THE SCHOLASTIC
Guide to

CLASSROOM
Multimedia

By Fred D'Ignazio

SCHOLASTIC

Fred D'Ignazio is one of the foremost authorities on the implementation of multimedia in the classroom. Schools across the country have adopted his innovative approach. For the past four years, Mr. D'Ignazio has devoted much of his time to training teachers and students in curricular uses of multimedia.

Edited by Gila Gevirtz

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AN INTRODUCTION TO MULTIMEDIA

From Computing to Multimedia

Over the last three decades a new way of presenting information — images, sounds, and text — has evolved. TV pictures are manipulated electronically by computers; compact discs store music that is played back using computer technology; books are typeset using computers; and newspaper photos are transmitted across continents by computers. With this "computerization of knowledge," industries that were once quite separate — radio and TV; book, magazine, and newspaper publishing; motion pictures; telecommunications; data processing; and the performing arts — are beginning to converge and overlap. This trend suggests that over the next decade these industries will gradually merge into a single *multimedia publishing industry*.

The advances in microelectronics that have brought us handheld computers and calculators will, in time, make it possible to create multimedia computers! Desktop computers will be capable of showing text, pictures, animations, and even short clips from documentaries and movies. They will play music, make sounds (like the roar of a rocket taking off, or the call of a loon on a remote lake), and talk to students.

Fortunately, teachers who want to use technology to create more dynamic learning environments don't have to wait for these multimedia computers. Using the technology that is readily available in their schools today, pioneering teachers have already begun to put together multimedia publishing centers. By hooking up computers, printers, audio cassette recorders, and video cameras in new and creative ways, these teachers are providing their students with a variety of opportunities in which they can explore curricular topics and then "publish" what they learn. These teachers and students are expanding the traditional concept of multimedia

which was once restricted to making presentations with two or more media (e.g., a slide projector and an audio cassette player used to present a slide/tape show). Now, the expanded definition of **multimedia*** refers to using a microcomputer to *integrate* two or more media into a single presentation format (e.g., an electronic "slide show" created with a microcomputer that integrates sound and images from computer software, audio tape, and photographs that are then transferred to videotape to be shown on a VCR).

Using computers and printers, students publish group journals on weather and the seasons; with video and still cameras, record players, and computers they publish video documentaries on how a law is passed by Congress; and using computers, audio cassettes, and video they publish **electronic slide shows** on the dangers of alcohol and drug abuse. The projects are diverse and often cover areas of the curriculum that may have been previously unpopular because they seemed devoid of opportunities for student interaction. With multimedia, however, topics such as understanding the legislative process, using estimation in problem solving, developing library research skills, and learning about weather and climate come alive and stimulate student interest and thinking.

This guide introduces the basic concepts of classroom multimedia — what it is and how it can enrich your curriculum, revitalize the teaching process, and stimulate student learning and thinking. Most importantly, it shows how you can introduce multimedia to your own school and classroom. Though many of the sample activities in this guide are oriented to grades K-8, multimedia is an equally exciting tool for secondary schools. All of the activities can be done using an Apple II family or MS-DOS® computer, although additional equipment may be required to record a signal from an MS-DOS computer onto videotape.

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* Boldfaced terms appearing here and throughout the text are defined in the book's *Glossary*

The Multimedia Pencil

Stop for a moment and think about how computers as "pencils," or writing tools, have evolved over the last ten years. Early computer-based word processors were tedious, awkward beasts. Since then, word processors have become easier to use and we now have a new generation of computer writing tools called **desktop publishing programs**. (For more information, see the Scholastic *Guide to Classroom Publishing*.) Using a desktop publishing program, you can generate words on a page and control their layout, or placement, as well as their typeface or style, and font or size. You can even insert art and illustrations using **clip art** and **digitized** photographs. Such programs also allow you to **cut and paste**, that is, cut words or entire paragraphs out of one part of your **document** and paste them somewhere else in your document.
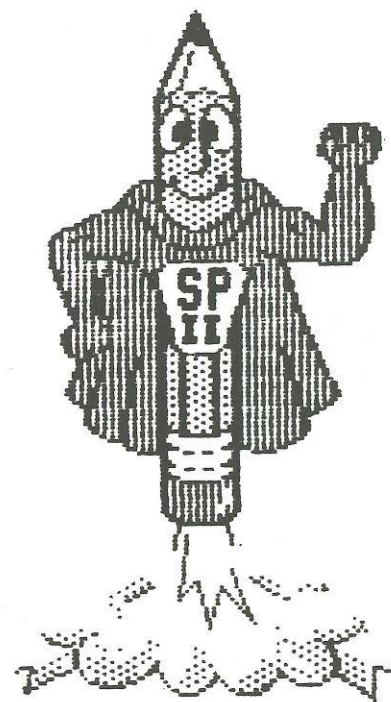
Multimedia publishing takes this writing/communications process several important steps further. In multimedia publishing you can create multimedia "documents" that combine photographic images, human voices, music, sound effects, full-motion video, and computer graphics, as well as written text. This is done by using multimedia publishing programs. These programs allow you to cut, or edit, written and spoken narration, still and moving images, and music that you gather from several different media, and paste them together into one multimedia document.

Pioneers and Explorers

As multimedia devices find their way into schools, we will see classrooms transformed into exciting, studio-like settings in which students "publish" curricular videos and electronic slide shows, audio book reports,
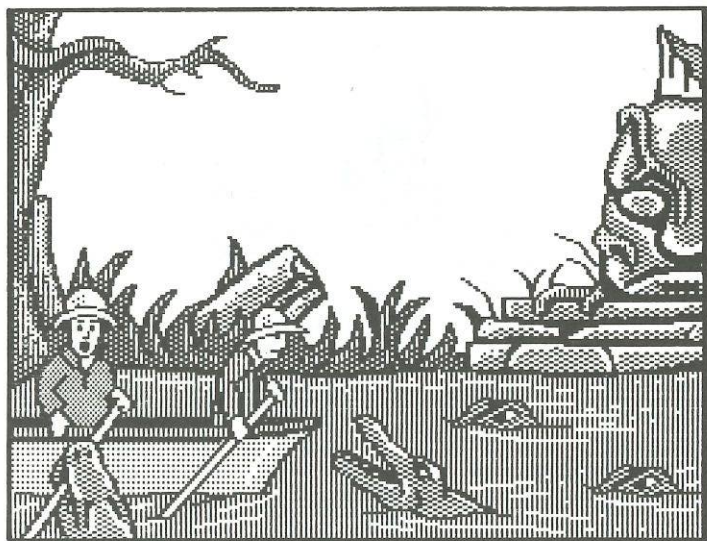
and multimedia term papers. Difficult areas of the curriculum will come alive as students translate them into multimedia documents or presentations. Teachers who get involved with multimedia technology at an early point will have the unique opportunity to pioneer and explore a remarkable new learning environment in which students can translate curricular knowledge from a textbook format into a multimedia format.

The Multimedia Publishing Center

Someday, student-produced multimedia may become as important a source of classroom curriculum materials and activities as today's textbooks and worksheets. However, teachers who see the possibilities for multimedia publishing don't have to wait for the future. They can begin now. They can bring the multimedia publishing environment into today's classroom by assembling the separate multimedia components into a single multimedia publishing center "scavenged" from equipment readily found around their schools.

Teachers are ingenious improvisers and exceptionally resourceful. They can use these valuable skills to collaborate with their students and track down the multimedia components they need, including a microcomputer, a VCR, a TV, a video camera, a still camera, a tape recorder, and a record player.

Students as Multimedia Explorers

The multimedia publishing center gives teachers an opportunity to share with students the responsibility for learning. This can be done in an environment in which everyone is encouraged to learn from one another. On the one hand, teachers are learning and knowledge specialists. Students, on the other hand, are particularly handy around new technologies.

Teachers can play a leadership role with their students by collaborating with them in *knowledge-exploration teams* that, for example, transform textbook knowledge into new, exciting multimedia presentations. These explorations can be used to produce mathematics mystery radio shows, video biographies, multimedia science projects, "electronic field trips" to zoos, museums, and other local sites, and all sorts of other innovative and exciting presentations.

Sharpening Student Communication Skills

As multimedia publishers, students use computers, video cameras, microphones, and other components as tools of *self-expression* and *interpersonal communication*. Their mission will be to turn the most difficult areas of the *curriculum* into interactive presentations that make the subjects more understandable and meaningful to themselves and their classmates. In the process, they sharpen their *research skills* by finding and exploring background information at the school library and in their *community*. They refine their *written and oral language skills* by writing reports, articles, and/or **scripts**, and by making presentations. Most important, they strengthen their *critical thinking* and group *problem-solving skills* by *working together* to *analyze* their research information and goals, and by figuring out what they really want to say, how they can make their subject "come alive" for their audience, and how to make the equipment do what they want it to do.

Getting More Mileage Out of What You've Got

This book is your guide to classroom multimedia publishing. It shows you how to get more use out of the equipment that you have hidden in the closets, classrooms, and cubbies around your school. This book also shows you how to map out a course that will take you and your students from today's world to the multimedia world of tomorrow. The multimedia learning and work environment can be an exciting, exhilarating place. As multimedia explorers, you and your students can share in that excitement. In the process, you may discover that the journey itself is the reward.
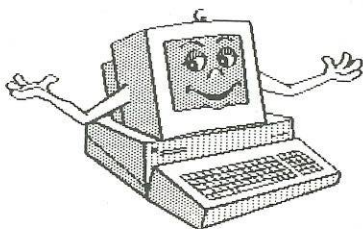
WHAT IS MULTIMEDIA PUBLISHING?

The Computer Hub

The computer forms the hub of a multimedia publishing center. However, students do not need to become computer programmers to become multimedia publishers. Software such as *Slide Shop, Super Story Tree, SuperPrint II, Microzine Jr.'s Graph Maker, Microzine's Greetings, The Bank Street Writer III, ESL Writer, Publish It! 2,* and *The Newsroom** eliminate all need for programming. Furthermore, this guide details how you and your students can set up a multimedia publishing center with a minimum of equipment and expertise.

There are five main categories of multimedia publishing, each of which focuses on a different medium: Desktop Publishing (publishing in a print format, e.g., newspapers, journals, and books), Electronic Slide Shows, Audio Publishing, Video Publishing, and Hypermedia Publishing. Each of these can be a self-contained form of publishing or can be combined in a multimedia format.

You will often hear the word "desktop" used in conjunction with multimedia publishing. Desktop refers to an activity "done with a personal computer." For example, **desktop video** involves processing video images using a microcomputer. Terms such as "desktop presentations" or "desktop publishing" reflect other aspects of multimedia publishing, and all of these terms reflect the importance of the computer as the hub or central device.

Desktop Publishing

In many classrooms, student publishers are already combining their use of printing and word processing

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* See the *Appendix* for information on how to acquire software products mentioned in this book.

software with programs such as *Microzine Jr.'s Story-book Maker, Microzine's NewsPrint* and *Banner Maker, Scholastic SuperPrint II, The Bank Street Writer III,* and *ESL Writer* (for students with limited English proficiency) to create handsome looking newspapers, literary journals, book reports, term papers, biographies, banners, and project posters. Programs like these, as well as desktop publishing programs such as *Children's Writing & Publishing Center* and *Publish It! 2,* are easy-to-use and give students the ability to write, illustrate, and revise their work quickly. They raise students' confidence and self-esteem by generating professional looking products of which the students can be proud.

A special feature of the *AppleTalk* network version of *The Bank Street Writer III* makes it possible to send "electronic mail" from one computer on a network to another. This feature enables students to work collaboratively on a desktop publishing project and transforms the world of personal computing to a world of "interpersonal computing!"

Electronic Slide Shows

With programs such as *Scholastic Slide Shop* and *Super Story Tree,* students can create their own colorful and dynamic electronic "slide shows" on the computer
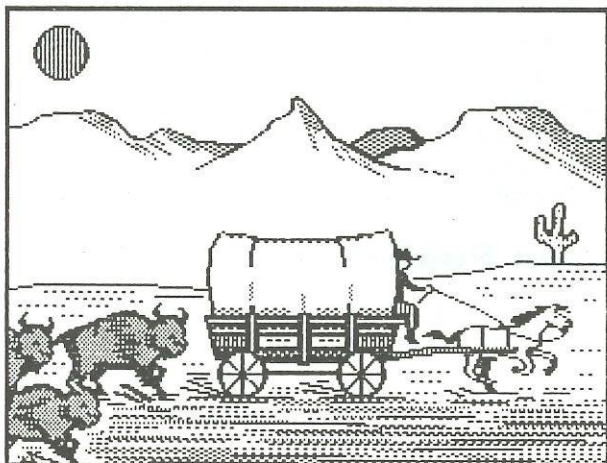
screen. (These programs are sometimes referred to as **desktop presentation** programs.) The slides can
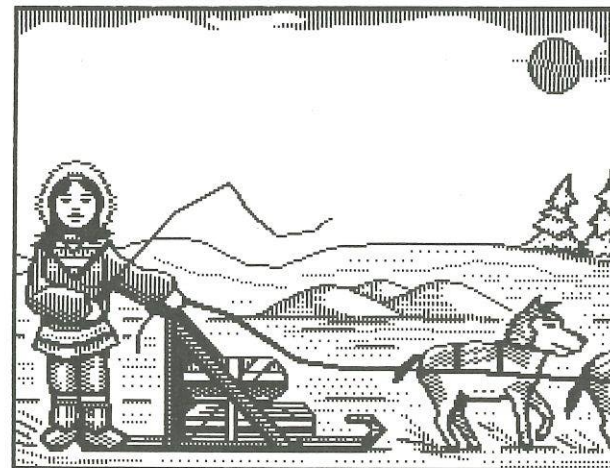
be explanations of how fractions are multiplied, where black holes come from, or about different modes of transportation; or they can be original stories written, illustrated, and animated by students. For example, *Slide Shop* lets students create screens made up of text, clip art graphics, and sound, and then sequence them in a continuous presentation. Students can choose the amount of time a slide remains on the screen and the special effect (e.g., a wipe, dissolve, or fade) that acts as a transition between slides. Music, sound effects, and digitized human voices can accompany each slide as it is displayed. Furthermore, the entire slide show can be automated and placed on a separate, **self-running show disk** that "boots up" automatically without the program disk when it is loaded into the computer; or it can be transferred to a video cassette.

Super Story Tree allows students to use the same creative tools that are available in a program like *Slide Shop* (i.e., clip art, music, and special sound and visual effects) in order to create branching stories or essays

that run on the computer or can be printed out. For example, students can use *Super Story Tree* to depict how a bill is passed, by following it through Congress. Using the program's branching capability, students can show places where a bill might get stuck or dropped. The planning and implementing of these dynamic essays and stories provide wonderful opportunities for students to develop their critical-thinking skills as well as their writing skills.

Audio Publishing

Now is the time to resurrect your classroom's trusty tape recorder and make it part of your multimedia publishing center! Imagine how a ho-hum report on the electoral process could be made more personal and dynamic by adding recorded interviews of schoolmates and adults in the community; or how a report on noise pollution would come alive with the taped sounds of local traffic, trains, and construction sites.

For even more exciting results, students can use a software program such as *Success with Writing* to brainstorm and write a script for a "radio" presentation, with sound effects that are synchronized with the words in their script. They can add their sound effects using a program such as *Microzine*'s *Sound Off!*, or they can use the music and sound effects from a program such as *Slide Shop*.

Video Publishing

As equipment prices have decreased in recent years, video cameras, **camcorders** (a video camera and VCR combined in one unit), VCRs, and TVs have become available in almost every school in the country. Teachers and their students are using this equipment to videotape special events, holiday programs, classroom skits, and field trips.

A video camera and VCR, or a camcorder, can be powerful learning tools in the classroom. Students can use these tools to become video publishers, combining video presentations with computer graphics, photo-

graphs, drawings, animation, sound, and music. This can be done more simply than you might imagine! As your computer is displaying an image on its monitor, just reach around behind the monitor and unplug the monitor cable from the monitor. Place a VCR next to the computer, stretch the monitor cable behind the VCR, and plug the cable into the VCR's "VIDEO IN" jack. Once you have made this connection, put a blank tape into the VCR and press the "PLAY" and "RECORD" buttons simultaneously. You will be copying the images directly from your computer onto videotape.

You can stop the tape at any time, rewind it, play back your computer images, or alternate them with live images that you record on the tape with your video camera. With a camcorder, a computer, and a VCR that allows you to edit, you now have a desktop video studio!

Students can create polished looking videotapes enhanced with computer titles and computer credits, generated using a program such as *Fantavision, Deluxe Paint II,* or *Slide Shop* and a digitizer such as *ComputerEyes*. For example, in a student video on the weather, video shots of actual clouds could be followed by *Slide Shop* or *Deluxe Paint II* graphic screens listing each type of cloud's distinguishing features. In addition, the *Apple II Video Overlay Card* and *Slide Shop* could be used together to combine video images and computer graphics to create a movie-like title screen at the beginning of the video and a snappy credit screen at the end. Since *Slide Shop* features sound effects and music, it could also be used to create a soundtrack for the video. Students can brainstorm ideas for their video, generate production plans, a schedule, and script using *Success with Writing*, or they can use a word processor such as *The Bank Street Writer III*.

Hypermedia Publishing

A more recent term to enter multimedia vocabulary is the prefix "hyper." In the context of computer technology, hyper refers to a branching presentation that is user-controlled and that often combines several media,

including such advanced technologies as CD-ROM and videodisc. Thus, **hypermedia** indicates a program that is nonlinear, allowing users to create their own pathways through material that may be called up from several different sources such as videodisc, CD-ROM, and CD audio disc.

In the future, more and more presentations will be done in hypermedia, i.e., in a nonlinear, multimedia format, and will give users the opportunity to navigate their own path through information. This contrasts with the linear format used in mass communications media such as movies and TV, in which viewers watch as the presention proceeds straight through from beginning to end, with no opportunity for interaction.

Although it sounds futuristic, you don't need to wait to explore hypermedia. Several software programs, including *Super Story Tree* and *HyperScreen* allow you to create hypermedia applications using the types of personal computers that are already found in most schools. These programs can be used to build interactive, nonlinear stories, lessons, and presentations that turn your students into active managers and publishers of information, rather than passive consumers. Two other hypermedia programs that are more complex and require more sophisticated hardware than is available in most schools are *HyperCard*® from Apple Computer and *IBM LinkWay*™.

Combining Media

The basic rule in multimedia publishing is "KISS — Keep It Simple for Success (and Survival)!" However, once students get the hang of publishing in one medium, they are usually eager to try a new medium, or combine media. The multimedia publishing center makes it easy for students to mix video presentations with electronic slide shows, desktop publishing with audio publishing, and so on.

Teachers and students have come up with ingenious ways to combine equipment, mix media, and create unique curricular presentations. Most subjects in the curriculum have never been presented in multimedia formats. Once your students get started, you will be amazed at what they can do with even those subject areas that have traditionally "turned students off." And you will get the feeling that something new and important is happening right before your eyes.

Thomas Jefferson — Multimedia Man

One of the thrills of making multimedia is watching how a given subject — say, parts of speech, photosynthesis, or Thomas Jefferson — is transformed and enhanced as it gets passed from medium to medium. For example, a student producer team might start a multimedia presentation on Thomas Jefferson by finding a portrait photo of Jefferson in an encyclopedia along with a brief passage that describes his main accomplishments. Using a video camera, a computer, and a digitizer (such as *ComputerEyes*), the team can "capture" Jefferson's image from the encyclopedia and have it appear on the computer screen.

In this case, a video camera is used as a still camera to capture, or photograph, an image so that it can be sent to the computer for "image processing." Like word processing, image processing implies that an original piece of data, in this case graphic rather than verbal, is electronically input, manipulated, revised, and stored.

To capture Jefferson's image on the computer, the students first point the video camera at the encyclopedia. Because the video camera is hooked into the back of the computer using the *ComputerEyes* card, Thomas Jefferson's image appears on the computer screen. The students choose "DIGITIZE" from the *ComputerEyes* program menu and, in five seconds, they have a computerized version of the picture from the encyclopedia.

This new, digitized image can be saved as a standard computer file on a floppy disk. Then it can be loaded into
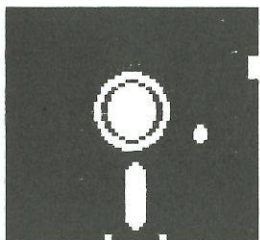
a desktop publishing program such as *Medley* or *Springboard Publisher*. The student team can use this program to write up a one-page story problem about Jefferson, based on his decision to acquire the vast tract of land known as the Louisiana Purchase. The team can illustrate the story problem with the digitized image of Jefferson at the top of the page over a banner-like headline such as "Jefferson Doubles Size of U.S. — Was He Right?"

It is very important at this point to give credit where credit is due. The image of Thomas Jefferson came from an encyclopedia (or a biography of Jefferson, or a history textbook, etc.), so the students need to add a bibliographic footnote that lists information such as the name of the source, the publication date, and the page on which the image appeared. This is similar to what students do when they use text from a published source. Students should make a habit of giving credit when using other published materials such as photographs, drawings, voice recordings, music, and sound effects.

When using copyrighted material, there are three rules of thumb: (1) Only borrow a small fraction of the published work (e.g., a few bars of music, lines of text, or seconds of video). (2) Never charge money for the students' publication or presentation when published material is incorporated into it. And, (3) give the appropriate credit. If your students follow these three guidelines they will be producing multimedia publishing that is ethical, legal, and responsible.

The students can stop after desktop publishing a printed report on Thomas Jefferson — or they can keep going. For example, they could use an interactive program such as *Super Story Tree* to create a branching electronic slide show on the Louisiana Purchase and its impact on America. They could use a printing program such as *SuperPrint II* to create one-page flyers to stimulate a debate over the Louisiana Purchase. Or, they

could use a word processor or writing program you already have to write a script for brief "radio" advertisements for and against Jefferson's decision, and then use their classroom tape recorder to tape the ads. The advertisements could be replayed in front of the class or over the school public address system.

The student team could go even further. It could write up a script for a brief, one-act "concept play" on presidential decision-making, and then videotape the play. The team could use a program such as *Slide Shop* to create title and credit screens for the videotape. For the title screen, they could load the digitized image of Thomas Jefferson into *Slide Shop* and then add a fancy "stars and stripes" border around Jefferson and a provocative title such as "Jefferson — Real Estate Developer or Hero?" Still using *Slide Shop*, the students could add sound effects and music. When completed, the title screen could be transferred onto videotape as the opening for the taped skit. Finally, in presenting the video to the class, the team could invite student comment and debate on the theme.
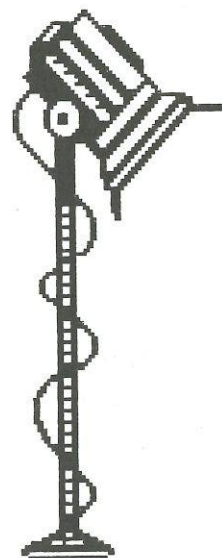
What transformations did Jefferson go through on this sample multimedia journey? He started as an inert black-and-white photo and a straightforward passage in an encyclopedia. Through "image processing," he was then turned into a digitized image on the computer screen and a file on a computer disk. From there he became an illustration for a student team's word-processed and printed report. Next, he became a live-action skit and a videotape that included the digitized image "captured" from the encyclopedia, decorated with a colorful border and title, and spiced up with sound effects. Last, he became a student team's live, interactive presentation that stimulated classroom discussion, thinking, and debate.

In other words, President Jefferson had a "facelift." This transformation is as dramatic as Clark Kent entering a phone booth and emerging as Superman. In a couple of hours, Thomas Jefferson went from being a remote figure in an encyclopedia to "Multimedia Man." You can create the same effect with any subject in the curriculum. Multimedia publishing can make even the most difficult areas of your curriculum intellectually provocative and more meaningful for your students.

Pride of Authorship

All the terms and applications described here point to the computer's becoming a multimedia pencil — a tool for teachers and young authors to use for communicating their ideas, stories, and discoveries. When you establish a multimedia publishing center, you give your students the opportunity to express themselves in a dynamic cooperative learning environment. You treat your students not as passive learners who retrace knowledge paths constructed by others, but as true authors who reconstruct knowledge themselves.

As multimedia publishers, students experience a pride of authorship that comes from a sense of discovery and creating something new and unique. This pride generates, in turn, an eagerness and a joy in learning and sharing that spreads throughout the entire classroom. The atmosphere in the classroom becomes one of discovery, exploration, and eager anticipation as student publishers follow their teacher into new worlds of knowledge and gain confidence in their ability to describe those worlds on computer disk, on videotape, audio tape, and the printed page. The entire class develops a sense of "mission" to publish what they discover and to share it with other students in the school, with their parents, and with their community. There is a sense of importance that teachers and students gain when they realize that they are making fresh, original discoveries and that they can share those discoveries with the world outside the classroom door.

CREATING A MULTIMEDIA PUBLISHING CENTER

A School-Wide Project

Before you can lead your student explorer and publishing teams, you will need to assemble a multimedia publishing center. This too is a team effort! You and your students can create your center from equipment that is sitting in nooks and crannies around your school.

Teachers who are experienced with multimedia have found that the best way to get the equipment they need is to enlist the help of the entire school—fellow teachers, students, administrators, support staff, and parents. How do you get everyone to pitch in? Two strategies have worked. First, get help from your students. Second, tell the students that their first multimedia publishing project is to let the school know about their mission to become publishers and explorers of new knowledge, and to invite the school to share in that mission.

Getting the School's Support

Teachers who are experienced in setting up mulitmedia publishing centers have come up with five surefire projects and activities that draw in other members of the school community and enlist their support.

Make a Video Yearbook At the beginning of the school year, send small teams of "student eyewitness reporters" to all major school events. Have the students use a video camera to capture each event on videotape. When they return to your class, have them review the tape, write a short narration that introduces the event, and add titles and special graphics screens with a program such as *Slide Shop* or *VCR Companion*. At the end of the year, have the students assemble all

the segments into a video yearbook that can be sold as a fundraiser to other students and parents.

Set Up a Media Club Talk with your fellow teachers and see if one or two will help set up a media club in your school. Be ready for a huge response from your students! One school expected a few students to sign up for the media club, and instead got eighty-seven! The club members can be students from various grades. After a few meetings, they can specialize in different areas of multimedia (desktop publishing, video, audio, etc.). These students can become your "technicians" and can help train fellow students. You'll be amazed at their motivation, ingenuity, and dependability.

Publish an Explorer's Diary Your class is about to begin an important journey into new worlds of knowledge (mathematics worlds, language worlds, science worlds, history worlds, etc.). They are explorers who are journeying far from home, and those folks at home (parents, students, teachers) can follow their progress if the explorers *report back* frequently and tell everyone where they've been and what they've seen. Students can use programs like *SuperPrint II*, *Microzine*'s *NewsPrint*, and *The Bank Street Writer III* to create a short weekly journal that describes the new ideas and information they've learned and the new experiences they've had. They can publish this journal on the computer, develop a subscriber list, and distribute their journal around the school and, of course, they can also take it home for parents to see.

Create Evaluation Videos Principals and teachers are always looking for creative ways to gauge student progress. You can use video as a tool for evaluating progress, and as a supplement to existing tests and other measures. The technique is simple. First, get each student in your class to buy a videotape at the beginning of the year. This tape can become the year's video record of a student's progress in developing self-esteem, oral and written communication skills, social and teamwork skills, and mastery of the curriculum. It is a vivid, high-tech performance résumé and a personal portfolio to be enjoyed by students and their families.

To record your students' progress, have them make a copy of each multimedia presentation that they create, narrate, or appear in during the school year. In addition, have your students video or audio tape each other at the beginning of the year and the beginning of each classroom project. Encourage them to tape each other again while they are in the process of mastering the skills and the materials of the project. And have them tape again at the end of the project or the end of the year. Each segment can be very brief, usually less then one minute long.
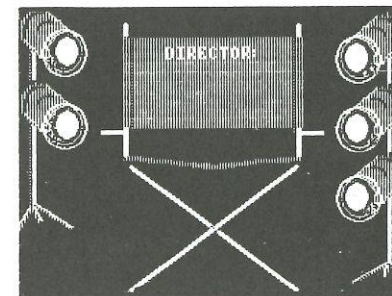
Some teachers have created a shadow team of student camera persons to document the other students' progress. They are similar to the teams that document the making of a feature film. The shadow team goes "behind the scenes" to capture students in the process of mastering the skills of communications, cooperative learning, criticial thinking, and curriculum content.

At the end of each major project and the end of the year, gather your students together and review the segments that were taped. Together, edit brief summaries that dramatize each student's progress. These "Before & After Videos" can be polished by using a desktop presentation program to create titles, explanatory screens, and credits. They make a tremendous impact when shown to the principal and other administrators, to parents, the local school board, or the PTA. They are an exciting, vivid record of the activities that you do with your students, the thrilling moments when your students learn something new, and the enormous personal growth your students have experienced.

Create School-Service Videos The best way to guarantee success in scavenging a multimedia publish-

ing center is to win the support of your school principal. And the surefire way to the principal's heart is to create a video about your school that serves the school or makes it shine. For example, the students in one school put together a video about the school lunchroom, shot from the perspective of a new kindergartner who had never used a lunchroom before. The video became an instant hit and was shown to incoming kindergartners and their parents the following spring during orientation. Other schools created "video greeting cards" that were shown to groups of parents, members of the local school board, and managers of local businesses who were thinking about adopting the school.

One of the most popular school videos was a ten-minute piece called *Kid's News,* in which kindergartners went around the school interviewing classmates and asking them, "What is a principal?" and "What does a principal do?" The video concludes with a hilarious visit to the principal's office, set to music from the movie *2001.* The principal loved this video so much he showed it at a national principal's conference.

Your Scavenging List

What equipment goes into a multimedia publishing center? Answer: Anything you and your students will find useful! Multimedia publishing centers are still so new and experimental that it is better to let student producers and their teachers decide which components are important and make the most sense for their classes. Also, some equipment will be easier to locate and some equipment harder. As good scavengers, you'll learn to make the best out of what you've got.
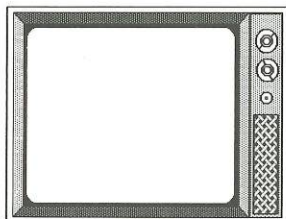
Still, it helps to have a list of items teachers have found valuable. *Don't try to assemble all these items at once. Instead, build your center piece by piece. Test to see which items work the best, then add something new.*

AV Rolling Cart The first item on the list is one most schools already have — a small, sturdy AV rolling cart. The cart should have two shelves, a brake on the hind wheels, and plastic twine and a "cable hole" to organize the multimedia cables. You can fit all your multimedia equipment on two or three carts. And the carts are so low to the ground that even younger students can push them around the classroom or from one classroom to another. Many schools have adopted the motto *Multimedia on Wheels* to express the idea that multimedia publishing centers are mobile and can be shared by an entire school.

Computer The microcomputer is the hub of your publishing center. With the right software and accessories, your computer can be used to create sound effects, electronic slide shows, title and credit screens for classroom videos, and illustrated books, signs, newspapers, and magazines. You'll need a *microcomputer, color monitor,* one or more *disk drives,* and a *printer.*

Audio Start simple with an *audio cassette recorder* or a *record player.* Next add a little *musical keyboard.* A *microphone* is optional if you have a camcorder, because your camera mike can record student narration directly onto audio tape or videotape.
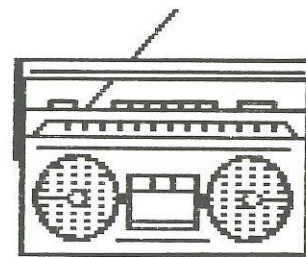
Video Again, start simple. Record screens directly off the computer onto your school *VCR* and add sound effects and narration from the classroom audio cassette recorder. When you can afford it (or scavenge it), add a *camcorder* (which doubles as an editing VCR).

Supplies You'll need *blank audio tape, videotape,* and *computer disks;* and *printer paper* and *printer ribbons* for your budding multimedia publishers. *Cables* and *adapters* can be found at a local electronics or hardware store for a few dollars. *Batteries* and a *six-outlet power box* are necessities for publishing power.

Multimedia Cables

If you have a computer monitor, chances are you also have the most basic tool with which to make multimedia. And that tool is not the computer! It is the little cable that connects the computer to the monitor. This cable goes by many names — dubbing cable, AV cable, RCA cable, and phono cable — that reflect its many uses. It can connect all three facets of multimedia — AUDIO, VIDEO, and COMPUTING. For example, it can be used to:

- Connect your computer to your computer monitor;
- Connect your computer to a VCR;
- Connect a tape recorder or record player to your VCR;
- Connect a musical keyboard to your VCR;
- Connect your video camera to your computer monitor; and
- Connect your VCR to your computer monitor.

And this is just the beginning! Teachers and student producers keep coming up with new ways to tie equipment together using these cables — simply by plugging the cables into equipment and seeing if something works! The electronic signal that travels along the cables is so low it is harmless. As long as the students are gentle about plugging things in, they can't damage the equipment. Students love the role of being multimedia experimenters, inventors, and explorers!

Where can you get these cables? Just walk into your local hardware or electronics store and say you'd like a six-foot or twelve-foot set of dubbing cables. Then turn the cables over to your student publishers and, before you know it, you will be making multimedia!

Multimedia Software

There are four general categories of software used in classroom multimedia publishing:

Word Processors (e.g., *The Bank Street Writer III*) Programs that are used for writing and editing material as varied as essays, short stories, letters, and scripts.

Desktop Publishers (e.g., *The Children's Writing & Publishing Center*) Software that is used for creating text, graphics, and page layouts for print materials such as journals and newspapers.

Desktop Video Publishers (e.g., *VCR Companion*) Programs that are used to create or enhance videotape productions including the addition of graphics and text for title screens.

Desktop Presentation Programs (e.g., *Slide Shop*) Software that is used to create presentation materials such as electronic slide shows.

Some programs have more than one capability. For example, *Slide Shop* can be used as a desktop presentation program to produce an electronic slide show, or as a desktop video publisher to enhance a videotape with titles and graphics.

You probably already have some multimedia software in your school. For example, programs such as *The Bank Street Writer III* and *SuperPrint II* have become standard classroom writing and printing tools. For more complete information on these and on other recommended products, refer to the *Appendix* in the back of this book.

Multimedia Peripherals

Once you have a working multimedia publishing center (for example, a computer and software, VCR, TV, video camera, audio cassette recorder, and cables), you may want to consider purchasing some additional computer equipment that will enrich the multimedia publishing you and your students do. For example, you may want to buy one or more **circuit boards** — cards that can be plugged inside your computer to add new capabilities. Here are three circuit boards that should be put somewhere near the top of your shopping list:

ComputerEyes This is the original "multimedia

card." It comes with three cables fastened to the end of the card. The cables enable you to plug your computer into a video camera and a VCR. The card lets you capture still images from the video camera, save them on a computer disk (for later use with *Slide Shop,* for example), and send them to the VCR as a "title screen" for your curricular video.

FingerPrint This card comes attached to a little blue ribbon with a red tab on the end which has the picture of a real "fingerprint." After you plug the card into your computer, you can run any program (e.g., a graphics program, drill and practice program, or an adventure game) and "capture" an entire screen from the program by pressing the little red tab. The screens can be saved on disk, passed to a desktop video program such as *Slide Shop*, or copied directly onto videotape using a VCR. Images from all your favorite software programs can be "recorded" and used as part of your students' multimedia presentations.

(Remember: whenever you or your students borrow material, be sure to give credit! This is your legal and ethical obligation as fellow "multimedia publishers.")

Apple II Video Overlay Card This is the "missing link" in multimedia. It enables your students to take a video they recorded and merge it with a computer graphics screen to create spectacular special effects, similar to those used on broadcast and cable TV. For example, they can use a *Slide Shop* map of the United States for a video the class is doing on U.S. current events. With the *Video Overlay Card* the students' video can appear inside the map of the United States. Then, as students who are on camera begin to talk or read their reports, they can be identified on the TV screen with colorful written titles. *Slide Shop* includes a video key color option that allows you to take full advantage of this feature.

For more information about multimedia hardware and software, including the products mentioned in this chapter, see the *Appendix* at the end of this book.

INTRODUCING MULTIMEDIA ACTIVITIES IN THE CLASSROOM

Strategies that Work

Multimedia publishing is an exciting new teaching and learning tool with wonderful possibilities for increasing students' knowledge and skills. However, it can only be effective if it is built into a practical teaching strategy that can be used by real teachers in everyday classrooms and curricular activities.

Fortunately, teachers who are new to multimedia can draw on the experience of others who have explored the world of multimedia before them. Hundreds of teachers around the U.S. and Canada have already been using multimedia in their classrooms and have helped their students set up multimedia publishing centers. Just as important, over the years these teachers have devised strategies that integrate multimedia publishing into their daily lessons. Here are some proven strategies that work.

Divide and Conquer No one ever said that multimedia means you have to do everything (audio, video, computers, slide shows, etc.), at once. That would be overwhelming! You'd never have time to do anything else! Instead, think of a multimedia center as *modules* that you can use together or *separately, one at a time*. For example, you might not have ready access to a video camera, but you can almost always find a tape recorder. So the first presentation your students can create is a current events show, or an audio skit about a journey back into the time of Laura Ingalls Wilder or Joan of Arc. Students can begin by writing their scripts, doing research in the library, and practicing in small groups and teams. Then they can record their oral narrations and present them to the class. It is important to start with what you've got and from where you're comfortable.

Have Your Students Sign a Contract Sit down and write up a brief, one-page contract for your students to sign in order to become "Multimedia Publishers and Explorers." They must agree to do commonsense things such as listen to you, take care of the equipment, complete their assignments on time, and help their classmates. Many teachers have had great success with contracts. These formal agreements give students a sense of structure and guidance and make clear what their teachers expect from them. Even more important, contracts turn the responsibility for success over to the students, where it belongs. The students know up front that, if they work hard, cooperate, and learn, they can do multimedia publishing. If not, the activity will be discontinued. Teachers have found that students will work much harder on nonmedia activities, complete assignments in shorter time, and behave more responsibly at all times in order to get a chance to do multimedia publishing. Multimedia publishing, therefore, can be a powerful incentive for students to complete their nonmedia activities.

The Writing Process At any one time, one multimedia center can be shared in only so many ways by 30 students. To get around this problem, teachers devise multimedia preparation activities. Most of these "premedia activities" involve writing that students can do at their desks (or in cooperative learning groups). Before a center comes rolling into a room, students might spend several days discussing, researching, writing, revising, and planning their multimedia presentation. If students have access to a computer (in the classroom or in a school lab), they can use a writing program like *Success with Writing* to brainstorm, plan, and create presentation **storyboards**. Once the multimedia preparation activities are completed, students are ready to use the equipment and software efficiently and productively when it is available.

The Multimedia Sandbox The multimedia center finally arrives in your classroom. Now what do you do?

Teachers say that the first few times students use the multimedia equipment (the computer, the video camera, etc.), they should not be forced into a production schedule with rigid rules and tight deadlines. Instead, treat the equipment as a "sandbox"—an opportunity for students to push buttons, experiment, and engage in hands-on learning. Provided that the students have already done plenty of preparation and see themselves as "publishers" and "producers," they will behave responsibly with the equipment and will work cooperatively and efficiently to master it in the time available.

This "sandbox" approach has already proven enormously successful in over sixty schools, involving thousands of students in preschool through high school. When students realize they have limited time with equipment, they get down to business quickly. Also, when they operate the equipment without relying on a rigid manual, students have been ingenious in discovering new uses that are appropriate to a classroom setting. In fact, most of the ideas and techniques discussed in this book were invented by students and teachers in their early attempts at figuring out how to use their scavenged media center.

This approach to technology results in many rewards. It sharpens students' critical-thinking skills. It develops flexibility, patience, and creativity. It gives students self-confidence in their use of technology. It encourages group problem-solving and collaborative learning. And it encourages students to begin making connections between the technology and the subjects they are studying in the classroom.

Giving Students a Mission

To help prepare students to share responsibilities for multimedia publishing, teachers often like to set the scene with a story. The story works best if the teacher sits down and tells it to students at the beginning of the school year when everyone is fresh.

Here is the story that one teacher tells:

"This is going to be a very busy year. We have lots of important jobs ahead of us, lots of important things to

do. We are going to learn about our school, our community, and our country and share what we learn with other people. We are going to track down mysterious concepts like fractions, prefixes, and pronouns; fascinating ideas like democracy, freedom, and equality; and 'invisible' objects like galaxies, air, and atoms. And we are going to make presentations that show people what these ideas and objects look like and why they are so important in our lives.

"We are going to take words out of our books and bring them to life for other people! This isn't easy, so we need to work really hard to get ready. We have to build all kinds of muscles — thinking muscles, writing muscles, listening muscles, and detective muscles.

"We are going on a journey of discovery together. Since much of what we search for will be new to me, too, there will be times when we'll have to work together to figure things out. Then you'll have to teach me. But, don't worry. I have lots of confidence in our combined brainpower if we work together. Together we'll figure out everything, especially if we help each other.

"Why do you think it is so important that we help other people see what we discover? Because everything we learn will be related to understanding our world — how it got to be the way it is today, how it works, and what it might be like in the future.

"That's our mission for the school year. It's a big job, and we can't waste time, so let's get started right now."

GETTING THE MOST OUT OF MULTIMEDIA

The Computer Plus ...

After your class has created a few simple multimedia publications, you are ready for the next step — using the computer plus one other piece of equipment. Here is an example of how a class might approach this.

Before the multimedia center arrives, divide your students into the following teams: (1) Desktop Video, (2) Desktop Audio, (3) Desktop Publishing, (4) Electronic Slide Shows, (5) Live Plus Slides, and (6) Live Plus Audio.

Let us say the unit the class is working on now is the solar system. All the students have been preparing for days, including reading their textbooks, viewing a filmstrip, doing worksheets, and taking books out of the library. Each team has visited the computer lab and used *Success with Writing* to outline its presentation and to write its script. Each team also has prepared storyboards. On every storyboard page, the "audio" (written indication of narration, dialogue, music, and sound effects) appears at the bottom of the page, and the simultaneous "video" (images and action that will appear on screen) appears at the top of the page in the form of clip art or hand-drawn pictures.

When the multimedia center arrives, the teams divide up the equipment and get to work on their separate projects. The Desktop Video Team has planned a video on the formation of planets in the solar system. They get the video camera and go out to the playground and do extreme close-up shots of several clods of dirt that "simulate" the growth of planets out of tiny particles. Next, they shoot several explanatory screens created from *SuperPrint II* posters, signs, and clip art pages taped to the classroom wall. A student reads the team's script aloud while standing off-camera.

The Desktop Audio Team's topic is gravity. The team creates outer-space sound effects using *Microzine's Sound Off!* program. While the computer plays the sound effects in the background, the students take turns reading parts of their script into a microphone attached to a cassette recorder. The students describe what gravity is like on the different planets, and how it affects a space traveller visiting those planets.

The Desktop Publishing Team has decided to create a giant poster that shows the birth and evolution of the solar system. They use *Microzine's Poster Maker* to create the basic poster, then add hand-drawn and hand-colored figures.

The Electronic Slide Show Team's topic is comets. They use *Slide Shop* to create a presentation about Halley's Comet. They choose music from *The Brandenburg Concertos* (one of the musical selections on *Slide Shop*) as background accompaniment to the slides.

The final two teams decide to create live presentations, assisted by multimedia. The first team creates an electronic slide show presentation of what life would be like for an explorer who visited each planet. As they narrate an imaginary journey through the solar system, they show "slides" depicting the surface of each planet. The second team uses *Sound Off!*, a little musical keyboard, and a sound-effects tape to create dramatic
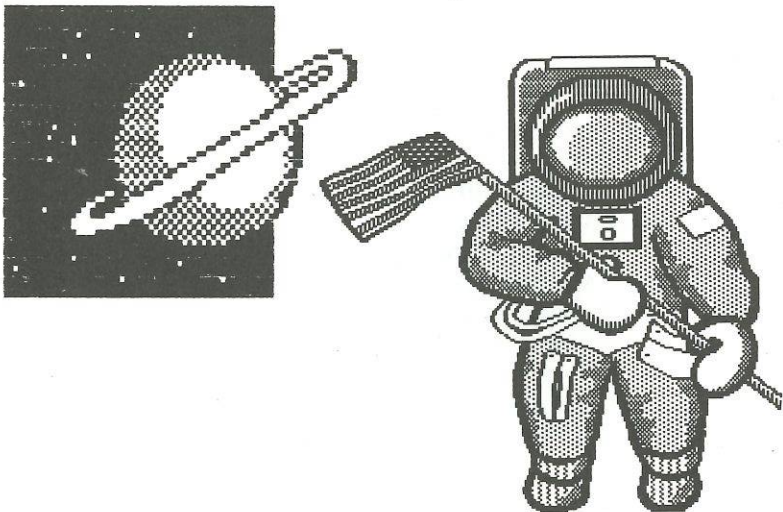
sounds to accompany an oral report describing key geological epochs in the Earth's history. As the Earth's story unfolds, the audience hears waves splashing, volcanoes exploding, and the trumpeting cry of dinosaurs.

Multimedia helps enrich all these presentations. Yet all are relatively simple, completely student-produced, and require only a brief use of multimedia equipment.

Another possibility when using multimedia is to involve the entire class in the creation of a single publication. Teachers have come up with a variety of ways in which to do this. One popular strategy is to divide the class into six specialty teams. Each team is in charge of one aspect of the publication. This interdependence encourages cooperation within and among the teams. For example, in a combined science and geography lesson on whales, sixth-grade students prepared for days before the center arrived. The entire class decided that their presentation would be in the form of a videotape they would show to the other sixth-grade classes in the school. They went to the library to do research, viewed a videotape on whales, discussed whales with their classmates, and wrote down notes and ideas for a presentation on whales.
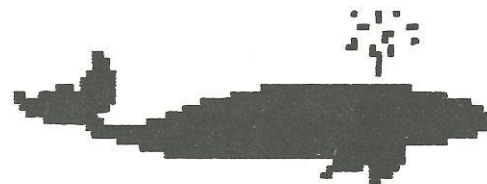
A week before the center arrived, the students formed the following teams: (1) Musicians, (2) Writers, (3) Video Specialists, (4) Graphics Specialists, (5) Editors, and (6) Producers.

When the center arrived, the Musicians began work transferring whale sounds from videotape onto their tape recorder for use in the final presentation. The Writers had already done research in the school library.

Now that the multimedia center had arrived, they sat down at the computer and, using *The Bank Street Writer III,* prepared a script for the whale presentation.

Once the script was completed, the Video Specialists videotaped one of the writers narrating the team's script. Next they went to the school's cafeteria to shoot a particularly "realistic" scene of a storm-tossed sea, created by blowing a fan onto a sinkful of artificially darkened water, with plastic boats and whales bobbing up and down.

The Graphics Specialists used the computer after the writers. They worked with *Slide Shop* to create title screens and credit screens for the class's video. They also created effective infographic screens with maps, diagrams, and pictures of whales. These screens were to appear before or after a video clip to highlight the major concepts and facts about whales.

The Editors took the input from all the other teams — the musicians' sound effects and dramatic narrations, the video team's video clips, the writers' scripts, the graphics team's colorful computer slides — and used the school's camcorder and VCR to assemble them,
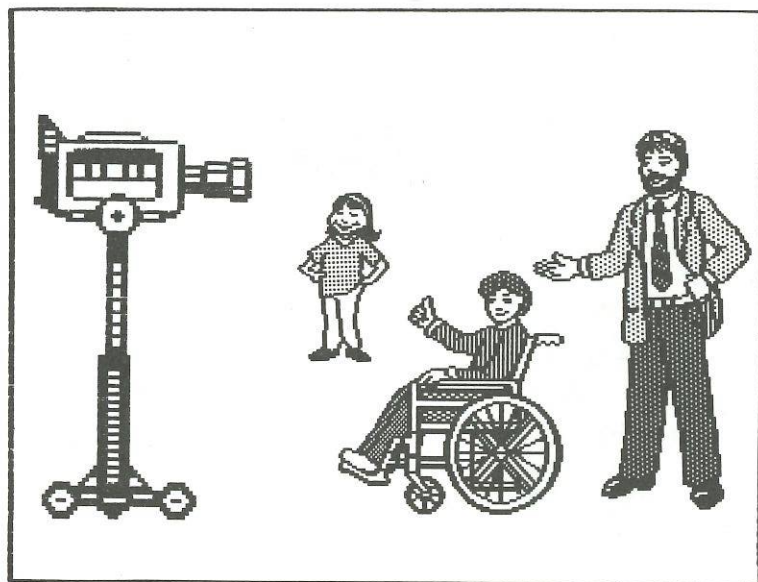
piece-by-piece, onto a final videotape master. The last team, the Producers, supervised everything. They made sure that the teams worked together smoothly. They made sure that students had the equipment they needed when they needed it. If that wasn't possible, they helped students reorganize their schedule so that other productive work could be done in the meantime. They cared for the equipment and made sure it was functional, safe, and secure. They reported on the teams' progress to the teacher. And they kept the entire production on schedule.

A Final Note

Multimedia publishing is a technique that you can use to bring critical subjects to life for your students. It is a way for you to get more use out of equipment your school already has on hand. Organizing a multimedia center and creating multimedia publications encourages cooperative learning and critical thinking among your students. In addition, it appeals to many hard-to-reach students and engages and involves them in the learning process.

Multimedia publishing is new. There is no single right way to do it. You and your students are pioneers. You can do original and powerful work with your students, even if all you have on hand is a tape recorder, VCR, and a computer.

Best of all, multimedia publishing can make learning seem just as fresh to you as to your students. Many teachers have found that multimedia brings new energy and vigor to their jobs. The students become so involved, so enthusiastic about learning, that they can't wait for class to begin. Successes happen every day. Teachers collaborate with other teachers and get support and inspiration. Teachers feel more competent with technology and feel more on the "cutting edge" than ever before. Multimedia infuses both teaching and learning with the exciting sense of endless possibilities.

So, welcome to the world of multimedia publishing! We hope that the ideas and suggestions presented in

this guide will inspire your imagination and confidence. As you will discover, even the simplest multimedia projects will spark student learning and add excitement and freshness to your curriculum.
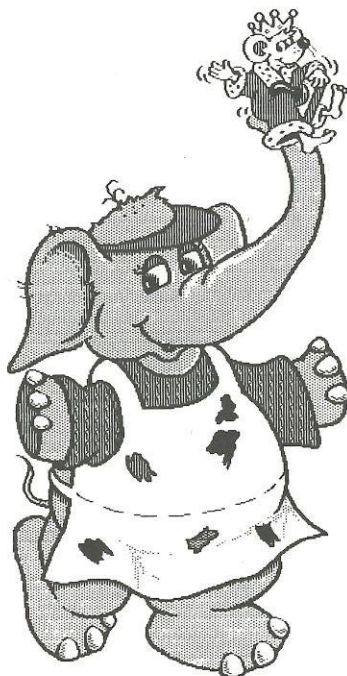
GLOSSARY

The following definitions are oriented to classroom applications of multimedia.

Camcorder   A combination video camera and VCR. There is usually a switch which, when pushed one way, turns the device into a video camera, and when pushed the other way, turns it into a VCR. Camcorders are lightweight and, therefore, especially easy for students to use.

Circuit Board   A card that when installed inside a computer, gives the computer added capabilities. For example, a video digitizer card gives the computer the capability of accepting an image from a video camera and storing that image on a computer disk. A video overlay card allows the computer to add graphics on top of video images from a video camera or VCR.

Clip Art   Line drawings stored on computer disk. This art can be selected and added to banners, posters, greeting cards, signs, and other documents.

Cut and Paste   To select a letter, word, or passage from a document, in order to delete ("cut") it from that part of the document and insert ("paste") it into another part of the document.

Desktop Presentation   A show created on a self-running disk and displayed on a microcomputer system. Desktop presentation software enables you to create your own electronic slide shows as a series of screens that can be stored on computer disk and presented, slide-by-slide, on the computer screen, complete with images, sound, and music.

Desktop Publishing   Creating and printing documents such as books, journals, flyers, and posters, using a microcomputer system.

Desktop Video   A videotape created with only microcomputer-generated sounds and images, or microcom-

puter-generated sounds and images combined with footage recorded using a video camera and VCR.

Digitize To recode visual or audio information (e.g., a video image of a clown, a photograph of the Grand Canyon, or the gurgle of a baby), so that it is represented digitally (i.e., a sequence of on/off or high/low electronic pulses) and can be recorded on a disk or manipulated by a computer.

Document Traditionally, information printed on paper. Examples include a report, essay, term paper, letter, or story. Multimedia extends this definition to include information appearing in nonprint media, including videotapes, audio tapes, and computer disks. Examples of "multimedia documents" might be a video book report (on videotape), an audio term paper (on tape cassette), or a computer slide show (on computer disk).

Electronic Slide Show A sequence of sounds and images appearing on a computer screen. The images are created by using clip art and/or by creating original computer graphics. They can be accompanied by voices, sound effects, and music and are connected in the slide show by dramatic special effects, including fades, wipes, spirals, and dissolves.

Hypermedia An interactive, nonlinear presentation of information in which more than one medium may be used (e.g., print, video, and computer), and in which users select their own paths through the material.

Multimedia A combination of media, (e.g., audio, video, and print), in which a microcomputer is at the hub of the system.

Multimedia Publishing A form of publishing that uses a computer in combination with other video and audio media. Student publications can appear in the form of a printed book, a radio show, a videotape, or an electronic slide show.

Script A plan for sequencing a show. Traditionally, a script has referred to the sequence of narration and dialogue in a dramatic performance; in some cases, a script has included information about visual cues. Today,

a script also refers to the sequence in which an electronic slide show will present its slides (computer screens with images, text, and sound) and special effects.

Self-Running Show Disk A disk created by an electronic slide show program. This show disk can run an electronic slide show on a computer without the use of a program disk.

Storyboard A tool that helps student publishers plan each detail in a multimedia presentation. Each frame in a storyboard verbally and visually describes one scene in the production or presentation. A typical storyboard has a cartoon "bubble" at the top of the frame or page containing a picture of a scene followed by a written description of the scene and the narration, dialogue, sound effects, and/or background music.

APPENDIX

Multimedia Bibliography

More information on multimedia is available in the following books and magazine articles.

Ambron, Sueann, and Kristina Hooper, eds. *Interactive Multimedia*. Bellevue, Washington: Microsoft Press, 1988.

Brand, Stewart. *The Media Lab*. New York: Viking Books, 1987.

Goodman, Danny. *The Complete HyperCard Handbook*. New York: Bantam, 1987.

Rogers, Michael. "Here Comes Hypermedia." *Newsweek*, October 3, 1988, pp. 44-45.

Rogers, Michael, with Richard Sandza. "Computers of the '90s: A Brave New World." *Newsweek*, October 24, 1988, pp. 52-57.

For more ideas and suggestions on how to set up a multimedia publishing center using equipment you already have in your school, see the following publications.

D'Ignazio, Fred. "It's the Mentality Not the Money." *Instructor* (Special Hi-Tech Issue), Fall 1987, pp. 10-12.

D'Ignazio, Fred. "Setting Up a Multi-Media Classroom: A QuickStart Card." *Computers in the Schools*, Summer 1987, pp. 5-30.

D'Ignazio, Fred. "Bringing the 1990s to the Classroom of Today." *Phi Delta Kappan*, September 1988, pp 26-27.

Rentschler, Nancy, and Lynn Murphy. "Teaching in the Multi-Media Classroom." *Teaching & Computers*, November/December 1988, pp. 18-23.

Richards, Meredith. *Guide to Classroom Publishing*. New York: Scholastic Inc., 1988.

Strange, J.H., et al. *Alternative Approaches to Developing a Cadre of Teacher Technologists*. (Report to the U.S. Congress Office of Technology Assessment.) May 1988, pp. 33-43 and Appendix A.

Multimedia Software

The following software programs can be used for the multimedia publishing activities described in this guide. The first section, "Scholastic Multimedia Software," describes programs developed by Scholastic Inc. The next section, "Other Recommended Multimedia Products," describes multimedia software and circuit boards produced by other leading publishers.

Unless otherwise noted, all these products can be found in the Scholastic Software Catalog. To request a catalog, or to order the programs, contact your local Scholastic Representative or Scholastic Authorized Education Dealer, or write: Inquiry Department, Scholastic Inc., P.O. Box 7502, 2931 E. McCarty Street, Jefferson City, MO 65102. Order toll-free by dialing 800-541-5513. In Missouri, call 800-392-2179.

Scholastic Multimedia Software

The Bank Street Writer® III An easy-to-use, yet sophisticated word processing program with a fully integrated spelling checker and thesaurus, pull-down menus, and programmable function keys. The AppleTalk® network version includes electronic mail.

ESL Writer™ A word processing program for students of limited English proficiency. It includes an ESL-focused grammar checker and a spelling checker to meet the special needs of Hispanic and East Asian students.

First Draft™ A prewriting tool that helps generate, process, and organize ideas into final outlines. As a "thought processor," this program can help students brainstorm ideas for multimedia projects including outlines for scripts, news and magazine articles, stories, and reports.

HyperScreen™ A hypermedia program that can be used to create interactive, self-booting lesson disks. It is easy to use and does not require skill in programming. A lesson created with *HyperScreen* can branch to a video display (e.g., material from a videodisc), and then back to the software program. *The Apple II Video Overlay Card* is compatible with *HyperScreen*.

The versatility of *HyperScreen* can be expanded with the seven Scholastic Graphics and Sound Booster Packs™: *Holidays & Special Events, People & Places (U.S. History), Science & Technology, Science Fiction, Mystery, Adventure,* and *Everyday People. Slide Shop* and *Super Story Tree* clip art can also be used with *HyperScreen*.

Microzine Jr. and **Microzine**® Curriculum-based software series. Each issue of Microzine Jr. and Microzine, the acclaimed "Learning Libraries on Disk," comes with four separate programs that help students develop reading, writing, math, science, and social studies skills, along with critical-thinking and problem-solving abilities. Issues 22 - 31 of Microzine and 1 - 5 of Microzine Jr. each include a publishing application.

Microzine Jr. classroom publishing applications: Premier Issue — *Storybook Maker;* Issue 1 — *Mask Maker;* Issue 2 — *Graph Maker;* Issue 3 — *Going Dotty;* Issue 4 — *Jigsaw Puzzler;* and Issue 5 — *Board Silly.*

Microzine desktop publishing applications: Issue 22 — *NewsPrint;* Issue 23 — *Greetings!;* Issue 24 — *Banner Maker;* Issue 25 — *Blueprint Maker;* and Issue 26 — *Certificate Maker.*

Microzine classroom publishing applications: Issue 27 — *Rebus Maker;* Issue 28 — *Stationery Maker;* Issue 29 — *Screen Artist;* Issue 30 — *Poster Maker;* and Issue 31 — *Presenting!*

Scholastic Slide Shop™ A program for creating "slide shows" on self-booting show disks. Students can design their own screens using clip art, backgrounds, borders, fonts, music, and sound effects provided by the program. Then they can create a script for their slide show that sequences the screens and inserts dramatic special effects after each screen. *Slide Shop* is also useful for producing lesson disks, "audiovisual aids" for oral presentations, video title and credit screens, and for creating illustrated pages in student-produced books. The *Apple II Video Overlay Card* is compatible with *Scholastic Slide Shop*. The same Booster Packs that are available for *HyperScreen* can also be used with *Slide Shop*; additionally, *HyperScreen* and *Super Story Tree* clip art also can be used with *Slide Shop*.

Scholastic SuperPrint® **II** A printing program with graphics that can be printed very small, or up to six feet tall. With *SuperPrint II* you can create Big Books, posters, cards, dramatic sets and backgrounds, and exciting bulletin board decorations, to name just a few applications. You can create your own graphics or use the program's clip art. Additional graphics "libraries" provide hundreds of additional characters, illustrations, and borders. These libraries include four curriculum-specific Graphics Activities Packs and four Graphics Packs. Graphics Activity Packs: *I. Early Learning; II. U.S. Maps; III. World Maps;* and *IV. Clifford, The Big Red Dog*®. Graphics Packs: *I. Resource Graphics; II. Famous Places & Times; III. Holidays & Parties;* and *IV. Special Events.*

Success with Writing™ A writing program that encourages students to use the process approach to writing. It is designed to support the four key stages of the writing process: Prewrite, Arrange, Compose, and Edit/Evaluate. The program includes extensive off- and on-line activities to give students complete support and a variety of writing experiences.

Super Story Tree™ A program for writing and reading "interactive stories," complete with graphics, text, and sound, on self-booting disks. An interactive story lets students make choices that determine the way a story branches and unfolds. The same Booster Packs that are available for *HyperScreen* and *Scholastic Slide Shop* can also be used with *Super Story Tree* and *HyperScreen*. Additionally, *Slide Shop* clip art can be used with *Super Story Tree*.

Talking Text Writer™ A highly effective reading and writing program that has been used successfully for the past five years in classrooms throughout the country. *Talking Text Writer* combines the best features of a word processor with the "magic" of a speech synthesizer.

Other Recommended Multimedia Products

Apple® II Video Overlay Card A circuit board that enables students to add computer graphics to video images coming from a video camera, VCR, or videodisc. A student can use this card to create fancy video effects just like those seen on television, including graphics titles underneath persons appearing in the video, colorful boxes and borders around the video, and illustrated images appearing alongside live images of people, animals, etc.

For more information, contact Apple Computer, Inc., 20525 Mariani Avenue, Cupertino, CA 95014, (408) 996-1010, or contact your local computer dealer.

The Children's Writing & Publishing Center™ A desktop publishing program that enables students to work with word processing, picture selection, and page layout. Information is provided on how this program can be integrated into the writing, literature, mathematics, science, and social science curricula. On- and off-line activities are included.

ComputerEyes™ A circuit board that gives a computer the capacity to "freeze" images from a video camera, save them on disk, and decorate them with computer graphics using a program such as *Slide Shop* or *SuperPrint II*.

Deluxe Paint® II A graphics tool that, with ease and precision, can be used to create works of art. Custom "brushes" can be made and saved, color palettes mixed, and on-screen animation can be created, among other capabilities.

Fantavision™ A computer animation program that enables novices to create flashy animated effects, titles, and credits that can be transferred onto videotape.

For more information or to order, contact Brøderbund Software, Inc., 17 Paul Drive, San Rafael, CA 94903-2101, or call (415) 492-3200.

FingerPrint® A circuit board that enables students to capture and print out any graphic image that appears on the computer screen. These images can go into a slide show created with a program such as *Slide Shop*.

Medley™ A word processor with artwork and page layout capabilities. It includes the ability to wrap words around any object or shape, a 500-picture clip art disk, and an on-screen Thesaurus.

For more information or to order, contact Milliken Publishing Company, 1100 Research Boulevard, P.O. Box 21579, St. Louis, MO 63132, or call (800) 643-0008.

The Newsroom™ A desktop publishing program that provides everything you need to publish a classroom newspaper. The program includes a text editor and a selection of fonts, borders, shading tones, and clip art. In addition, you can create your own illustrations and decorations. Additional collections of clip art can be purchased and a more sophisticated version of *The Newsroom* is also available — *The Newsroom Pro*.

Pelican's Graphics Converter™ A program that converts graphics and fonts from *The Print Shop®* for use with *Scholastic SuperPrint II*. It also enables you to convert *Super Story Tree*, *HyperScreen*, *Scholastic Slide Shop*, and Booster Pack clip art for use with *SuperPrint II*; to convert *SuperPrint II*, Graphics Pack, and Graphics Activity Pack clip art for use with *Super Story Tree*, *HyperScreen*, and *Slide Shop*; and to convert a digitized image (from *ComputerEyes*) into a *SuperPrint II* background.

Publish It! 2™ A full-featured desktop publisher with word processing, graphics, and page layout. The computer screen displays exactly how your printed page will look. Icons, pull-down menus, and scroll bars make the program especially easy to use. There are over 1200

possible type-style combinations from which to choose, a graphics tool box, and the capability to import graphics.

Springboard Publisher™ A desktop publisher with word processing, an extensive graphics library, and flexible page design. Original graphics can be created. The program uses pull-down menus to help enter and edit text. Use of a mouse is strongly recommended.

ThunderScan® A program that "magically" converts an *ImageWriter*® into a scanner. Housed in a component that looks like a ribbon cartridge, the electronic eye uses the printer's positioning system to scan a page that has been rolled into the *ImageWriter*.

VCR Companion™ A program that allows a student to "script" a sequence of video title images and to record the titles onto videotape.

For more information or to order, contact Brøderbund Software, Inc., 17 Paul Drive, San Rafael, CA 94903-2101, or call (415) 492-3200.

The materials listed in this guide represent just some of the multimedia products available today. For more information on multimedia software and hardware, consult any of the various educational computing and media magazines, and amateur video magazines.