been phenomenal, and things are looking even better for the future," says Harvey.

Based in Houston, StyleWare was incorporated in August 1985. "Before that, we were basically a garage software company," says Harvey. In March of last year, StyleWare released its first product—*MultiScribe*, a word processor for the Apple IIe and IIc.

"We knew if we could give Apple II users a program like those on the Macintosh, they would love it," Harvey says. StyleWare officials felt the Apple II market had become stagnant, with few new products that were truly exceptional.

Older word processors had always used the Apple II's text capabilities, but StyleWare set out to bring a graphics-based word processor to the market.

"We priced the package at \$39.95.

Within a couple months, we sold thousands of copies and gained a loyal following," says Harvey. The initial sales gave StyleWare enough money to produce and sell the product through standard retail channels, and sales continued to rise.

With 25 employees, StyleWare has committed its future to the Apple IIGS. Products released by the company now take advantage of the many IIGS features. "The Apple IIGS is an ideal machine for consumers," says Harvey. "It's great for the home and children and it has all kinds of educational programs available."

Harvey stresses that the latest Apple IIGS version of *MultiScribe*, called *MultiScribe GS* (see review, this issue), is a very what-you-see-is-what-you-get package. A user sees on screen exactly what will be printed, unlike many text-oriented word processors.

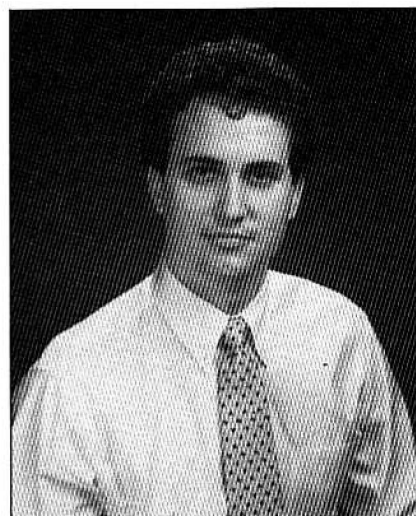
According to Harvey, the speed and enhanced memory of a IIGS make many things possible that have never existed on an Apple II computer before.

One such capability includes use of multiple windows to edit a number of different documents simultaneously. Another feature stems from *MultiScribe GS'* color capabilities, which allow users to extract color choices from a palette of 4,000 colors. "At first we thought color would be a gimmick, but people like it and use it regularly," Harvey says.

StyleWare sees continued market growth for its word processor in the IIGS home and educational markets. "IIGS users are mainly home users, and our product allows them to make nice printouts," says Harvey. "It also carries over to schools. Teachers don't have to teach word processing in an archaic way. A IIGS gives kids automatic feedback they can understand and helps students who are afraid of computers."

An Eskimo tribe in northern Canada is using *MultiScribe* to write down their language. "They used the program's font editor to create a special alphabet and are transcribing what has always been an oral language," Harvey says.

Another StyleWare's product, *TopDraw*, is one of the first object-oriented IIGS graphics programs. "A user does not paint on a canvass-like environment, which sets *TopDraw* apart from other graphics programs," says Harvey. "Objects on the screen retain their identity, even when something is drawn on top of them. It's basically like a superset of *MacDraw*."



Kevin Harvey

TopDraw can access more than 4,000 colors and is useful for designing textures. "It's a great program for something like fashion design," Harvey adds.

StyleWare is unique because it's primarily a IIGS developer, while most other publishers produce software for several different computers. "We believed in the IIGS from the beginning," Harvey says.

Because StyleWare has bet its future on the success of the Apple IIGS, Harvey is pleased by dealer reports that IIGS sales are going well. As for future products from StyleWare, he offers this thought: "We're always thinking." ■

—Eric Tenbus

Great Graphics On The Apple IIGS

You don't have to be a budding Michelangelo to make stunning pictures on your Apple IIGS. Today's paint, draw and video-accessory products can bring out the creativity juices in just about everyone.

In the forgotten days of early computers, graphics was a myth. Computers accepted punched cards for input, and produced reams of paper for output. One day, an anonymous programmer with a sense of humor told his computer to print out a Snoopy picture. The picture consisted of various periods, equal signs and assorted other letters. From a distance it looked like a picture of the popular cartoon character Snoopy.

The resolution (dots per inch) of the printout was very low, but it was a start. As hard-copy terminals were replaced with CRT display tubes, the graphics capabilities of computers began to expand. Many CRT terminals included graphic character sets, little blocks which could be used to create crude graphics images, and pretty soon Snoopy pictures started to turn up on them. The Snoopy pictures, and other graphic images, were pretty to look at, but they didn't do anything. That changed with the introduction of animated computer simulations, moving cartoons and computer games.

By 1976, the first home computers usually included some crude form of





graphics characters or low-resolution graphics. Apple Computer, Inc. co-founder Steve Wozniak wanted, and built, better graphics for the Apple II. The Apple II's graphic circuitry included the built-in capability for both low-resolution and high-resolution graphics. Since many users couldn't afford the computer at that time, massive amounts of memory required for high-resolution graphics (a whole 8K!), the low-resolution mode was provided. It occupied the same portion of memory as the screen memory and didn't steal any program memory space.

The low-resolution memory consists of a 40-block by 48-block, 16-color display. The original Apple II demos included a version of the Atari *Breakout* game, a color Kaleidoscope, a math program, and a program which created various screen demos, including a tunnel effect, a spring, moving lines, and a color bar-test pattern. This last program can be seen as part of the special effects in the 1977 Patrick Duffy television series, "Man from Atlantis."

The high-resolution graphics consists of a 280-dot-by-192-dot four-color (black, violet, green and white) display in the original Apple II. Why those colors? It turned out that those were the colors produced by using the TTL chips which Woz used to design the Apple's video display circuitry. Users very quickly found out that it was easy to add two more colors, orange and blue, with the addition of two more integrated circuits (ICs). The first six thousand Apple IIs went out of the factory with four-color high resolution, but the rest of the units all had six-color capabilities built in.

When the Apple IIe was introduced in 1983, the text display was upgraded from 40 columns to 80 columns. Along with doubling the text, it was decided to double the graphics resolution at the same time, and the IIe introduced two more graphics modes: the double low-resolution mode (rarely used), and the double high-resolution mode. Regrettably, no software support was supplied by Apple, but many second-party manufacturers have written routines for double high-resolution graph-



Sophisticated real-time images can be captured with AST's VisionPlus, then later manipulated in paint and draw programs.

ics, and many programs use this mode for better-looking displays.

Introducing The Apple IIGS

Many new computers, including the Apple IIGS, are designed with excellent graphics capabilities. With the GS standing for Graphics and Sound, the IIGS had to live up to its name and it does, with an advanced graphics generator. The IIGS supports all of the early Apple graphics modes and adds two new ones: the super high-resolution graphics modes. Expanded memory is what makes higher resolution displays possible. A super-high-resolution display takes up 32K of memory—16 times as much as the low-resolution display on the original Apple II, and twice as much memory as my entire Apple II had when I purchased it in 1978!

The super-high-resolution mode can be set to either 320 dots by 200 dots with sixteen colors, or 640 dots by 200 dots with four colors. Although the 320-by-200-dot display seems at first glance to be a lower resolution display than the double high-resolution mode, it

actually looks better, due to better hardware, better displays and more colors. Instead of six, or even 16 colors to choose from, the IIGS can produce a rainbow of 4,096 different colors. If you can imagine the color, the IIGS can generate it.

Most programs that use these colors have sliding bars to adjust the levels of red, green and blue you want in each shade of color. Depending on the program, you may also have tint, hue or intensity bars that adjust the various colors together. Alternately, if you don't need color in your display, you can set your colors to shades of gray to produce high-quality black-and-white pictures. Instead of using dithering pixel patterns to create the illusion of gray scale, your palette can be set for different light levels.

Many people have asked why the IIGS only has 200 vertical dots of resolution, as opposed to the 400-vertical-dot-resolution popular in other graphics-oriented computers. Couldn't the IIGS' graphics generator be designed for a better vertical resolution? Basically, it's possi-

Spectacular Vernacular.

MultiScribe GS 3.0™

The fastest, most powerful graphic word processor for the Apple® IIGS™ is now even more powerful – with MultiScribe GS 3.0.

Complete with the 80,000-word Merriam-Webster/Proximity spell checker and thesaurus, MultiScribe GS offers the most sophisticated spell-checking and thesaurus technology ever available on an Apple II. An on-line spell checker that not only checks your spelling, but also suggests valid alternatives to misspelled words – both typographically and phonetically. And a thesaurus that lets you find the most appropriate words for your work, by using 40,000 entry points to generate 470,000 possible synonyms!

The desktop publishing solution for the Apple IIGs.

Choose from a variety of type styles, character sizes, and fonts to fit your writing needs. MultiScribe GS includes built-in object-oriented drawing, so you can add color shapes and lines to your documents – without using a graphics program. With the exclusive MultiScribe GS Color Editor, you can choose from 4,096 colors for your text and graphics. And MultiScribe GS is compatible with all major IIGs graphics programs.

From the screen to the page – without surprises!

All character sizes, print styles, and graphics appear on-screen exactly as they will when printed. MultiScribe GS offers near letter quality color printing on an ImageWriter II™ and near typeset quality with a LaserWriter.™

Powerfully professional.

MultiScribe GS even includes power user features like direct AppleWorks™ word processing, file compatibility and keyboard commands for scrolling, selecting, and deleting text.

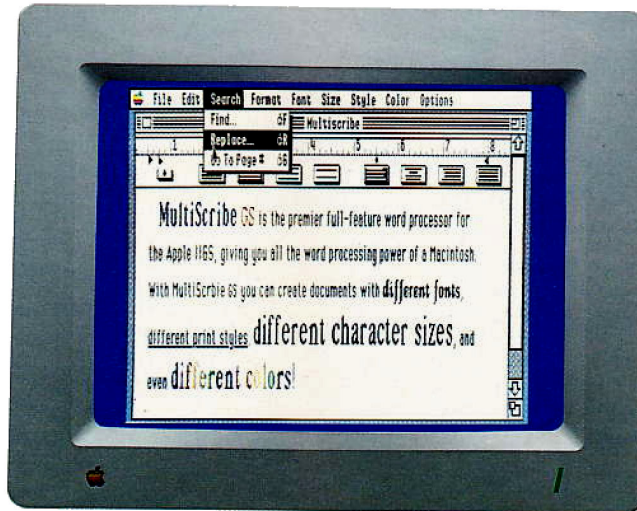


Illustration Sensation.



TopDraw™

For those thoughts that just can't be put into words, StyleWare has created TopDraw. Like MultiScribe GS, TopDraw is designed to take full advantage of the capabilities of the Apple IIGs. And TopDraw does it with flying colors – 4,096 colors, to be exact!

The shape of things to come.

The first object-oriented graphics program for the IIGs, TopDraw gives you the ability to create drawings based on shapes, or objects, which can be moved, edited and duplicated – giving you virtually limitless drawing potential.

The color of creativity!

TopDraw lets you edit both colors and patterns. Draw with up to 38 color patterns at once. Use color patterns as line or fill patterns to create millions of color combinations. And because creativity isn't limited to an 8½ x 11 inch page, TopDraw lets you print your creations in any size you want – up to dozens of pages in length and width.

Get serious.

TopDraw comes complete with all the tools you need to create professional quality drawings – movable palettes and user-defined rulers, grids, colors, and patterns. Create ellipses, rectangles, polygons and freehand objects, and a wide variety of lines and arcs. Print in beautiful color on an ImageWriter II. And because TopDraw uses object-oriented graphics, its LaserWriter output is far superior to that of the bit-mapped graphics of paint programs.

Seeing is believing!

See TopDraw, MultiScribe GS, and all the other creative StyleWare products at your authorized StyleWare dealer.



StyleWare, Inc.

5250 Gulfton, Suite 2E, Houston, Texas 77081
713/668-0743 (in Texas)
800/233-4088

ble to have up to 525 vertical lines on the screen. However, to do so would require the use of interlacing, a technique that leads to flicker, which is very tiring on the eyes. Restricting the vertical resolution to 200 lines produces a much more readable display.

Another major decision in the design of the Apple IIGS was the use of the AppleColor monitor. The monitor is fairly inexpensive and complements the Apple IIGS, both in the style of its case and its capabilities.

Unlike most earlier Apple monitors, the AppleColor is an analog RGB monitor. RGB stands for Red Green Blue—the primary colors of light. An RGB monitor uses separate signals for each of the three colors, instead of the combined signals used in composite monitors. With a digital RGB monitor, a signal can be either on or off, and the three primary colors can be combined to produce only eight colors.

Some RGB monitors use a separate intensity signal, often referred to as an RGBI monitor to produce different shades for a total of 16 different colors. An analog RGB



Thunderscan by Thunderware

monitor allows much finer adjustments to color levels. Instead of just an on/off choice, each of the three colors can be set to 16 different levels, ranging from full off to full on.

Consequently, Apple's latest approach to RGB allows for many different color and shade possibilities. For example, the color yellow actually consists of red and green, with both fully on. And purple is red at half-level, mixed with a small amount of green and blue. The analog RGB monitor and Apple IIGS combination produce a crisp, clean, and flicker-free screen picture with excellent resolution in all of its modes.

Let's Make A Video

So, how can you use all of those fancy new graphics capabilities? Real-world graphics—including objects, video images, and drawings on paper—all can be converted into computer graphics, within certain limitations. You can try to redraw the image in your computer, or use a hardware device that converts the image for you. A popular method of converting real-world images into computer output is to use a video camera. Just aim the camera at what you want, and its picture will appear on your computer's screen.

The conversion box which changes a video signal into a computer picture is called a digitizer. Currently, two different models are available for the Apple IIGS. Digital Vision's ComputerEyes 2 is inexpensive at (\$149.90, including Apple IIGS software), although it is fairly slow. Just aim your video camera at any object and set up the software. Within six seconds ComputerEyes will digitize your image.

Once digitized, the image can be printed to an ImageWriter or otherwise

Clip Art:

Software Shortcut To The Artist In You

Draw and paint programs are both excellent tools for artwork, but they're only as good as the person using them. Does that mean you have to be an artist to use a graphics program? No, but it does help. What you do with any graphics program depends partially on skill, experience and how much effort you want to put into the final output.

A good tool which helps make your life easier is sets of pre-drawn pictures, or clip art. Clip-art diskettes typically are filled with assorted pictures that can be cut and pasted into your own masterpieces. You can obtain maps, animals, icons and more in clip-art disks. Unfortunately, clip-art disks aren't always as compatible as pic-

ture files, and as a general rule a clip-art image will only work with the program it's intended to work on. I tried the Activision *Clip Art Gallery*, and the *Deluxe Paint* art parts series.

The Activision disk (\$29.95) includes a variety of images that are saved in 24 categories, from academia to fantasy and vehicles. All together there are 600 separate drawings. Any of the images can be grabbed with the lasso, saved in the clipboard and added to your own pictures.

Electronic Arts has three separate additional clip-art packages for \$29.95 each. The *Arts Paris* series includes pictures and examples spanning a multitude of images, including birds, dinosaurs, faces,

graphs and holidays.

When comparing the two offerings, the Electronic Arts clip-art pictures seem hard to beat. Besides the much larger library of pictures to choose from, the Electronic Arts images include real color shading, as opposed to the "cartoonish" style of the Activision artwork. In addition, I found the Electronic Arts library to be better arranged, making it that much easier to find a particular piece of clip art.

It is possible to make clip-art disks that are compatible with all of the different paint programs. Someday, some budding artist may decide to produce disks filled with clip-art for use in a variety of programs.

Presenting One Musical Group That Will Never Make The Cover Of Rolling Stone.



While most musical groups would love to be on the cover of Rolling Stone, The Music Class™ will settle for an appearance on your Apple computer.

Its playful graphics and challenging tests will guide you through the principles of music. All you need to run The Music Class software is an Apple II™ or IIGS™ computer with 64K memory.

The five programs are:

Fundamentals: Make sense of those skinny lines with blobs and tails. All the basics from rhythm to note reading. \$49.

Rhythm: What the exact difference is between waltz, polka, jazz, rock, ragtime, and more. A comical guy by the name of Mr. Metro Gnome is the teacher. \$49.

Ear Training: How to hear



The Music Class allows kids to learn at their own speed. Whether they're beginners or child prodigies.

exactly what's happening in a piece of music.

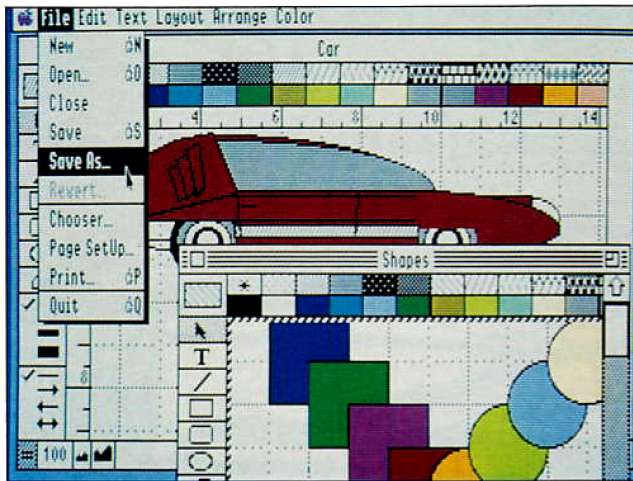
You'll never listen to The Rolling Stones quite the same way again. \$49. *Music Symbols:* No, they aren't called squiggles, blips, slashes and dots. You'll learn up to eighty musical symbols. \$39.

Note Reading: Know what the differences are between an E-Flat eighth note and a B-Flat quarter note. This is where you'll learn to read music. \$39. So order by calling toll

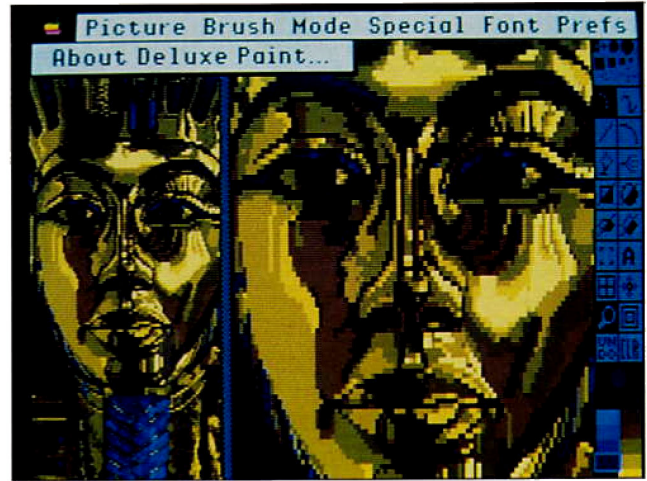
free 1-800-843-1337. Or collect 612-854-9554. Ask about our Coda Catalog with just over 600 music software products. And get your music career rolling.

Wenger Music Learning Division, 1401 E. 79th Street, Minneapolis, Minnesota 55420-1590





Draw Plus by Activision



Deluxe Paint II by Electronic Arts

manipulated on the computer screen (for example, by shrinking or expanding).

AST's VisionPlus is more expensive at \$399, but also much more powerful. The AST board digitizes standard black-and-white images at the rate of 15 times a second, thereby achieving a television-picture effect on your computer screen. In addition, you can also digitize 640-mode, black-and white-pictures (7.5 per second), or full-color images five times each second. Once pictures are digitized, you can zoom in on portions or stretch images. The AST software doesn't support printing capabilities yet, but you can save your image to a disk, and print it with another program.

A more unusual method for digitizing an image has been available for Macintosh users for a while now, and is just becoming available for Apple II owners. The Thunderscan from Thunderware, Orinda, California, is a different kind of digitizer that actually reverses the operation of your printer. Instead of sending out graphics from your computer and printing with a ribbon onto a blank sheet of paper, the Thunderscan takes a sheet of paper with an image on it, "reads" it while it is being passed through the printer, and converts it into a graphics image on the computer screen.

The Thunderscan reader uses an optical sensor that replaces your ImageWriter's ribbon. Under program control from the

Apple, the ImageWriter's print mechanism is used to pass the image onto a sheet of paper under the Thunderscan's reader. The data is then sent into the computer where it is converted into a graphics image. Since the ImageWriter has a very precise mechanism, very-high-density images can be converted. And, since most users already have an ImageWriter, the Thunderscan package is less expensive than a video camera and digitizer combination.

One disadvantage is that you have to rearrange your printer, replacing the ribbon cartridge each time you want to perform a scan. Also, the printout you want scanned must be on a sheet of paper that gets creased when it passes through the printer. You cannot digitize real-world objects with the Thunderscan, and you won't want to pass through anything valuable, such as an important picture or contract.

There is a simple solution to these problems, though. Take a photograph of anything that isn't on a sheet of paper. If it's too valuable to risk passing through the printer, just make a photocopy, and Thunderscan the photocopy.

We found the video digitizers excellent for use with a video recorder or for use with a video camera for real-world objects. With the proper setup you can start your own flea market "Computerized Pictures" booth. The Thunderscan, however, was unbeatable for digitizing most printed

documents, including logos off letterheads and photographs.

Painting And Drawing

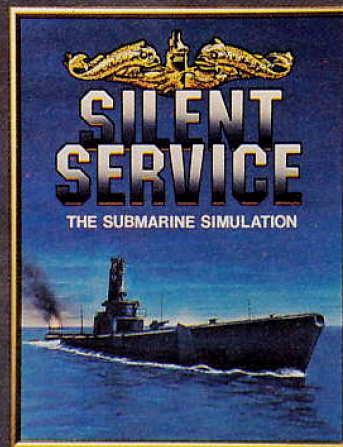
Grabbing a real-world image is fun and useful, but the most popular way to create a graphics image is through an art program. Art programs come in two categories: draw and paint. A draw program treats the segments of what you are drawing as individual objects. If a picture consists of a ball, triangle and squiggly line, each of the three objects is saved separately in memory and controlled separately. You can move each of the objects separately, adjust their sizes and edit their shapes.

If you remove an object on top of another object in a draw program, the object below will be revealed. In a draw program, objects are stored in memory, and the program uses the screen only as a display to show the user how the output will turn out. A paint program, on the other hand, treats the screen memory as the canvas that you are painting on. When you use a paint program, you're updating the video memory directly, thereby affecting what you see on the screen.

In a paint program, once you paint one object over another, the object below is erased. The primary advantage of a paint program is that you're actually manipulating screen memory. Each dot on the

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screen can be set the way you want. The advantage to a draw program is that objects can be moved and manipulated separately, and you can produce very-high-resolution pictures when you dump to a high-quality printer, such as the Laser-Writer.

Some draw programs will support paint-created images and can grab a paint-created image for use within a draw-type document. Naturally, that paint image cannot be edited any further, and has to be treated as a single object within the draw program.

Which is better—paint or draw? It depends on what you are trying to do. For artists, a paint program is naturally better, but for an architect, a draw program is more suited toward moveable walls and furniture. What about an interior designer who requires both the needs of an artist and an architect? For many such people, both types of programs are indispensable.

Both paint and draw programs are available for the Apple IIGS, and there are several different versions of each one. Most of the programs are just being released as you read this, and early programs are being reintroduced with new updates. One reason this process takes a long time: Apple's print drivers were just introduced in late spring/early summer, and many programmers have been waiting to add Apple's drivers to their programs.

All of the following programs have their roots in the first paint and draw programs designed for the Apple mouse environment, but go well beyond the capabilities of their Macintosh forefathers. Here's a look at two draw programs and three paint programs designed specifically for the Apple IIGS's capabilities.

The draw programs for the IIGS have their roots in *LisaDraw*, which was released in 1984 for the Apple Lisa computer and *MacDraw*. Since draw programs are object-oriented, rather than screen oriented, they're designed more for designers than artists. Both programs include removable rulers (with both metric and American units) and grid lines, making it very easy to position objects exactly where you want them.

TopDraw By StyleWare

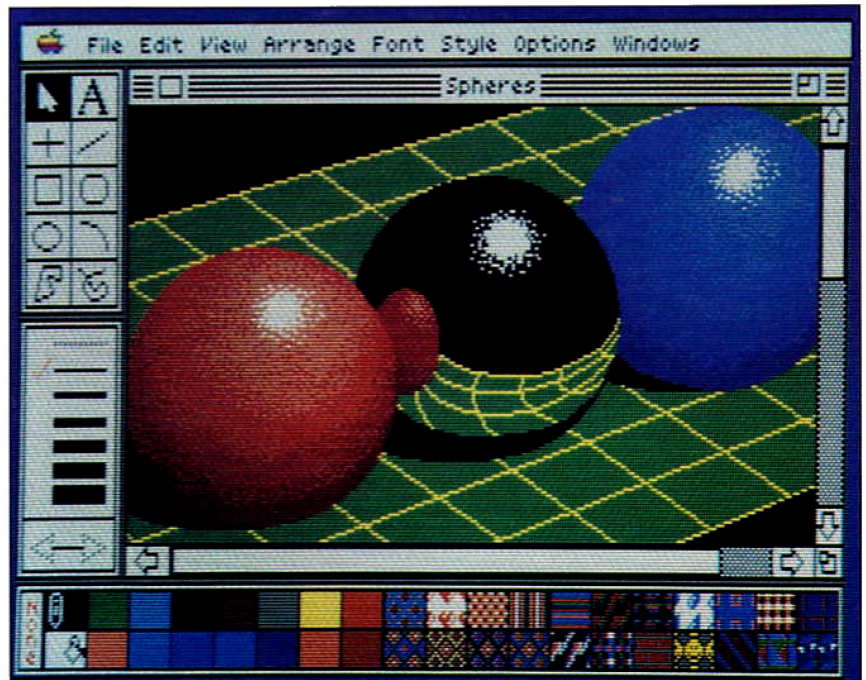
TopDraw is the first drawing-type program to be produced specifically for the Apple IIGS. You can create a document as large as 64 inches wide by 88 inches long, with as many objects as your memory allows. The only practical limits are how much memory you have, how much patience you have when your document is filled with objects, and the several minutes it takes to redraw the screen.

The 187-page manual is liberally illustrated with diagrams and examples, and a tutorial chapter shows you how to create an invitation with a drawing of a present, complete with ribbon and tag.

A document in *TopDraw* can be shown normal size, reduced to fit on the screen, or enlarged to show its detail. The lines in a figure can be smoothed out to create a free-flowing curve and the sizes of lines can be adjusted. One feature I especially liked about *TopDraw* is the capability to save various default parameters. Your ruler assignments, colors, preferences, and patterns can all be loaded automatically when you boot the program.

One unique feature is that it can receive bit-mapped graphics (a paint-type document) from another source, whether it's a digitized picture or a picture created with a paint program. Once converted into *TopDraw*, the bit-mapped picture then acts like a rectangle. Although you cannot manipulate the individual bits of the picture enclosed within the rectangle, you can move it and adjust its size by "squeezing." As you change the size of the rectangle, the picture within will squeeze and stretch to fit, making it easy to place paint-style pictures within a *TopDraw* document.

Unfortunately, *TopDraw* comes with the least readable menus of any of the programs I tested. Since the program offers more menu details than the other packages, it uses a smaller, less readable character set. In the deactivated mode the displays are hardly readable, and I found the active mode more difficult to read than standard Apple IIGS displays. Even with the menu problems, *TopDraw* produces excellent results.



TopDraw by StyleWare, Inc. is one of the first drawing-type programs available for the Apple IIGS.

Draw Plus By Activision

Activision supports both draw- and paint-style programs. Their draw program is *Draw Plus*, a package that can create documents as large as 96 by 80 inches, containing several thousand objects. On an Apple IIGS equipped with 1.5 megabytes (MB), more than 16,000 objects are available.

Draw Plus can enlarge a portion of a picture to four times its actual size, or allow a "zoomed out" view for an overall look at a large document. You can change back and forth between the 320 and 640 modes without losing your image. In the 320 mode you'll get a true 16-color display, but the 640 mode will produce much more legible text. While *Draw Plus* doesn't have as many default settings as *TopDraw*, you can save your custom rulers and menus for use each time you boot the program. All of these features help make *Draw Plus* easy to read and use.

One unique feature is its icons. Icons are often used to simplify computer use by substituting picture choices for menus or text-based commands. The program comes with pre-drawn icons for everything from printer choices (ImageWriter, LaserWriter, etc.) to the space shuttle, a chemistry beaker and Groucho glasses. With the icon editor you can design and create your own 32-dot-by-32-dot full-color icons.

The disadvantage to *Draw Plus* icons is that they're fixed. You can't stretch them or change their sizes. Nevertheless, icons are very convenient to place as needed onto a document. And, since they can be stored to disk, icon libraries can be created with pre-made icons that can be easily added to various documents.

While *Draw Plus* can't receive a paint-type document from another program, it can create a paint document that can then be used with another program. *Draw Plus* would have been more usable, however, if it did have the capability of importing a paint document the way *Top Draw* does.

Paint Programs

Apple IIGS Paint programs all have their



Fantavision brings animation and color to the Apple IIGS.

founding roots in *MacPaint*, the classic Macintosh paint program by Bill Atkinson. The original *MacPaint*-like program for the Apple II family was *Mousepaint*, by Bill Budge. If you're familiar with *MacPaint*, any of the Apple IIGS-based paint programs will seem familiar and easy to use, but you'll find new capabilities with each program.

The most obvious enhancement is color. All of the paint programs support color and will print color pictures to the Apple ImageWriter II if you have a color ribbon. The paint programs are all intelligent, and each one will load standard-size pictures created by the others, or digitized images created with any of the digitizers.

Paintworks Plus By Activision

Paintworks Plus looks and acts almost identically to *MacPaint*. It provides the same familiar set of tools on the screen: the lasso, paint bucket, eraser, pencil, etc. And not surprisingly, *Paintworks* acts like *MacPaint*. All of the *MacPaint* shortcuts and features are available, making *Paintworks Plus* both easy to use and fairly versatile.

With *Paintworks*, you can design and paint an image filling an entire sheet of

paper. Since the Apple IIGS' screen can only display about a fourth of a page at a time, you'll first have to select what portion you want to edit. You can either paint within a workspace window with all of your tools and menus available, or paint using the entire 320-by-200 screen.

Besides choosing 16 colors to work with, *Paintworks* lets you save up to 128 sets of the 16-color palettes on your program disk. Specific palettes can be designed for specific applications (e.g., an earth-tones palette for landscapes, a primary color palette for pop art, a palette with dark blues and blacks for night sky pictures, etc.). If you have a specific set of colors that you'd like to save, the palette tables make it easy.

A unique *Paintworks* feature is its animated displays. You can draw pictures resembling cartoons, each one slightly different than the one before, and combine them together into an animated cartoon. *Paintworks* lets you compress them together and select a display speed. The program disk includes a demo file showing a bouncing ball—complete with a shadow beneath the ball.

My only complaint is that *Paintworks* doesn't stop you from choosing bad color

combinations. It is quite easy to select the same background and foreground colors, making the display unreadable. The only solution to this predicament is to reboot your computer.

816/Paint By Baudville

816/Paint exists in several versions available for several different Apple graphics modes. Besides the 320 and 640 Apple IIGS modes, there are versions of *816/Paint* available for the standard and double high-resolution modes of earlier Apple IIs. I examined the standard Apple IIGS version, although Baudville informs us that the program operates identically in each of its four different versions.

One nice *816/Paint* feature is that it supports a variety of printers and interfaces in addition to the Apple ImageWriter and LaserWriter "standards." Unfortunately, the Apple LaserWriter isn't one of the printers *816/Paint* supports.

Another special feature of *816/Paint* is its use of color palettes. While *Deluxe Paint* only uses one paint palette and *Paintworks Plus* can store up to 128 palettes, *816/Paint* lets you operate on eight separate palettes at the same time. Unlike *Paintworks*'s disk-based palettes, all of *816/Paint*'s eight palettes are in memory at once, and you can create color patterns and spreads that cover several of the palettes.

816/Paint is much less like *MacPaint* than *Paintworks Plus*. There's a different approach to how tools are used. For example, no eraser is included to wipe out unwanted areas; instead, you select the drawing tool with a very wide white paintbrush.

Three easy-to-use separate zoom levels are included. When you zoom a picture, the left half of the screen shows the standard size picture, and the right half shows the magnified portion. In the zoomed-in portion you can specify whether you want it to scroll as you reach its edges.

There is one special utility program mentioned in the 49-page *816/Paint* manual which hopefully will be available by the time you read this. FILEUTILITIES is

a program that should convert earlier Apple standard and double high-resolution pictures into super-high-resolution pictures compatible with *816/Paint*. For those of us with libraries of thousands of high-resolution pictures, this sounds exactly like what we need.

Deluxe Paint By Electronic Arts

Deluxe Paint is certainly the most powerful and sophisticated paint program available for the Apple IIGS, and probably the most powerful for any microcomputer. At \$99 (\$119 with a copyable backup) it's probably also the most expensive. Besides handling all of the standard paint functions, *Deluxe Paint* will create 3-D perspectives, zoom up to 16 times normal size, create permanent backgrounds, let you make a drawing brush out of any portion of the picture, allow for different gradients for shaded fills, specify the size of the grid you want to use, smear and smooth sections of your picture for special effects, and create stencils, among other exotic functions.

You can edit two separate pages of art at the same time, using one page as a temporary storage location. Each of these pages can be up to twice as large as a standard super-high-resolution screen, and you can choose whether you want to use the 320-dot or 640-dot mode. In the 320 mode (standard super-high-resolution) you can choose 16 true colors; the 640-dot mode supports four colors. The 640-dot mode provides twice as much horizontal resolution, and is excellent for producing high-quality line artwork.

A sample file on the diskette shows how the four 640-mode primary colors can be combined and shaded to produce up to 22 color combinations. You must choose whether you want 640 or 320 mode before you start your document, though—once you start in one mode, there's no turning back!

The only major function where *Deluxe Paint* lacks sophistication is animation. The demo disk does show several animation examples, but these are all created by

cycling colors. In comparison with the other paint programs, *Paintworks* has excellent animation facilities, but no color-cycling capabilities; *816/Paint* has no animation, but excellent versatile color cycling through several palettes; and *Deluxe Paint* has no animation, and color cycling limited to the palette in memory.

Deluxe Paint does include a safety feature in its color palette choices. You cannot set the foreground and background color choices to the same value. If you try, the program will prevent you, and choose a close combination. The resulting combination may be difficult to see, but at least it will be visible.

One feature I found annoying is *Deluxe Paint*'s choice of keyboard equivalents. Most mouse-oriented programs have quick keystrokes that perform the same functions as the pull-down menus; in this regard, *Deluxe Paint* is no different. However, *Deluxe Paint* doesn't use the standard equivalents used in many other Apple programs. As a result, you have to look up the keyboard equivalents in the manual or cheat sheet. If enough users would complain about programs that ignore the standards set up by Apple, more programs would use identical keystrokes.

Deluxe Paint does include an excellent, although expensive backup policy. The program diskette is not copyable; however Electronic Arts will send you a copyable backup diskette, if you send them \$20 and promise not to distribute unauthorized copies.

Besides the program disk, *Deluxe Paint* comes with a "Bonus Art Disk" that includes a variety of sample pictures, including a self-portrait of author Dan Silva, along with the King Tut picture shown in Electronic Arts ads, animals, an Apple IIGS picture and assorted other pictures.

Of course, the bottom line to graphics system is this—can it produce a Snoopy picture? The answer in the Apple IIGS' case is not only can it produce a Snoopy picture, but that Snoopy can move, dance and sing, all at the same time. ■

—Philip Chien, contributing editor

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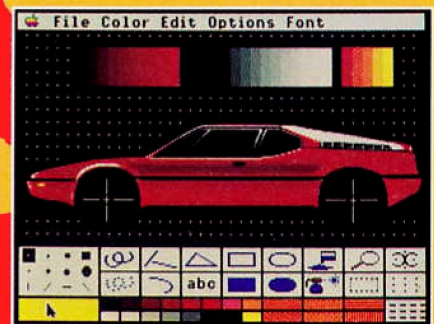
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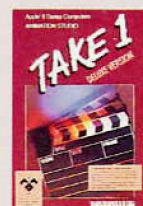
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The World's Best Dragon Slayer: Gourmet Gaming With The Apple IIGS

Software developers are slowly unraveling a wealth of game potential hidden inside the Apple IIGS. For computer game addicts, the results are nothing less than spectacular:

When I first took a look at an Apple IIGS last year, I didn't think, "Wow, I bet this computer would make a great desktop publisher." Nor did I wonder how many symphonies I could compose on it. No, I was interested in the Apple IIGS for a far more mundane reason: to play games.

In my opinion, there is no truer test of a computer's capabilities than a game. What other type of program combines so much artistic and musical creativity? The Apple IIGS has the ability to be one of the greatest game machines on the market. That's not to say it won't become a wonderful desktop publisher or a fantastic music composer; it will.

An Apple IIGS can use a total of 4,096 colors when displaying graphics. Compare that with the 16 colors on an Apple IIe or IIc; it's easy to see which machine has more visual ability. The IIGS also has a graphics resolution of 640 by 200 pixels (dots on screen), compared with 560 by 192 pixels for the IIe and IIc.

I was most impressed by the IIGS' sound quality. With its 15-voice Ensoniq Digital Oscillator chip, an Apple IIGS has the ability to create extremely realistic

sound effects or play great music. Add to this MDIdea's Supersonic Stereo Card and your IIGS will produce a world of wonderful sound.

Other factors that make the Apple IIGS a great game machine are its speed control and mouse capability. The speed control setting allows you to play a game using a IIGS' native speed, which is approximately 2.5 times as fast as a IIe. If necessary, a IIGS can be slowed down to play games designed originally for an Apple IIc.

The IIGS' mouse capability allows the use of Macintosh-like pull-down menus in many currently available games. Some programs offer the option of using a mouse instead of a joystick, while others allow a mouse and the keyboard controls.

So much for hardware potential. Now here's a look at some of the first software games available for an Apple IIGS.

GBA Championship Basketball

Basketball fans across the country rejoiced when Activision/Gamestar released *GBA Championship Basketball Two-on-Two* last year. Finally, there was a basketball game that combined arcade action with genuine strategy. Gamestar has



TASS TIMES IN TONETOWN

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 Apple IIcs



improved its already excellent game with the release of an Apple IIGS version.

Improvements to *GBA Basketball* involve graphic elements. One flaw with the original Apple version was the difficulty of seeing player's actions. In *GBA Basketball*, a jump shot must be released at the precise moment for it to go through the hoop. In the original Apple II version, it was difficult to determine when that moment occurred.

The Apple IIGS version of *GBA Basketball* has nice graphic details; from the two opposing coaches to the detailed wooden floor. A packed house crowds both sides of the arena, cheering every slam dunk, blocked shot and three-pointer. The coaches sit or stand, depending on their blood pressure level (actually, their movement seems to be entirely random).

The game begins with a close-up of a chalkboard in what appears to be a locker room. A user must choose whether to play a game, practice a bit or watch a demo. After choosing a one-player or two-player contest, joystick or keyboard control is selected. Finally, the user must determine whether the game will be a "league" game or an exhibition game.

The next segment, the "player draft," is crucial. This determines how well you'll fare in league play. It is important to draft two players who complement each other on the court. It's difficult to win the *GBA* championship with no outside shooting or a lack of rebounding. Player skills are broken down into six categories: Inside Shooting, Outside Shooting, Dribbling, Stealing, Quickness and Jumping Ability.

Once you've determined *your* player's skills, it's time to choose a teammate from a group of 10 "superstar" players. Each superstar is patterned after a present or past NBA great. The names have been changed, but it's fairly obvious who's who. It doesn't take a sports genius to figure out who *GBA*'s "Larry Berg" is patterned after, or "Julius Keith," known to his fans as "Dr. K."

GBA Championship Basketball allows a user to set defensive or offensive formations each trip down the court. While the choice of formations is limited (four defensive, five offensive), it's what you do from each formation that makes the game exciting.

From a "Man-to-Man Light" defense, you can shift your player over to double-team the ball handler. You can also dare your opponent to take an outside jumper by putting both defenders "in the paint."

GBA Championship Basketball has many details necessary in a good computer sports simulation. Its combination of arcade action and basketball strategy make the game enjoyable for repeated play. Couple these elements with the detailed graphics of an Apple IIGS and *GBA Championship Basketball* comes up a winner.

Programming The Apple IIGS:

An Interview with Ivan Manley



Ivan Manley is a software developer at Seattle-based Manley and Associates, which develops programs for Activision, Electronic Arts and Springboard Software. Manley worked on Activision's Hacker II and Shanghai for the IIGS. We asked him to give us a programmer's view of the Apple IIGS.

Apple IIGS: How did you get into Apple IIGS software development?

Manley: About a year ago I got a preproduction version of a IIGS. I learned a lot about programming it by using the alpha version of the APW compiler, along with the GS Assembler.

Apple IIGS: Were there initial problems converting programs from an Apple II to an Apple IIGS?

Manley: We ran into a slight problems converting *Hacker II* and *Shanghai*. Both programs had been originally written in C language. The alpha version of the compiler had problems with C, so we ruled out using it as a development language for the IIGS. We ended up writing both programs in assembly language.

Apple IIGS: What are some of the advantages of programming for the IIGS?

Manley: In a IIGS program, the assembler language codes are more powerful, making it a lot easier to do a more complicated program. Another advantage is graphics on a IIGS are superior. It's easier to design the graphics for a game with the creative freedom the IIGS allows you. The Apple IIGS allows a programmer to have 4,096 different colors on one display.

Apple IIGS: What does the future hold for the IIGS? Will the machine make it in the marketplace?

Manley: The machine's growth potential in areas of business and entertainment are excellent. The Apple IIe and IIc have reached their maximum software development potential. The IIGS adds plenty of extra memory. It will definitely do well in the marketplace because it's far more user friendly than earlier Apple IIs.

Hacker II: The Doomsday Papers

In *Hacker II* from Activision, the U.S. government has uncovered a diabolical plot by the Russians to destroy the United States. The CIA wants you to save the country. All you have is a computer keyboard a top-secret manual entitled *Multi-Function Switching Matrix (MFSM) Operator's Manual, Volume I*. Hey, no one said it was going to be easy!

The manual describes a machine patched into the security system at a complex somewhere in Siberia. The CIA has infiltrated the building with a couple robots known as Mobile Remote Units (MRUs). With your computer keyboard or mouse, you can control the MFSM, which in turn moves the MRUs (one at a time) around the Siberian complex.

You are seeking a notebook known only as the *Doomsday Papers*. It's hidden in a safe somewhere in the complex. By searching with the MRUs, you can find the combination to the safe, find the safe and remove the papers.

Like any security station, the Siberian complex is heavily monitored and guarded. Not only must you find the safe and discover its combination, you have to make sure no one sees you. If your MRU is caught, he will be crushed into a sardine can by a metal monster called The Annihilator.

Knowing what to do in *Hacker II* and actually doing it are two different things. It takes a couple tries to figure out the best way to sneak about the security complex unnoticed. Once you figure out how, it's a matter of timing. Obviously, my timing is a bit off. I've been caught every time!

Detailed graphics and excellent sound effects make this program a worthwhile purchase for all Apple IIGS owners with a taste for espionage.

Shanghai

Simple games are often the most addictive. Think of games that have withstood the test of time: checkers, chess, backgam-



Shanghai by Activision

mon, gin rummy, Pac-Man. They have one thing in common: elegant simplicity. *Shanghai*, a recent Apple IIGS release from Activision, seems destined to join this group of gaming classics.

Shanghai is loosely based on the ancient game of mah-jongg. The object is simple: 144 tiles are laid out in "Dragon Formation," which is sort of an extended five-story pyramid. Among the 144 *Shanghai* tiles, there are 108 Suit tiles, 12 Dragon tiles, 16 Wind tiles, four Season tiles and four Flower tiles. Once the tiles are laid out, you must remove them in pairs until none are left.

There is a catch. Only matching tiles may be removed at the same time; not just tiles of the same suit, but identical tiles. Also, the tiles can only be removed if they are "free." A tile is considered free if no other tile is on top of it and if it can slide out to the left or right.

There are four different ways to play *Shanghai*: Solitaire, Team Effort, Tournament and Challenge. The Solitaire and Team Effort games have no time restrictions and may be saved for future play. An unlimited number of participants is allowed in Tournament play. In a Tournament game, each player has the same Dragon formation. The player who removes the most tiles is the winner.

The game has a Help menu that allows you to back up a move, start a game over, show all possible moves during a turn or peek at the tiles on the lower levels of the Dragon. It also includes an on-screen instruction guide and strategy sessions to improve playing abilities.

Unlike the Macintosh version of the

game, the IIGS version provides you with a three-dimensional perspective of the Dragon setup. The details and colors of the IIGS version are also much easier on the eyes than the black-and-white graphics on a Mac.

Tass Times In Tonetown

Tass Times in Tonetown is a tough game to describe. Perhaps I'm not "ultra plus chic" or "tass" enough. *Tass Times in Tonetown* is Activision's very bizarre computer adventure where you travel to another dimension in search of the missing "Gramps." Another objective is to acquire "tass" (which translates as "not looking like a tourist").

A key to survival in Tonetown is to read the enclosed copy of the *Tonetown Times*. Clues that help you survive in Tonetown are in this paper. The front page includes a helpful story on Gramps and a story on Franklin Snarl, an evil alligator-like villain.

Snarl is a real estate magnate who is buying up most of Tonetown. He's also the last character you'll see during this game, if you accidentally let your true tourist colors show.

You are not alone in your search for Gramps. Your companion is Gramp's dog, Spot, who has been transformed into Ennio, a talking canine newshound. To Tonetown residents, Ennio is known simply as "The Legend." Ennio is more than a mutt; he's a prize-winning journalist.

What I couldn't figure out was, if this dog's so bright, why does he just smile and wag his tail when I ask him a question? Maybe I should have bribed him with a dog biscuit!

Tass Times in Tonetown can be a frustrating game. It doesn't take too many wrong moves to have Franklin Snarl show up and kick you out of town for being a "stupid tourist." Luckily, the program has a Quicksave option that allows you to save and restart a game at any point without going back to the beginning.

The Bard's Tale

With its release in 1985 for the Apple IIe and IIc, the original *Bard's Tale* set



Tass Times in Tonetown by Activision

the standard by which all other adventure games are judged. It's a game so detailed in design even experienced computer adventurers take months to complete it.

Well, Electronic Arts has upped the industry standards again with the release of the Apple IIGS version of *The Bard's Tale I*. The game is the same; you still create a party of six adventurers who are in pursuit of the evil Mangar. This time, however, the game uses the considerable graphics and sound capabilities of an Apple IIGS.

The game's opening screen provides a good indication of what follows. A lone bard, beautifully illustrated, sits on a stool, poised to play a tune. He precedes to strum and sing a song about the city of Skara Brae (where the adventure takes place). This "song" isn't just a collection of different pitched beeps, as in the previous version. Your Apple IIGS plays a song, complete with an accompanying lyre (or is that a "lute" the bard is playing?).

The Bard's Tale I is an ideal program if you want to see what an Apple IIGS can do. Michael Cranford, the game's designer, has programmed a challenging adventure that will keep you at your Apple for hours, perhaps months!

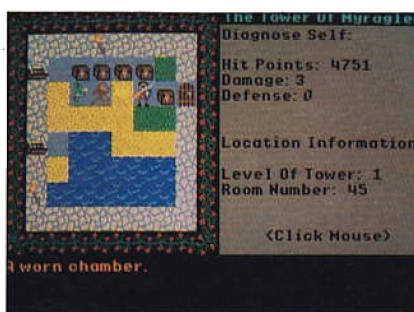
The Tower of Myraglen

The wind howls and whips about at a fevered pitch. Lightning flashes overhead in the night sky, offering only flickering glimpses of a foreboding stone castle. Battle horns trumpet, sending a chill down your spine. Thus begins your adventure in

The Tower of Myraglen from PBI Software.

A one-player adventure, you are one of the last knights of valor. Your quest is to seek out the Medallion of Soul Stealing hidden within the Tower of Myraglen. Before entering the tower, your knight is given a Ring of Unlimited Arrows, which will shoot arrows in any direction. On his quest, your knight finds plenty of gold and weapons, along with clues that help him (you) progress.

The opening scene is the most impressive one in *The Tower of Myraglen*. The



The Tower of Myraglen by PBI Software, Inc.

tower is impressively illustrated, and the sounds of a raging thunderstorm provide an air of danger. Unfortunately, it seems the designers spent most of their efforts on that scene. The game is a bit of a let-down after the initial tower graphics. Most of the time, your knight runs through hallways that all look the same, easily destroying evil creatures that happen to get in his way.

The Tower of Myraglen is played using the mouse and keyboard. Players have the option of using their keyboards alone, which may be easier. There are also options to change game speed, prepare a new tower and save a game in progress.

The game, which supports MDIdea's SuperSonic Stereo Card, requires a minimum of 512K RAM, although 768K is recommended to get all sound effects.

Coming Attractions

By the time you read this, the games reviewed will have been joined by at least another dozen. More companies have made commitments to develop IIGS soft-

ware, and the initial few that pioneered game software are stepping up their efforts.

According to Stan Roach, director of marketing within the creativity division of Electronic Arts, the Apple IIGS represents a major step in the computer industry. "The IIGS takes the Apple computer from an appliance status (used only for number and data crunching) to an interactive medium status. Electronic Arts is very bullish on the IIGS," he says.

Activision, currently marketing five IIGS programs, is one of several companies increasing its production. According to Loretta Stagnitto, public relations manager, "Activision recognized this system would continue the tradition of the Apple II series. The IIGS will be as widely accepted as a home and small-business computer as the IIe and IIc."

Accolade, Inc. is also enthusiastic about the IIGS. The company has produced a IIGS version of its excellent golf program, *Mean 18*. It plans to release a IIGS version of *Hardball* later this fall.

What accounts for the delays in producing game software for the Apple IIGS? Many companies took a wait-and-see attitude. Phillip Adams, president of Spectrum Holobyte, cites another reason. "From a software development standpoint, we didn't have the utilities necessary to produce software that takes full advantage of the graphic and sound capabilities of the IIGS," he says.

Spectrum Holobyte converted its submarine simulation, *Gato*, over to the IIGS and is now working on *Orbiter*, a space-flight simulator to be released this fall.

The Apple IIGS gaming future seems to be a bright one. In recent months, Apple has released its *QuickDraw* font manager and print manager utilities for the machine. Apple is also releasing text-to-speech sound tools, which allow speech routines to be created more easily. With the advent of these utilities, the time has come for software developers to stop waiting and start programming.

Fellow gamers. . . warm up those joysticks!■

—Michael Meyers, contributing editor

should work with little, if any, modifications.

The most important software incompatibility issue is disk format. Earlier Apple IIs use 5.25-inch disks, and almost all Apple IIe programs are distributed on 5.25-inch disks. A couple years ago, the 3.5-inch UniDisk drive became available, and software publishers started to distribute programs on 3.5-inch disks.

The 3.5-inch disks store more data, are more damage resistant and work faster than their older counterparts. Apple decided to make the 3.5-inch drive the standard Apple II GS storage device.

Most software publishers distribute programs on 5.25-inch floppies, because they are less expensive to produce. And, in general, more Apple II users have 5.25-inch drives than 3.5-inch drives.

If you receive a program on a 5.25-inch disk, there are ways to make it compatible with your IIGS. The most expensive, though most reliable, way is to purchase and use a 5.25-inch drive. Apple sells one for \$299, but you can buy a third-party drive for less than half that price.

Any external 5.25-inch drive designed to work with an Apple IIc should work fine with a IIGS, and adapter cables are available for earlier drives. Although the IIGS supports two 5.25-inch drives, one should be sufficient to transfer programs to 3.5-inch diskettes and run 5.25-inch format programs.

Programs come in three categories: those that can be transferred without any problems; copy protected programs; and programs that are designed to work only with 5.25-inch diskettes. Regrettably, the biggest category is copy-protected programs.

Many software publishers copy protect their programs to control illegal distribution. For users who only want to make archival backups, copy protection causes more problems than it solves. When attempting to transfer a program from a 5.25-inch diskette to a 3.5-inch disk, a copy-protected program will not operate. The only solution is to contact the publisher and see if a 3.5-inch copy of the software is available.

Many programs are designed to operate only on 5.25-inch disks. Some are in DOS 3.3, an early disk operating system that only supports 5.25-inch disks. Others, including disk diagnostic utilities, are designed to work with the 5.25-inch drive mechanism. Some of these programs can be converted to ProDOS (the all-purpose operating system) and 3.5-inch disks, but they may have to be modified. Some may not be fully usable on 3.5-inch disks.

Making Transfers

Fortunately, many programs distributed on 5.25-inch disks can be easily transferred to 3.5-inch disks. To transfer a program, borrow a 5.25-inch drive and connect it to your system. Many dealers let you transfer programs on their demo units.

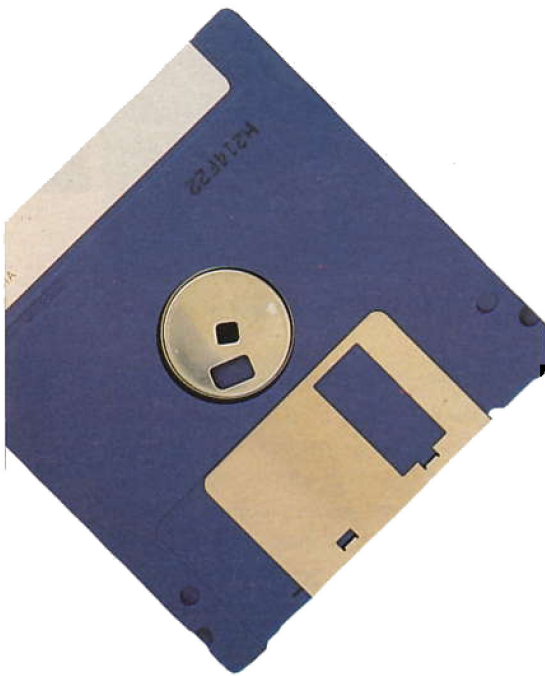
If you purchase a program on a 5.25-inch disk, the dealer should transfer the program for you. Any standard Apple file utility program (*Filer*, *Apple Desktop*, *SYS Utilities*, etc.) can be used to format a blank 3.5-inch disk and transfer the files over from the 5.25-inch disk.

Besides disk format, there are several other hardware differences between early Apple IIs and a IIGS. Early Apples use a plug-in interface card with a clock circuit. A IIGS has a built-in clock accessed through the Toolbox. Many programs are still distributed with an early version of ProDOS (ProDOS 1.1.1 and earlier), which doesn't support the IIGS clock. If you replace the ProDOS on the program diskette with a later version (ProDOS 81 1.2 or later), ProDOS will recognize the IIGS clock.

Other programs are designed specifically for, and will look for, a clock in the Apple's slot. These programs require re-writing or updates, if you want to use the IIGS clock.

Communications Concerns

The serial ports on a IIGS are different from an Apple II's Super Serial Card and a IIc's built-in serial ports. Apple changed the hardware in the IIGS serial port to make it more compatible with the Macin-



If you receive a program on a 5.25-inch disk, there are ways to make it compatible with your IIGS.

tosh and AppleTalk network. In so doing, almost all communications programs designed to work with earlier Apple IIs require an update from their publishers to work with a IIGS.

Most IIe/IIc programs that print through standard print routines will work perfectly on a IIGS. There are some programs designed specifically for use with IIe/IIc serial ports that won't work properly on a IIGS, however.

While unlikely, it's possible a few older programs will be incompatible with your Apple IIGS, due to hardware built into the circuitry of the IIGS (mouse, keyboard, sound circuits, firmware, etc.). In these cases, you'll have to get IIGS versions of the software.

When you get your programs to run on your Apple IIGS, you may have to adjust to new syntax rules. For example, several changes have been made to the IIGS keyboard, which set it apart from the Apple IIe. Besides adding a numeric keypad and making the keyboard detachable, Apple moved a few keys and renamed others.

The Open Apple key has been renamed Command, and the Closed Apple key has been renamed Option. When a program manual refers to the Closed Apple key, use the Option key instead.

Another important adjustment is configuring your software. If a IIGS isn't listed in a program's configuration routine, choose a 128K Apple IIe selection, if available. Depending on your software, you may have to configure it so that you've got an Apple IIe with an extended 80-column card installed (these features are built into the Apple IIGS).

An Apple IIGS has a serial printer port in slot 1, a serial modem port in slot 2, a mouse in slot 4, and disk drives in slot 5 (3.5 inch) and 6 (5.25 inch).

An Apple IIGS is twice as fast as an Apple IIe. Certain programs and hardware peripherals are designed to run at the Apple IIe's slower speed, however. The solution for using these products is to select the slower Apple IIe speed through the IIGS' control panel, which is accessed directly from the keyboard.

Apple II Updates

Externally, a IIGS is physically different from other Apple II family members. Its two serial connectors use sub-8 connectors, its disk drive uses a DB-19 connector and its RGB video connector uses a DB-15 connector.

Apple dealers stock the proper adapter cables to connect a IIGS to a variety of printers, modems and serial devices. Make sure you use the proper IIGS cable. Don't purchase another cable because it says "Works on any Apple II." An Apple IIGS is not just another Apple II.

Some interfaces may not fit into a IIGS' case, especially with a fan installed. If you have a joystick that attaches to the 16-pin internal connector, you may need an extension cord if your joystick has a short cable. A card that plugs into the AUX slot or cassette port of a IIe won't work on a IIGS.

Fortunately, you won't need to plug too many IIe interface cards into a IIGS, because the most popular interfaces are already included. (A typical Apple IIe has three to five interface cards for functions that are already built into a IIGS).

Most Apple IIe and IIc owners attach their computers to composite video monitors, although some use digital RGB monitors that produce 16 colors. An Apple IIGS has a built-in analog RGB monitor interface that can produce up to 4,096 colors, and most IIGS owners use RGB monitors for their displays.

An RGB monitor generates a different display than a composite monitor. Various graphics programs will look different. If this happens to you, it's not a software bug that needs squishing; it's a slight hardware incompatibility (see "Great Graphics On The Apple IIGS," this issue.)

Many hardware manufacturers have come out with enhancements to their Apple IIe peripherals that use the IIGS' advanced capabilities. These enhancements may come out as firmware (ROM) upgrades or as software that provides a peripheral with new capabilities.



A typical Apple IIe has three to five interface cards for functions that are already built into a IIGS.

What's the final word on compatibility? Rest easy—the vast majority of Apple II programs are well written and work on an Apple IIGS without any problems. Many manufacturers label their software and hardware "Works on an Apple IIGS," making selection easier.

None of the rules for compatibility in this article are absolute. The only universal rule is to check out every program on your Apple IIGS and see how well it works. ■

—Phil Chien, contributing editor

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That's why this paint program is the top selling software product for the Apple IIGS. With all the colors and tools it takes to make a computer artist's studio.

Choose from the 4096 colors available to create just the right palette for every picture.

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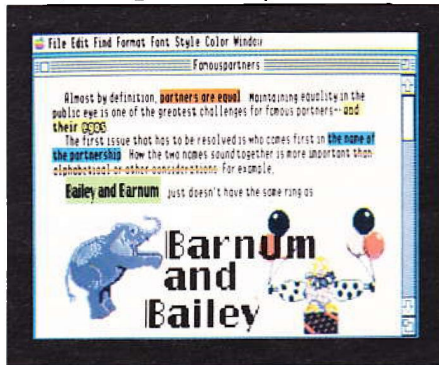
And now every *Paintworks Plus* package includes *Clip Art Gallery*, a library of over 650 vivid color images, FREE.

If you can see it in your mind's eye, you can picture it on your Apple IIGS — with *Paintworks Plus*.

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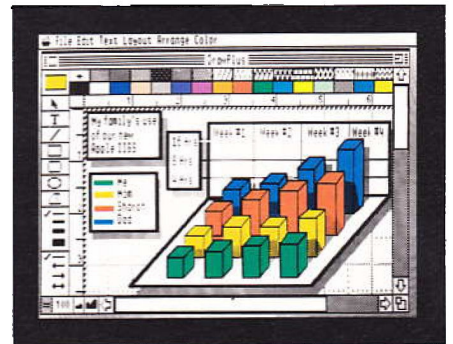
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Educational Software Roundup: A First Look At What's New For The Apple IIGS

Just when you think your computer is state of the art, with the most advanced hardware and peripherals, Apple comes out with a new machine—the Apple IIGS. This computer sports a larger standard RAM (256K) than earlier Apple IIs, speeds up many Apple II programs, offers beautiful color graphics and is capable of spectacular sound.

While the possibilities spark your curiosity, at first you adopt a wait and see approach. After all, rumor has it there isn't much software to take advantage of all the new Apple IIGS features. Inevitably, the day arrives when you visit your local computer store to try the Apple IIGS demo program. The graphics are impressive, and the sound is exceptional. The IIGS bug bites and your hunt for software begins.

Like me, you probably use a computer for writing personal and business letters, organizing your widget collection and sticking to a monthly budget. If you're a parent, you also use your computer to reinforce the skills your children learn in class.

A computer does what no textbook can accomplish. It combines sound, colorful graphics and animation in innovative ways. It makes education a stimulating, challenging and fun-filled experience. It offers never-ending patience, immediate feedback without negative reinforcement

The Apple IIGS may be the ultimate teaching machine, and its new software has the potential to make learning an exciting—and colorful—experience.

and a one-to-one teaching environment. With appropriate software, a computer can help your children do well in school.

What follows is a review of the first crop of IIGS educational software. There are more programs available than you think. Some are new, some are renewed Apple II products and some are newly ported from other machines. All of them take advantage of at least one IIGS feature: increased memory, multivoice speech and sound capabilities, enhanced graphics, faster execution or the convenience of mass storage on a durable—almost kid-proof—3.5-inch (800K) disk.

If you think of your computer as a valuable educational tool, as commonplace as the TV or telephone, it's time to consider a IIGS. The point is not to upgrade to a IIGS because of hardware improvements, however. The crucial performance factors to consider are the quality and power of available software. Remember, too, that

symphonic sound and flashy graphics really enhance computer-assisted education.

Kidstime II

Designed for children ages 3 to 10, *Kidstime II* is a newly ported IIGS product originally conceived for the Macintosh. The IIGS version offers a Macintosh-style interface, with a mouse as the input device of choice. There are windows, pull-down menus, icons, scroll bars and double-clicking for activity selections. Its two educational activities, ABKey and KidsNotes, use super high-resolution graphics, the IIGS built-in synthesizer chip and 512K of memory.

ABKey is for younger children, pre-school to kindergarten. It teaches upper and lowercase letter recognition. Letters, pictures or both appear on screen, one at a time, two at a time or at timed intervals. When a matching letter or beginning letter of a picture-related word is pressed on the keyboard, a musical "reward" plays. The word also appears under its picture. It may be written in either upper or lowercase.


Choosing more than one letter at a time may confuse very young users. For example, my four-year-old daughter thought the word "nose" began with the letter "x," simply because they appeared on screen simultaneously.

KidsNotes is an introductory music activity that allows older children to explore

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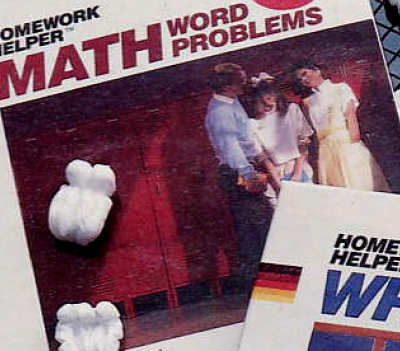
"Hi, I am Ted E. Bear. Let me introduce your young child to geometric shapes and important engineering concepts about shape and form."

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Introduces Young Children to the World's Leader in Software Speech Technology

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BONUS PACKAGE
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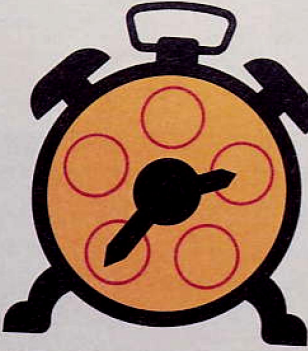
A step-by-step approach to writing successful book reports and essays. Grades 7-12.

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8 illustrated stories to complete again and again - the possibilities (and laughs) are endless!

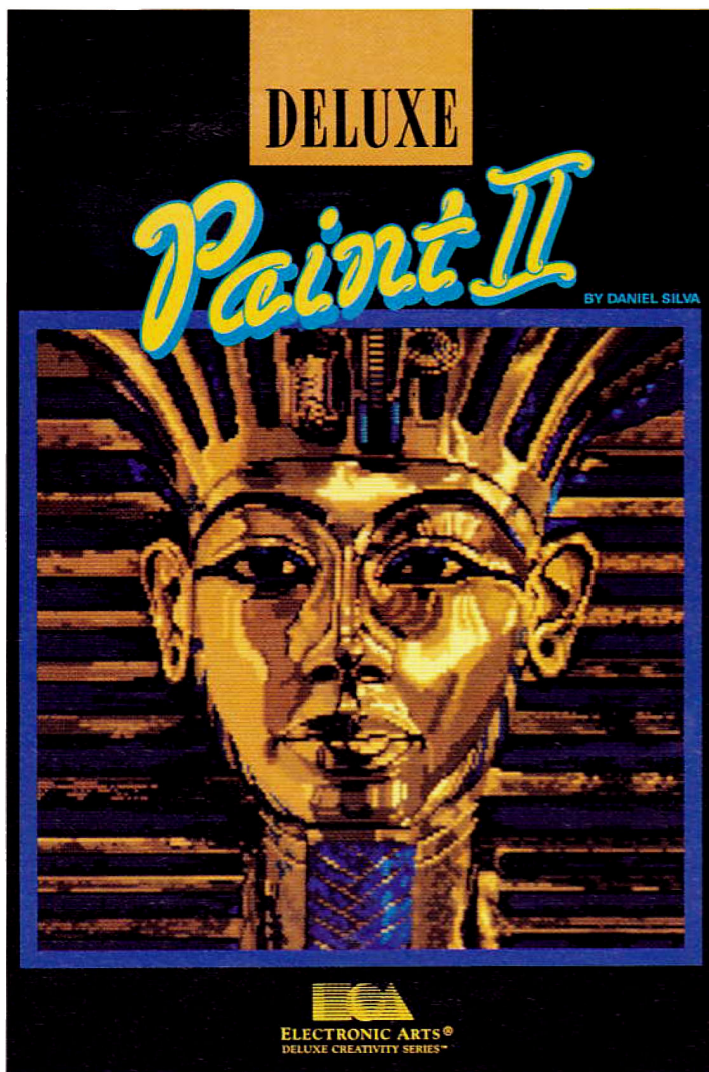


BY Roger Price & Leonard Stern
Pss! (A PRICE/STERN/SLOAN HUMOR SPECIAL) Pss!

Speech, Graphics and Software developed by First Byte!

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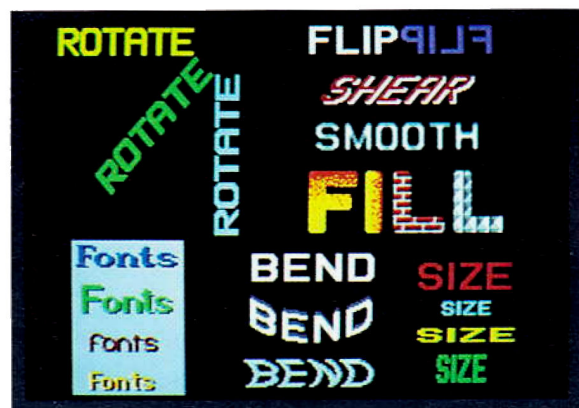
Educational Benefits!
Computer MAD LIBS is a delightful way for children to write stories and learn the parts of speech!



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INTRODUCING DELUXEPAIN II. The images above were all produced with the most advanced paint program ever created for a personal computer. The only paint program that lets you zoom in to see your painting in four levels of detail, create custom gradient color ranges from a 4,096-color palette, freeze an image and paint over it, and do dozens of other things you never knew a personal computer could do. The program is DeluxePaint II. The result is more than just a pretty face.

GREAT GRAPHICS... the best reason to buy an Apple IIgs. And the best reason to buy DeluxePaint II. With DeluxePaint II you can master the third dimension with the exclusive 3-D perspective tool. Soften jagged edges and color transitions with the smoothing tool. And give life to static pictures by cycling through a range of colors. Computer graphics have never been so easy. Or so powerful.

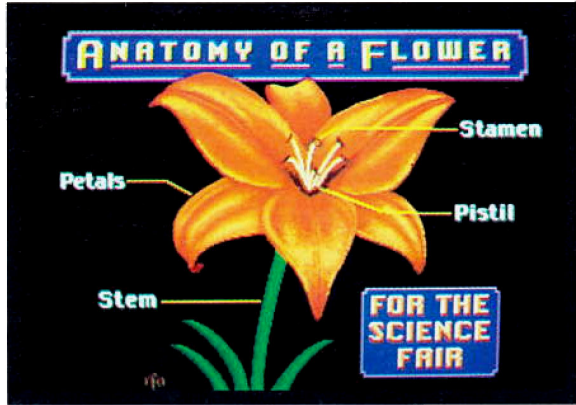
"THE BEST GRAPHICS PRODUCT OF THE YEAR." We didn't say it. The Software Publishers' Association did—and gave us the award to prove it.

DELUXEPAIN II. MORE THAN JUST A PRETTY FACE.

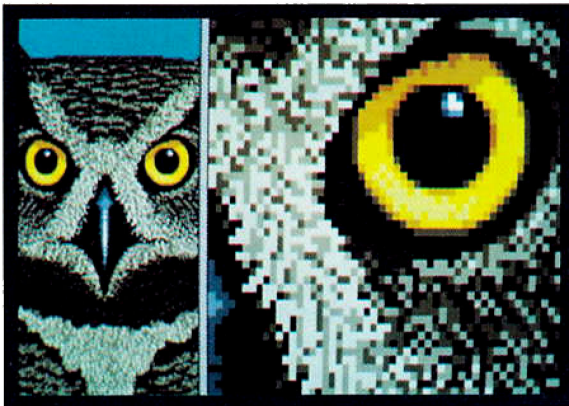
T PROGRAM THAT CAN DO ALL THIS!



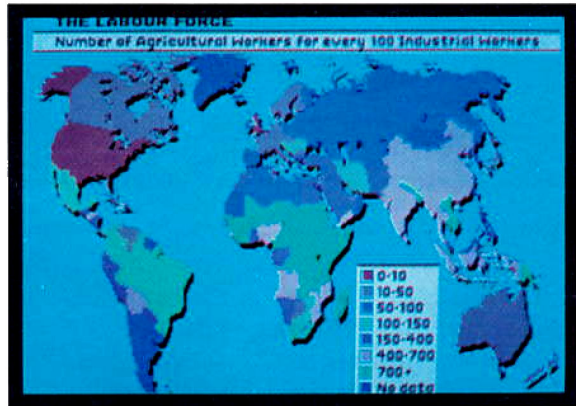
Enter the third dimension. Turn 2-D into 3-D with a click and get a new perspective!



Combine text and graphics for educational presentations. It's easy enough for kids of all ages.



Zoom in through four levels of magnification and put the gleam in the owl's eye.



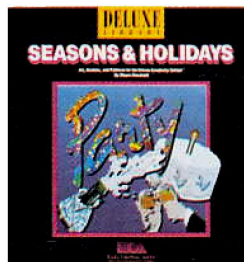
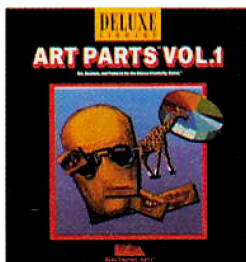
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DeluxePaint II requires 768K of RAM. The upgrade offer is only available directly from Electronic Arts. Send check or money order for \$49.95 (or VISA/Mastercard Information) AND THE FRONT COVER OF ANY APPLE IIGS PAINT PROGRAM MANUAL (no facsimiles accepted) to ELECTRONIC ARTS INCIDER UPGRADE, Dept. I-10, P.O. Box 7530, San Mateo, CA 94403. Allow 4-6 weeks for delivery.

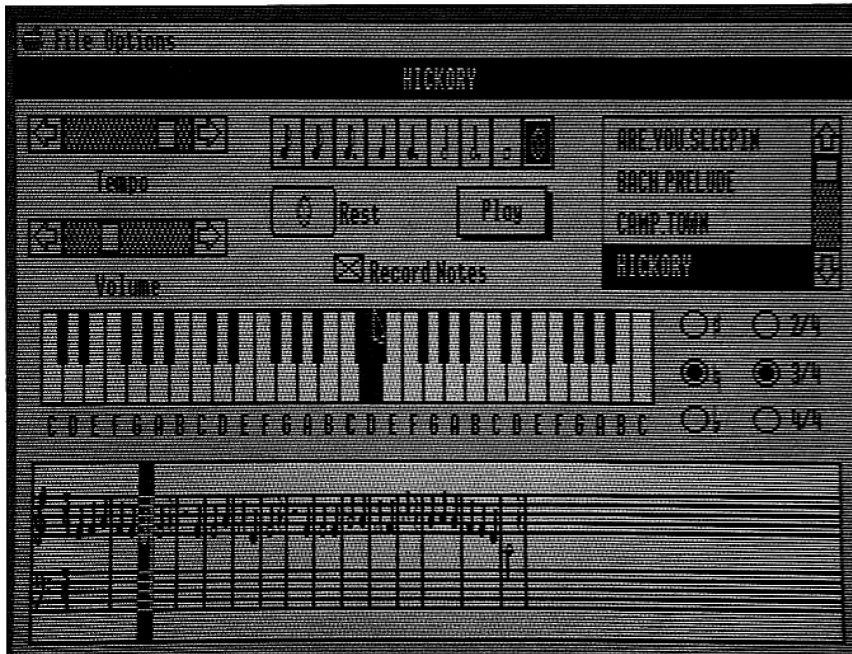
TO ORDER DELUXEPAINT II: Visit your retailer. If you can't find DeluxePaint II there, call 800-245-4525 (in CA 800-562-1112), and place a direct order on your VISA or Mastercard. To order by mail, send check, money order, or VISA/Mastercard information to Electronic Arts Direct Sales, Dept. I-10, P.O. Box 7530, San Mateo, CA 94403. The regular direct-order price is \$99.95; add \$3 for shipping and handling (\$5 Canadian). There is a 30-day money-back guarantee on direct orders. Allow 6-8 weeks for delivery. Apple IIGS is a trademark of Apple Computer, Inc. Paintworks Plus is a trademark of Activision, Inc. DeluxePaint II is a trademark of Electronic Arts.



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Kidstime II teaches young IIGS users the basic elements of music and words.

many aspects of music. For preschoolers to kindergarteners, there is an assortment of simple melodies, many of them nursery rhymes. These melodies may be played by clicking the mouse on Play or on a song's name. Pressing the space bar will cycle through all the songs. As a melody plays, its notes are highlighted on an on-screen piano keyboard and musical staff. Older children will have fun altering the duration, volume, and tempo of the melodies.

Children enjoy randomly playing on the keys or creating simple melodies. They play the notes by clicking on the piano keyboard or pressing the keys on their Apple IIGS keyboard. They can experiment with tempo, volume, simple key and time signatures, note lengths and pitch. It is possible to enter new songs, edit, play, name and save them.

Kidstime II comes with a well-written manual that includes a section on basic musical concepts. The program is unprotected. Transferring it to a hard disk or making an archival copy is no problem. It uses lots of memory, so make sure your computer has at least 512K.

Product: *Kidstime II*

Price: \$39.95

Company: Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

Requirements: Apple IIGS; 512K; 3.5-inch drive; RGB color monitor

Explore-A-Story/ Explore-A-Science Series

The Explore-A-Series offers reading instruction with the help of animated and interactive graphics. Students read the storybook and follow along on their computers by clicking their mouse devices to advance the pages. The pictures in the storybook are screen shots of the computer-generated graphics.

Once they read and view a story, students can modify it by changing the characters, scenery or plot. Older children can type in their own text; younger children can select words from those provided in a Picture Menu to label their on-screen creations. There are a variety of props, backdrops and characters from which to choose.

Also included are "story starters." These are scenes that can be used to generate original stories. One of the story starters is often a "word stack." In "A Brand New View," the story starter is an ordinary outdoor scene with a number of words stacked in a pile. Students must lift words off the stack one at a time and move them to label the appropriate objects on screen.

When their scenes are complete, students can save their work to disk and then print it out in either black and white or color. A scene must be saved before a new file is opened or the work will disappear from memory. While the program disk itself is copy protected, teachers can reproduce the data disk for distribution to the class.

The disk utilities make it possible to reconfigure the data disk to work in a second drive. This cuts down on disk swapping during program operation. The vendor would do well to store both the program and data disks on a single 3.5-inch (800K) unprotected diskette. Programs such as *A Closer Look: The Desert* use two student data disks. Combining information would cut down on load time, make it easier to access data files and eliminate disk swapping.

All products in the Explore-A-Series series have the same look and feel. They offer a Macintosh-style user interface complete with menu bars and windows. Each works well with input from a keyboard or joystick, but clicking on a mouse is the simplest way to make activity selections or move objects on screen. The programs are not specifically designed for use with a IIGS, but they work well the IIGS' faster microprocessor. At the faster speeds, their animation is a joy to use.

Programs in the Explore-A-Science series are aimed at a slightly older audience and require more developed reading and writing skills. While there are only two programs currently available, others are being developed. *Tyrannosaurus Rex: Dinosaur Construction Kit* was featured in the dinosaur exhibit at the Museum of Science in Boston. Each of the program's many

activities is designed to teach students about dinosaurs and the paleontologists who study their fossil remains.

As students read the activity book, they page through the T-Rex file. It contains seven scenes: Find the Fossil, Dig Up the Bones, Sort the Bones, Build the Skeleton, Uncover the Skeleton, Color T-Rex and Prehistoric Scene. Younger students and beginning readers will enjoy finding fossils, digging them up, coloring the dinosaur and composing prehistoric scenes—complete with wing-flapping pterodactyls and fearsome triceratops.

In *A Closer Look: The Desert*, students learn about the Sonoran—the desert located in the southwestern part of the United States. Paging through the Desert file, they discover there is more to desert life than sun and sand.

The students can peek into the holes of the saguaro cactus and uncover the underground burrows of desert animals. A closer look leads to the discovery of a habitat teeming with animated life. Bats fly, frogs bury deep into the sand, a turtle pokes its head and feet in and out of its shell, a scorpion comes out of the rocks to sting its next meal, an owl egg hatches and a spider emerges from its hole to catch a butterfly.

The programs in both series are very open-ended, with plenty of opportunities for creative thinking and writing. Students will enjoy modifying scenes and creating new ones. Using the accompanying labels will help them improve their reading skills. The science modules will teach them more about the world around them. These programs are winners!

Products: Explore-A-Story Series, for grades K-2: *A Brand New View*, *Rosie*, *The Counting Rabbit*, *Just Around the Block*, *The Bald-Headed Chicken*, *The Napping Stack*. For grades 3-5: *The Lima Bean Dream*, *What Makes A Dinosaur Sore?*, *The Quasar Kids*.

Explore-A-Science Series: *Tyrannosaurus Rex*, *Dinosaur Construction Kit*, *A Closer Look: The Desert* (grades K-6)

Price: \$66 each

Company: Collamore Educational Pub-

lishing/D.C. Heath and Co. (in association with Learningways, Inc.); 125 Spring St.; Lexington, MA 02173; 800-334-3284

Requirements: Apple IIe, IIc, IIGS; 128K; 5.25-inch disk drive; mouse, joystick or Koala Pad (optional); color or black-and-white printer (optional); color monitor preferred

First Shapes

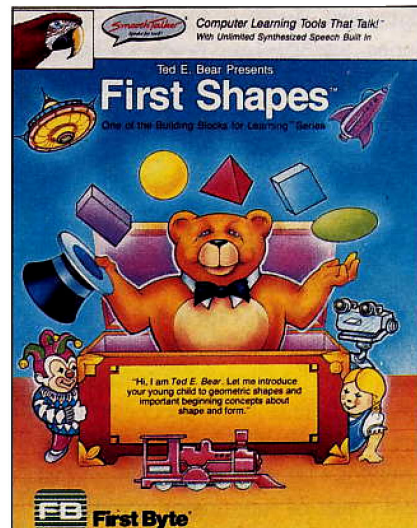
First Shapes introduces Ted E. Bear, the first computer bear that talks. This interesting character offers five learning activities that teach preschoolers about basic geometric shapes: circles, ovals, squares, triangles and rectangles. The program is simple to use, as Ted E. Bear gives verbal instructions. Even the youngest preschoolers can click their computer mouse devices and make selections from the picture menu.

In the module called Shapes, Ted E. Bear presents five geometric figures. Clicking the pointer anywhere on his body causes him to say the name of each shape. The word for each shape also appears on screen. Children can click their mouse devices to make the shapes larger or smaller. Mr. Bear speaks when the biggest or smallest shape is reached.

In *The Toy Factory*, children construct toys using the same five geometric figures as building blocks. There are many toys to build, including a robot, clown, boat, monster and doll. The toys can be realistic—i.e., trucks with round wheels or boats with round windows—or nonsensical—triangular faces, square wheels and oval tails.

In *The Toy Fair*, children help Ted E. Bear win arcade games and take a balloon ride by comparing shapes and answering rounds of 10 questions each. Three shapes are randomly presented for each of the questions. There is a minimum of negative reinforcement for incorrectly answered questions.

The final activity, *Make-A-Match*, is a game in which a player tries to match pairs of shapes by turning over cards two at a time. There are three levels of difficul-



First Shapes by First Byte, Inc.

ty. Children either play by themselves, with a friend or with Mr. Bear, who can be "silly," "smart" or "very smart."

Children age 3 to 8 will enjoy this program. In the process, they'll learn to identify and use a variety of geometric shapes. The super-high-resolution graphics are superb on an Apple IIGS; the mouse interface is easy to use and Mr. Bear's synthesized voice encourages user independence.

Parents can tailor *First Shapes* to meet the needs of individual children by making certain modules active or inactive; altering speech volume; inserting a child's name, personalizing the reinforcement messages; or toggling the printer. The program is not copy protected. It comes with a handbook explaining its learning modules and educational objectives.

While *First Shapes* is enjoyable, it is slow to execute and it's not always easy to access the Helper file. Ted E. Bear's robotic voice is also difficult to understand. For my children to hear him, we had to set the volume as high as it would go. These complaints are minor, however, when compared with what the program can and does accomplish. Your children will have fun and learn at the same time.

Product: *First Shapes*

Price: \$49.95

Company: First Byte, Inc.; 3333 East Spring, Ste. 302; Long Beach, CA 90806; 213-595-7006; distributed by Electronic Arts

Requirements: Apple IIGS; 512K; 3.5-inch disk drive; color monitor

Computer Mad Libs

If you liked the written version of "mad libs" as a child, this speaking computerized version should tickle your funny bone, too. This "do-it-yourself laugh kit" offers eight mad lib stories to edit, save and hear. If you have an ImageWriter or LaserWriter printer, you'll be able to make hard copies of your original wacky creations.

The program is simple to use. A picture menu offers four possible choices: Mad Lib Titles, to select the Mad Lib of your choice; Mystery Mad Libs, to select a story sight unseen; Library, to select Mad Libs you have saved; and Quit.

Options 1 and 2 call up the Word Entry screen, where you type in requested words. Because the program calls for inserting nouns, adjectives, adverbs, verbs, etc., it has real educational value. It could be used, for example, to supplement a language arts curriculum.

When all words are entered, have the computer read them to you. Incorrectly spoken words can be modified to improve pronunciation. Changing speech is accomplished by typing in another word that sounds like the original. Because you can't type in phonics, even corrected words may not be pronounced as well as you would like.

After fixing the speech, listen to the computer read your mad libs. You may have to access the control panel to turn the volume up, for the synthesized voice is difficult to hear. Each mad lib is illustrated with colorful non-animated graphics.

The program comes in ProDOS 16 on a non-protected 3.5-inch disk. A four-page manual provides all necessary instructions. One page even gives examples of the parts of speech. *Computer Mad Libs* may be more suitable for children age 6 to 12

than adults, but I found myself chuckling on occasion.

Product: *Computer Mad Libs* (Volume 1)
Price: \$19.95

Company: First Byte, Inc.; 3333 E. Spring, Ste. 302; Long Beach, CA 90806; 213-595-7006; distributed by Electronic Arts

Requirements: Apple IIGS; 768K or more; 3.5-inch drive; color monitor



Clock Works by MECC

Clock Works

Clock Works demonstrates that drill and practice work on a computer can be educational and fun. It teaches how to tell and set time on both analog (traditional) and digital clocks, using time intervals (minutes, quarter hours, etc.) and expressions (words). Designed to be included in math curriculums for first through third grades, younger students also get practice in reading. Parents or teachers can access the program's teaching options to adjust content and skill level.

Clock Works offers animation and optional sound as rewards for correct answers in each of its four activities. In *What's The Time*, students get practice telling time on an analog clock by answering 10 multiple choice questions. If all 10 questions are answered correctly on the first try, a "wuzzle" appears on screen and rings an alarm.

Set The Clock gives practice converting time expressions and digital time into analog time. Again, there are 10 questions. For each correctly answered question, a worm pops farther out of its apple. If all 10 questions are answered correctly on the first try, the worm will do a dance.

Digital Drill offers practice converting analog time and time expressions into digital time on a digital clock. Ten right answers on the first try bring performing wuzzles to the screen. In *The Clock Factory*, students can design and build their own alarm clocks, using Arabic or Roman numerals.

The IIGS version of the program comes on a 3.5-inch disk. The only difference from the 5.25-inch version is that, on a IIGS, the program runs in a faster mode. Activities load and execute more quickly and graphic animation is speeded up.

Product: *Clock Works*

Price: \$49 (5.25-inch version); \$55 (3.5-inch version)

Company: MECC (Minnesota Educational Computing Corp.); 3490 Lexington Ave. N.; St. Paul, MN 55126; 612-481-3500

Requirements: Apple II family; 64K; 3.5-inch or 5.25-inch disk drive; color monitor preferred

Odell Lake

Odell Lake is a simulation game that teaches students in fourth through sixth grades about predator/prey relationships among a group of 12 organisms living in Odell Lake, Oregon. It uses simple animation, sound and color graphics to highlight the food chain and illustrate animal interaction in an actual freshwater lake.

While the program runs on as little as 64K, it works faster on a 256K Apple IIGS because it does not need to access the disk as often.

The game can be played in one of two ways: *Go Exploring* or *Play for Points*. In either mode, you assume the identity of one of six species of fish that swim around the lake. You also encounter other organisms besides fish. These include: osprey (a fish-eating hawk), otter, plankton, insects and larvae. Each time you meet another animal or plant, you must decide what to do (eat, chase away, ignore, shallow escape or deep escape).

In *Playing for Points*, the computer chooses the type of fish you will be. Your identity changes after every five encounters. The game ends when your fish is



Odell Lake by MECC

caught. The identity of organisms you meet is not initially revealed, and you have limited time to make decisions.

Product: *Odell Lake*

Price: \$49 (5.25-inch version); \$55 (3.5-inch version)

Company: MECC; 3490 Lexington Ave. N.; St. Paul, MN 55126; 612-481-3500

Requirements: Apple II family; 64K; 3.5-inch or 5.25-inch disk drive; color monitor preferred

Homework Helper: Math Word Problems

Written for students in grades seven to 12, *Homework Helper: Math* is an interactive, three-part program designed as a tool for understanding and solving math word problems. It teaches that learning appropriate methods to solve algebraic word problems is just as important as finding correct solutions.

Part I is a tutorial on how the program works. Part II offers practice with five types of word problems: number, age, distance, coin and mixture. Each problem type comes with four levels of difficulty.

Part III assists students with their actual homework problems.

Homework Helper: Math organizes information and simplifies the data presented in word problems. It offers seven steps to follow in building equations: read a problem carefully; make a plan using diagrams, general equations or a grid; enter data onto a grid using variables for unknowns; figure out the value of each part of a problem; translate data into

equations; solve the equations; and reread the problems and check your answers.

The package comes with both 5.25- and 3.5-inch disks. The 5.25-inch version is on two double-sided disks; the IIGS version is on a single 3.5-inch disk. The extra storage offered by a 3.5-inch disk eliminates the need for multiple disk swaps. The larger IIGS memory also provides faster access to program data. (The program runs in faster mode on a IIGS.)

Homework Helper: Math is not copy protected, but it took almost 15 minutes to make an archival backup of the 3.5-inch disk using Apple's own *System Utilities* disk.

Product: Homework Helper: Math Word Problems

Price: \$49.95 (includes both 5.25 and 3.5-inch disk versions)

Company: Spinnaker Software; One Kendall Sq.; Cambridge, MA 02139; 617-494-1200

Requirements: Apple IIe, IIc, IIGS; 128K; 3.5-inch disk drive recommended; printer optional.

What's In Store

As this article went to press, several vendors were about to announce new educational software packages for the Apple IIGS. By the time you read this, many of the following should be available.

First Byte

Apple IIGS programs from First Byte seem to be cropping up almost weekly. Many are newly ported from other computers. Watch for *MathTalk*, *MathTalk Fractions*, *KidTalk* and *Speller Bee*. They use speech, super-high-resolution graphics and animation to teach children, ages 5 to 15, reading, writing and arithmetic.

The Learning Company

If the IIGS version is as good as its predecessor for the Apple II family, *Reader Rabbit IIGS* will be a success. It promises to teach children, in kindergarten to grade two, how to read, write and

spell more than 200 three-letter words. The new version will access the Ensoniq sound chip and use super-high-resolution animation to develop letter and word recognition, memory skills and vocabulary.

Contact The Learning Co.; 545 Middlefield Rd., Ste. 170; Menlo Park, CA 94025; 800-852-2255 or 800-852-2256 in California.

Scholastic

Designed for children ages 4 to 10, *Talking Text Writer* is a reading and writing program that combines word processing with a speech synthesizer. You can type in and hear your computer speak letters, words, sentences, stories or even nonsense text.

The current version of the program requires an Echo or Cricket speech synthesizer card. The new version, slated for release in October 1987, promises to access the Ensoniq synthesizer chip directly,

eliminating the need to dedicate an internal slot to the Echo board. It also will have a Macintosh-style user interface, pull-down menus, icons and mouse input.

A literacy tool like this could go a long way to assist beginning readers and writers by reinforcing early language skills. Children want to write because they want to hear their computers speak.

The current version of the program makes only a few concessions to the Apple IIGS. For example, it combines its original four 5.25-inch disks onto one 3.5-inch disk. The new version promises full use of all IIGS capabilities.

Product: *Talking Text Writer*

Price: \$249 (includes sound hardware)

Company: Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Requirements: Apple II family computer; disk drive; Echo board included; printer optional; color monitor preferred

Homework Helper: Writing

Homework Helper: Writing helps students in grades seven to 12 prepare book reports and essays. It has word processing capabilities, a 500-word spell checker and helpful screen prompts.

A tutorial explains how the program works and introduces students to the three stages of writing: prewriting, writing and rewriting. Students can choose Create Ideas for either a book report or an essay. Each topic is handled in detail, including help screens, prompts, definitions of terms and questions that stimulate thinking. All questions and Help files are specific to the type of paper a student chooses to write.

The program offers on-screen instructions and positive reinforcement. Before students move from Create Ideas to the word processor, they can make necessary revisions. Knowing that revisions are possible encourages students to feel comfortable with words.

Once ideas are formed and expressed, the students can access the program's

word processor and organize their ideas into outline form. It is also possible to use the word processor to create files without first using the Create Ideas option.

Word processing files can be edited, saved and printed. Before printing, students can access the spell checker to correct common misspellings. Unfortunately, there is no way to access the spell checker file or increase its number of words.

The program comes with a well-written user's guide, six 5.25-inch disks and an unprotected 3.5-inch disk. On a IIGS, the 3.5-inch disk runs in faster mode and accesses data quickly. The 3.5-inch disk also eliminates the need for disk swapping.

Although its word processing capabilities are somewhat limited and formatting a data disk takes about four minutes, *Homework Helper: Writing* provides students with detailed information about writing papers on a word processor. Its writing hints, prompts and thought-provoking questions are helpful—even for adults—in learning how to organize ideas and improve writing style.

Product: *Homework Helper: Writing*

Price: \$49.95 (includes both 5.25- and 3.5-inch disks)

Company: Spinnaker Software; One Kendall Sq., Cambridge, MA 02139; 617-494-1200

Requirements: Apple II family; 3.5-inch disk drive recommended; printer optional

There is lots of excitement in the marketplace about the IIGS and its new crop of software. Its enhanced sound and graphics are appealing features, and programs that access the Macintosh-style interface all have the same friendly look and feel. First-time users will have a sense of mastery over the machine because of its easy-to-use software, which is both entertaining and designed to teach.

So get in line at your local computer store and check out the IIGS demo program. You'll soon find yourself imagining its possibilities and getting on the IIGS bandwagon. ■

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

DESKPAK™ Volume I

Introducing DESKPAK - the premier Desk Accessories for the Apple® IIGS™

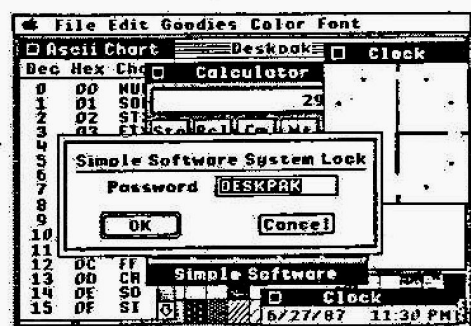
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MultiScribe GS

A Family Word Processor

If you're looking for a word processor for the whole family, *MultiScribe GS* is a good one to consider. It makes use of many Apple IIGS special features and offers enough flexibility to meet most word processing needs.

MultiScribe GS provides a Color menu that contains 16 colors, which children will like. The program also has a color editor for blending colors. You can access all 4,096 colors available on a IIGS by adjusting the color editor's scroll boxes until the color you want appears. All colors may be printed on an ImageWriter II.

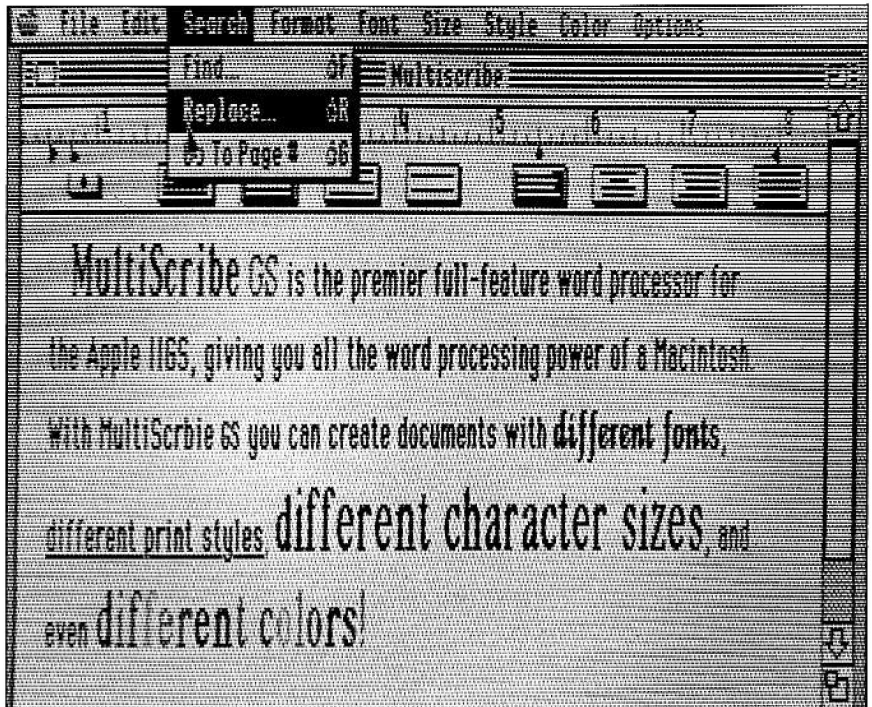
A wide range of type fonts and sizes is available in *MultiScribe GS*. Choices provide almost limitless ways to add creativity to documents.

The program's type options are more than entertaining, however. Students will appreciate being able to use italics and underlining on their papers and subscripts with their chemical formulas. Though automatic footnoting is not supported, *MultiScribe GS*' superscript function indicates end-note numbers properly.

All program fonts are displayed on screen exactly as they will appear in print. Font sizes can be as small as six-point and as large as 48-point. Font sizes from 8-point through 24-point may be selected from the Size menu.

Other sizes are accessed by selecting Larger or Smaller from the same menu. These commands increase or decrease size one point at a time. Though it takes a lot of keystrokes to get from 24-point to 48-point, this method offers a great deal of flexibility. If you select a font size that's not in the font folder on the disk, the program determines the size needed based on available sizes for the font being used.

MultiScribe GS also provides the ability to incorporate pictures and text in a document. The Load Pictures command in the File menu allows the importing of pictures created in a drawing program such as *PaintWorks*.



MultiScribe GS by StyleWare, Inc.

Because creating pictures require lots of memory, *MultiScribe GS* has a Virtual Memory Manager. This feature checks the memory requirements of a document and all pictures. If necessary, it can shift pictures to a disk for temporary storage. If you have more than 512K of memory, you probably won't need this feature.

MultiScribe GS also has a Draw option that allows the creation of simple drawings within the program. When you select Draw, a dialogue box appears offering a choice of shapes: straight line, oval, rectangle or rounded rectangle. These shapes may be either filled or empty. A choice of pen widths is provided. All tools appear in the color selected on the Color menu.

Though possible to use the drawing feature to create simple diagrams, it's most useful for placing borders around text. The Send Back command places a colored background behind text for unique effect.

One of the handiest *MultiScribe GS* features is the ability to accept *AppleWorks* files without converting them to ASCII files. We loaded a file from an *AppleWorks* data disk quite easily. It appeared on screen with the formatting intact. This is not, however, a two-way process. We were

no longer able to read the file with *AppleWorks*.

Other features do not sacrifice of performance. We looked at a prerelease copy of *MultiScribe GS*, version 2.0, and liked it well enough to use it for several projects.

Formatting text is done with colored rulers. These rulers, which may be inserted where needed, provide the options for margin settings, tab settings, line spacing and text alignment. The settings are visible at a glance and may be changed easily at any time.

MultiScribe can manage up to eight open documents at once. A handy Stack Windows command in the Options menu instantly arranges three horizontal windows across the screen.

The program's documentation is well-organized and clearly illustrated, with easy-to-follow instructions. We particularly like the chapter devoted to keyboard and mouse shortcuts for moving around in a document. The techniques described are real timesavers.

MultiScribe GS is an excellent program. While it is easy enough for all but the

OctoRAM And OctoRAM ESP

ROM And RAM Together

MDIdeas' memory-expansion product for the IIGS is the OctoRAM board. Unlike the board from Apple Computer or third-party expansion products, OctoRAM uses SIMMs (Single In-line Memory Modules). Easier to install than normal RAM chips, SIMMs are usually more expensive and not as readily available.

OctoRAM is the only board that holds 8 megabytes (MB) of RAM. Other boards either aren't as expandable or require a second piggyback board—in addition to the main memory board—to store 8 MB.

OctoRAM has eight sockets that can hold either 256K or 1 MB SIMMs. You can't mix 256K and 1 MB SIMMs, and only a few memory combinations are available: 256K, 512K, 1 MB, 2 MB, 4 MB or 8 MB.

Besides installing the SIMMs, you have to set up five jumpers that tell the board how much memory is available. Once you have the board populated with SIMMs and configured, plug it into your IIGS' memory expansion slot. It will function with all standard IIGS programs.

Besides allowing a maximum of 8 MB of RAM expansion space on a IIGS, Apple designated 512K for ROM storage. Originally intended for enhancements to the Apple IIGS' monitor ROM, this memory can be used for other purposes.

The advantage of RAM over ROM is that RAM can be easily modified and changed. You can load one program into RAM and change to another program as needed. MDIdeas has combined the best features of both RAM and ROM in the OctoRAM ESP, a board that plugs into the OctoRAM.

The ESP (Extended Static RAM Pack) board uses static RAM chips and a battery backup. Static RAM uses little power, and the built-in rechargeable battery keeps the RAM powered while a IIGS' power is off. The battery, which should last several years, recharges with the power on.

The static RAM onboard OctoRAM ESP acts virtually the same as a ROM disk, ex-

cept loading programs into it is easier. With normal ROM, special equipment is required to "burn" programs into the circuits, and ROM chips are expensive.

The ESP board works like a fast disk drive. Normal ProDOS files or programs can be stored or retrieved. Most ESP users will want to load commonly used utilities or programs onto the board for easy access. For example, if you save *AppleWorks* on a ROM disk and tell your IIGS to boot from it, *AppleWorks* will be loaded within a couple seconds every time the computer is turned on.

The IIGS Control Panel and monitor ROM support ROM disks. They boot the ESP ROM disk when your Apple IIGS is powered up. With a properly configured ROM disk, you can load any program into memory in less than two seconds.

The ESP board comes with 128K of static RAM and can be expanded to 512K. Each 64K static RAM upgrade costs \$35.

One disadvantage to consider is the size of an ESP board. It plugs onto the front of an OctoRAM board and blocks slots 6 and 7 inside a IIGS.

An ESP board has two jumpers that are used for write-protecting and power. Once you have your ROM disk properly configured, you can remove the write-protect jumper to prevent accidental changes to ESP's static RAM. The battery jumper is used to provide power from an ESP's rechargeable batteries to the static RAM.

When you remove or install static RAM chips, remove this jumper to prevent accidental damage to the RAM.

Because static RAM uses little power, keep in mind that a small static electric shock or accidental capacitance can overpower the chip. Also, static RAMs are very sensitive to voltage surges.

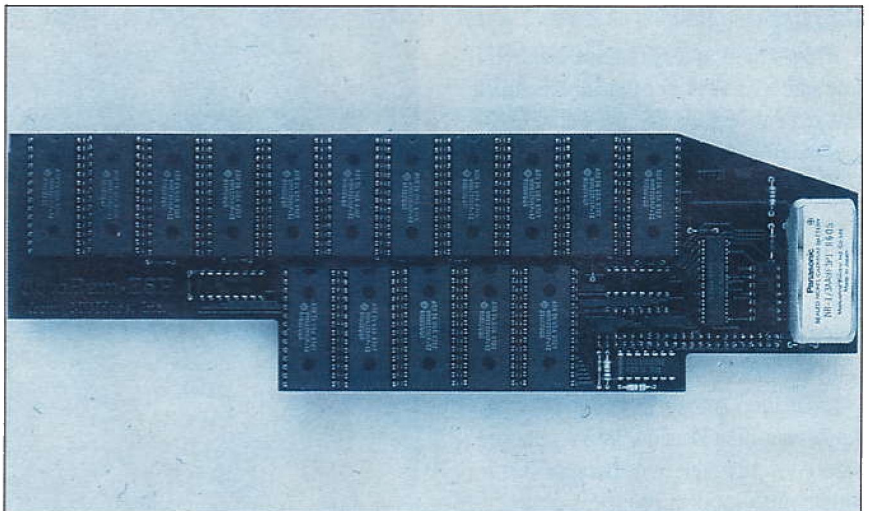
To expand an ESP board, purchase and install your own static RAM chips. To play it safe, send your board back to MDIdeas. The company will install the RAM and test the board for \$20.

An OctoRAM board costs about the same as an Apple IIGS Memory Expansion Card. The SIMM memory modules can be difficult to obtain and are more expensive than standard RAM chips. Still, the OctoRAM is the most expandable memory board available for the IIGS.

The feature we like most about an OctoRAM is its ESP option. It's nice to load up immediately, rather than wait for a disk drive to load. We would like it better, however, if the ESP board attached to the back of an OctoRAM, where it wouldn't block any slots.

—Philip Chien

Product: OctoRAM and OctoRAM ESP
Price: \$149.95 (OctoRAM with 256K)
 \$349.95 (OctoRAM with 1 MB)
 \$599.95 (OctoRAM with 2 MB)
 \$2,899 (OctoRAM with 8 MB)
 \$179.95 (128K OctoRAM ESP; requires OctoRAM board)



OctoRAM by MDIdeas

\$35 (for each additional 64K)

Company: MDIdeas; 1163 Triton Dr.; Forest City, CA 94404; 415-573-0580

Requirements: Apple IIGS

Warranty: One year

Phasor

Compatible Sounds

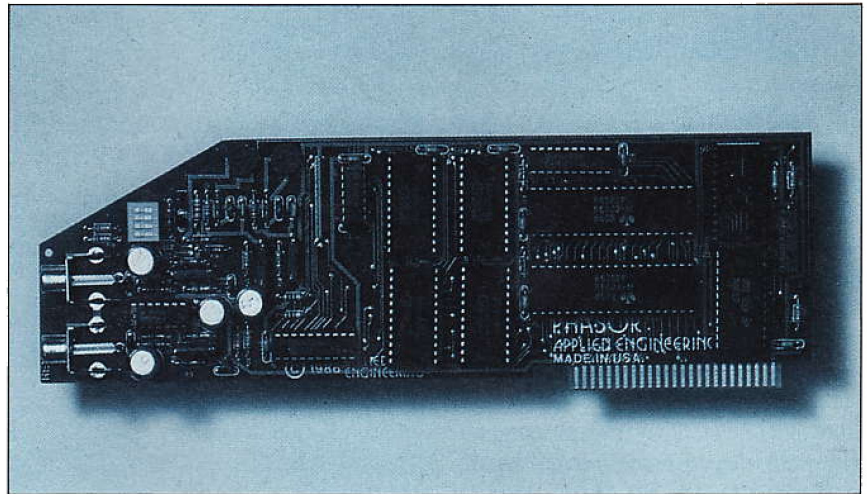
An Apple IIGS produces music through waveforms. When you hear music produced by the computer's Ensoniq sound chip, chances are good it existed previously in a non-computer format—perhaps as a human voice, sound effect or musical instrument. In most cases, these real-world sounds have been digitized, stored in the IIGS' memory and converted back into sound people can hear.

Earlier computers without sound chips generated music, noise, speech and sound effects through other methods, primarily oscillator circuits and hardware phoneme (units of speech) generators. Many of these products are still available for the Apple II+, IIe and IIGS. Many IIGS owners prefer not to "go back to yesterday's technology." Perhaps some do, however.

Many older speech, music and sound programs are designed to work with a variety of different sound generators, including the ALF music card, Mockingboard, Echo speech board and others. None of this software will work properly on an Apple IIGS without the right additional hardware.

Phasor was originally intended for early Apple IIs, but it works quite well on an Apple IIGS. The Phasor board is hardware- and software-compatible with products designed for the Mockingboard, ALF music synthesizer, Echo card and Applied Engineering's Super Music Synthesizer. The board includes four white-noise generators, a 12-channel music synthesizer and one speech chip; a second speech chip can be added later.

Phasor includes a built-in 4-watt stereo amplifier. Just attach two speakers to the



Phasor by Applied Engineering

RCA output jacks and you're ready to produce stereo sound.

Applied Engineering recommends you install your Phasor board in slot 4 of your Apple, because most Mockingboard programs are designed to work with the Mockingboard in slot 4. This isn't an absolute rule, but it occurs often enough to make it worth following.

On an Apple IIGS, however, slot 4 corresponds to the memory occupied by the mouse firmware. Luckily, it's fairly easy to readjust the Control Panel for use with the Phasor, or mouse, as needed.

Phasor comes with one double-sided 5.25-inch program disk. IIGS customers can obtain a 3.5-inch version by calling Applied Engineering's technical support department. A variety of demonstrations and utilities are included for each Phasor function. Music programs include several songs, a composer for designing your own songs using game paddles and a music staff.

The white-noise generator demo includes a train, explosion, waves, even a flying saucer. Speech utilities include a "type and talk" program, a "Dr. Fay Zor" advice program and a talking clock program. Regrettably, the clock program is designed to work only with Applied Engineering's Timemaster H.O. clock. It won't work with a IIGS clock.

You can attach Phasor utilities to your own programs in Applesoft BASIC. While

programming speech through the Ensoniq chip is difficult, the Phasor TTS (Text To Speech) utility easily attaches to a BASIC program and automatically converts English text into speech. The end result doesn't sound as good as the Ensoniq chip "speaking," but it works and is easier to program.

With the Phasor board, you can tap thousands of programs designed to work with earlier Apple audio hardware and design your own musical programs. Technically, all Phasor capabilities can be reproduced through the Ensoniq chip. It may take some time before most users will be able to access this sophisticated component, however.

Hopefully, more enhancements to Phasor software will become available, including second-channel speech support, a IIGS version of the talking clock and enhanced versions of the music composer designed to operate with IIGS music programs.

The major advantage to the Phasor board, at the moment, is its large database of existing programs and hardware.

—Philip Chien

Product: Phasor

Price: \$179

Company: Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Requirements: Apple IIGS; other Apple II computers

Warranty: Five years

RamPak 4GS

Make Way For Megabytes

An Apple IIGS can address up to 8 megabytes (MB) of RAM, but it comes with only 256K of RAM. As IIGS owners quickly find out, many new IIGS programs require 512K, 768K or even 1 MB of RAM for proper operation. While Apple's IIGS Memory Expansion card holds only 1 MB of RAM, several third-party manufacturers have designed cards that store more memory, often at prices that beat Apple's own memory product.

RamPak 4GS is Orange Micro's entry into the IIGS RAM sweepstakes. It can hold 512K up to 4 MB of RAM on one board. Unlike its competitors, RamPak 4GS uses 44256 memory chips. Each 256K by 4-bit memory chip is the equivalent of four standard, 1-bit 256K chips.

When you want to add 256K to a RamPak 4GS, this means you need two 44256 memory chips, rather than eight 41256 chips. Because fewer chips are needed for each memory bank, the board is smaller than other memory boards and doesn't require a piggyback board for more memory.

Its installation manual infers that because fewer chips are needed for expansion, RamPak 4GS is less expensive to upgrade than other boards. This isn't necessarily true.

During midsummer 1987, Orange Micro was charging \$49 for each extra 256K of memory (two 44256 chips). Eight standard 41256 chips, required for 256K expansion on most memory boards, can be purchased for under \$30.

Orange Micro explained its reference to less expensive memory expansion was limited to comparisons with high-capacity memory cards such as a GS RAM Plus and OctoRAM, both which can be expanded beyond a RamPak 4GS' 4 MB limit.

RamPak 4GS comes with 512K of factory installed memory. Coupled with the 256K that comes with an Apple IIGS, a minimally configured RamPak 4GS delivers a total of 768K RAM. While this is more than enough power to run most ap-

plications, we've seen many programs that require more than 512K RAM.

This includes *Deluxe Paint* and the *Supersonic Digitizer* demo program to name two. Dozens of additional programs have been enhanced with more memory, including *AppleWorks*, *SoftSwitch*, *Paintworks Plus* and most file transfer utilities. Fortunately, RamPak 4GS is expandable beyond the standard 512K configuration.

When you purchase RamPak 4GS, it looks like somebody forgot to put in the memory. There are 14 sets of memory expansion locations, but they're all empty. The board includes 512K of permanently installed RAM as part of its circuitry.

Because that memory is soldered to the board, it can't be easily replaced. If a chip in that portion of memory should go bad (an unlikely occurrence), the board must be returned to the factory for repair. If any of the extra expansion memory you installed goes bad, determine which chip is at fault—with the supplied memory diagnostic program—and replace it with a good one.

Orange Micro includes a special feature with RamPak 4GS that is not supplied with any other IIGS memory expansion board: a cache (pronounced "cash") driver.

A cache program is a RAM input/output buffer between the disk drive and the program's memory. Cache software sets aside a portion of RAM to be used for storing most-requested data from your disk drives. As you work, the cache software automatically replaces the least-used portion of its memory with new data. This operation is transparent to you, but overall results are excellent.

For safety reasons, cache software doesn't affect disk writes—in case of a power failure or software glitch—but disk reads appear to increase in speed. The reason is the cache software reads data from its RAM, instead of the drive. Caches aren't as fast as RAM disks, but they're much faster than normal disk drives.

RamPak 4GS is priced in the midrange of available RAM boards. It isn't as inexpensive as available 1 MB and 2 MB RAM cards and not as expandable as 6 MB to 8

MB cards. It can be expanded from its starting value of 512K up to 4 MB of RAM, however, which is enough for almost all current applications.

While RamPak 4GS may not have the bells and whistles of other expansion cards (e.g., 8 MB memory limits, ROM disks and an expansion connector), it is a solid memory expansion product.

RamPak 4GS is inexpensive, but upgrades to a megabyte or more can add up. Its cache software feature is excellent. Hopefully, other manufacturers will produce versions of cache software for their expansion boards, too.

—Philip Chien

Product: RamPak 4GS

Price: \$189 (RamPak 4GS with 512K); \$49 (each additional 256K)

Company: Orange Micro; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

Requirements: Apple IIGS

Warranty: One year

Supersonic And Digitizer

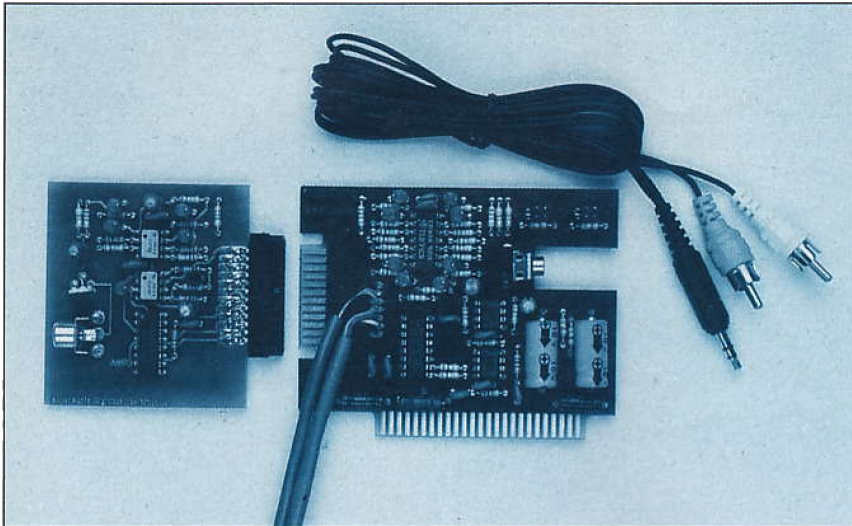
Making Music Together

Although an Apple IIGS generates stereo sound internally, you can't get stereo sound by attaching a pair of speakers.

For various reasons, Apple decided to include only a three-inch speaker inside each IIGS case, primarily for use as a beeper for warnings and indicators. The IIGS Ensoniq sound chip generates stereo sound, but a IIGS' sound jacks are attached to a *mono* minijack on the back of the computer.

Fortunately, Apple provided a special seven-pin Ensoniq input/output jack, leaving the field open for third-party stereo boards.

Supersonic is MIDIdeas' stereo board for a IIGS. It plugs into any unused IIGS slot, and a small cable connects the Supersonic board to a IIGS' Ensoniq connector. Three audio output jacks are provided: phono jacks for the left and



Supersonic and Digitizer by MDIdeas

right channels, and a Walkman-type mini stereo jack.

Jumpers on the card let you set it up for low- and high-level outputs. No software configuration is necessary for a Supersonic board. In fact, you don't have to "tell" the IIGS Control Panel that a Supersonic board is installed.

The Supersonic is a simple, easy-to-use board that does what it's supposed to. It doesn't have a volume control or other adjustments; those things are the responsibility of the user's software. The only utility program that comes with the board is a demo of Electronic Arts' *Music Construction Set*.

Most IIGS sound programs designed to work with stereo output boards should work well with a Supersonic board. Many even recommend a Supersonic in their documentation.

One little-used feature of the Ensoniq chip is its ability to input stereo sounds. With proper hardware, you can digitize, record and store any sound inside your Apple. With some software, you can edit and modify music waveforms and design new sounds based on old ones.

The Supersonic Digitizer is an add-on to the Supersonic board. It plugs into the Supersonic board and has a RCA jack for audio input. A Digitizer board turns your IIGS into a digital tape recorder, making it

possible to record and produce audio quality similar to a compact disc (CD).

Input for your Digitizer board can come from a preamp or the earphone jack of any radio, tape recorder or CD player. You must first set the audio level, which is a simple process that requires the included audio adjustment program. Running the calibration program produces a horizontal line on screen.

The sounds generated when you start your audio source will be graphed, similar to an oscilloscope or audio meter. A volume control on the Digitizer lets you adjust the board to an optimum level.

The demo *Digitizer* program that comes with the Digitizer board lets you capture and play back digitized audio in either mono or stereo modes. To get a high-quality lifelike sound, the Digitizer uses up memory at the rate of 32K for each second of sound stored.

The program requires a minimum of 1 megabyte (MB) of RAM. Even with a 1 MB RAM board installed, memory is used up in half a minute for mono sound and in 15 seconds for stereo sound. Extended memory boards and high-density disk drives are *highly* recommended for serious audiophiles.

The *Digitizer* software is fun to play with, but not very useful. You can graph sound with the calibration program, digi-

tize a sound, play it back, save it to disk or play back a sound you previously saved to disk. No extra software is provided to play back sounds from within your programs, edit sound waves or use waveforms from within other programs (e.g., creating your own instruments for a music program).

MIDIdeas is planning new software enhancements, and other third-party companies are looking into software for the Supersonic Digitizer. Until then, the Digitizer will be more of a toy than a serious programming tool.

Besides lack of software, our only complaint about the Digitizer is its lack of a stereo input. While the Supersonic board corrects Apple's mistake of leaving out a IIGS stereo output, the Digitizer brings the problem back; it only digitizes mono sound.

True, the software lets you digitize stereo sound, but you have to rewind your tape and record each channel separately. It's annoying to have to resync outputs when you want to play back a stereo recording. ■

—Philip Chien

Product: Supersonic and Digitizer
Company: MDIdeas; 1163 Triton Dr.; Forest City, CA 94404; 415-573-0580
Price: \$59.95 each
Requirements: Apple IIGS; the Digitizer requires 1 MB RAM minimum
Warranty: One year

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Apple IIGS Hardware And Software Directory

About This Directory

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

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

In order for a vendor's program to be listed in this directory, the product must either be Apple IIGS-specific or at least available on a 3.5-inch disk. Why? Many Apple IIGS owners do not own 5.25-inch disk drives, or they may opt for two 3.5-inch drives rather than one 3.5-inch drive and one 5.25-inch drive.

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

Accessories

A-B Box

Switch box
Apple IIGS

The A-B Box is a switch box that connects two peripherals to one serial port or lets you share one peripheral between

two Apple IIGS computers. It comes with a 2-inch Mini-DIN8 cable. For older equipment with DB9 connections, you can get an Apple conversion cable from the vendor. The A-B Box is also compatible with the Macintosh.

\$99.95 retail

Kensington Microware; 251 Park Ave. S.; New York, NY 10010; 800-535-4242

Apple Security System

Security kit

Apple IIGS

The Apple Security System lets you secure an Apple IIGS computer, monitor, keyboard and peripherals without interfering with its functioning or setup. It attaches easily and comes with security cables, screws and locks. When installed in school computer rooms, the Apple Security System allows children to work after hours unattended without fear of vandalism.

\$49.95 retail

Kensington Microware; 251 Park Ave. S.; New York, NY 10010; 800-535-4242

Bose RoomMate Speakers

Digital sound speakers

Apple IIGS

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

\$229 retail

Bose Corporation; 100 The Mountain Rd.; Framingham, MA 01701; 617-879-7330

Disk Pocket

3.5-inch disk holder

Computer or monitor

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

\$9.95 retail

Kensington Microware; 251 Park Ave. S.; New York, NY 10010; 800-535-4242

Disk Drive Cleaning Kit

Cleaning accessory

Apple IIGS

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

\$29.95 retail

Kensington Microware; 251 Park Ave. S.; New York, NY 10010; 800-535-4242

DSM802

Data switch

Apple IIGS and peripherals

The DSM802 is a compact two-way data switch with mini 8-pin DIN connectors.

Designed for an Apple IIGS and Macintosh Plus, it enables a user to attach two

peripherals to one computer or two computers to one peripheral.

\$69.95 retail

Data Spec; 20120 Plummer St.; PO Box 4029; Chatsworth, CA 91313; 818-701-5848

Dust Cover For The Apple IIGS

Dust cover

Apple IIGS and monitor

The Dust Cover For The Apple IIGS is a clear, anti-static cover that protects an Apple IIGS computer, monitor and keyboard.

\$13.75 retail

Kensington Microware; 251 Park Ave. S.; New York, NY 10010; 800-535-4242

Kablit

Computer and peripheral tie-downs

Apple IIGS; monitor; other peripherals

Kablit for the IIGS is a cabling system that ties down and secures your computer and peripherals. It uses snap-in fasteners for the computer and monitor. Kablit comes with complete instructions, two brackets, one hex fastener, one hinge, two molliies, one screw and washer (for external disk drive), in addition to a lock and a cable.

\$39.95 retail

Secure-It, Inc.; 10 Center Sq.; East Longmeadow, MA 01095; 413-525-7039

Kraft Premium II

Joystick

Adapter Card Model 820044

The Kraft Premium II is a two-button joystick available for the Apple IIGS. It is equipped with an exclusive and patented "center-lok" mode selector for spring-centered or free-floating use. The vendor says the Premium II has been tested through more than 1 million cycles without failure.

\$44.95 retail

Kraft Systems, Inc.; 450 W. California Ave.; Vista, CA 92083; 619-724-7146

Kurta GIS

Cordless graphic input system

Apple IIGS

The Kurta GIS is a cordless graphic input system for an Apple IIGS that includes either a cordless pen or a cordless puck and tablet. It can be used either as a mouse or a graphics tablet. Users can switch between mouse and tablet modes while working on any application.

\$495 retail

Kurta Corp.; 4610 S. 35th St.; Phoenix, AZ 85040; 602-276-5533

MousePouch

Mouse container

Apple IIGS

When your mouse is not in use, then MousePouch is the place to keep it. MousePouch is a vinyl suede pocket that attaches to the side of the Apple IIGS or monitor, or any other convenient surface with velcro.

A stick-on velcro patch is included for placing on the side of the computer. Besides storing the mouse, MousePouch will also hold up to eight 3.5-inch disks.

\$5.95 retail

H&H Enterprises; PO Box 2672; Corona, CA 91718; 714-737-1376

Mouseway

Individual mouse pads

Apple IIGS; mouse

Mouseway provides a smooth, dirt- and static-resistant work surface for the mouse used with an Apple IIGS. It keeps the mouseball from scratching furniture surfaces and absorbing damaging furniture cleaning solutions. Its color is slate gray.

\$9.95

Kensington Microware; 251 Park Ave. S; New York, NY 10010; 800-535-4242

Mouse Cleaning Kit With Mouse Pocket

Cleaning kit

Mouse

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

\$24.95 retail

Kensington Microware; 251 Park Ave. S; New York, NY 10010; 800-535-4242

Mouse Pocket ADB

Mouse holders

Apple IIGS; mouse

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

\$9.95 retail

Kensington Microware; 251 Park Ave. S; New York, NY 10010; 800-535-4242

Printer Muffler 80

Printer sound cover

Apple IIGS; printer

The Printer Muffler 80 is a printer cover that reduces noise from your Apple IIGS printer by 75 to 85 percent. Molded from high-impact styrene plastic for durability, it keeps dust out and is transparent.

\$59.95 retail

Kensington Microware; 251 Park Ave. S; New York, NY 10010; 800-535-4242

System Saver IIGS

Cooling fan power center

Apple IIGS; monitor; two peripherals

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

System Saver IIGS protects your system against power surges, spikes and noise. It clips spikes and surges at a safe level and filters out disruptive noise.

\$99.95 retail

Kensington Microware; 251 Park Ave. S; New York, NY 10010; 800-535-4242

Turbo Mouse ADB

Replacement mouse

Apple IIGS and mouse attachments

The Turbo Mouse ADB works at twice the speed of a standard mouse and in half the space, its vendor says. It turns mouse technology around and puts the mouse ball on top, not the bottom. Only the ball of the mouse moves, not the whole mouse.

\$129.95

Kensington Microware; 251 Park Ave. S; New York, NY 10010; 800-535-4242

Books And Publications

Apple IIGS Firmware Reference

Guide for programmers and hardware designers

The Apple IIGS Firmware Reference is a technical guide for programmers creating software for the Apple IIGS. It provides an extensive description of the internal operations of an Apple IIGS and presents the latest information about its firmware facilities.

The book provides information about how to use the firmware to access the system monitor, mini assembler, keyboard, mouse, video display, serial ports and disk drives.

Addison-Wesley Publishing Co.; Route 128; Reading, MA 01867; 617-944-3700

of Apple IIGS software. Compatible programs include *Sbahghai*, *Newsmaker*, *MUSIC Studio*, *Paintworks Plus*, *MultiScribe GS* and more.

\$29.95 retail (plus \$3 postage and handling)

Simple Software; 4612 North Landing Drive; Marietta, GA 30066; 404-924-2667

GraphicWriter

Graphics/word processor

512K or larger Apple IIGS; extended memory card recommended

GraphicWriter is a word processor that allows graphics and text to be combined on the same page. It can be used to produce personal and business letters, legal documents, reports, illustrated manuals, flyers, ads, newsletters and more.

Left, right, center, full justification and multiple-line spacing are supported. Tab and margin settings are paragraph oriented, so a user can set each one individually or use the same setting for an entire document.

Newsletters, flyers and so forth can be laid out by selecting the program's Regions function. Regions can be rearranged, if necessary, through an option called Show Full Page. Object-oriented graphic tools, displayed along the bottom of the screen, can be incorporated into any document.

\$149.95 retail

DataPak Software, Inc.; 14011 Ventura Blvd.; Sherman Oaks, CA 91423; 818-905-6419

Managing Your Money

Financial planning/small-business package
Apple IIGS; 80-column monitor; two disk drives

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

More than 200 help screens are provided in the program on subjects ranging from investment portfolios, taxes, life insurance needs and net worth. The program is fully integrated, generates a

variety of reports and has an extended warranty plan.

\$149.95 retail

Micro Education Corporation of America (MECA); 285 Riverside Ave.; Westport, CT 06880; 203-222-9087

MouseTalk

Telecommunications

Apple IIGS; modem

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

Program features include a built-in text editor and a macro system and the ability to use keyboard commands as an alternative to a mouse.

MouseTalk also offers terminal emulation, accommodates data-transfer speeds up to 19,200 bits per second and is compatible with most popular modems and the serial port on an Apple IIGS.

\$149.95 retail

United Software Industries; 8399 Topanga Canyon Blvd., Ste. 200; Canoga Park, CA 91304; 818-887-5800

MouseWrite

Word processor

Apple IIGS; extended memory card recommended; two disk drives

MouseWrite, Version 2.6, is a ProDOS mouse-based word processor that features pull-down menus, mouse control and support of the IIGS-interrupt and extended-memory environments. The expanded desktop can handle up to 12 open documents at once, and a feature called Print-While-You-Work has background print-spooling ability.

Other enhancements include an integrated spelling checker, mail merge, communications, glossary and the ability to directly load *AppleWorks* word processing files without conversion.

The program also features downloadable fonts and color selection for use with color printers such as the *ImageWriter II*.

\$149.95 retail

Roger Wagner Publishing, Inc.; 10761 Woodside Ave., Ste. E; Santee, CA 92071; 619-562-3670

MultiScribe GS

Word processor

512K Apple IIGS

MultiScribe GS is a mouse-based word-processing program that brings Macintosh-like pull-down menus, windowing and fonts to an Apple IIGS. It lets users choose from a selection of fonts and character sizes and offers what-you-see-is-what-you-get word processing.

MultiScribe GS allows a user to open up to eight different document windows at once. Editing options include the Cut, Copy, Paste and Undo commands employed by Macintosh word processors.

\$99.95 retail

StyleWare, Inc.; 5250 Gulfton, Ste. 2E; Houston, TX 77081; 713-668-1360

Notes-n-Files

Database and word processor

Apple IIGS

Notes-n-Files combines a database filing system with a word processor-like editor. The product includes full mail-merge and mailing-label management capabilities. According to its vendor, *Notes-n-Files* also offers a desktop environment with graphic representation of filing cabinets, office stationery, etc.

Other features of *Notes-n-Files* include direct import of *AppleWorks* files; choice of font size and stylized type faces; builds customized mailing lists; and allows for three-way cross referencing of files.

\$129.95 retail

DataPak Software, Inc.; 14011 Ventura Blvd., Ste. 507; Sherman Oaks, CA 91423; 818-905-6419

On Balance

Personal finance program

Apple IIGS

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

On Balance works as a financial planning tool, letting people set up their own

FREE PRODUCT INFORMATION

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The Apple IIGS Buyer's Guide Fall 1987

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Apple IIGS

The Buyer's Guide

Dear Apple IIGS Owner:

Here is the Premier issue of *The Apple IIGS Buyer's Guide*, a free gift to you from the publishers of the Macintosh Buyers Guide.

As the first magazine targeted exclusively to Apple IIGS users and followers, *The Apple IIGS Buyer's Guide*, will become the definitive source of information for Apple IIGS hardware, software and peripherals.

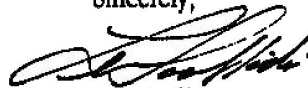
An exclusive directory summarizes every product to date ever produced for the Apple IIGS. Moreover, in-depth feature articles provide helpful "how to" advice and tips to help users get the most out of their Apple IIGS computers. Regular departments and product reviews round out the editorial for parents, teachers, hobbyists, artists, dealers and other Apple IIGS followers.

Included in this issue is an in-depth look at Apple IIGS graphics, a tutorial on upgrading from the Apple IIe to the IIGS, a roundup of Apple IIGS entertainment software offerings, more than a dozen product reviews and a first look at Apple IIGS educational software.

Times change and in the Apple II world, the excitement has shifted to the Apple IIGS. We anticipate that hundreds of new products will be launched in 1988 exclusively for the Apple IIGS and we'll be there to review them for you.

I encourage you to subscribe to *The Apple IIGS Buyer's Guide*, and look forward to welcoming you aboard as a satisfied subscriber. To subscribe, simply fill out the attached card and mail it back to us or call us at 1-800-826-9553. In Florida call 305-231-6904.

Sincerely,



Len Scaffidi
Publisher

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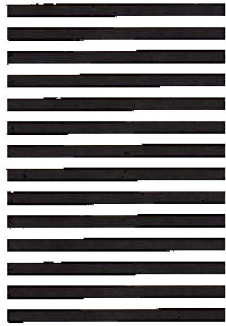
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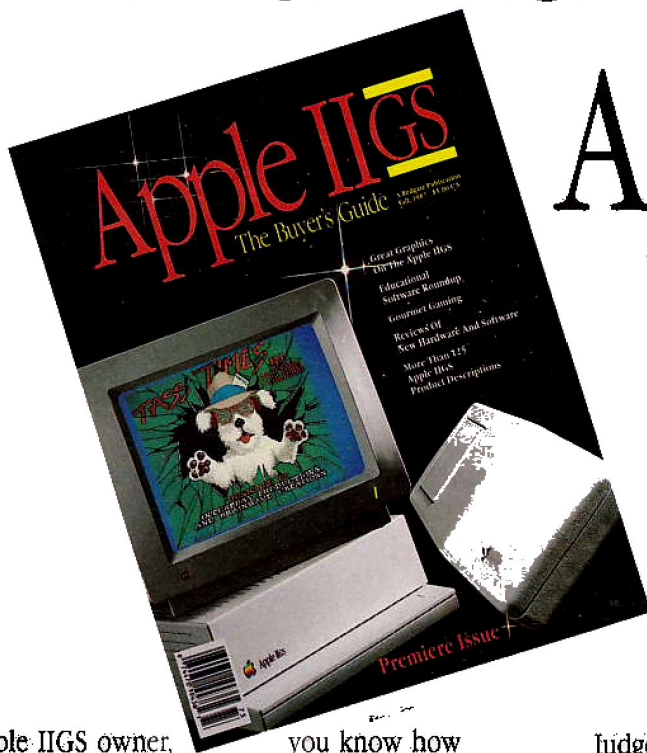
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Apple IIGS

The Buyer's Guide

financial goals. The program includes record keeping and automatic reconciliation, accurately reports net worth and net income, allows for flags (e.g., tax-deductible items), reminds people of recurring transactions, develops monthly and yearly budgets and prints and balances checks. \$99.95 retail

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903-2101; 415-479-1700

Pinpoint Desktop Accessories

AppleWorks enhancements
Apple IIGS; two disk drives; AppleWorks 1.3 or later version or selected ProDOS applications; extended memory card recommended

Pinpoint Desktop Accessories offers a complete selection of pop-up tools designed to enhance *AppleWorks* or other selected ProDOS programs. Its eight applications include Appointment Calendar, Calculator, Communications Window, Telephone Dialer, Graphmerge, Notepad, Quicklabel and Typewriter.

With *Pinpoint Desktop Accessories*, an entire program remains resident in RAM while *AppleWorks* (or other ProDOS programs) continue working in the foreground. A "hot key" combination brings any of the tools to the screen, where they can be used until resuming the main application.

\$89 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Point-To-Point

Telecommunications program
Apple IIGS; two disk drives; extended memory card recommended

Point-To-Point opens up an Apple IIGS to the world of telecomputing and lets it communicate with almost any computer and modem. It can electronically search databases, join ongoing real-time discussions and swap programs and files.

\$129 retail
Pinpoint Publishing; 5865 Doyle St., Ste. 112; Emeryville, CA 94608; 415-654-3050

Printrix 1.0

Font printing package
Apple IIGS; printer

Printrix is an innovative font printing package that includes a large selection of fonts. It enhances the print quality of many dot-matrix printers, including the ImageWriter and Epson FX series printers and allows direct printing of text files from *AppleWorks*, *AppleWriter*, *WordPerfect* and *Word Juggler*.

The software also merges graphics and text together; includes font enhancements such as italics, boldface, underline and magnification; allows newspaper-style columns; permits proportional or non-proportional spacing; automatic page number; color printing; and more. \$65 retail

Data Transforms; 616 Washington St.; Denver, CO 80203; 303-832-1501

ProTERM

Telecommunications
Apple IIGS

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

Other features include automatic macro generation for log-on to remote databases, support for larger memory cards and sophisticated data transfer capabilities. \$95 retail

Checkmate Technology, Inc.; 509 S. Rockford Dr.; Tempe, AZ 85281; 602-966-5802 or 800-325-7347

ReportWorks

AppleWorks enhancement program
Apple IIGS

ReportWorks is a report generator that uses *AppleWorks* files to print lists, fill out forms and analyze data. The program allows users to design intricate reports, including purchase orders, statements, invoices, estimates and more. It also has the ability to perform math calculations more advanced than offered by *AppleWorks* and has enhanced sorting capabilities

for sorting up to three different fields for greater flexibility.

\$49.95 retail
Megahaus Corp.; 5703 Oberlin Dr.; San Diego, CA 92121; 619-450-1230

Salary Magic

Salary spreadsheet
512K Apple IIGS

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

Salary schedules are created quickly, and tools are provided to make what-if projections individually and collectively. Raises, benefits and experience can be taken into account and recalculated based on alternatives to current proposals.

\$395 retail
Magic Software, Inc.; 1706 Galvin Rd. S.; Bellevue, NE 68005; 402-291-0670 or 800-342-6243

Sensible Grammar

Proofreading program
Apple IIGS; word processing program

Sensible Grammar is a proofreading program that checks word processing files for common writing errors. It contains a library of more than 1,000 commonly misused English phrases to identify pompous, informal, cliché, vague, wordy, repetitive and other faulty phrases in a user's writing. The program also catches many punctuation, capitalization and other typographical errors, such as repeated words.

\$99.95 retail
Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48063; 313-528-1950

Sensible Speller For ProDOS

Electronic dictionary
Apple IIGS

Sensible Speller is an electronic dictionary designed to correct misspellings after a document has been completed. The program has a vocabulary of more than 80,000 words on disk, all taken from the Concise Edition of the *Random House Dictionary*.

\$125 retail

Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Sensible Writer

Word processor

Apple IIGS

Sensible Writer uses a Macintosh-like user interface that makes it easy to select portions of text to be moved, underlined, boldfaced, justified and more. According to its vendor, the program is fast, reliable and easy to use. The program uses visual format rulers to easily set tab stops, margins, and paragraph indentations on the screen.

Multiple windows allows users to work on two independent, full-size documents at the same time.

Other features include built-in mail merge; easy to share data with *AppleWorks* and other word processors; takes advantage of most extended memory cards available for the Apple IIGS by allowing for large text files; and compatibility with most printers. *Sensible Writer* is also compatible with *Sensible Speller* and *Sensible Grammar*, available from the same vendor.

\$99.95 retail

Sensible Software, Inc.; 335 E. Big Beaver, Ste. 207; Troy, MI 48083; 313-528-1950

Springboard Publisher

Publishing program

Apple IIGS

Springboard Publisher is a desktop publishing package designed for those who create and publish pages in the home, school and business. Pages can be preformatted or the user can work free-form. All of the tools are available on screen and are accessed through pull-down menus.

Page-layout features include "intuitive text" that automatically flows around graphics; direct import of *AppleWorks* files; multiple-column, variable-width column pages; automatic borders to separate sections of the page; and the capacity to insert and overlap both text and graphics.

\$139.95 retail

Springboard Software, Inc.; 7807 Creekridge Cir.; Minneapolis, MN 55435; 612-944-3912

Tax Preparer

Tax accounting software

Apple IIGS

The 1987 edition of *Tax Preparer* contains information for filing under the Tax Reform Act. The new edition also contains major advances in speed, automation and ease of use.

Among the program's automated features are on-screen support to guide users through the program, a calculator scratch pad, unlimited itemizing, built-in record keeping and automatic IRS-accepted print-outs of 22 forms and schedules.

\$250 retail

HowardSoft; 1224 Prospect St., Ste. 150; La Jolla, CA 92037; 619-454-0121

Typing Tutor IV

Keyboard instruction

Apple IIGS; color monitor recommended


Typing Tutor IV is a typing program that automatically adjusts to a user's abilities and progress. It shows a user his speed, accuracy, strengths and weaknesses and graphs a user's progress along the way. The program can also be used to create customized lessons.

The program first determines a user's initial typing ability—beginner, two-finger or touch typist—and then works to set reasonable progress goals.

Lessons simulate real-life typing experiences. Practice sessions use actual words and phrases that contain the keys a user is learning. The program allows a user to backspace and correct mistakes while typing.

\$49.95 retail


Simon and Schuster Software; 1 Gulf + Western Plaza; New York, NY 10023; 212-373-8882



SPEECH

The Echo IIb speech synthesizer is compatible with the Apple IIe, II+, and the new Apple IIGS. It offers both text-to-speech and natural sounding speech capabilities. Its unique text-to-speech program gives the Apple an unlimited vocabulary. The Echo IIb also features distinctive natural sounding speech in a female voice. The fixed vocabulary of 720 words is supplied on disk and can easily be added to BASIC programs.

The Echo IIb, like the Echo II, Echo I, and Cricket, is compatible with numerous educational and special needs programs from over 90 software manufacturers. Contact Street for a list of companies offering these talking programs.



Street Electronics Corp. P.O. Box 50220, Santa Barbara, CA 93150 (805) 565-1612

VIP Professional

Spreadsheet

Apple IIGS; extended memory card recommended

VIP Professional is an integrated spreadsheet with database and graphics features. It incorporates the features and functionality of Lotus 1-2-3, as well as a mouse interface with pull-down menus and icons. The program offers file compatibility with Lotus 1-2-3 and AppleWorks, thereby allowing users to move spreadsheets from one program to another.

\$299.95 U.S. retail

ISD Marketing, Inc.; 2651 John St., Unit 3; Markham, Ontario, Canada L3R 2W5; 416-479-1880

Visualizer

Business graphics

Apple IIGS

Visualizer is a professional business graphics program designed to take advantage of the graphics capabilities and interface of an Apple IIGS, including color, mouse support, fonts and pull-down menus.

Features include the ability to display title and legend boxes; more than 100 colors for text and graphs and a graph background that can be displayed in different color patterns.

\$99.95 retail

PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

//WRITE

Word processor

Apple IIGS

//WRITE is a word processor that features multiple document windows, full control of commands through the mouse and keyboard, true what-you-see-is-what-you-get displays, cut-and-paste capabilities, pull-down menus, a wide range of font and type styles, scroll bars, multifaceted alignment rulers and shortcut keys for experienced users.

Other features include cut, copy, paste, replace and delete; cut or copy to clipboard; change font, style and size; move,

resize and rearrange windows; set margins, tabs, spacing, alignment and justification from the same ruler and align left, right, justify and center.

\$79.95 retail

Random House; 201 E. 50th St.; New York, NY 10022; 212-572-2553

Writer's Choice elite

Graphics/text word processor

512K Apple IIGS; color monitor

Writer's Choice elite is a dedicated word processor that allows a user to combine graphics and text. It can be used with Paintworks Plus, Draw Plus, Clip Art Gallery or other compatible graphics programs to create custom reports, memos, letters, flyers and more.

Key features include full graphics integration with leading Apple IIGS software; mouse interface and pull-down menus; 16 document windows available to work on several documents at once; full-color capabilities including highlighting and crossed-out text; printing in 16 colors; multiple text capabilities including numerous fonts and type sizes; headers and footers (text or graphics); search and replace; ruler formatting, including single-, double- and triple-spacing, margins, tabs, decimal tabs, indent, centering and right and full justification; and more.

\$79.95 retail

Activision, Inc.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

WordPerfect for the Apple IIGS

Word processor

512K Apple IIGS; two disk drives or a hard disk drive recommended; extended memory card recommended

WordPerfect for the Apple IIGS provides more than 110 word processing features. In addition to a 115,000-word speller and a thesaurus, the program offers footnotes, mail-merge, macros and several formatting features.

The program's alphabetical interface allows a user to select features with both the keyboard and the mouse. Users can also edit an unlimited number of documents at the same time and take advantage of any extra memory available.

Other features include labeled function keys; boldface, underlining and centering; advance up or down a half of a line; center page top to bottom; screen up, down, left and right; page up and down; scroll horizontally and vertically and delete character left or right.

\$179 retail

WordPerfect Corporation; 288 W. Center St.; Orem, UT 84057; 801-225-5000

Creative

816/Paint

Color graphics program

Apple IIGS; color monitor

816/Paint software supports the 4,096-color super-high-resolution mode on the Apple IIGS. In fact, the latest version supports all Apple color graphics modes, including the 320 and 640 modes.

Users are free to scale, rotate, stretch or paint any object on screen. The program can be used to illustrate "video slides," to produce clip art for desktop publishing or as a form of entertainment.

\$75 retail

Baudville; 1001 Medical Park Dr. SE; Grand Rapids, MI 49506; 616-957-3036

Award Maker Plus

Award-style graphics

Printer

Award Maker Plus is graphics software designed to create awards, certificates, licenses, coupons or other documents of your own design. It is compatible with The Print Shop from Broderbund Software and has 12 professional-quality border designs in your choice of 14 colors.

You can use your own custom high-resolution pictures on some award styles or choose from 286 prepared award styles. The program allows you to choose a text style, enter your own message and select the border style and color.

\$39.95 retail

Baudville; 1001 Medical Park Dr., SE; Grand Rapids, MI 49506; 616-957-3036

Clip Art Gallery

Clip art software

Apple IIGS; color monitor

Clip Art Gallery is a database of more than 600 images designed for use with several Apple IIGS graphics programs. It consists of pictures in 24 categories, including business, school, sports, American themes, animals, bugs, fantasy, outer space, gadgets, people and holidays.

The product is designed to work with *Paintworks Plus* and *Writer's Choice elite*, or any other IIGS-specific paint or word-processing program, to add illustrations to text-intensive reports, memos and flyers. \$29.95 retail

Activision, Inc.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

DeluxePaint II

Paint software

Color monitor

DeluxePaint II is an expanded version of *DeluxePaint*, which won the 1986 Software Publisher's Association "Product of the Year" award. The new version contains more than 90 painting tools and effects, including perspective, custom brushes, variable zoom, stenciling, fixed backgrounds, gradient fills, pattern fills, color cycling, font control and symmetry.

DeluxePaint II lets the artist copy or pick up any piece of a painting, and use it as a brush or fill pattern. The "brush" image can be rotated, stretched and flipped (vertically or horizontally), or used as a nozzle on the Airbrush tool.

\$99.95 retail

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Deluxe Library

Clip art software

DeluxePaint II

Deluxe Library is a family of color clip-art disks for *DeluxePaint II*. *Art Parts, Volume I* contains more than 175 color images, including faces, maps, charts, birds, plants and fantasy art ranging from dinosaurs and African landscapes to alien creatures.

Art Parts, Volume II contains more than 100 color images in 12 categories, including astronomy, military, interiors, seascapes, people, storefronts, farms and nature.

Seasons & Holidays contains art for nearly every occasion, including New Year's Eve, Easter and Fourth of July. \$29.95 each retail

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Draw Plus

Drawing software

Apple IIGS; color monitor

Draw Plus is a full color drawing program that can be used together with *Paintworks Plus*, *Writer's Choice elite* and *Clip Art Gallery* to create and customize graphics and documents in limitless ways.

With *Draw Plus*, users can create floor plans, logos, forms, letterheads, flow charts and organizational charts, furniture arrangements, presentation graphics, landscape designs and more. The software can reduce or enlarge objects up to 16 times their original size, and it includes numerous fonts and typestyles.

\$79.95 retail

Activision; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Fantavision IIGS

Animation and special effects

Apple IIGS; color monitor

Fantavision has been entirely rewritten to make full use of the Apple IIGS' color, speed, sound and super-high-resolution screens. Using "Tweening and Transformation" tools, a user can create detailed animation without needing to be an artist or expert animator.

With Tweening, *Fantavision* can create up to 64 intermediate frames of animation for each user-drawn image. Transformation enables *Fantavision* to automatically transform one object into another.

The enhanced sound capabilities of the Apple IIGS are also supported in the program and are used to enhance animation movie disks that users create.

\$59.95 retail

Broderbund Software, Inc.; 17 Paul Dr.; San Rafael, CA 94903; 415-479-1700

Instant Music

Music composition system

512K Apple IIGS

A nonstandard form of music notation and the use of artificial intelligence makes *Instant Music* a revolutionary music composition tool, says Electronic Arts. The program's user interface makes creating music as easy as possible. Up to four instruments can be played at one time, and the user can take control of one instrument and "jam" along with the other three.

For composition, the user turns on a QuickDraw icon, describes a line on the screen with the mouse, and the program fills in the proper notes along that line. The user can zoom in to see several measures at a time or just one measure.

Instant Music is available with two library disks of songs, each containing over 15 new digitized instruments and 40 songs.

\$49.95 retail; *Instant Music*

\$29.95 retail; *It's Only Rock 'N' Roll*

\$29.95 retail; *Hot & Cool Jazz*

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

Master Tracks Pro

MIDI sequencing program

Apple IIGS

Master Tracks Pro is a professional MIDI recording and editing package recently enhanced for the Apple IIGS. It provides real-time, step-time and song mode sequencing that uses up to 2 MB of expanded memory for longer songs.

The Main Sequencer and Song Mode sections can send and receive a MIDI Song Position Pointer. It can also be used to write film scores, TV scores or jingles synced to videotape.

\$299.95 retail

Passport Designs, Inc.; 625 Miramontes St., Ste. 103; Half Moon Bay, CA 94019; 415-726-0280

Kidstime II

Creative software

512K Apple IIGS; color monitor

Kidstime II contains two educational programs designed for children ages 3 to 10: *Abkey* and *Kidsnotes*.

Abkey is a letter-recognition/keyboard-skill program that contains different levels of difficulty. The simplest level involves identifying an uppercase letter on screen and pressing the corresponding key on the keyboard. A more difficult level involves identifying lowercase letters.

Kidsnotes is an introductory music program that allows a child to explore the many aspects of music. An assortment of simple melodies, familiar to young children, is included on the disk.

\$39.95 retail

Great Wave Software; 5353 Scotts Valley Dr.; Scotts Valley, CA 95066; 408-438-1990

KidTalk

Talking notebook

Apple IIGS; color monitor recommended

According to its vendor, *KidTalk* increases a child's ability to read, write and communicate ideas. It creates an environment in which a child can write, hear and read stories, reports, plays, poems and even secret messages.

KidTalk provides word-oriented pull-down menus for older children along with standard File, Edit and Print commands. For younger children, it offers picture-oriented menus with a speech capability that allows a child to hear an entire story or have each letter, word or sentence spoken as it is entered into the computer.

\$49.95 retail

First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006; distributed by Electronic Arts 800-245-4525 or 800-562-1112 in California

MathTalk

Talking notebook

Apple IIGS; color monitor recommended

MathTalk is designed to help children solve math problems, learn to complete assignments on time, prepare for tests,

learn calculator skills and master basic mathematical facts.

According to its vendor, the program's unique approach allows children to enter their own math problems and receive individualized graphic and spoken help specific to each problem.

The program introduces a talking helper, Professor Matt A. Matics, who provides each child with his own private tutor. The professor helps a child work through the program's included tutorials, simulations and games.

\$49.95 retail

First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006; distributed by Electronic Arts

MathTalk Fractions

Talking notebook

Apple IIGS; color monitor recommended

MathTalk Fractions features Professor Matt A. Matics matching wits with his students as he guides them through this talking notebook of decimals, fractions and percents. Students enter their own problems, plus play a variety of games, as they test their skill at mastering math, trying to master their professor and getting their homework done.

The professor tries to outwit his students in games such as Team Challenge, Fraction Shuffle and Fun House. As students solve the equations in the games, Professor Matt sneaks in interrelationship problems, showing his students how all numbers, particularly fractions, decimals and percents, interact.

\$49.95 retail

First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006; distributed by Electronic Arts

Mastering Math

Drill-and-practice software

Apple IIGS

Mastering Math is a collection of arithmetic drill-and-practice software for students in grades one through four.

Coordinate Math provides students in grades four through nine with practice at using Cartesian coordinate systems. *Equation Math* is designed for high school stu-

dents choosing to investigate linear, quadratic or trigonometric equations.

\$400 retail for *Mastering Math*

\$55 retail for *Coordinate Math*

Call for pricing information on *Equation Math*

Minnesota Educational Computing Corp. (MECC); 3490 Lexington Ave. N; St. Paul, MN 55126; 612-481-3500

Reader Rabbit

Talking early education program

Apple IIGS

Reader Rabbit, uses the speech capabilities of the Apple IIGS to reinforce the learning process, particularly reading, spelling and vocabulary skills.

An animated Reader Rabbit and lively music help to reward correct solutions. Special exercises develop and test concentration and memory. Multiple options also allow parents or teachers to customize the program to individual reading levels.

The program offers four sequenced games that increase in difficulty as a child's reading skills improve. It concludes with a "concentration" game that reinforces skills learned in previous levels.

\$49.95 retail

The Learning Company; 545 Middlefield Rd., Ste. 170; Menlo Park, CA 94025; 415-328-5410

Speller Bee

Talking notebook

Apple IIGS; color monitor recommended

Speller Bee incorporates speech capability and graphics for the purpose of improving a child's spelling skills. Designed for ages 5 to 13, *Speller Bee* allows a child not only to see his own spelling words, but to hear them spoken as well.

Children are able to create 32 of their own spelling lists, with each list containing 10 words up to 15 letters in length. *Speller Bee* contains 150 prestored spelling words, each at a different level of difficulty.

A child can enter spelling word lists that relate to school assignments or specific interests. The program comes with 150 pre-entered and frequently misspelled words grouped according to reading levels.

\$49.95 retail

First Byte; 3333 E. Spring St., Ste. 302; Long Beach, CA 90806; 213-595-7006; distributed by Electronic Arts

Talking Text Writer

Speech word processor

Apple IIGS; Echo board

Talking Text Writer is a software package that combines word processing with the Echo board, a speech synthesizer from Street Electronics. Children can hear aloud any letters, words, sentences, stories or other text they type.

The program is designed as a literacy tool for use by students in prekindergarten through sixth grade, for gifted and bilingual children and for students with communication disorders or in remedial reading programs.

Students can see the text and control how they want it to look by changing screen colors, margins and text size. The program has a Dictionary Box for a screen display of teacher comments.

\$199.95 retail to educators

\$249.95 retail for home versions (includes Echo board)

Scholastic, Inc.; 730 Broadway; New York, NY 10003; 212-505-3000

Entertainment

GBA Championship Basketball

Basketball simulation

Apple IIGS

GBA Championship Basketball combines arcade game action with basketball strategy. This Apple IIGS version of the original Activision classic allows one or two players to practice inside and outside shooting, dribbling, ball stealing, quickness and jumping ability.

\$44.85 retail

Activision, Inc./Gamestar; PO Box 7286; Mountain View, CA 94043; 415-960-0410

Hacker II: The Doomsday Papers

Strategic adventure

512K Apple IIGS

With the release of *Hacker II: The Doomsday Papers*, the United States government discovers a diabolic plot to destroy the world. You, as the player, are asked to help collect details on the project, known only as "The Doomsday Papers."

Players are provided with a top secret operations document, called the MSFM Operational Manual, which gives secret intelligence-gathering procedures to help complete a mission. The program was named "Game of the Year" by *The Guide To Computer Living*.

\$39.95 retail

Activision, Inc.; PO Box 7286; Mountain View, CA 94043; 415-960-0410

Shanghai

Oriental adventure game

Apple IIGS

Shanghai, one of the first computer games designed for the Apple IIGS, is derived from an ancient oriental game called Mah Jongg. The game consists of 144 tiles of seven visually different suits, which are stacked in a five-level, dragon-shaped pyramid.

To play the game, players must match and remove pairs of tiles until no additional moves can be made. As each pair of tiles is matched, they disappear, leaving any tiles hidden underneath in view. The play continues until no additional moves can be made.

\$44.95 retail

Activision, Inc.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

Silent Service

Submarine simulation

Apple IIGS; color monitor recommended

The Apple IIGS' graphics, sound and speed enhance the realism of *Silent Service*, a submarine simulation game that has sold more than 100,000 copies on earlier Apple II computers.

Players captain a World War II submarine in the South Pacific through a wide

selection of historical scenarios, ranging from single-ship attacks to patrol missions with heavily escorted convoys.

All of a submarine's critical battle stations are replicated: the conning tower, engine room and ship's bridge. Player-selected reality levels provide challenge and complexity. Automatic time scaling ensures that actions and decisions are constantly required.

\$39.95 retail

MicroProse Software, Inc.; 120 Lakefront Dr.; Hunt Valley, MD 21030; 301-667-1151

Tass Times In Tonetown

Exotic adventure

Apple IIGS

In this detailed adventure, the Gramps character travels to a place called Tonetown and acquires "tass." A grandchild, set on saving his grandfather's life, journeys to Tonetown with the only clue Gramps left behind: a cryptic note and a receipt for a pepperoni pizza.

You have two objectives—to find Gramps and to get tass. If you can't get tass, you'll be labeled a "stupid tourist" and booted out of Tonetown.

\$34.95 retail

Activision, Inc.; PO Box 7286; Mountain View, CA 94039; 415-960-0410

The Bard's Tale

Medieval adventure

Apple IIGS

The Bard's Tale is an adventure story played and narrated in a way that takes advantage of the Apple IIGS' sound and graphics capabilities.

The game takes place in a country town called Skira Brae. The plot revolves around your attempts to halt the evil spread by the wizard Mangar the Lionhearted, who has stolen magical powers.

The Bard's Tale characters are created from 10 character professions and six status levels. Each character is endowed with the attributes of strength, intelligence, dexterity, constitution and luck.

\$49.95 retail

Electronic Arts; 1820 Gateway Dr.; San Mateo, CA 94404; 415-571-7171

The Tower of Myraglen

Adventure action game

512K *Apple II*GS

The Tower of Myraglen revolves around a dying world known as Myraglen. The few remaining knights of justice draw together in the once-great civilization, knowing that its only hope lies with them. Each knows well the world of Myraglen and of its devastation since the unholy war. Myraglen is infected with a disease that cannot be cured without another confrontation.

\$54.95 retail

PBI Software, Inc.; 1163 Triton Dr.; Foster City, CA 94404; 415-349-8765

Hardware And Peripherals

Apple II GS Memory Expansion Card

Extended memory board

*Apple II*GS

The *Apple II*GS Memory Expansion Card adds as much as 1 MB of additional memory in 256K increments to an *Apple II*GS. The card is compatible with most *Apple II* software that works with the *Apple II*e Memory Expansion Card.

\$129 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple II SCSI Interface Card

*Apple II*GS; Hard disk card

Apple SCSI System Cable

The *Apple II* SCSI (small computer-system interface) Card provides compatibility with high-performance peripherals that use the SCSI standard, such as the *Apple Hard Disk 20SC*.

According to its vendor, the card features high-performance parallel data transfers and the ability to connect up to four SCSI ProDOS 1.2-controlled peripherals with one card.

\$129 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple II GS System Fan

Temperature maintainer

*Apple II*GS

The *Apple II*GS System Fan maintains the proper internal-case temperature in an *Apple II*GS that has three or more expansion cards installed. Some of the features of this product include: compatibility with the vents on the top and bottom of the *Apple II*GS case to circulate fresh air; keeps components cooler and prolongs their lives; aerodynamic design for quieter operation; and easy installation.

\$49 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple II GS Upgrade

Transformer kit

*Apple II*e

The *Apple II*GS Upgrade gives the *Apple II*e the advanced capabilities of an *Apple II*GS. It is a dealer-installed option that involves replacing the logic board and metal base pan of an *Apple II*e with a new *Apple II*GS board. The Upgrade Kit's features include 256K of built-in memory, with RAM that is expandable to 8 MB. The basic system comes with 256K and can be increased in 256K increments.

\$499 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

Apple Hard Disk 20SC

Mass storage for data

*Apple II*GS; *Apple SCSI Card and System Cable*

The *Apple Hard Disk 20SC* provides 20 MB of storage for an *Apple II*GS. It works in conjunction with the *Apple II* SCSI Card and Cable. The system's major features include: a storage capacity equivalent to twenty-five (25) 800K 3.5-inch disks; a high-performance SCSI parallel port, which can easily connect up to three devices on an *Apple II*GS using ProDOS 1.2; and a platinum and beige finish.

\$1,299 retail

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AppleColor RGB Monitor

Color monitor

*Apple II*GS

The *AppleColor RGB Monitor* simultaneously displays high-resolution text and color graphics. It features a 12-inch screen; high-resolution, analog RGB color; and direct connection to the RGB port of an *Apple II*GS. The connector cable is supplied and no adapters or interface cards are necessary.

The screen displays all 4,096 colors generated by an *Apple II*GS, and 256 colors can be displayed at one time. Text is displayed in 80-column format.

\$499

Apple Computer, Inc.; 20525 Mariani Ave.; Cupertino, CA 95014; 408-996-1010

AST-2000

Hard disk backup support

*Apple II*GS; *compatible operating system*

The AST-2000 is a SCSI (small computer-system interface) 20 MB, 3.5-inch hard disk and 20 MB cartridge tape-drive storage system that provides data storage, data management and data backup. It allows a user to manage large databases, run sophisticated applications and share files and resources on an *AppleTalk* network.

The AST-2000 includes utility software for ProDOS 8 and ProDOS 16 operating systems.

\$2,795 retail

AST Research, Inc.; 2121 Alton Ave.; Irvine, CA 92714; 714-553-0340

AST RamStakPlus

Extended memory card

*Apple II*GS

AST *RamStakPlus* is an extended memory card designed to take advantage of an *Apple II*GS' memory addressing capabilities and built-in RAM-disk feature. Available in a minimum 256K configuration, the card can be increased by adding RAM chips.

In addition to its RAM capability, the card provides a read-only memory capability, supported by ProDOS. This feature allows entire applications to be loaded

into read-only memory, where they become instantly available without extra disk access. The card is compatible with Apple's Memory Expansion Card, thereby allowing users to create a RAM disk in memory from the Apple IIGS Control Panel.

\$129 retail

AST Research, Inc.; 2121 Alton Ave.; Irvine, CA 92714; 714-553-0340

AST VisionPlus

Video digitizer

Apple IIGS; Video camera

VisionPlus is a video digitizer card that allows a user to capture black-and-white or color images. The video-input device can be a video camera, videocassette recorder, tuner or any North American Television Standard Committee (NTSC) device.

Once an image has been digitized by VisionPlus, it can be stored permanently on disk or printed out as hard copy. The product comes with image manipulation software that allows images to be cropped, rotated, color enhanced and so on.

VisionPlus can be used for desktop publishing, education, design, science and engineering applications. It offers Macintosh-like menus, screens and controls.

\$399 retail

AST Research, Inc.; 2121 Alton Ave.; Irvine, CA 92714; 714-553-0340

Central Point 3.5 Drive

Disk drive

Apple IIGS; Universal Disk Controller

The Central Point 3.5-inch drive provides 800K of storage on an Apple IIGS. It connects to the Universal Disk Controller from the same company and includes an LED "in use" light. According to the vendor, the product is fully compatible with the 3.5-inch drive from Apple Computer, Inc.

\$225 retail (3.5-inch drive)

\$90 retail (Universal Disk Controller)

Central Point Software, Inc.; 9700 SW Capitol Hwy., Ste. 100; Portland, OR 97219; 503-244-5782

ComputerEyes/2

Video digitizer with GS software support
Apple IIGS

ComputerEyes/2 is a hardware/software slow-scan system that connects any standard video source with an Apple IIGS. It converts a black-and-white images into near photographic-quality screen shots after several seconds have been allotted for capture time.

The new *ComputerEyes GS Support Package* allows users to capture images in the super-high-resolution mode of an Apple IIGS. According to its vendor, the software is friendly and menu-driven, making image acquisition easy.

Automatic calibration is provided for both brightness and contrast, which can be further modified to suit preferences or for special effects. The software can also shrink and expand images by any percentage, allows left-to-right flips and inverts images similar to a photographic negative.

Once an image is captured, it can be saved to disk for use in other graphics programs. The images are directly compatible with all popular GS graphics packages, such as *Paintworks Plus* and *816/Paint*.

\$129.95 retail

\$19.95 retail for the *ComputerEyes/2 Support Package*

Digital Vision, Inc.; 66 Eastern Ave.; Dedham, MA 02026; 617-329-5400

Conserver

Surge suppression device

Apple IIGS

The Conserver is an integrated surge-suppressing unit that provides six AC outlets, surge protection and a fan. The unit acts as both a monitor stand and as a holder for one or two Apple 3.5-inch disk drives. The fan circulates and extracts air from the computer, giving maximum cooling and protection from heat-related failures.

\$149.95 retail

MDIdeas, Inc.; 1111 Triton Dr., Ste. 205; Foster City, CA 94404; 415-573-0580

Datalink

Modem board

Apple IIGS

Datalink is a 1,200-baud internal modem for an Apple IIGS. Because it looks to the computer like an Apple Super Serial card attached to a Hayes Smartmodem, Datalink is compatible with many communications software packages designed for this combination. The modem itself uses a one-chip design, fits into any slot on an Apple IIGS and has a second jack for connection to a telephone.

A basic communications package is built into the circuitry of Datalink. This software in ROM can be used to replace regular communications software for many communications purposes.

\$219 retail

Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Echo IIb Speech Synthesizer

Text-to-speech board

Apple IIGS

The Echo IIb is a small plug-in board that features both text-to-speech and natural-voice capabilities. It is compatible with speech, educational and special-needs software written for the Echo II and Echo+ boards, says its vendor.

Echo IIb has an improved audio circuitry and voice and a sharper, higher-quality speaker than its predecessors. With the addition of headphones, several individuals in a classroom or computer lab can simultaneously access talking programs without disturbing fellow students.

The Echo IIb includes a number of features to aid blind and non-vocal users. It supports *Textalker 3.1.1* software, an enhanced version of *Textalker*.

\$129.95 retail

Discounts are available to schools and organizations that aid the handicapped. Street Electronics Corp.; 1140 Mark Ave.; Carpinteria, CA 93013; 805-684-4593

FingerPrint-Key

Voice translator

Apple IIGS and accessories

The FingerPrint-Key is a small board that plugs into any slot of an Apple IIGS.

It interrupts the link between the keyboard and the computer to provide additional ways of inputting data. It uses advanced macros to convert long text strings and numbers into just a few keystrokes, including electronic banking account numbers, phone numbers, database numbers and passwords.

FingerPrint-Key accepts a wide range of accessories through its RS-232 ports. For example, optical scanners can enter text within *WordPerfect*, *AppleWorks* or whatever program is running. FingerPrint-Key is also capable of translating voice commands into their corresponding keystrokes, thereby enabling any existing program to accept voice commands and dictation.

\$199 expected retail

Thirdware Computer Products; 4747 NW 72nd Ave.; Miami, FL 33166; 305-591-4480

FutureSound

Stereo sound recording

Apple IIGS

FutureSound is a hardware/software stereo sound recording package that gives the user many capabilities found in a digital recording studio. The package includes a stereo output card, an audio digitizer, a microphone and a music editor. There are three output jacks for headphones or speakers, and three input jacks, including direct line and microphone.

\$279 retail

Applied Visions, Inc.; Ste. 2200; One Kendall Square; Cambridge, MA 02139; 617-494-5417

GS-RAM And GS-RAM Plus

Extended memory boards

Apple IIGS

The GS-RAM memory-expansion board is compatible with all operating systems and software for the Apple IIGS, including all versions of *AppleWorks*, BASIC, ProDOS, DOS 3.3, Pascal, C and CPM.

The board is available in 256K, 512K, 1 MB and 1.5 MB versions and can be increased to 8 MB by adding a piggyback card. It includes software that expands *AppleWorks*' memory limits, thereby al-

lowing much larger databases to be created.

The GS-RAM Plus board is available for unusually high memory requirements. It uses 1 MB RAM chips that plug into the main board. A piggyback card can be added to increase total memory to 8 MB.

\$169 retail; 256K GS-RAM

\$219 retail; 512K GS-RAM

\$299 retail; 1 MB GS-RAM

\$379 retail; 1.5 MB GS-RAM

\$459 retail; 1 MB GS-RAM Plus

\$759 retail; 2 MB GS-RAM Plus

\$1,059 retail; 3 MB GS-RAM Plus

\$1,359 retail; 4 MB GS-RAM Plus

\$1,659 retail; 5 MB GS-RAM Plus

\$1,959 retail; 6 MB GS-RAM Plus
Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

HyperDrive FX/20

Hard disk drive

Apple IIGS; System software and Apple SCSI Card

The HyperDrive FX/20 is an external SCSI (small computer-system interface) hard disk drive. It can be installed on an Apple IIGS with the Apple II Conversion Kit. This kit contains special Apple II editions of the *HyperDrive System Software* on both 3.5-inch and 5.25-inch disks, along with installation documentation.

When properly formatted, HyperDrive FX/20 can be plugged directly into an Apple IIGS with an Apple SCSI Card installed.

HyperDrive FX/20 has 20 MB for storage, providing space for large documents and applications. It also includes backup software for making file backups on diskettes, making sure each file matches its original.

\$1,199 retail

General Computer Corp.; 215 First St.; Cambridge, MA 02142; 800-634-9737

OctoRAM

Extended memory board

Apple IIGS

OctoRAM is an extended memory board that uses SIMMS (single integrated-memory modules), which are compact

and easy to install. Memory chips come in modules of 256K and 1 MB, giving users flexibility in upgrading their systems.

OctoRAM is also available with an optional Extended Static RAM Pack (ESP board). This product mimics a ROM disk, allowing the Apple IIGS to access it like a fast disk drive. The ESP board can be used to allow any program to be loaded into memory in under two seconds.

\$149.95 retail (OctoRAM with 256K)

\$599.95 retail (OctoRAM with 2 MB; other configurations available)

\$179.95 retail (128K OctoRAM ESP; requires OctoRAM board)

MDIdeas, Inc.; 1163 Triton Dr.; Ste. 205; Foster City, CA 94404; 415-573-0580

Phasor

Sound board

Apple IIGS

Phasor allows an Apple IIGS to run many sound-oriented software programs written for earlier sound boards for Apple II family computers. It does this by emulating the Mockingboard, ALF music synthesizer, Echo speech board and others. The product includes a 4-watt stereo amplifier, a 12-channel music synthesizer and one speech chip. A second speech chip can be added at a later time.

Included with Phasor is a 5.25-inch program disk. A 3.5-inch version is available. The software includes demonstration programs and utilities for composing your own songs.

\$179 retail

Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Plus Hard Disk Systems

Hard disk drives

Apple IIGS; SCSI port

The Plus drives are hard disk drives that add 20, 30, 45 or 65 MB of storage to an Apple IIGS through a SCSI port. A 20 MB tape backup system is also available. Up to seven drives can be connected to provide a maximum of 455 MB of storage.

\$1,095 retail for the Plus-20

\$1,395 retail for the Plus-30

\$1,895 retail for the Plus-45

\$2,495 retail for the Plus-65

Peak Systems; 1120 Capital of Texas Hwy.; Austin, TX 78746; 800-225-7509 or 512-329-1020

ProGrappler

Parallel printer interface

Apple IIGS

The ProGrappler provides all the necessary hardware to connect most popular parallel printers to an Apple IIGS. It also provides many options for printing text or graphics directly from the screen. This is accomplished on the IIGS through new pull-down menus, allowing easy visual selection of any ProGrappler or printer features.

Printing options include inverted and rotated graphics, graphics windowing, enlargement and printing of any high-resolution graphics. All features can be accessed through traditional and English commands. ProGrappler functions can also be accessed through the Desk Accessory menu in the Apple IIGS operating system.

\$119 retail

Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

ProModem 1200A/2

Internal modem

Apple IIGS ProCom-A communications software

The ProModem 1200A/2 is a Hayes-compatible 300/1200-baud internal modem with built-in ROM software. The GS version comes with software that supports 80 columns and all modem functions. It has a built-in speaker and volume control; two phone jacks, with exclusion switching that make it easy to switch back and forth between voice and data; senses whether to tone or pulse dial; and has auto-redial-on-busy capability.

\$295 retail

Prometheus Products, Inc.; 4545 Cushing Pkwy.; Fremont, CA 94538; 415-490-2370

RamPak 4GS

Memory Expansion Card

Apple IIGS

The RamPak 4GS memory expansion system for an Apple IIGS provides a stan-

dard 512K of memory, expandable to 4 MB. It includes a memory management utilities package for RAM caching, diagnostics and dynamic allocation of memory.

The RamPak 4GS uses 256K by 4 RAM chips, enabling a user to expand in two-chip increments, as opposed to the eight-chip minimum required by other formats. Memory automatically self-configures, so no switch settings or jumpers need be changed. A RAM diagnostics utility detects and pinpoints any RAM problems that may arise.

\$259 retail

Orange Micro, Inc.; 1400 N. Lakeview Ave.; Anaheim, CA 92807; 714-779-2772

Serial Pro

Multifunction card

Apple IIGS

Serial Pro is a multifunction card that combines a serial port with a functioning clock/calendar card. It can connect to a printer, modem or other serial device and is compatible with virtually all letter-quality and dot-matrix printers. The serial port can communicate with the fastest external modems at baud rates from 50 to 19,200.

Serial Pro's clock/calendar is ProDOS, DOS and *AppleWorks* compatible. All *AppleWorks* files are automatically time and date stamped. The card incorporates a 20-year auto recharging battery and switch selection for real-time interrupts.

\$159 retail

Applied Engineering; PO Box 798; Carrollton, TX 75006; 214-241-6060

Sierra-2040 and Sierra-3040

Hard disk drives

Apple IIGS

The Sierra-2040 and Sierra-3040 add 20 MB and 30 MB of storage per drive, respectively, and come with a 40 MB streaming-tape backup. Each drive and tape backup fit neatly on top of an Apple IIGS. Up to two Sierra drives can be linked together.

Backups can be unattended. The drives automatically shut down the computer

and the Sierra System when a backup is complete. Automatic head-locking of the drives prevents possible loss of data.

\$2,495 retail for Sierra-2040

\$2,695 retail for Sierra-3040

Peak Systems; 1120 Capital of Texas Hwy.; Austin, TX 78746; 800-225-7509 or 512-329-1020

Sider

Hard disk drive and backup

Apple IIGS

Sider is an external hard disk available in 10 MB and 20 MB sizes. The internal Xebec controllers have a SASI/SCSI interface bus with a host interface card available for the Apple IIGS.

The interface offers fast throughput with low software overhead, an auto alternate track capability that insures greater system integrity, and convection cooling that increases reliability and reduces power consumption. The software offers a multiple DOS partition option for enhanced data management capability.

The B-Sider is a tape backup subsystem for the IIGS that offers 20 MB cassette streaming tape combined with Xebec's menu-driven software to offer fast backup and restore capabilities. It supports multiple backups to a single tape as well as tape-spanning for backing up drives larger than 60 MB.

\$695 retail; 10 MB Sider

\$795 retail; 20 MB Sider

\$795 retail; B-Sider

Xebec; 3579 Highway 50 East; Carson City, NV 89701-2826; 702-883-4000

Smartmodem 1200A

Modem

Apple IIGS; communications software

Smartmodem 1200A gives an Apple IIGS user 1,200-baud communications capability, call-progress monitoring, built-in test modes, Hayes Standard "AT" Command Set implementation, voice and data transmission, auto-dial and auto-answer modes, two phone jacks, redialing and more.

Comprehensive Listing Of All Entries By Product Name

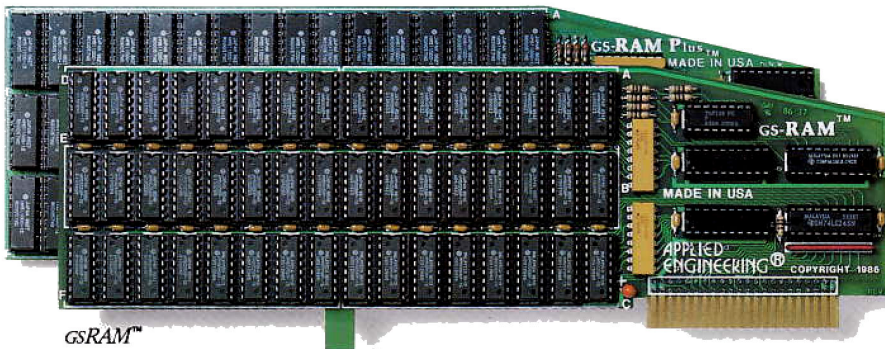
//WRITE	52	Fantavision IIGS	53	Printer Muffler 80	45
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Dust Cover For The Apple IIGS	44	Plus Hard Disk Systems	60	Writer's Choice elite	52
Echo IIb Speech Synthesizer	59	Point-To-Point	50		
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Insist on GSRAM™ When You Buy Your IIGs™

Expand the IIGs RAM and ROM with the GSRAM or GSRAM Plus
with ROM Pak. Available now with 256K to 8 MEG!

Now the Fastest Memory Card
for IIGs with New Disk-Caching Feature

GSRAM Plus™



GSRAM™

Remember the 16K cards for the II+ and the 64K cards for the IIe? At the time, that much memory seemed like a lot. But when the owners of these memory cards came to us for more memory, many had to throw away their smaller Apple memory cards or try to sell them. Most of our customers told us that had they known about Applied Engineering's larger memory cards when they bought their Apple, they would have purchased them at the same time.

GSRAM and GSRAM Plus are available now, allowing up to 8 MEG of memory expansion. That's 8 times the memory capacity of Apple's card and just look at the benefits that only GSRAM and GSRAM Plus have over Apple's card:

- Lower cost
- Has 6 RAM banks (Apple's card has 4)
- Has memory expansion port
- Has ROM expansion port
- No configuration blocks to set
- No soldered in RAM chips
- Expandable to 8 MEG
- Expands AppleWorks internal limits
- Built-in Hi-Res self-diagnostic software
- 5 year hassle free warranty (Apple has a 90 day warranty)
- Made in USA

GSRAM for More AppleWorks Power

Only GSRAM and GSRAM Plus eliminate AppleWorks internal memory limits, increasing the maximum number of records available from 6,000 to over 25,000 and only GSRAM and GSRAM Plus increase the number of lines permitted in the word processing mode from 6,000 to over 15,000. And only GSRAM and GSRAM Plus offer a built-in printer buffer so you can continue using Appleworks while your printer is printing. GSRAM and GSRAM Plus even expand the number of lines in the clipboard from 255 to 2047 and will auto segment large files so they can be saved on two or more disks. You can

even have Pinpoint or Macroworks and your favorite spelling checker in RAM for instant response. GSRAM and GSRAM Plus will even display the time and date right on the AppleWorks screen. Nothing comes close to enhancing AppleWorks so much.

Turn Your IIGs into a Giant

Simply plug GSRAM into the IIGs memory expansion slot and you've got up to 8 megabytes of RAM at your fingertips—all of it instantly and automatically recognized by the IIGs. GSRAM is compatible with all IIGs software, including AppleWorks, as well as BASIC®, ProDos, DOS 3.3, PASCAL®, "C" and CP/M®.

Grow by Bytes or Megabytes

We offer GSRAM in two configurations so you can increase your memory 256K at a time (GSRAM) or a megabyte at a time (GSRAM Plus). Both offer full compatibility, lower cost than other boards, and easy expandability. And both are extremely low in power consumption. A fully expanded GSRAM operates at only 375 ma, and GSRAM Plus at only 270 ma (even with 6 megabytes on board!)

GSRAM—for Normal Memory Requirements

GSRAM is available with 256K, 512K, 1 MEG or 1.5 MEG of memory already on board. If you don't need the full 1.5 MEG now, you can choose a GSRAM with less memory and expand it up to 1.5 MEG in the future—or upgrade to GSRAM Plus for a small charge.



"In quality, performance, compatibility, expandability and support, Applied Engineering's GSRAM and GSRAM Plus are number one."

Steve Wozniak, the creator
of Apple Computer

With an optional piggyback card, you can expand GSRAM even higher than 1.5 MEG! (Other cards are only expandable to 1 MEG.)

GSRAM Plus—for Growing by Leaps and Bounds

GSRAM Plus is the first Apple memory card to use 1 MEG RAM chips on the main board. It's available with 1 to 6 MEG on board. If you don't need the whole 6 MEG now, you can buy a GSRAM Plus with less memory and easily expand it in the future.

GSRAM Plus can be expanded up to 8 MEG with an optional piggyback card.

Easy Expansion

Both GSRAM and GSRAM Plus use standard RAM chips that are readily available and just plug right in. So unlike other cards, you'll find expanding your GSRAM or GSRAM Plus easy, convenient and very economical. And with our optional ROM expansion module you can even increase the IIGs's ROM space and all in just one slot.

Quality and Support of the Industry Leader

Applied Engineering is the largest supplier of Apple peripherals in the world. We *invented* the first large RAM cards for the Apple. With a 5-year "no-hassle" warranty and outstanding technical support, you can be sure GSRAM and GSRAM Plus will deliver the performance you're looking for—or return them within 15 days for a full refund.

GSRAM with 256K	\$169
GSRAM with 512K	\$219
GSRAM with 1 MEG	\$299
GSRAM with 1.5 MEG	\$379
GSRAM with 2-8 MEG	CALL
GSRAM PLUS with 1 MEG	\$459
GSRAM PLUS with 2 MEG	\$759
GSRAM PLUS with 3-8 MEG	CALL

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Introducing System Saver IIgs! The next generation.



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System Saver IIgs



AUX



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Apple IIgs

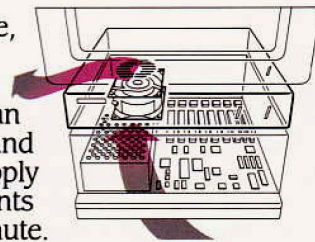
Years ago, when Apple introduced the first Apple® II, we thought it needed a little help. Over ¼ million Apple II users thought so too. That's why they chose our original System Saver to organize, protect and cool their computers.

When Apple brought out their next generation Apple IIgs, we thought it deserved the same good treatment. That's why we're proud to announce *our* next generation — System Saver IIgs.

System Saver IIgs organizes your power with four outlets for your computer, monitor, and two peripherals. And it puts everything at your fingertips with two front-mounted switches. (One switch controls your computer and monitor. The other controls your peripherals.)

System Saver IIgs also protects your valuable equipment and data from dangerous power surges, spikes and noise. Surge suppression circuitry* clips surges and spikes at a safe level, and EMI/RFI noise filtering smooths out disruptive line noise to make your IIgs more reliable and longer lasting.

Best of all, System Saver IIgs keeps your Apple cool — more quietly and efficiently than the optional internal fan offered by Apple. How? Well, the bottom of the System Saver IIgs forms a seal with the top of the IIgs case, so its whisper-quiet fan draws air *up and through* your computer, instead of just pushing it around inside. More powerful than the Apple fan, it pulls air through the back and bottom vents of the IIgs, over the power supply (the primary source of heat), and out the vents in the top at the rate of 17 cubic feet per minute. And there's nothing to install inside the computer, so it won't block two slots like the Apple fan.



System Saver IIgs, \$99.95, is available at Apple dealers everywhere. For a dealer near you, or for more information, call toll-free (800) 535-4242. In NY, call (212) 475-5200.

KENSINGTON