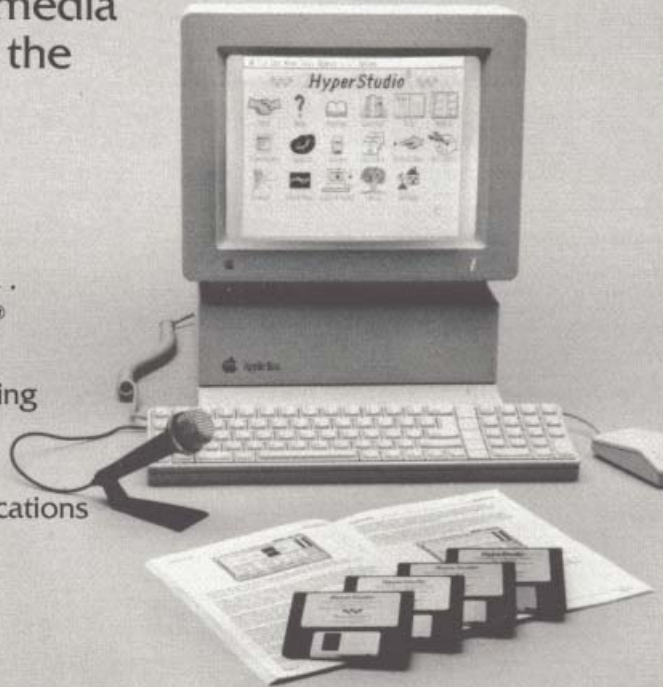


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HyperStudio

Hypermedia System
for the Apple IIGS

by Michael O'Keefe, Dave Klimas & Eric Mueller

Contributing Programmers:

Roy Bannon, Ken Kashmarek and Garrick Toubassi

Produced by:

Roger Wagner Publishing, Inc.

1050 Pioneer Way, Suite "P"
El Cajon, California 92020

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Introduction to HyperStudio

Welcome to the world of HyperStudio and hypermedia! HyperStudio provides you with the complete system to create things on your computer that will make it more useful, more educational, and just plain more fun than you can probably imagine.

What is Hypermedia?

If you're new to the subject, it's probably in order to answer the question "What is hypermedia?" You're already familiar with the various ways of exchanging information that currently exist. Newspapers, books, movies - all these are referred to as the media, and are those channels that handle the mass distribution of information. In addition, the term media also refers to the specific physical form that carries the information. This can be the printed word, a colorful artistic graphic, or an electronic image. However, for the most part, all of the current ways of conveying information in the modern world are passive. That is, you act as a silent viewer of the information presented.

The word "hyper" is derived from a Greek word meaning extreme or beyond. The word hypermedia was coined to describe a way of communicating that went beyond the current notions of the media.

Imagine starting with something commonplace, like a book. This is a typical form that information in our world takes. Now imagine seeing not only text and pictures on each page of the book, but certain areas that you could touch with your finger that would suddenly expand into a whole new page of information, or that would perhaps instantly take you to an entirely different part of the book, perhaps even to a completely different book. While you're thinking of that, wouldn't it be nice if the pictures on the page could actually be animated to show a bird flying, or the path that an army during the Civil War followed? Better still, imagine hearing the sounds of the battle while you read the text!

Well, imagine no more, because this is exactly what hypermedia offers, and in particular, what HyperStudio delivers! In the coming chapters of this manual, you'll start by looking at some sample Hyperstudio applications ("stacks"), and then move into a tutorial of how to use the tools provided in the HyperStudio package to create your own stacks. HyperStudio also gives you the tools to take existing HyperStudio stacks, and to enhance and change them as you wish. You'll find it's easy to take an existing HyperStudio application, and to use it as the starting point for an entirely new application of your own.

What HyperStudio Can Do For You

At this point, the relevance of hypermedia to your own situation may not be obvious, so let's look at some specific ways that HyperStudio may be of immediate use to you.

When you made your decision to buy the Apple IIGS, you were probably attracted to its terrific graphics, realistic sound abilities, and overall power of the system. At the same time, the Apple IIGS is one of the easiest-to-use computers every created.

You've probably seen programs that take advantage of many of these features on the Apple IIGS, but found it difficult to find something that combines them all in one environment. HyperStudio's first big feature is that it gives you one environment where you can use all the abilities of the Apple IIGS in a wide variety of applications, or in creating your own.

This brings us to HyperStudio's second big use: creating your own software programs on the computer, without having to spend a lot of time, or needing a lot of technical knowledge.

If your family has young children learning the alphabet, the names of states, or other skills, you could try to buy a program that teaches these concepts. Chances are, however, that it would be relatively expensive, take time to find, and might not even be readily available.

With HyperStudio, it's easy to create a few screens with letters of the alphabet, or words and common objects, even a map of the United States, and add your own voice prompting to click on the right image or state. Best of all, the whole family can participate in creating this kind of software, helping with voice prompts and responses, creating graphics, recording sound effects.

However, HyperStudio isn't just for creating software for young children. What it *is* good at is communicating ideas and information. If you're a teacher, this can be lessons, presentations, even tests on many kinds of material. From foreign languages to complex concepts, HyperStudio is the perfect tool, and requires no more effort than preparing any other kind of a lesson presentation.

If you're a student, HyperStudio offers the most dynamic environment for reports ever created. It can also be used to record and organize notes and ideas for the more traditional written report.

Even if you are neither teacher nor student, but would like to share knowledge you have with others, record your family tree, introduce customers in your business to new products or show them how to find something their looking for, keep track of your music or magazine collection, or any number of other applications that hypermedia is an idea solution for, then HyperStudio is for you.

The HyperStudio disks come with many example stacks to get your started, and give you ideas for your own stacks. For now, though, let's get started by making a backup of the HyperStudio disks, and then looking at some HyperStudio applications that we have included in the package.

Backing Up Your HyperStudio Disks...

Although the chances of physically damaging a disk in normal daily use are fairly small, it is still a good idea to make a duplicate copy, or "backup disk", of the original disks provided in the HyperStudio package. This process is very easy, takes only a few minutes, and is a very worthwhile "insurance" provision for the possibility that something does ever happen to the disks you use on a daily basis.

So, before proceeding further, take a moment now to make backup copies of the HyperStudio disks. You can do this with the Finder software provided with your Apple IIGS (on the Apple System Disk) as you would any other 3.5" disk, or you can use your own disk copy utilities, as you prefer. Do make sure that the names of your final backup disks are the same as the originals, i.e., /HyperStudio, /HS.Demo, /HS.Art, and /HS.Sounds. The Finder can be used to rename disks, if necessary.

Since there is not much space remaining on the HyperStudio disks for additional files, we recommend you make a data disk for the stacks you create. The Finder on the Apple System Disk will also format new disks for you. You can name this disk HS.Data if you wish.

If you are unsure of how to make backup copies, or create data disks, see the manual "Apple IIGS System Utilities", that came with your computer.

After making your backup copies and a new data disk, continue with the next section.

System Requirements

HyperStudio requires an Apple IIGS with **at least 1Mb** total RAM, and a 3.5" disk drive. It is compatible with GSOS, and can be run on hard disks, as well as the Appleshare Network.

While working through the examples on the Home Card, and the tutorial, we recommend you **set your RAM disk to 0K** (zero K), using the RAM disk option in the Control Panel. This will give HyperStudio access to all of the RAM in your computer for the various stacks.

The memory requirements for any particular stack depend entirely on the individual characteristics of the stack you create. That is, depending on how many different backgrounds, graphic objects, and imbedded sounds you use for a stack, the memory used by the stack can vary over quite a range. With no imbedded sounds, and simple card backgrounds, your stack could have hundreds of cards in it. HyperStudio is designed to optimize memory usage by compressing memory, and other techniques.

Digitized sound require approximately 10K of RAM per second of sound. Thus, a 10-second sound would require 100K of memory. However, HyperStudio does not require that every sound in a given stack be loaded all at the same time, and in practice, the amount of sound available in a stack is more a function of disk size.

Installing the Hardware

Part of the HyperStudio package is a set of sound digitizing (recording) equipment. These tools are provided to make it as easy as possible to not only enjoy the excellent sound quality of HyperStudio applications, but to also allow you to easily record your own voice, music, and sound effects for hypermedia applications that you create yourself.

Before proceeding, verify that the following components are in the box:

- (1) HyperStudio digitizing board.
- (2) bolts, and (2) nuts.
- (1) microphone with stand.

You'll also need a small flat-bladed screwdriver, to tighten the bolts on the digitizing card.

Installation of these components in your computer is very easy, and is comparable to attaching any common interface card, such as a hard disk controller card.

Installation Steps

- 1) Turn off the computer.
- 2) Remove the cover to the computer itself by gently pressing down on each plastic tab at the back of the computer. While the tabs are depressed, use the palms of your hands to lift the back of the cover up, and remove.
- 3) Looking down at the computer, with the front closest to you, you'll see seven "slots" towards the back of the computer, and one more to the far right, and closer to the front.

The good news is that the HyperStudio digitizer doesn't go in any of these slots. This has two immediate benefits. First, your recordings will have much less background noise than recordings done with many alternative boards that do have to go in a slot. This is because the computer itself is the source of background "hiss" or occasional "pops", and this electronic noise is strongest in the slot connectors. Second, there are a limited number of slots in your computer, and those users who are quickly filling them up will appreciate the fact that the HyperStudio digitizer doesn't require any of this valuable "real estate."

- 4) To install the recording hardware, first insert the bolt through the lower hole in the mounting bracket of the circuit board. Insert the bolt so that the head is on the side of the plate opposite the circuit board, and the threaded end points towards the board. Now attach the nut to the bolt, but do not turn the nut more than 3-4 turns. You want there to be a lot of open area left between the nut and the head of the bolt. (See fig. 1)

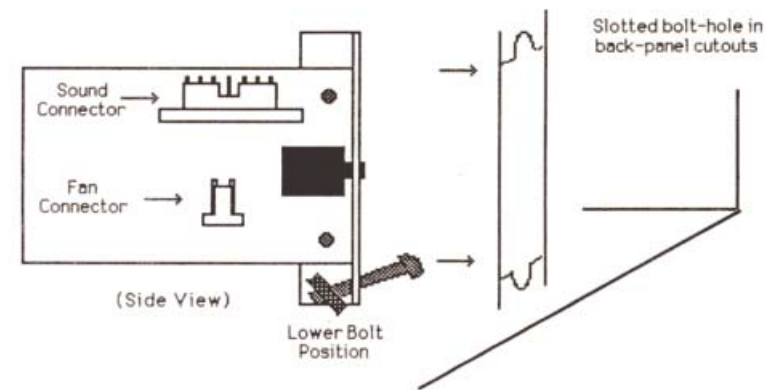


Figure 1

- 5) Looking at the back of the computer, you will see that there are openings ("cutouts") in the back panel, which are closed off with plastic covers. On the interior side of the back panel, these covers are attached with a metal clip. Identify the opening at the far left (closest to the power supply), and turn the clip counter-clockwise one-half turn. The clip should now be easily removable by gently pulling it directly towards the front of the computer, at which point the plastic cover will also fall free.
- 6) It is behind this opening, inside the computer, that you will mount the circuit board. Prepare now by making sure that you have located the second mounting bolt, and nut, but do not attach them to the board yet.
- 7) Before inserting the board, remove any interface card, such as a printer card, that may be present in slot #1 (the slot closest to the power supply).
- 8) The power for the digitizing card is picked up from two small wire posts near the back of the computer, and which are marked "fan". These posts are usually used for powering an internal cooling fan in the computer. If you have an internal fan, disconnect it now from the power connector. (See figure 2)

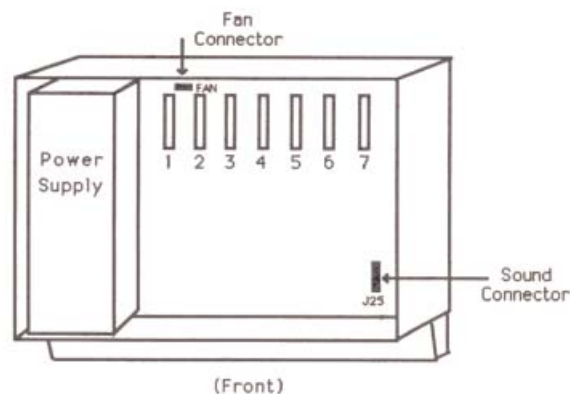


Figure 2

9) Locate the small two-wire connector coming from the digitizing card, and push it onto the post marked "fan" near the back of the computer. The plug is "keyed" which means that it is very difficult to install backwards. However, just to be sure, verify that the red wire is on your left, as you look towards the back of the computer, with the front of the computer closest to you.

10) If you have an internal fan, you can now attach its connector to the 2-pin connector on the digitizing board. This replaces the function of the connector on the computer's main circuit board, and can be used for anything that would otherwise require the connector used by the HyperStudio digitizer card.

11) With the lower bolt and nut as loose as they can be without the nut falling off, pull the head of the bolt away from the bracket. With the 7-pin connector on the right side of the board, and facing up, place the board and its mounting bracket against the inside back of the computer so that the loose bolt drops into the notch at the bottom of the cutout. The idea here is to fit the card into position with the head of the bolt on the outside of the back of the computer.

12) Once in position, gently tighten the bolt and nut with your fingers. **DO NOT TIGHTEN COMPLETELY!** You will want to leave a little "slack" for the moment so that you can insert and tighten the upper bolt. It may be necessary to gently push down on, or fold to the right, the wires that go from the power supply to the computer's main circuit board to make room for the digitizer card.

NOTE: Although the first opening (from the left) in the back of the computer is generally the most convenient location for the HyperStudio digitizer, there are also three other possible positions that you can use. Use of these will probably require that the slot in front of the cutout

does not have an interface card in it, but you are welcome to use whatever cutout is the most convenient for you.

13) Now insert the bolt through the top hole in the back of the computer and the mounting bracket on the card. Attach the nut to the end of the bolt on the inside. It is a little cramped here, but with patience you should be able to get it in place. It works best if you work on turning the head of the bolt with the screwdriver, rather than the nut. Aren't you glad you set up the lower bolt before putting it in the computer?

If you drop the nut while trying to attach it to the bolt, don't panic. You can just lift out the digitizer board, retrieve the nut, and then replace the board and try again. If your screwdriver is magnetized, it will be a lot easier to pick up the nut by just touching the end of the screwdriver to it.

ALTERNATE INSTALLATION TECHNIQUE: If you find that trying to thread the top bolt *after* placing the digitizer card in place is too difficult, you can try this alternate approach.

Before trying to put the board in the computer, partially thread *both* nuts onto each bolt, both top and bottom, leaving as much free play in the bolt as possible. Now, lower the head of the lower bolt into its slot in the cutout, and use the tip of your finger, or the screwdriver, to push the head of the top bolt down as you pass it through the cutout. Once the heads of both bolts are through the cutout, adjust them into the proper position in each slot, and tighten with the screwdriver. (See figure 3)

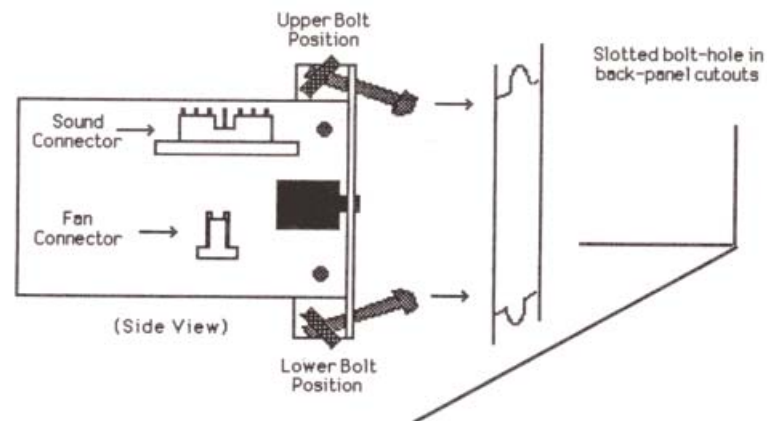


Figure 3

14) Once the nut is threaded onto the bolt, tighten both the top and bottom bolts. DO NOT OVERTIGHTEN! It is not necessary to turn the bolt head until it absolutely won't budge. It is only necessary to make sure that the connecting bolts are firm.

15) If you have removed a printer interface card, or any cards from the other slots, you can now replace them.

16) Now that the circuit board is mounted, find the 7-pin connector towards the front of the computer, and on the right side. It is marked "J25", and is right next to the connector for the speaker. If you already have another sound-related hardware device in your computer, such as the MDIdeas or FutureSound cards, unplug their connector from this post.

17) Now plug the long ribbon cable that comes from the HyperStudio digitizer into the 7-pin connector on the computer's main circuit board. It is also "keyed" so that connecting it improperly is very difficult. However, you should verify that the red wire on the ribbon cable is closest to the front of the computer as it enters the connector at J25. The cable is deliberately made just long enough to reach the J25 connector, so as to reduce electrical noise. If you have a lot of extra cards in the slots of your computer, run the ribbon cable over the tops of all of them, rather than trying to snake the cable between cards.

18) If you have disconnected an existing sound hardware device, you can now plug it into the replacement connector at the top of the HyperStudio circuit board.

19) The installation of the board itself is now done. Before putting the cover back on the computer, you should take one last look around inside to make sure that everything has been properly attached, and that there are no loose wires left hanging. Once you have checked, you can then put the cover back onto the computer.

20) The microphone is plugged into the connector on the mounting plate for the HyperStudio digitizer, and is generally placed on the left side of the computer.

That's it! The HyperStudio hardware is now installed. Should you need to move your computer, simply unplug the speaker and microphone from the back of the computer. It should not ever be necessary to remove the circuit board, although you may want to check the tightness of the connecting bolts occasionally if you move your computer often.

Special Features Note

The microphone connector on the HyperStudio digitizing card has a special convenience feature built into it that you should know about.

The microphone connection has a switching function. When the microphone is plugged in, the HyperStudio digitizer is active, and any sound *input* device connected to the card is disabled. When the microphone is unplugged, any sound input device is enabled, and can be used in the customary way. This makes it easy to switch between the HyperStudio digitizer, and an alternate device.

The sound *output* function of any device (stereo card, etc.) connected to the HyperStudio digitizer is always active, regardless of whether or not the microphone is plugged in.

HyperStudio: A Quick Look

The best way to see what HyperStudio can do is to look at some of the demonstration files provided as part of the package. This will give you a sense of where you're headed in the tutorial section as you construct the sample hypermedia applications, and will also give you some good ideas as you start your own creations.

To begin, just start up your Apple IIGS with the main HyperStudio disk (/Hyperstudio). This will load GSOS (the GS Operating System), HyperStudio, and also automatically load a stack.

The stack loaded is rather special, and is called the **Home Stack**. The screen that first comes up is called the Home Card. The Home Card is a central reference point from which you can launch other stacks or application programs. When finished, the stacks you use, or the application programs you launch, will return back to the **Home Card**.

On the Home Card you'll see a number of small graphic pictures, called *icons*. These represent the stacks and applications that you can get to from the Home Card. When you move the mouse, you'll see that the cursor is a small hand. By positioning the hand over the item you want, and clicking the mouse, you can select which stack or application you want to use.

Some of the Home Card items will be explained later, but there are a few that you'll want to know about now.

First, the Sound Shop, Sight 'n Sound, and Browser icons are for launching separate programs provided on the HyperStudio disk.

Sound Shop is a dedicated sound recording and editing utility. **Sight 'n Sound** lets you put a startup picture and sound on a disk, and **Browser** lets you quickly scan a disk with recorded sounds. All three of these are described later in this manual, and it's best to leave them for the time being, while you explore HyperStudio.

The remaining icons are all used to access existing stacks on the HyperStudio disks. When you click on any of these, if the disk that is needed for the loading of that particular stack is not in memory, HyperStudio will prompt you to insert the needed disk.

You could experiment by just clicking on the various icons, but for now, let's start with the stack called Intro. The Intro stack is located on the disk labeled /HS.Demo. If you have two 3.5" disk drives, insert the HS.Demo disk in the second drive. If you only have one 3.5" drive, remove the HyperStudio disk, and insert the HS.Demo disk.

Position the mouse cursor over the icon labeled Intro, and click the mouse. There will be a pause while this stack is loaded from the HS.Demo disk, after which the screen will fade to the opening card of the Intro stack.

The "Intro" Stack

This stack is an introduction to HyperStudio and the elements that make up a stack. It will give you an idea of the various objects that can be on a given card in a stack, and also what actions can be done by pressing a button. Use the mouse to click on buttons as directed. At the end of the Intro stack, you'll be returned to the main Home Card on the HyperStudio disk.

The important things to notice in moving through the cards that make up this stack are, first, how easy it is for a user to move through a hypermedia presentation. Hypermedia is also sometimes called "interactive multimedia."

Second, you'll notice that with just a few simple building blocks, a wide variety of software applications are possible. Although the Intro stack does not attempt to show all the possible applications itself, it should be quickly evident how powerful a tool HyperStudio can be, and all without requiring any programming knowledge, and with a minimum investment of time. When you return to the Home Card, you can explore other example stacks that have been provided.

Other Stacks

After viewing the Intro stack, and learning about the various elements that make up a card and its stack, try exploring the other stacks provided on the HS.Demo, HS.Art, and HS.Sounds disks. These stacks are already connected to the Home Card. When you click on an icon in the Home Card, you will be prompted to insert the proper disk.

If you have installed the HyperStudio software on your hard disk, the Home Card will work best if you put all the stacks from the various HyperStudio disks in the same folder on our hard disk.

Following is a brief description of each of the other sample stacks. After browsing through the existing stacks, continue with the next section, "Using HyperStudio".

Demonstration Stacks:

Button Ideas: This stack has a collection of graphic images that can be used as buttons on a card. To use a graphic as a button, use the Get Clip-art function in the File menu of HyperStudio. After pasting it onto your card, you simply define an "invisible button" that overlays the graphic image. For more details, see the section on invisible buttons later in this manual.

Card Ideas: This stack concentrates more on the possible layouts of cards, rather than particular applications. Remember, you can always use the images and cards from any of the stacks on this disk as the starting point for your own stacks.

Jukebox: This stack plays a collection of music and sound effects on the HS.Sounds disk.

Saturday: This is an example of how a young child could use HyperStudio to tell a story.

Spanish: An example of a foreign-language lesson created with HyperStudio.

Family: A genealogy stack that you can use as the basis for your own family tree.

Art Library: This is a "slide show" of some of the clipart provided on the HS.Art disk. When you run this stack, you will be prompted to insert the disk "HS.Art". If necessary, you can remove either the HyperStudio or the HS.Demo disk to insert the HS.Art disk.

This also demonstrates the use of one of HyperStudio's extended features, the "User-defined Button Action", in the form of a stack that sequentially loads and displays whatever Super Hi-Res pictures are in the same directory as this stack. The user-defined button action is a "hook" into HyperStudio that lets assembly-language (or Pascal, or other language) programmers add their own special functions to HyperStudio.

Testing Stack. This stack shows how HyperStudio can be used to give a test, and displays the results of the file created by the test stack.

Read and Listen. This is a limited version of a stack from the Manchester Apple Users' Group, which was created to reinforce word recognition for early reading skills.

Video Overlay Demo. If you have the Apple II Video Overlay Card and a Pioneer 4200 LaserDisc player, be sure to look at this stack. If you only have the Video Overlay Card, but not the Pioneer 4200, use the Open Stack function in the File menu, and look in the folder Video, inside the Xcmds folder, on the HS.Demo disk. There you'll find an alternate demonstration stack that can be used with live video sources like video cameras, VCRs, etc.

Other Stacks: As time goes on, and space on the disk permit, some stacks may be added to the Home Card that are not described here. It is also possible that some stacks listed above may have been deleted in the interest of presenting a more useful example of another kind. However, you should find all the stacks on the disk sufficiently self-explanatory.

Sources of Other Stacks

It is not necessary to create your own stacks to find HyperStudio a useful addition to your computer. Many user groups, schools, and modem-accessed bulletin board systems have public-domain stacks that are readily available. In addition, commercial software publishers also will no doubt offer many different types of stacks to HyperStudio users.

Roger Wagner Publishing, Inc. is planning a catalog of available stacks, and this is a good reason to return the Software Registration Card at the front of this manual. By letting us know where you are, we'll also be able to send you that catalog of available stacks.

The final source of HyperStudio stacks, and we think one of the most rewarding, is to simply create them yourself. "Authoring" a HyperStudio application is very easy, and the resulting stack can be distributed to others with no license fee required. The Software License at the front of this manual gives you permission to distribute stacks in any way you wish, as long as the HyperStudio software itself is not passed on to others.

To see how easy creating a stack can be, read on to the next section.

Creating Your Own Stacks: HyperStudio Applications

By now we hope that you have explored the stacks that are presented as examples on the HyperStudio Home Card. This section will lead you through an introduction on how to create your own stacks. It's actually quite easy, and we hope you'll be inspired to use your Apple IIGS computer to the best use imaginable - as a *personal* computer for use by yourself and others in the communication of the information and ideas that are of interest to *you*.

We like to think of HyperStudio as a tool for "desktop publishing". You may have already heard of "desktop publishing." That's where you use your computer to do the layout and printing of a newsletter, brochure, perhaps even an entire book. However, when you're done using all your great computer tools, what you end up with is the same thing that Gutenberg did: Sheets of paper with ink on them. To get your ideas duplicated, you'll still need to go to a printer, and in the case of a book, spend perhaps thousands of dollars to share your ideas with others.

Once they get the book, your readers will be forced by the medium - the book itself - to go through your ideas in a linear fashion. That is, they'll start on page 1, and finish on page 599, or wherever. They won't have the option to suddenly jump ahead to find out more about a certain part that interests them. In addition, if your subject is something not easily explained in a straight-line path, you'll have to force your ideas into the traditional form anyway. That is, if you don't have HyperStudio.

With HyperStudio, you can now put subjects as diverse as your family tree, or everything you know about gardening, onto a *disk*. If the person using your stack wants to jump from one place to another because the ideas are connected, they simply click on a button you've added, which then takes them to that part of the stack. When you've finished your stack, you don't need to go to anyone to duplicate the information. For the cost of a single disk, you can distribute the information to anyone you want. No minimum printing quantities, no special equipment needed. Just copy your disk, and you've entered the age of hypermedia, and desktop publishing.

We believe that there are two immediate benefits to every computer user as a result of this process. First, more than ever before, a method is provided for an individual to record, organize, and distribute their ideas, without requiring that there be a "mass market" for their work, or requiring the "approval" and financial cooperation of a large publisher.

Secondly, in the area of computer software, we think you'll finally see a wider range of affordable software. For most programs, including HyperStudio, a tremendous amount of effort goes into the development of the software itself, independent of the information content. In the case of educational software, for example, this means that most companies spend much more time

and money on the part of the software that puts an image on the screen, than they do the actual information content.

With HyperStudio, virtually all the time invested in creating a new software product can be put into the information in a stack, rather than the "core" routines necessary to display the information. This means that it will be possible to create better software in less time, and to you that means more software at a smaller cost.

Well, enough discussion. Let's dig in and see just what's involved in creating a new stack.

Creating a Stack: A Simple Example

Any stack is nothing more than a series of cards, on which are placed various objects. These objects can include:

- Text
- Graphics
- Buttons
- Sounds
- Video sequences

The buttons are used to move between cards, or to trigger certain actions like the playing of a sound or an animation sequence.

The steps to creating a stack are fairly simple:

- 1) Choose New Stack from the File menu.
- 2) Create a series of cards with the desired backgrounds.
- 3) Add information to each card in the way of text and graphics.
- 4) Add buttons to move between cards, or trigger actions on a card.

That's it! Since cards can be added anywhere in a stack, moved from one position to another, deleted, copied, and in general manipulated in many ways by the computer, you can use the computer itself to help you organize your thoughts. In general, you'll get off to a better start if you try to conceptualize your project as well as you can before beginning, but HyperStudio is flexible enough to let you change things as you go along.

For our first stack, let's suppose you wanted to create a stack like the "Spanish" stack, that teaches a foreign language.

Step 1: Go to the File menu in HyperStudio and choose New Stack. Of course, if you haven't started up the HyperStudio disk, you'll need to do this first! When the Home Card

appears, just choose New Stack. It won't hurt anything as you see the screen clear to a blank white card. The system has now been cleared of the existing stack, and is ready for you to begin.

Don't worry about the Home Card. It's still on the HyperStudio disk. Choosing New Stack only affects what is in the computer's *memory*, not what is on the disk.

Step 2: Prepare the cards and their backgrounds. For our example stack, we'll start with a map of the world as the first card. The next card will be a scene of a plaza, with various things typical of a foreign location - a passport, room keys, taxi, etc. In this background, we've even included a guitarist and dancer!

- a. To load the first background, go to the File menu again, and choose **Load Background**. The standard file selection box will appear. If the disk HS.Art is not already in the disk drive, insert it now, and click on Disk (or press the Tab key) to show the list of files on the disk. If you have several disk drives, it may be necessary to use the Disk button several times to finally list the HS.Art disk.

When the list of pictures on the HS.Art disk is displayed, use the scroll bar controls, or the arrow keys on your keyboard, to scroll down until you see the file "World.Map" highlighted. As a short-cut, you can also press the "W" key.

When the file World.Map is highlighted, press Return, or click on the Open button. You can also just double-click on a file name to load it. The screen will then fill in with the picture of the world map. This is the background for your first card.

- b. Before adding anything to the first card, let's finish setting up the background for the second card. Pull down the Edit menu, and choose **New Card**. The screen will erase again as a new card is created, and the upper-right corner of the screen will now display "Card 2".
- c. Now load the background for the second card by again choosing **Load Background** from the File menu. This time load the picture file "Spanish.Pic", also located on the HS.Art disk.
- d. You have now created two cards, each with a unique background. To move back to the first card, pull down the Move menu, and choose **First Card**. This will move you back to the first card, which has the picture of the world map.

Step 3: Now you can add some objects to the first card. To begin with, we'll add a small box of text that tells the the user what you expect them to do. To do that, go to the Objects menu, and choose **Add a Text Item**. This is used to add a body of text, as an object, to a card. It's called an object, because when you come back to the card you can move the block of text around, edit the text, delete it, and do other actions, independent of the graphics background on

the card itself. This is in contrast, for example, to the *paint tools* text entry, where once you type something on the card, it becomes a permanent part of the background. More on that later, however.

- a. The first time you add text, a dialog box will appear reminding you that the box you are typing in can be moved and resized as desired, and that when you're finished entering text you should click outside the text box. Click on the Continue button once you've read the message. This box only appears once in any given time that you use HyperStudio.

Next, a rectangle will appear, that represents the area that you want the text to appear in on your card. By putting the mouse on any corner of the rectangle, holding down the mouse button, and then dragging the mouse, you can re-size the box to make it larger or smaller. By putting the mouse on the *frame* or interior of the rectangle, you can use the mouse to drag the box to a new position. For now, position the box in the **upper right corner** of the world map, and then click the mouse anywhere outside the rectangle. This tells HyperStudio that you are done positioning the rectangle, and to drop it in that position.

- b. Now, a dialog box will appear giving you a choice of styles for the text box, and also asking you if you want to type text in now, or load a file from disk. Click on the check boxes, if necessary, so that Draw Scroll Bar, Allow Scrolling, and Draw Rectangle Around Text, are checked; Text is Read-Only should *not* be checked. Then click on "Type Text Now." This will bring up the built-in word processor in HyperStudio, and let you type in the window that you've defined.
- c. **Type in the text:** "The spanish language is spoken all over the world. Click on the button for one of the countries for an example."

Step 4: That's it for adding the text! Now let's add a button. Go back to the Objects menu, and choose **Add a Button**.

- a. The first screen that appears will present you with a selection of button styles. Choose the square button, with the small shadow, by clicking on it with the mouse. To add text within the button, just type on the line provided. For this button, type "Mexico", and press Return (or click on the "OK" button).
- b. The button will now appear in the upper-left corner of the world map. Use the mouse to **position the button** just to the left of where Mexico is located on the world map. Click **outside of the button**, anywhere on the world map. As with the text item, this "drops" the button, and tells HyperStudio you're finished positioning the button.

- c. The next dialog box that appears is provided to let you choose what action should be taken when the button is pressed. Under "Connect to:", is a list of possible "targets" that HyperStudio will move to when the button is pressed. Since we want this button to move to the next card, the one with the Spanish scene, click on "Another Card", at the top of the Connect To list.
- d. The screen will now clear, and you'll see a dialog box that says "Move to the card which is the target of this button, click OK when the proper card is displayed." The idea here is to use the commands in the Move menu to move to the card that you want. Choose Next Card in the Move menu. You'll now see your Spanish scene. Now click on "OK" to tell HyperStudio that this is where you want to move to when the button is pressed.
- e. The next choice you get is what type of visual effect, or transition, you want when the user moves to the new card. You've probably seen a number of these transitions by now, in the example stacks of the Home Card. For this transition, choose "Fade to white", and click on the "OK" button (or press Return). As you create your own stacks later, you'll want to experiment with the different transitions to see how they look.
- f. Once that's done, you're back at the Button Actions section. In addition to moving to another card, you can still decide whether you want a test score kept ("Test functions"), and whether a sound should be played, or an animation (when available) started. For now, just click on "Done" (or press "Return").
- g. You could use Next Card in the Move menu to move to the next card, but you can also just use the button you defined. Click on the "Mexico" button to move to the Spanish scene.
- h. On this card, we'll suppose that you want to set things up so that when the user clicks on something in the scene (like the passport, taxi, etc.), they'll hear the Spanish word pronounced. To do this, you'll want to put an *invisible* button over each image, and have the button play a sound when pressed. An invisible button is used for those cases where you want to define a graphic image, such as the Home Card Icon, or an arrow, or in this case, the passport, as a button. It is also used for those cases where you don't want the user to see where you're expecting them to click the mouse. An example of this was in the "About Computers" example in the Intro stack, where you were asked to click on the disk drive. (Look for this stack on the Home Card, if you haven't tried it already).

The first item in the picture we'll try will be for the passport, in the lower-right corner of the screen. Since you're again adding a button, go to the Objects menu, and choose **Add a Button**.

- i. This time, choose **Invisible** button, and click on "OK" (or press Return). Now, instead of a floating button, you'll see a twinkling rectangle, indicating the "hot" area for an invisible button. Positioning and sizing this rectangle is done in the same way that you worked with the text rectangle. Use the mouse pointer to drag the corners of the rectangle to

resize it. If you hold down the mouse button and drag the mouse with the cursor inside the rectangle, you can reposition the button wherever you want. This rectangle will define where the user will be able to click with the mouse to get the same result as clicking on a button.

- j. Use the mouse to **position (drag) the rectangle over the passport**. Pressing the mouse button down with the cursor in the middle of the rectangle, and dragging the mouse will move the rectangle. **Size the box** to just fit around the passport.
- k. As before, to tell HyperStudio you're finished with the rectangle, just click outside the rectangle somewhere. You'll get the same dialog box of Button Actions as before. This time, leave the "Connect To:" setting to "No Connection", and click on "Play a sound...".
- l. A new dialog box will appear that will give you the choice as to whether you want to record the sound now, or use a Disk File. We've included a pre-recorded voice of the spanish word for passport on the HS.Demo disk. Insert the HS.Demo disk in your disk drive, and then click on **Disk File** to begin the loading process.
- m. If the files on the HS.Demo disk are not already listed, click on the **Disk** button until they are. Then press "P" to highlight the file "Passport.Span", and press Return (or click on **Open**).
- n. After the sound has been loaded, a picture of a tape recorder will appear. This lets you play the sound to see if it is the one you want. **Click on the Play** button on the tape player to hear the sound. You can also use the volume control to adjust the volume to your liking. Click on the "OK" button near the bottom of the screen when finished.
- o. After telling HyperStudio what sound to use with this button, you'll be returned to the Button Actions menu again. The dialog box should display "No Connection", a checkmark in "Play Sound", and "No Test Functions". Click on **Done**.
- p. The card will now reappear. If you now **click on the passport**, you should hear the Spanish word for passport!

Trying It Out

To try your stack out, choose First Card in the Move menu. Then click on Mexico. When the Spanish scene appears, click on the picture of the passport to hear the Spanish word.

Saving Your Stack

Saving a stack is easy. Just choose **Save Stack As** from the **File** menu. Since there is not much remaining room on the HyperStudio disks for new files, you'll have to save your stack on your own data disk. If it is not already in a drive, insert your data disk (HS.Data if you've created one as suggested earlier), and use the **Disk** command until you see the disk name in the dialog box. For now, use the name **My.Spanish**. Once saved, you can run the stack again by just re-loading the stack, using the **Open Stack** option in the **File** menu.

Adding it to the Home Card

Although you can now run your stack by loading it directly, let's see what's involved in adding your stack to the Home Card itself. Basically, what is required is:

- 1) Create a graphic image on the Home Card.
- 2) Define an "invisible button" over the graphic that connects to your stack.
- 3) Save the modified Home Card Stack back to disk.

This process is very easy. To begin, your *working copy* of the HyperStudio disk should be in your drive. Go the **File** menu and choose **Open a Stack**. Use the **Disk** button, if necessary, to list the stacks on the HyperStudio disk, then load the **Home.Stack**.

Step 1: Although HyperStudio has built-in painting tools with which you can create a graphic image, it also lets you use existing graphics that you may have from other Apple IIGS paint programs, such as **PaintWorks Gold™**, **8/16 Paint™**, or others. HyperStudio also includes its own extensive set of "clip-art" that you can use in creating your stacks. These graphics are located on the disk labeled "HS.Art".

- a. To use an existing graphic, you can use the **Add Clip-art** function, located in the **File** menu. If the disk **HS.Art** is not already in one of your disk drives, insert the disk now, and then choose **Add Clip-art**. If necessary, use the **Disk** button to list the graphic files on the **HyperStudio.Art** disk. Select the file **"Icons"** (press "I" to jump to the file!), and click on **Open**.

This file is a collection of graphic images like the Home Card Icon, arrows, and other items you'll find handy. We'll use one of the graphics on this page as the icon for the sample stack you just created. Look in the upper-right corner of the graphics page. In the second row, you'll see two images of stacks of cards. Let's use one of these as the icon for your stack.

- b. Across the top of the **Add Clip-art** window are four icons that indicate what you can do while in this window. The rectangle on the left is a selection tool that selects a square chunk of graphics from the page. The lasso tool lets you draw a line around the graphic

you want, and then copies just the graphic, leaving the white background behind. Since you're copying the card icon to a colored (yellow) background, you'll need to use the lasso.

Click on the lasso with the mouse. It will highlight, showing it is now the active tool. Now use the mouse to draw a line all the way around the card icon. It's a rather tight squeeze between each of the graphics, so you'll have to draw carefully. If you make a mistake, and run into one of the other graphics, or accidentally hit part of the card, don't worry. Just release the mouse button, and try again. When you have successfully circled the card icon, the edges of the image should "shimmer", showing the image is selected. Now use the mouse to click on the "OK" icon at the top of the clip-art window.

- d. The clip-art window will disappear, and you'll see the image of the card icon floating over the Home Card. Put the mouse pointer over the middle of the card image, and hold down the mouse button while you move the mouse to position the card icon in one of the open positions on the Home Card. When you get the icon where you want it, just let go of the mouse button, and then click anywhere outside of the icon. The card icon will then be "pasted" onto the Home Card image. (If later you decide to erase this image, you can always use one of the paint tools, and paint, in yellow, over the image to erase it.
- e. Last of all, you'll probably want to add a few words under the card icon to describe it. For this you can use the painting tool's "text tool". The painting text tool is different from the "Add a Text Item" function in the **Objects** menu. When you add a text item, it is separate from the background, and can be moved around and resized at a later time. The paint tools directly alter the background graphic by "painting" what you do onto the background. For the Home Card, this makes more sense than creating a text item.

Use the mouse to select the **Tools** menu, and choose the **Text tool**. This is the icon that looks like the letter "T" near the bottom of the menu. The mouse cursor will now change to what is called an "insertion cursor", indicating HyperStudio is ready to let you type text.

Before typing, you should also know that HyperStudio lets you type the text in any of the allowable painting colors. The labels for the other icons on the Home Card are typed in the dark red color, rather than black. Use the mouse to open the **Options** menu, and choose **Set Text Color**. Choose the red color square, then click on **Ok**.

- f. Now position the cursor under the card icon, and a little to the left of center, and click the mouse. A blinking insertion point will now appear. Type the words "My Spanish". You don't need to press **Return**. Now, look to see if the text is where you want it. If not, you can use the **backspace** or **Delete** key to erase what you've typed, then move the mouse cursor and click more to the left or right, or up or down, as needed. You signal that you're finished creating text by either clicking the mouse again somewhere else on the screen, or choosing another tool (like the browse tool) from the **Tools** menu.

If you're still having trouble getting the text exactly where you want it, you can also just type the words you want, without worrying if they're exactly where you want them. Then go to the Tools menu, and select the dotted rectangle tool in the third row from the top. Now position the mouse just a little to the left, and above, the words you've typed, then press the mouse button and hold it down while you move the mouse to the right, and down.

Use this motion to draw a box that completely contains your text. Then release the mouse button, and the rectangle will become a moving line. Now place the mouse in the middle of the box (the cursor will change to an arrow). By holding down the mouse button, and moving the mouse, you can "drag" the words to the exact position under the card icon that you want. The closer the dotted-line box is to the text itself (that is, the smaller the box), the easier it will be to get the text next to other graphics without erasing part of them. When you've got the text where you want it, click outside of the box to finish placing it.

If you want to try drawing a different-sized box again, choose Undo from the Edit menu, and try again. Until you actually drag the selected rectangle, you can also cancel a box that's been drawn by just clicking outside the box.

Step 2: The next step is to create an invisible button over the card icon. You've already created an invisible button in the earlier example, so this next part should be easy.

- a. First, go to the **Objects** menu, and choose **"Add a Button"**. As before, choose the **"Invisible"** button, and then position and size the rectangle so that it forms a box **around your card icon**. You'll probably want it to include the text as well. Then click the mouse outside the box to finish the placement.
- b. The Button Actions dialog box will then appear. This time, you want to **"Connect to Another Stack..."**. When you click on this, the Standard File Interface box will appear, displaying only the stacks on your disks. If needed, insert the disk with your sample stack saved on it (HS.Data if you've been following along), and select the file **My.Spanish**, and press Return. The Standard File Interface dialog box will then disappear, and you'll be allowed to select what transition effect you want used when your stack is started. Choose whatever seems best to you. After clicking on **OK** (or pressing Return), you'll be returned to the Button Actions screen. You could elect to have a sound played as you moved to the new stack, but for now, just click on **Done** (or press Return).
- c. Finally, you'll want to save the new Home Card stack back to your working copy of the HyperStudio disk. Save this in the same way you saved the stack you created earlier. Insert the HyperStudio disk (a backup, we hope!) into your disk drive, and then choose **Save Stack As** from the File menu, and save the stack using the name **Home.Stack**. If the list of files for the HyperStudio disk doesn't appear immediately, click on the Disk button to switch to the HyperStudio disk.

When you click on Save, a dialog box will appear reminding you that the stack Home.Stack already exists on that disk. Click on Replace to continue the save process.

Special Note: In the interest of minimizing the number of times you have to switch disks, the Home.Stack has been placed on both the HyperStudio and HS.Demo disks. The Home.Stack on the HyperStudio disk is only used when your first start up the HyperStudio disk. After that, control passes to the HS.Demo disk, and it is that copy of the Home.Stack that is used from then on. If you want the My.Spanish icon to show up on the Home.Card all the time, you should save a copy of the new Home.Stack to the HS.Demo disk as well.

If you are using HyperStudio on a hard disk, you would only have one copy of the Home.Stack, presumably in the folder HyperStudio.

By the way, the difference between Save Stack As... and Save Stack is related simply to whether you are saving a stack that HyperStudio already knows the name and location of, or whether you are saving a stack for the first time (or giving it a new name and location). When you begin a stack with "New Stack", it has no name. To save it the first time, you would use Save Stack As... to give it a name, and to choose the disk you want to save it on.

However, once you've already saved the stack (or if you've loaded it earlier from disk), HyperStudio then knows the name and location of the stack, and you can just use Save Stack. This avoids having to re-type the name of the stack every time you want to save it. If you want to save a current stack under a new name, or on a different disk than the one it was last loaded from, or saved to, you can always use Save Stack As... again.

Step 3: After modifying the Home Card, you may also want to add the Home Card Icon to your own stack so that users can easily return to the Home Card. This is basically just a matter of doing the same thing you did to add an icon for your stack to the Home Card, but in reverse. In this case you'll use the Add Clip-art function to copy the Home Card Icon from the Icons file, and paste it onto each card of your own stack. (Or at least those where you want the user to have the option of returning to the Home Card.)

- a. Load your stack (presumably named "My.Spanish") from your data disk (HS.Data). If you're still on the Home Card, you can also just click on the My Spanish icon that you added a little while ago!
- b. While viewing the first card, the world map, choose **"Add Clip-art"** from the Edit menu. Get the file **Icons** from the HS.Art disk. If you're unsure of how to do this, review the instructions given earlier about using the Add Clip-art function (or look in the Reference section of this manual, later) when using the Icons file for the card icon that was added to your Home Card.

- c. Use the lasso tool to grab whichever **Home Card Icon** you prefer from the upper-right corner of the graphics page. Click on **OK**.
- d. Now use the mouse to **position the Home Card image** in the lower-left corner of the world map background. Click outside the image to finishing placing it.
- e. Now use "**Add a Button**" from the **Objects** menu, and use the **Invisible** button option to define an **invisible button** over the Home Card Icon.
- f. Select "**Connect to Another Stack...**" in the **Button Actions** dialog box, and choose the **Home.Stack** on the HyperStudio disk as the destination for your button. Select a transition that you like, and click on **OK**. Finally, click on **Done**. (You may have to put the HyperStudio disk back in the drive here).

Note: Whenever you finish adding a button, the mouse cursor changes to a hand. This is called the "browse tool", and is required to click on buttons to make them do something. The browse tool can be selected from the **Tools** menu whenever you want to use existing buttons to move through your stack.

- g. Now use the **Move** menu to move to your **second card**, the Spanish scene, and repeat steps "b" through "f" to add a Home Card Icon button to that card as well.

(Do you have the feeling these instructions are becoming more brief? You're right! We're forcing you to remember what you learned a little earlier in the hopes that you'll soon be self-sufficient! If you do forget how to do a certain action, just go back a few pages until you find the detailed explanation of how to do what you want. In addition, you can always turn to the Reference section of this manual to read how to use any particular command.)

- h. Finally, **save your stack** (**My.Spanish**), with the changes you just made back to your data disk (**HS.Data**). You can use **Save Stack** in the **File** menu to do this.

Now you should be able to use your own Spanish stack from the Home Card whenever you want!

Where to Go From Here?

You've now successfully gone through the basic steps to creating a stack. HyperStudio offers many more options in adding information to cards, controlling what happens on each card, and much more. Each available function is described in the Reference section that follows.

Because this information is presented more by function, rather than in a tutorial, you will find that the best way to use the information is to first browse through the text to get an overview of

what functions are available. Then, when creating your own stacks, you can refer back to just those sections that are relevant to what you want to do.

HyperStudio is designed so that the manual is not absolutely required to perform the most-common activities. However, there are advanced features that you will find this manual helpful in understanding. In addition, there are other utilities provided on the HyperStudio disk, such as **Sound Shop**, **Sight 'n Sound**, and **Sound Browser**, that are described after the Reference section.

When in doubt, jump right in and EXPERIMENT! As long as you're using backup disks of the HyperStudio software, you can't hurt anything by trying things. If you think a certain combination of actions might be useful for what you want to do, just try it. HyperStudio has been designed to be as intuitive as possible. If all else fails, however, feel free to call our Technical Support department, weekdays (M-F), from 9:30 am. to 5:30 pm. (PST).

HyperStudio Reference Section

This section describes each of the menu items in the HyperStudio authoring environment.

File Menu

This menu relates to the various file-, and thus, disk-related activities related to a stack. Many commands in not only the File menu, but other functions of HyperStudio, will require your identifying a file on a disk to load, or a name and location for the saving of a file. Virtually all of these operations will be done with something called the *Standard File Interface*.

The Standard File Interface will appear whenever a file is loaded or saved, and it works by presenting a dialog box with a list of various files on a disk, and buttons with which to examine other disks and open folders. Finally, it determines a specific file to access by either your clicking with the mouse on the filename you want to load, or your directly entering the name to use for saving a file.

When the file interface is first presented, it always starts by showing the relevant files in the directory in which the HyperStudio application was located. There are four buttons to the right of the filename window. The Disk button shows you the main directory of any other disks that are in other drives in your computer. If you want to put a different diskette in a drive that was just displayed, simply replace the diskette, and click on Disk. You can also press the TAB key as an equivalent keyboard command for the Disk button.

If a file is highlighted, either by clicking on its name with the mouse, or by using the up and down arrows, you can click on Open to load the file, or you can just press the Return key. If a folder is selected (highlighted), then choosing Open will open that folder, and show the files within that folder. As a convenience feature, if you press the letter keys on your keyboard, the file selector will automatically go to the first file in the current list that begins with that letter. From there, you can use the arrow keys to select a particular file.

If you are viewing the files in a folder, and wish to "back up" one level to the previous directory, click on the Close button. You can also press the Escape key.

Finally, if you should be presented with the file interface, and decide you want to cancel the operation, simply click on the Cancel button. There is no keyboard equivalent for the Cancel button.

When examining disks, note that not all files will always be displayed. If you are loading a sound file, for example, only sound files and folders (subdirectories) will be shown in the filename window. On the other hand, if you were loading a picture, only the graphics filenames would be visible in the window. This is so that you do not have to look through unrelated files while searching out the one you want.

When a file is saved, *all* the files in the current directory are shown in dimmed text. This is so that you can see which filenames are already used when entering a new name.

New Stack: This option erases whatever stack is currently in memory, and begins a new one. If you have not saved whatever is in memory since you last made a change, a dialog box will appear asking you to confirm your request to start a new stack.

Open Stack: This is used to open a stack that already exists on the disk. This can be a stack you created yourself, or it can be a stack created by another person. When this menu item is chosen, you can indicate the stack you want to open using the Standard File Interface dialog box that will be presented. Once loaded, a stack can either be directly used, or you can edit the stack, adding or deleting more cards and/or objects as you wish.

Save Stack and Save Stack As...: These are used to save a copy of the current stack on a disk. The very first time you save your stack, you'll have to give it a name. This is done using the Save Stack As... command. Until a name is given the stack, the Save Stack command will be disabled.

When Save Stack As... is chosen, the Standard File Interface is presented, but there are some additional functions present, as compared to a Load command. The most important item is the box at the bottom of the window where you should enter the name you want used when the file is saved on your disk. A default name of "New.Stack" is presented, but you should enter your own filename. The second new item in this dialog box is the button New Folder, just below the Disk button. This lets you create your own file folders, while you're saving the stack itself.

To create a new folder, enter the name of the folder you want to create in the edit-box at the bottom of the window. Then click on New Folder. A new folder of that name will be created. You can then open this folder up, and save your stack in it if you wish.

Once the computer knows the name of the stack in memory – either because you have used Save Stack As..., or because you loaded an existing stack from a disk - the Save Stack menu item can be used. When Save Stack is chosen, HyperStudio *immediately* saves a copy of the current stack in memory to the disk using the current name.

Load Background: In HyperStudio, each card can be thought of as a background graphic over which various objects are placed. Even a blank card has a background – a white one. On each background can be placed graphics, text, or buttons. The background itself is generally a common framework on which the objects on the various cards are presented.

For example, a stack which made up an address book might have a background for each card that looked like a file card. A stack could also have a background that suggested the pages of a book. Backgrounds can contain graphics that add to the visual appeal of the cards, or the background can be a solid color. Although some stacks you create or see will probably have one background for the entire stack, this is by no means a requirement. A stack can have as many different backgrounds as you like.

The Load Background command loads a 640-mode, Super Hi-Res picture, and uses that graphic as the background for the current card. A background can be edited using the paint tools (see the Tools menu). Whenever you create a new card (see New Card in the Edit menu), HyperStudio will automatically copy just the background of your current card onto the new card. This is because, in many cases, you will want to repeat the same background on many different cards. If you do want a different background when creating a new card, you can just load a new background, or use the Erase Background (Edit menu) command.

HyperStudio does not actually duplicate the background when creating a new card. Instead, it just uses the background from the one card for the others. That is, the same graphic is used when displaying all the cards with that background. This has the advantage of using only a fixed amount of memory (that used by the first background) for as many cards as you wish. Whenever you load a new background, or draw on the current background with the paint tools, HyperStudio turns this into a new background, and more memory is used to make room for the new background. Solid color backgrounds use much less memory than complicated graphics.

When you are creating your stacks, try not to repeatedly load backgrounds. You will use far less memory for your stack if you first load a single background, and then create all the cards that use that background with the New Card command. Then create the cards that use a different background. If you do have to switch between backgrounds as you create new cards, try to copy and paste existing cards, rather than loading new backgrounds.

Save Screen: Although you can use 8/16 Paint, Paintworks Gold, DeluxePaint II, Graphics Studio, or virtually any 640-mode, Super Hi-Res drawing program to create backgrounds, you can also use the built-in paint tools of HyperStudio. The Save Screen command saves whatever is currently on the screen as a Super Hi-Res picture. Once saved, the image can then be used as a background or graphic in other cards or stacks. Because the files are saved in a standard format, you can also go back and forth between your favorite paint program and HyperStudio as often as you wish using the Load Background and Save Screen commands. Screens can be saved with graphics, buttons, text, etc. either visible or not, as you wish. (See Hide Items in the Options menu).

Add Clip-art: The HyperStudio.Art disk contains a number of useful graphic images that you may find useful in creating your own stacks. In addition, you may have your own collection of icons, button images, and small graphics that you would like to use on cards in your stacks. The Add Clip-Art function is provided as a way for you to copy a portion of a graphics screen, and paste it onto the background of a card you are working on.

When you choose Add Clip-art, you will see the usual disk file interface. Use this to display the file names of 640-mode graphic images that you have on disk. After selecting a file, a new window will open displaying the graphic page.

Across the top of the Add Clip-art window are four icons that indicate what you can do while in this window. The icon on the left is a selection tool that selects a square chunk of graphics

from the page. The lasso tool lets you draw a line around the graphic you want, and then copies just the graphic, leaving the white background behind.

If you make a mistake while selecting a graphic, and run into one of the other graphics, or accidentally hit part of what you're trying to capture, don't worry. Just release the mouse button, and try again. When you have successfully selected your image, use the mouse to click on the "OK" icon at the top of the clip-art window.

The clip-art window will disappear, and you'll see the image floating in the middle of the current card. Put the mouse pointer over the middle of the image, and hold down the mouse button while you move the mouse to position the graphic where you want it. When you get the graphic where you want it, just let go of the mouse button, and then click anywhere outside of the image. The graphic will then be "pasted" onto the background.

Choose Printer: Use this to choose what type of printer HyperStudio will print to. The most common setup is for an ImageWriter printer, using the Printer Port, with Direct Connect highlighted. If you're not using AppleTalk, the User Name field isn't required.

Page Setup: This is used to specify other details about how you want HyperStudio to print things. When you choose Page Setup, you can set which type of paper your printer is using; whether things are printed vertically or horizontally on the page; print sizing; and whether to reduce the printed image. The default settings are for standard US Letter size paper, Normal vertical sizing and vertical printout. The printer effects check boxes are normally clear, with no 50% reduction and normal gaps between pages.

Print: This is used when you want HyperStudio to print either the current card, all the cards in the stack, or just the cards in the "back" list. When you choose Print, the first thing you'll be asked is what card layout you want on each page, and what range of cards you want to print. You have the choice of printing one card per page, or printing the cards full size (two cards per page), or half-size (four cards per page). After choosing the layout, the standard print dialog box appears, where you then choose how many copies you want. Ignore the options for which cards you want to print, as this has already been selected in the first dialog box.

The printing process can be cancelled at any time, by pressing Apple-period during the print-out.

Quit HyperStudio: Choosing this closes the current stack, and returns you to the Finder, Program Launcher, DeskTop, ProSel, or whatever program launcher you used to start HyperStudio.