

EDUCATOR'S GUIDE TO

Macintosh Applications

POWERPOINT

Spreadsheets

MICROSOFT WORKS

Operations

SKDRAW



Desktop Publ

Database

IS PAGEMAKER

ARNIE H. ABRAMS

Includes tutorials on DeskDraw™ and DeskPaint™,
Microsoft Works™, Aldus PageMaker™,
and PowerPoint™

EDUCATOR'S GUIDE TO
MACINTOSH
APPLICATIONS

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CHAPTER 1

Introduction and Overview

Overview

This book has two main purposes. First, it can serve as a painless way to learn how to use a computer. You will get a hands-on introduction to using the computer for personal productivity via extensive guided experience with Macintosh computers. Second, you will discover methods of applying computers to all phases of conducting a research project: from researching and writing the report, to laying it out and illustrating it, and finally to presenting it. This Computer Assisted Research Project (C.A.R.P.) can be applied to numerous purposes, including term papers, theses, and research project presentations.

In this book, you'll start from ground zero; no previous computer experience is needed. The book is divided into tutorials which can be worked through in any order. However, I urge everyone to begin with the first three chapters, including the tutorial in Chapter 3, *Getting Started on the Macintosh*. That chapter lays the foundation for efficient use of the Mac. If you're new to computing, it will be essential reading for you. If you've used other types of computers, you'll find that working through Chapter 3 will make it easy for you to pick up the operation of the Mac. Even if you are an experienced Mac user you'll find some new tricks and tips in the chapter.

It is important to note the brevity of each chapter. The goal is to teach you each of these applications in three to six hours of use. As Mark Twain once said, "I would have written you a shorter letter if I had the time." The intent is to get you up and running on these computer applications quickly and, I hope, fairly painlessly. This book does not aim to be an exhaustive reference for the programs it teaches. For that purpose you are referred to the programs' manuals and reference guides. The intent here is to introduce you to most of the functions of the programs in a very straightforward manner by having you work on sample projects. In my experience as a college professor and computer trainer I have found that people hate to read manuals. How many of us really have the time to work through a 500-page manual? I have found, however, that most people are willing to work through twenty or thirty pages. Therefore, these tutorials trade complexity and thoroughness for conciseness and speed.

This book uses a tutorial approach. Except for Chapters 1 and 2, the book is not designed to be read away from the computer. In fact, doing so would probably only confuse you. This book is about **DOING** computing, not reading about computers. Completing the tutorials, or portions of

them, a second time is highly recommended. The intent in this book is to steer clear of technical jargon. Learning to use a computer is much like learning to ride a bicycle; it's not inherently difficult, but it does take practice. My advice is to practice, practice, practice, and then apply what you've learned.

Using Computers for Teaching and Learning

As we move firmly into the information age it becomes apparent that finding, organizing, and presenting information are skills that are needed not only by the professional researcher, but are necessary for all students, from grade school to adult learners. In addition, many careers will require the creation of reports and the presentation of information to colleagues and superiors. This book will give you the tools to prepare and present your reports in a very professional manner, using the efficiency of the desktop computer and such powerful technologies as **CD-ROM, laser printers, and LCD panels.**

In the introduction to each tutorial in this book is an overview describing the use of that chapter's application for teaching and learning. These discussions address elementary school use, secondary school use, applications for college and adult learners, applications as tools for the teacher, and limitations. For more specific ideas about using these programs in the classroom, be sure to read Appendix F, Twenty-Five Classroom Microsoft Works Tips.

A junior-high school teacher once told me a poignant story relating to the impact of computers on teaching and learning. He gave a writing assignment designed for his seventh-grade English class. One student inquired if she could use her parents' computer to word process the composition. The teacher said certainly. When the student received the story back with the spelling mistakes marked in red, the student asked permission to use the spelling checker and thesaurus on her parents' computer. On the third draft the student used a grammar checker to help fix her grammatical errors. The teacher pondered if this was fair in an English class. His view of his teaching role began to change. He reasoned that if the computer could assist with some of the mechanical aspects of the writing process, then students could concentrate more on the creative aspects. Students could work "smarter, not harder."

This story is a quintessential example of the change in thinking many educators have gone through in the last ten years concerning using computers in their classrooms. They now view a computer not as a teaching machine but as a tool to let students and teachers concentrate on higher-order thinking skills and creative work. The applications taught in this book promote this "tool use" of the computer for both the student and the teacher.

The primary use of computers in elementary schools has been for computer assisted instruction (CAI), but a recent trend is to have even young children use the computer as a tool. Specially designed, simplified application software has made it practical to introduce word processing, database management, and even desktop publishing to students as early as second grade. The programs used in this book, however, were not designed to be used by children in the primary grades.

Students in secondary schools should in general be able to learn to use the programs in this book (assuming that their teachers can learn them first!). It is important to develop lesson plans and tutorials for teaching these students, and it is equally important to point out ways that they can apply these new skills to their school work. Some of the benefits of computers in the classroom that have been cited in the research include individualizing instruction, appealing to different learning styles, increasing interactivity, fostering cooperative learning, and improving student motivation. The programs in this book are designed to encourage learners to experiment in a risk-free environment. This in turn develops logic and problem-solving skills.

For college and adult learners, using computer applications is almost mandatory (and, in fact, it is mandatory at many colleges). The creation of term papers, research reports, art projects, and in-class presentations will be fostered by using the programs taught in this book.

Perhaps the most apparent use of the computer in the classroom is as a tool for the teacher. Computer applications can save teachers time, give their work a more professional appearance, and let them try out new teaching methods.

There are some problems and limitations, however, in introducing the computer into the classroom. Limited access to computers, outdated hardware, lack of training, and teacher resistance have all been cited as roadblocks to computer integration. Another problem is the lack of models for integrating computers into the instructional process. But, as our society becomes more entrenched in high technology, all of these roadblocks will surely be overcome. Specific limitations in using the individual applications in this book are discussed in the introduction to each tutorial.

Conventions Used in this Book

Throughout this book we will use different typesets to identify certain types of terms. The key to the use of these styles is as follows:

- Bold Type** = New terms, which are described in the glossary.
- Italics* = Things you type in plus file, folder, and disk names.
- Bold Italics*** = Menu names and items, window names, and actions you take via menu items, Command keys, dialog buttons, or tools.

Appendix A has a printed reference of all the application's menus used in each tutorial.

Goals—Skills—Objectives

This book does not claim to offer you total mastery of the skills you will be taught. An entire book could be devoted to the subject of each chapter (and numerous such books do exist, usually sitting next to computers and gathering dust). What this book offers is a first and second step. The first step is exposure; you will work with many sample files that demonstrate the productive use of the program you are working with. Each tutorial

includes application examples from education or personal productivity. For example, in the **database** tutorial you will work with a file on whales, which you could use in a science curriculum, a file on business contacts, and a file for keeping track of a collection of musical recordings. The second step is practice. You will get extensive hands-on experience using the programs. The book starts with basic machine operation and moves to advanced applications such as **desktop publishing**.

What is a C.A.R.P.?

A great culmination of your experiences with this book would be for you to complete a Computer Assisted Research Project (C.A.R.P.). This is a fancy way of saying that you would complete some type of report in which you used the computer in all phases of preparation and presentation. Let me explain how I use this assignment in my computer classes. The report may be on any subject the student wishes. It does not have to be on a topic in the area of education or technology (although this is certainly not discouraged). Students may turn in their report for use in another class, but they need to make sure this does not cause problems with the other instructor. The report does not have to involve research, but it should be of an academic nature and of college-level quality. In my classes students are not graded on the content of their reports. The paper needs to be at least four pages in length and should be free of spelling mistakes (they learn how to use a spelling checker in the tutorials). The paper must first be word processed, and then the text and illustrations must be imported into PageMaker. Students create attractive covers for the reports and on the last day of class present summaries of their reports using their Power-Point presentations on a computer with an LCD panel and an overhead projector. They must also produce handouts and speaker's notes in Power-Point.



Scope and Projects

Each chapter begins with some general concepts about that chapter's program as well as ideas for its practical application. Each tutorial also includes example files to work on from education and personal productivity

and concludes with an exercise. In addition, a second assignment could be the completion of that portion of readers' own research reports using that application. For example, the word processing chapter would entail word processing the text of the research report, while the desktop publishing chapter would involve laying out the report for publication. I hope the capstone experience for users of this book will be the creation and presentation of their own research reports. Listed below are the general content of each chapter and some sample criteria for your own computer assisted research project.



Getting Started on the Macintosh

This chapter provides instruction in the basic operation of the Macintosh, with special emphasis on the **Finder** and file management. The activity for this tutorial is to **back up** the data disk that comes with this book; this involves moving and copying **files** and **folders**. Another activity is to fill in the answers to an exercise called Test Your Macintosh I.Q. on the computer.



Word Works

This chapter introduces the learner to word processing via the use of Microsoft Works. Generic word processing concepts are covered as well as some ideas on the power of word processing in the writing process. The chapter concludes with an exercise in which the learner creates a document and then makes numerous changes. For their C.A.R.P. activity, students would word process the text for their reports. Each report would be effectively formatted, at least four pages in length, and have no spelling errors.



Producing Pictures

This chapter fully explores both a **paint program** and a **draw program**. In this chapter are assignments to recreate a series of charts in DeskDraw and a couple of pictures in DeskPaint. Students doing the C.A.R.P. should create a handsome cover for the report and also include at least two illustrations or charts within the text. The graphics do not need to be great works of art or have enormous detail but should exhibit the use of a full range of graphics tools, including fills, duplicating, and alignment. The emphasis is not on artistic development but on using the efficiency and power of computer graphics.



Doin' Data

The power of **database management systems** is experienced in working with numerous data files. The chapter concludes with an assignment for the learner to create an original database from scratch. Students could organize their research sources using a database file.



Knowin' Numbers

This chapter teaches the **spreadsheet** application of Works. During the tutorial, learners create several spreadsheets and chart the data. At the end of the chapter students are challenged to create their own spreadsheets from scratch. The emphasis is not on employing the full power of spreadsheets but on getting an idea of their utility. For their research projects students could place statistical data in a spreadsheet and then chart it, later placing the charts in their published report.



PageMaker 4.0

Painless PageMaker

The amazing capabilities of **desktop publishing** are explored in this tutorial, which works with most of the features of PageMaker. Along the way, students work step-by-step with text and graphics to put together and format a report. An assignment at the end of the chapter has the learner recreate a preproduced layout. For their C.A.R.P.s, students will put their research text and illustrations together into final layout form.



PowerPoint

Presenting PowerPoint

In this tutorial, students will create both handouts and speaker's notes as well as prepare an on-screen presentation. The assignment in the chapter has them piece together a presentation from provided elements, while the C.A.R.P. project would require them to create a presentation of their research report.



Appendices and Glossary

The book concludes with a series of appendices and a glossary. The appendices include a collection of the menus used in the tutorials, a sample C.A.R.P. report, information about converting MS-DOS files to the Macintosh, using on-line references, and other software, and tips for using Microsoft Works in the classroom.

In addition to the exercises mentioned above, it would be desirable for students doing research reports to get some experience working with information retrieval via CD-ROM or an **on-line database**. In my classes, students are required to do an electronic search and find at least four applicable references for their reports. The reference desk at most college libraries will be able to provide students with access to the **ERIC database**, **InfoTrack**, and a host of other databases.

The Learning Curve

In training circles we speak of the learning process as a learning curve. Navigating the learning curve is like driving down a road. Sometimes it is steep and difficult and other times level and easy. In these tutorials it may seem at times that the road is steep, but you should remember that you will need to practice and apply your skills. Be assured that these skills get easier as you practice them. The beauty of the Macintosh is that most of the programs function very similarly and intuitively, so that after you learn a few initial techniques your continued education will become much easier.

Step-by-Step Learning Approach

These tutorials lead you step-by-step through the programs. Be sure not to skip steps or pages. If you do, the exercises may not work properly. If you get really fouled up, go back a page or two and start that section over. Don't worry, nothing you type will damage the computer. If your data files get corrupted, you will have a backup set to use.

Work at your own speed. Don't try to memorize the commands; that will come in time, and you can always refer to these tutorials or other ref-

erences. A reference sheet of each application's menus is included in Appendix A. Another suggested technique when beginning to learn any software is to pull down each **menu** and examine the commands, but do not try them. Chances are, you will be familiar with many of the program's commands.

An especially effective way of using these tutorials is to have someone read them to you while you work at the computer. Working in pairs is also a good way to verbalize your practice procedures and to solve problems cooperatively.

Where to Go from Here

Completion of this book should represent not an ending but a beginning. If there's one thing that computer veterans agree on, it's that there's always more to learn: new versions of software, new programs, new computers. You may want to continue your computer education with explorations of **multimedia**, **telecommunications**, programming, or the Next Big Thing on the market. The field is constantly changing and expanding. You may want to work through an independent study book or take classes or workshops. Consider attending conventions or professional seminars. Local **user groups** are a great source of information and training. And, finally, if you haven't already done so, you may be tempted to take the plunge and buy your own Mac.

Overview of the Software Covered

Let's take just a moment to get an overview of the programs you'll be using with this book:



Microsoft Works

Microsoft Works is an **integrated software package**. It contains a word processor, database management system, spreadsheet, charting ability, graphics module, and telecommunications program. For most users, 90 percent of what they'll use a computer for can be found in this one relatively low-cost program. In this book we'll be exploring the word processor, database, spreadsheet, and charting abilities of version 3.0 of the program. Microsoft Works is rapidly becoming the most common program used in public schools. It offers a good compromise between simplicity of learning and sophistication of features. For very intensive use, a more powerful dedicated program such as Microsoft Word or Excel may be needed, but Works is remarkably robust for most applications, and its ability to mix or integrate data between modules is a big plus. Microsoft offers special academic pricing of their products through most college bookstores. Microsoft Works is also available in versions for **MS-DOS** and **Microsoft Windows**. Similar integrated software packages for the Mac include ClarisWorks, WordPerfect Works, and GreatWorks.



PageMaker

PageMaker, published by Aldus, is the most popular **desktop publishing program** on the market. It is also available in an IBM version. PageMaker is a very powerful program, and we'll only have space to offer you a basic working knowledge of it in this book. You might want to follow up with intensive practice and more detailed instruction. This book uses version 4.2 of PageMaker, but it also addresses differences in version 5.0. Other desktop publishing programs on the Mac include QuarkXPress, FrameMaker, and Publish-It Easy. In addition, some word processing programs such as Microsoft Word and WordPerfect offer limited desktop publishing capabilities.



DeskDraw and DeskPaint

DeskDraw and DeskPaint, which are published by Zedcor, are full-function graphics programs. They come bundled together and can be purchased for an extremely low price in relation to other graphics packages. They offer most of the features of more expensive graphics packages: full color support, special paint effects, and multiple windows. They use a small amount of memory so you can keep them open while you are working on other applications. You can also use the graphics module in Microsoft Works 3.0, but it offers only a draw program and not a paint program. We have used version 3.08 of DeskDraw and 3.54 of DeskPaint in this book. These programs are not available for the IBM platform, but most graphics programs are very similar in operation. For very sophisticated graphics, users may want to use a **PostScript** graphics program such as Adobe Illustrator or Aldus Freehand.



PowerPoint

PowerPoint is a **desktop presentation program** also published by Microsoft. It can be used to generate overheads, slides, speaker's notes, handouts, and on-screen presentations. It incorporates Apple's QuickTime technology, which allows you to import digital film clips into your presentation. We have used version 3.0 for this tutorial. Similar programs include Aldus' Persuasion and Symantic's More.

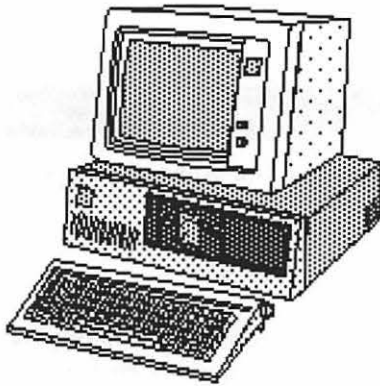
Logistics for Completing These Tutorials

Using Different Software Versions or Other Programs?

What if the software you are using is a different version of the programs in this book? In general, the tutorials should still hold up, but some specific instructions may be incorrect. When a software company releases a new version of its software it usually just adds features or performance capabilities rather than changing how the program operates. Therefore, you may have fewer or more features if you use different software versions than the ones in this book. By the way, here's a little background on how to interpret software versions. Software is numbered with two or sometimes three digits, such as Works 3.0 or System Software 7.12. A change to the left of the

decimal point marks a major revision of the software (where you need to pay for the upgrade). When Microsoft went from Works 2.0 to 3.0 it dramatically changed the program. A change to the first number to the right of the decimal point is an incremental improvement to the program (an upgrade is often free in this case). For example, PageMaker went from 4.0 to 4.2. A change to the third digit represents a small change, usually fixing a bug in a program.

The good news for Mac users is that once you learn one brand of **application** you can usually figure out other brands of that application. For example, if you have SuperPaint instead of DeskPaint, you'll be able to pick it up pretty quickly because the basic concepts and operations will be similar.

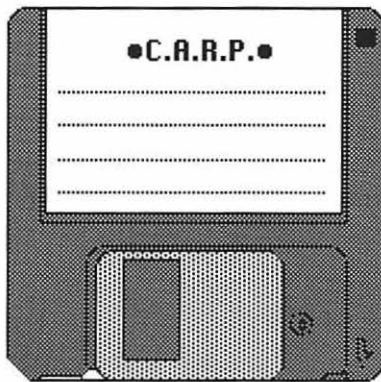


Committed to IBMs?

What if you're committed to the IBM platform? There's more good news. If you run Microsoft Windows on your PC, most of the programs in this book will run 99 percent the same in their Windows versions. Microsoft Works, PageMaker, and PowerPoint are available for the Windows platform; you can even interchange their files between the Mac and the IBM. DeskPaint and DeskDraw are not available for the IBM, but there are many IBM graphics programs which function similarly.

Managing Your Files

You should keep a **backup** copy of your data disk so you can replace the original if it gets lost or damaged and so you can go through the tutorials a second time if you wish to. **AT THE CONCLUSION OF CHAPTER 3 YOU WILL LEARN HOW TO MAKE A BACKUP COPY OF YOUR C.A.R.P. DATA DISK. DO NOT PROCEED PAST CHAPTER 3 BEFORE DOING SO.** Since the C.A.R.P. disk is almost full, we will have you break it into two different disks so you will have space to save your exercises on the same disks. If you decide to do a Computer Assisted Research Project, you will want to have a blank disk to save that work on.



Caring for Disks

The floppy disks that you use in your Macintosh are surprisingly durable, but there are a few things you can do to increase the security of your data. As noted before, you should always have a backup copy of important disks. The biggest enemies of disks are heat, moisture, and magnetic fields. If you leave your disks in the hot sun they may warp. Keep your disks away from any liquids. Strong magnets such as the ones found in television sets, telephones, and speakers can scramble your data, but it's generally accepted that the security "x-ray" machines used in airports, libraries, and some stores will not corrupt the data on your disks. In fact, in an experiment, a library taped a disk directly on the gate of their security system. After three years, the disk still worked perfectly.

If you slide the metal gate on a floppy disk open and touch the magnetic material with your fingers you can damage the disk. Dirt can also work its way into the disk's mechanism and make the disk unusable. It's a good idea to get a small case for the disks you are carrying around.

Working in a Lab or on a Network

Things may be just a bit different if you do the tutorials in this book in a computer lab and/or on a computer connected to a **network** system. The primary difference is that you may need to access the software from a central **file server** rather than an individual hard disk. Equally important is the fact that you will want to **SAVE ALL OF YOUR WORK ON YOUR OWN FLOPPY DISK** and not on someone else's **hard drive** or network. Some labs may have security systems which prevent you from saving on the hard drive; this can pose some problems in the next chapter when we teach you how to copy files. Some systems may not have the help files or dictionaries installed that the software in this book uses. All of these problems should be minor, and in any instance your lab supervisor or network administrator should be able to provide you with assistance.

MacTruths

In closing this chapter, let me give you a few overriding principles concerning Macintosh computing.

1. Have fun!

You're going to spend a great deal of time sitting in front of a computer. No one says it has to be drudgery. Although computing may not be as much fun as going to the beach, you can still marvel at its efficiency and wonder at your increased productivity. The greatest advantage for children using the computer may be its motivational factor. Work and fun can go together. View your learning as an exploration.

2. Easy is hard.

Some computer veterans foster the attitude that the harder something is to deal with, the more advanced it is. As Arthur Naiman says in the *Macintosh Bible*, "Actually, it's very hard to make things easy. The more work you put into something, the less work the person who uses it has to do. Easy is powerful. Hard is primitive."

3. Start small.

The Mac may be user friendly, but learning its software is still not simple. Don't feel that you need to learn every Macintosh program. Start small and concentrate on just a few programs.

4. Don't worry, you won't break anything.

Short of spilling something on it, there isn't much you can do to damage the computer. If things get really fouled up, simply restart the computer.

5. Save at least every fifteen minutes.

Even if you do nothing wrong, things can still go afoul. This is the dreaded world of **system errors**, **crashes**, **bugs**, and **glitches**. Although the Mac is

pretty reliable, errors still happen. If the computer crashes you will lose your work unless it's saved on a disk. It's awful to lose your creative efforts. I recommend that you get into the habit of saving every fifteen minutes. If the computer crashes, you will then only lose a few minutes of work.

6. Back it up.

Even if you save your work frequently, you can still lose data. Disks can become damaged (both floppies and hard disks). Make a copy (a backup) of important disks.

7. Know where you're saving.

If you work in a computer lab, it is essential to save your work on your own floppy disk and not on the institution's hard disk or network. In the next chapter you will learn how to set the save destination.

8. "Select then affect."

An important rule of the Mac is that you must select something before you modify it. For example, you must first select some text before you can format it, or you must first select a graphic object before you can resize it.

9. Don't steal.

It's very easy to make illegal copies of software, but you put yourself and your organization at risk by doing so. Support the creative efforts of software designers by compensating them.

10. Concentrate on concepts not specifics.

The goal of this book is not for you to memorize computer commands. Try to look at the big picture. Once you know how to use one word processor, it will be easy to transfer those skills to using another Mac word processing program. So whether you switch to ClarisWorks, WordPerfect, SuperPaint, or most other applications, you should be able to pick them up quickly after learning the concepts in this book.

The next chapter gives a quick overview of some of the issues in dealing with Macintosh hardware and an understanding of just a tiny bit of computer terminology (*technospeak*). After that, I promise you, we'll get you started working on the Macintosh.

CHAPTER 2

Hardware Issues

Before we look at specific Macintosh hardware, let's take a quick look at some general computer concepts. I like to think that this is just enough **technospeak** to protect yourself in a computer store.

Memory

0 1

01000001=A

A computer is a **digital** device. All of the information (data) it handles is converted into a series of 0s and 1s. These digital data can represent text, graphics, sound, or even video. The smallest unit of information a computer handles is called a **bit**. The term bit stands for a binary digit, referring to the binary nature of computers: power is either allowed to flow through an electronic switch (represented by a 1) or stopped (0).

A combination of eight bits equals one **byte**. Generally speaking, each stroke on the keyboard is represented by one byte. It's much like the old Morse code of the telegraph system. Each letter, number, or symbol on the keyboard is coded into a unique series of eight bits (represented by 0s and 1s). For example, 01000001 represents the uppercase A. A group of about a thousand of these bytes (1024 to be exact) is called a **kilobyte** or **K**.

Computer memory, disk space, and document size are measured in terms of kilobytes, **megabytes**, and even **gigabytes**. A page of plain text takes up about 3 K, but graphics and sound take up much more space. When people talk about an 800K disk, they mean it can hold about 800,000 bytes or characters. The earliest Macs had only 128 K of **random access memory (RAM)**, but now all Macs are sold with at least 4 megabytes of RAM. A megabyte (or meg or MB) is 1024 kilobytes (or about one million bytes).

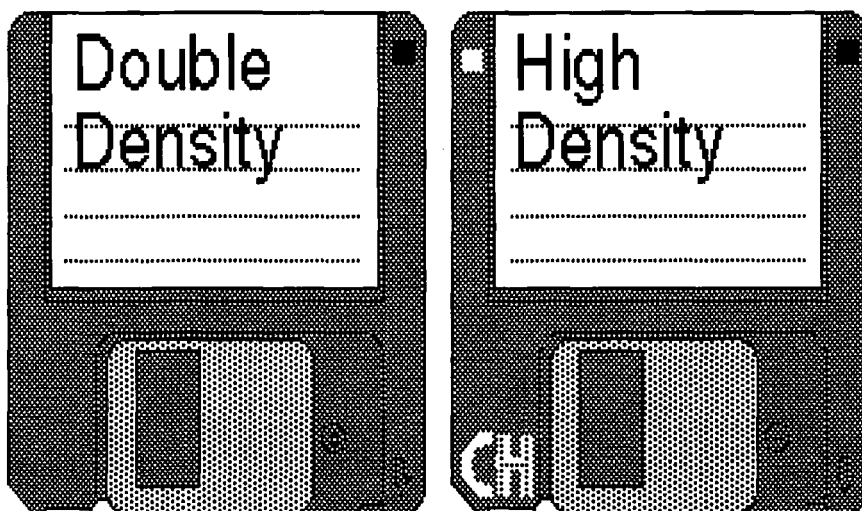
Now that we have been casually dropping the term RAM, we'd better explain what it means. There are two types of computer memory, RAM and **ROM**. ROM refers to read only memory. These are the permanent instructions built into the computer's chips; the user can't change them. These include the number of colors the computer can display, the sounds it makes, and basic arithmetic functions. We don't normally measure ROM. What is more variable is RAM or random access memory. This is user definable memory. As you type on the keyboard or load a program in from a disk, the information is held in RAM. Think of this as a holding tank. The bigger the tank (more RAM), the more data you can work with at one time. RAM is thought of as soft memory; it's only in the computer's memory

until the computer is turned off or someone trips over the plug. There's only one way to make these data more permanent. You guessed it! Save the information on a disk. If the plug gets pulled or the computer crashes (stops working) you can always load the information back into RAM from your disk. In these tutorials remember to save often. By the way, when you load information from your disk into RAM, the computer actually makes an electronic copy of your data and places it into RAM. Your original file is still on your disk and only gets changed when you resave the file.

Storage

Floppy Disks

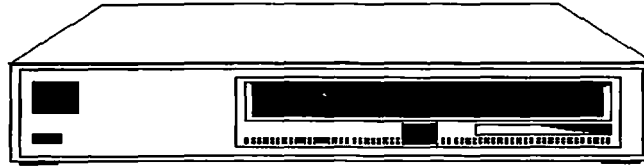
Now that you've been badgered into saving often, let's discuss the various storage media. The Macintosh uses 3.5 inch floppy disks. These come in two different types: **double density**, which hold 800 K (remember kilobytes?), and **high density**, which hold 1.44 megabytes. You can tell the disks apart because the high density disk has two holes on the top, while the double density disk has only one. Be aware that some older Macintosh models cannot read high density disks, while all can read double density. When you buy a brand new floppy disk it is not **formatted** (or **initialized**). There is no indication of whether it is for the Macintosh or IBM platform. In the next chapter you will learn how to format a blank disk on the Mac.



Hard Disks

A **hard disk** is a series of rigid platters that can hold great amounts of data. Macs come with a built-in hard disk, but you can also buy external hard disk drives to fit under or beside your computer. Either way, hard disks are not removable; they are a permanent part of your computer system. The smallest Mac hard drives commonly found hold 40 megabytes of data, but it's increasingly popular to buy drives with 80 MB, 160 MB, or more. Most

powerful programs such as Microsoft Works and Aldus PageMaker must be run from a hard disk.



Removable Cartridge Drives

If you need to transport really huge files you can buy drives that use **removable cartridges**. These have as much if not more capacity than hard disks, but they are removable. The cartridges are not much larger than a floppy disk. Some of these cartridges use a magnetic system (tape), and others use an optical system (disks). Removable cartridge drives are often used for storing complex graphics or multimedia presentations.



CD-ROM Drives, or What's a Gigabyte?

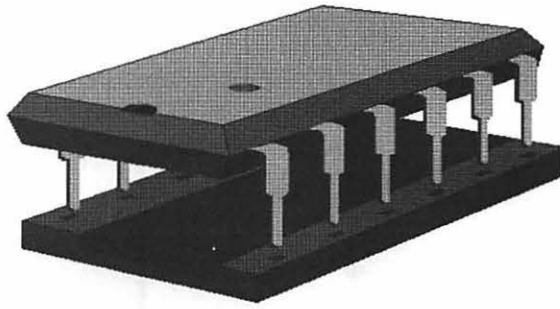
A CD-ROM (Compact Disk Read Only Memory) can hold almost 1,000 megabytes (a gigabyte or a billion bytes) of data. A CD-ROM disk looks just like an audio CD; in fact, most CD-ROM drives can also read music CDs. The data on a CD-ROM is read by a laser beam. Most CD-ROM drives are external, but a few new Mac models offer built-in drives. Because of the mind-boggling storage capacity of CD-ROMs, they are gaining popularity as the best medium for storing large databases of information, such as a whole encyclopedia set or enormous **clip art** collections. But there are two drawbacks to CD-ROM. First, as the name implies, they are read only, so you cannot write to or change the information on the disk. The second problem is that CD-ROM drives are relatively slow in reading data, thus they have some problems in multimedia applications.

Well, this is starting to sound like Computer Literacy 101, so let's look specifically at the world of Macintosh computers.

Macintosh Models

The first Macintosh was introduced by Apple Computer, Inc., in 1984. It was revolutionary for its graphical user interface and ease of use. In the last couple of years a dizzying number of Macintosh models have been introduced. The primary differences among the various Macs are their processor speeds and memory configurations.

Microprocessor Speeds: The "brain" of any microcomputer is its **central processing unit (CPU)** or microprocessor. The CPU is a silicon chip which is mounted on an integrated circuit. Generally speaking, the faster the speed of the processor, the faster the computer works. This is most evident in intensive applications such as desktop publishing and multimedia. Macintosh computers have been built using the Motorola 68000 series



of microprocessors, with speeds ranging from 16 to 40 megahertz. In 1994, Apple, working jointly with Motorola and IBM, introduced the PowerPC chip, with speeds from 60 to 100 megahertz. Some older Macs can be upgraded to use PowerPC technology. It now appears that Apple's strategy is to group Macintosh models into the following families:

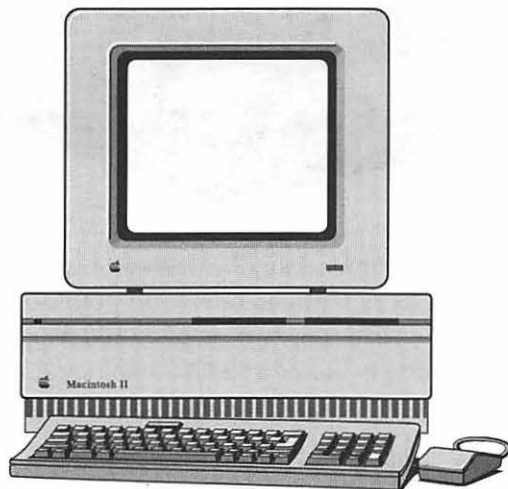
- **Power Macintosh:** The most powerful and fastest Macs, incorporating the PowerPC chip. The newest generation of Macs.



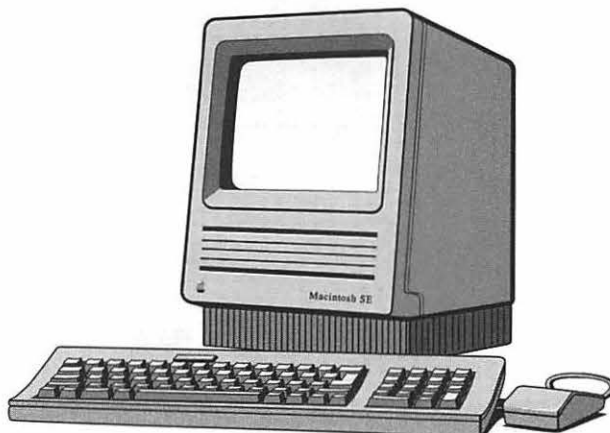
- **Quadra:** Powerful Macs geared for business and professional applications. Uses the Motorola 68040 CPU.



- **Mac LC:** Geared to the educational market. Less costly and not quite as powerful as the Quadras.



- **Performa:** Sold through department stores and aimed at the wants and prices of the home market.



- **Powerbook:** Laptop computers for portable use. Also includes the Powerbook Duos, which "dock" into a desktop Macintosh system.



Apple has discontinued many models of Macs including the SE and the IIsi. But even if you have an older Mac, most software will still work on it, although perhaps not as efficiently as on the newer, speedier Macs.

System Software

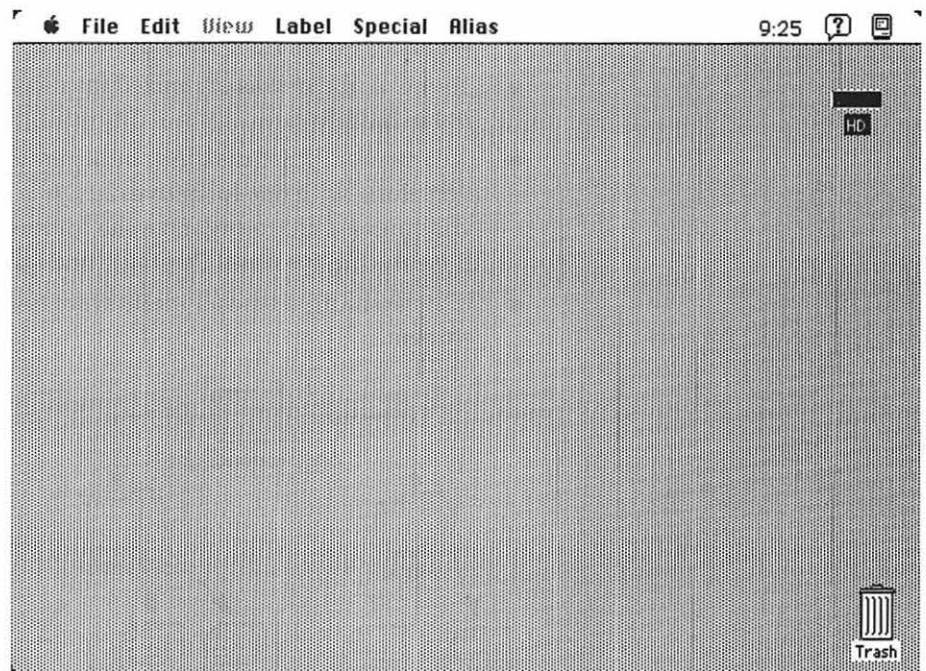


System

A computer must have a program that controls its basic functions. In the IBM world this program is referred to as DOS or disk operating system. Apple calls its software **System Software**. When you buy a Mac it comes with the current System Software installed on the hard disk. The current version is called **System 7**. You can upgrade to new versions as they are released. The System Software is the first thing read into memory when you start up the computer. Chapter 3, Getting Started on the Macintosh, has you explore the System Software extensively. For users running the older **System 6**, differences have been noted in the text of the tutorials.

The Finder

When you first turn on your Mac, the program you will be in is called the **Finder** and the screen you will see is called the **Desktop**. You might think of this screen as home base. This is where you start from and where you must return to in order to do basic housekeeping tasks, such as moving and copying files.



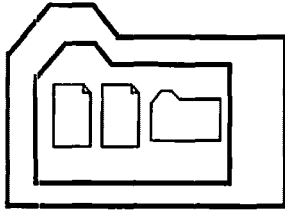
HD



•C.A.R.P.•

Graphical User Interface (GUI)

The Macintosh made its mark with the introduction of its graphical user interface (pronounced gooey!). This is a fancy way of saying it allows the user to point to pictures and symbols (**icons**) instead of having to memorize commands. Pull-down menus for **commands** and the use of **windows** are also part of this **user friendly** interface.



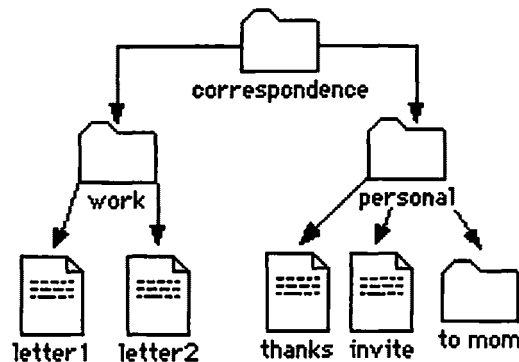
Files, Folders, and the Hierarchical File System

The Mac separates data into **files** and **folders**. Files may be **applications** (programs) or **documents** (letters). Folders may contain any combination of these file types. All of these are represented by **icons**, or small pictures on the screen. There is a hierarchy which determines how these data are organized.

The more data there are on a disk, the more important it is to keep them efficiently organized. You will want to develop a logical organization of your files and folders; this is the concept of the **hierarchical filing system**. On the Macintosh, you organize your data on the Desktop much like the way you file paper files in an office. Your documents are placed into file folders. Folders with a similar nature are grouped together, just as in an office they would go into the same file drawer. Then these groups of folders can be grouped together, just as you might keep related drawers of files in one filing cabinet.

The analogy to an office filing system breaks down in the fact that on the Mac, folders can be nested inside of other folders. Thus there is a logical progression: files into folders, nested inside other folders, and perhaps inside still other folders. Folders can contain files, applications, or other folders. Here are a few examples:

- In your personal files you might have a folder called *Correspondence*, in which you might have two folders, *Work Correspondence* and *Personal Correspondence*. Within your *Personal Correspondence* folder you might have numerous documents and other folders such as *Letters to Mom*.
- In your folder on a research project, you might have separate folders for *Findings*, *Things to Do*, *Illustrations*, and *References*.
- Your C.A.R.P. disk is organized into separate folders, one for each tutorial in the book.
- A computer's hard disk may be separated into folders for each application along with one for active data. If you have numerous applications you might want to organize the folders into *Word Processors*, *Graphics Programs*, *Instructional Programs*, and so on.
- In a classroom, a teacher might want to set up a separate folder for each student.



When you save your data it is important to determine which folder the document will be saved in. You will practice this in the next chapter, but

you should always make sure that you save your data in the right folder on the right disk. Just as in real life, if a document gets misfiled it may be difficult to find it (in Chapter 3 we'll show you a secret to help you quickly find any file).

Well, enough chitchat; let's move on to the next chapter and get started *using* the Mac.

CHAPTER 3

Getting Started on the Macintosh

FILES AND FOLDERS USED IN THIS TUTORIAL

The following will be found in the *Practice Folder* of your *C.A.R.P.* data disk:

<i>More Practice</i> (folder)	<i>Beginnings</i>
<i>Ready</i>	<i>Set</i>
<i>Go</i>	<i>Worthless Junk</i> (folder)
<i>More Junk</i> (folder)	<i>Important Junk</i>
<i>Teach Text</i>	<i>First Time</i> (created by user)
<i>Masterpiece</i> (created by user)	<i>Improved Masterpiece</i> (created by user)
<i>MAC IQ</i>	<i>IQ ANSWERED</i> (created by user)

You will be making a backup of the *C.A.R.P.* disk at the end of this chapter, so you will need two blank floppy disks to do this. Don't worry about changing the files in this tutorial; a "fresh" set of them will be created in the exercise at the end of the chapter.

Conventions

Throughout this printed tutorial we will use different types to identify certain types of terms. The key to the use of these styles is as follows:

- Bold Type** = New terms, which are described in the glossary.
- Italics* = Things you type in plus file, folder, and disk names.
- Bold Italics*** = Menu names and items, window names, and actions you take via menu items, Command keys, dialogue buttons, or tools.

Appendix A has a printed reference sheet of all of the menus you will be working with in this tutorial.

A Note about System Software Versions

A computer must have an operating system installed in order for it to function. In 1991 Apple introduced a major revision of its **System Software**, which is called **System 7**. This tutorial addresses both **System 7** (including incremental upgrades through 7.1) and **System 6**.

Many users with older Macs continue to work in **System 6**. Some older Macs cannot run **System 7** efficiently. Operations in **Systems 6** and **7** are the same about 90 percent of the time. **System 7** has a few additional features.

In this tutorial when instructions are different for System 6 users, those instructions are prefaced with this notation: **SYSTEM 6 USERS**. In addition, some of the screen displays illustrated will be slightly different than what you will see when working in System 6. Later in this tutorial you will learn how to tell which version of the System Software is installed on the Mac you are working on.

Introduction

In order to use Macintosh applications effectively, it will pay to be comfortable with the basic operation of the computer and its system software. The focus of this tutorial is to have you explore the use of this system software in some detail. A couple of hours spent here will save you hundreds of hours in your Macintosh computing career.

With computers there are always difficult ways to do things, but we want to show you the easy way to do things. Remember MacTruth number 2? Hard is primitive, easy is powerful.

This tutorial will lead you click-by-click through the operations, so you'll need to use this at the computer, following the instructions as you go. We'll try to explore all of the features of the menus in the **Finder**.

Review of Terminology

Chapter 2 covered most of the terminology you will be encountering in this tutorial. But let's take just a moment to review a few of those concepts.

The Macintosh uses a **graphical user interface** of icons (pictorial symbols) and **pull-down menus**. Data are separated into **files** and **folders**. **Applications** are programs, and **documents** are letters or other items created in an application. There is a hierarchy of how these data are organized.

You will learn how to use a **mouse**, the Macintosh pointing device. The four mouse movements will be explained. You will select, open, and create numerous files. Pull-down menus will be used to access **commands**. You may even have to use the keyboard at times. You'll learn more about **windows** than you ever thought possible. You'll learn how to **open**, **zoom**, **resize**, **drag**, and **close** a window, and we'll have a bit of fun using some **Desk Accessories**.

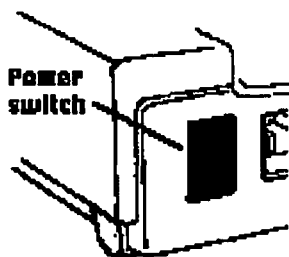
Starting Up the Computer

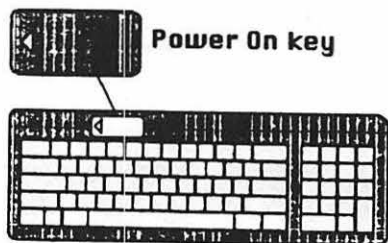
Turning It On

There are a couple of different ways of turning on the Mac, depending on which model you have.

On most modular Macs (those with the monitor separate from the computer), the following steps apply:

- 1 Reach around to the lower back left or back right of the computer and press the rocker switch. On Power Macintosh models the power switch is on the front of the computer.





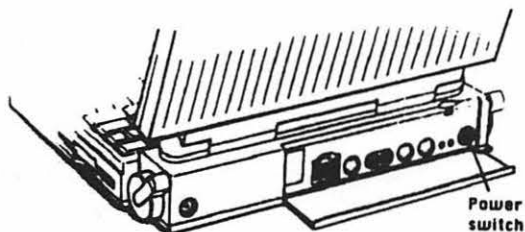
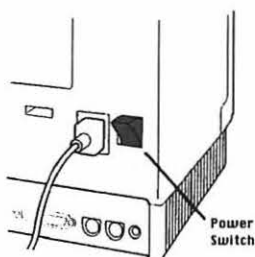
- 2 You'll also probably need to switch on the monitor. This power switch may be on either the front or the back of the monitor.

A good way to simplify this process is to plug both the computer and the monitor into a power strip and just use its one switch for master power.

If you are using a Mac II or a Quadra, follow these directions:

- 1 Simply press the large key with the triangle on it at the top of the keyboard to turn on the computer. On most other Macs this key does nothing!
- 2 You'll also probably need to switch on the monitor. This power switch may be on either the front or the back of the monitor.

If you are using a "one piece" Mac (with a built-in monitor), such as a Classic or some Performas, turn everything on with the rocker switch on the lower back left of the computer.

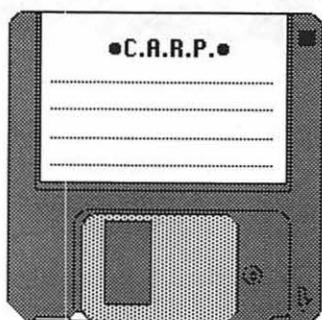


If you're using a Powerbook, you'll have to wrestle to open the little door on the back left of your computer to get to the power-on switch (the leftmost button). Press it once to turn on your Powerbook. If you're using a Powerbook Duo, there won't be a door to negotiate. Just press the power-on switch on the back left of your computer.

The Finder and the Desktop

After you turn on the computer, the hard disk will whirl for a moment and you will see a screen with **icons** and **menus** on it. The application you are in is called the **Finder**, and the gray (or other colored patterned) area of the screen is called the **Desktop**. This is your home base; you will return to this screen to copy or move files and to shut down the computer.

Take a moment to examine Figure 3.1, which shows the parts of the Finder's screen.



Inserting a Floppy Disk

- 1 Take your C.A.R.P. data disk and hold it label side up.
- 2 If you look carefully you will notice that the disk has an arrow on one edge of it. Find the arrow.
- 3 While pointing this arrow at the computer, place the disk in the computer's floppy disk drive.

The drive will quietly whirl, and an icon of the floppy disk will appear on the Desktop.

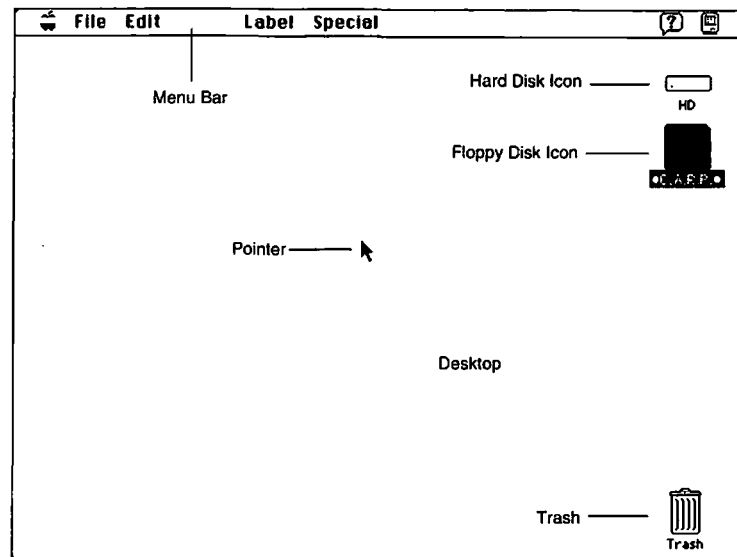


Figure 3.1

The Mouse



You've probably heard of computer **mouses** (mice?). This is the Mac's primary pointing and input device. We'll be using the mouse extensively. You will learn four basic mouse moves: the **press**, the **press-and-drag**, the **single-click**, and the **double-click**. It usually takes about an hour of practice to get comfortably coordinated in using the mouse. To begin, hold the mouse so your forefinger naturally falls on the large button at the top of the mouse.

Apple's laptop computer, the Powerbook, comes with a trackball instead of a mouse. A trackball is like a mouse flipped on its back. You roll the ball around with your thumb. Some users of desktop Macs prefer to hook a trackball up to their computers instead of a mouse. In 1994, Apple introduced the Trackpad on some Powerbooks, a flat touch sensitive plate, which takes the place of a trackball.

Watching and Waiting

Anytime you see a little watch on the screen, that means the Mac's micro-processor is busy processing. You don't need to do anything; in fact, you can't do anything. Just wait a moment and you'll be back to live action.

Using Menus

Pull-Down Menus

First, let's practice using the Mac's **pull-down menus** and learn how to choose an item.

The Pointer



Move the mouse around the screen. You will see an arrow move; this is the **pointer**. Remember, the part of the pointer that is active is the very tip of the arrow. When typing, the arrow will turn into an **I-beam** or **insertion point**. At other times the pointer may take still other forms.

By the way, if the mouse goes off the edge of the mouse pad or table, you can lift it up, move it, and continue your action. Most people use a mouse pad to keep the ball on the bottom of the mouse clean. You can turn the mouse over and see how the ball moves.

Mouse Movement Number 1—The Press

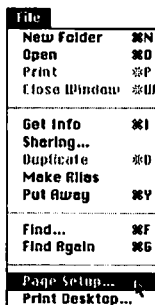
- 1 Move the mouse until the tip of the pointer is on top of the word *File* and press the mouse button down (see Figure 3.2). A list of menu commands drops down. We've just learned our first mouse movement, the **press**.
- 2 Let go of the mouse button.
- 3 Press on each of the menu's names and notice the commands in the pull-down menus (but don't select anything).

In this book we will recommend you introduce yourself to a new application by pulling down each of its menus and, without selecting any of the commands, take mental note of those commands. With the Mac's intuitive approach, you can probably guess what many of the commands do.

► **SYSTEM 6 USERS** *You will have slightly different menus than those illustrated.*



Figure 3.2



Mouse Movement Number 2—The Press and Drag

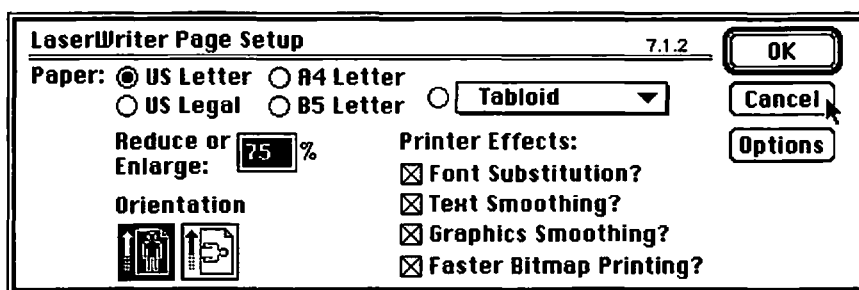
To choose an item on a menu, you will press the mouse button and slide the pointer down until the desired command is highlighted, or selected.

- 1 Move the mouse until the pointer is on the word *File*.
- 2 Press down on the mouse button and, while still holding the button down, drag down to the *Page Setup* command.
- 3 Release the mouse button.

This is our second mouse movement, the **press-and-drag**. Later, you will use this same technique to select text.

Dialog Boxes

You now see a rectangle on the screen with additional instructions. This is called a **dialog box**. Anytime you see an **ellipsis** (three dots) after a menu command, as you did with *Page Setup*, it means you will need to make choices in a dialog box. Dialog boxes always give you an option to cancel, so it is safe to explore menu commands this way.

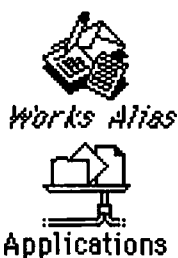


Mouse Movement Number 3—The Single-Click

Move the mouse to the *Cancel* button and click once. This is our third mouse movement, the **single-click**. To single-click you make a quick, light touch on the button of the mouse, with the cursor located on the desired spot on the screen.

Determining System Software Versions

- 1 Move the pointer to the part of the menu that is the icon of an Apple and press the mouse button. This is logically called the *Apple* menu.
- 2 If the top command reads *About This Macintosh*, you are using System 7. If it says *About the Finder*, you are working in System 6. Drag down and select this top command. A dialog box appears which tells you what System Software version you are using and how much memory is available on your computer.
- 3 Select *Close Window* from the *File* menu to close this dialog box.



Deciphering Icons

You'll encounter many types of icons, including those representing hard disks, floppy disks, folders, documents, applications, printers, and the system. When an icon is black it means it is selected. When it is gray it means it is already open.

The First Rule of the Macintosh

The first rule of the Mac is that you must select something before you can do anything with it. You might think of it as "select then affect." This rule is true in all Mac applications. For example, in a word processor, you need to select the desired text before applying a typesize or style to it. In a graphics program, you must first select an object before you can move or resize it. In the Finder, you must select a file or folder before opening, moving, or copying it. By the way, selecting by itself does nothing; it just identifies which item will be affected. Let's do some selecting.

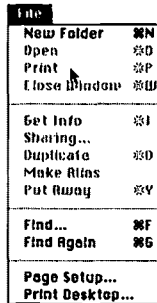
Selecting a Disk



- 1 Single-click on the floppy disk icon to select the C.A.R.P. data disk.
- 2 Notice that the icon becomes darkened, which indicates it is **selected**.

NOTE: Click inside the icon and not on the name. If you click on the name, the computer thinks you want to change the name.

- 3 Click in the center of the screen to deselect the floppy disk.



Dimmed Commands

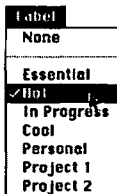
- 1 Pull down the *File* menu.

You'll notice that some of the commands are in black letters and some are in gray. When a command is gray or dimmed, it means that particular item is not available at that moment.

- 2 For example, drag down to select the *Print* command. Nothing happens. It is dimmed because there is currently nothing selected to print.

Toggle Commands

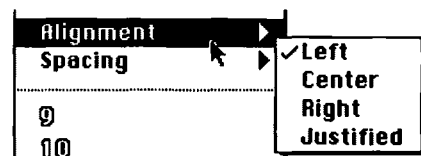
Some commands will have check marks next to them in the menu. A check mark indicates the command is active, or on. By selecting the command again, you toggle the command off (the check mark disappears). Select it again, and it toggles back on (the check mark returns). Sometimes the name of the command will change instead of a check mark appearing (for example, Show Balloons will change to Hide Balloons when you toggle it).



- 1 Single-click on the floppy disk icon to select the *C.A.R.P.* data disk.
- 2 Pull down the *Label* menu. Notice that *None* has a check mark next to it.
- 3 Select *Hot* from the *Label* menu. Notice that *Hot* now has the check mark and *None* has been toggled off.
- 4 Select *None* from the *Label* menu to toggle it back on.

Pop-Out Menus and Scrolling Menus

In some programs you may encounter **pop-out menus**, where you not only slide the mouse down, but also to the side. These are indicated by an arrow next to the command. Very long menus may have an arrow at their bottom. When you drag down you will see additional items which extend past the bottom of the screen. Neither of these types of menu is found in the Finder.





Label Special Alias

Label menu

Use this menu to assign labels to items on your desktop and in Finder windows. The labels you assign can be used to organize related files.

Balloon Help

System 7 introduced a funny little feature called **Balloon Help**. The term “balloon” comes from the comic book term for the area where the words that a character is saying are displayed. In the Finder and other programs which offer Balloon Help (including Microsoft Works), you can toggle this feature on and get a brief explanation of each menu command as you move the pointer on it. Let’s try it.

- 1 Pull down the *Help* menu (it’s the one with a question mark in a balloon) and select *Show Balloons*.
- 2 Drag the pointer over the *Label* menu. Gee whiz, Batman! A balloon popped up!
- 3 Drag down to various commands and you will see explanations of those items. Boffo, Batman—more help!

Before you get too impressed with this feature, you should know that the help you get is pretty simplistic and the balloons popping up dramatically slow down your work. So, you might want to Show Balloons when you are just beginning to learn a program, but after that you will probably leave them off. Let’s turn them off before we go batty.

- 4 Select *Hide Balloons* from the *Help* menu (notice the command name toggled). Whew! That was a close call!

► **SYSTEM 6 USERS** Sorry, *System 6* does not offer Balloon Help. Perhaps you’re fortunate!

Command Key Shortcuts



You might have noticed some strange characters to the right of some menu commands. These are **Command key** shortcuts. You can use these instead of using the menu by pressing the Command key (the one with the cloverleaf symbol on it) and the letter associated with it. For example, Command-P will print.



- 1 If it isn’t already selected, click once on the C.A.R.P. data disk to select it.
- 2 Hold down the *Command* key on the keyboard and at the same time press the *O* key (the letter *o*). This functions to open a window to show you all the files in it or to start an application.
- 3 The C.A.R.P. disk will open.
- 4 Do a *Command-W* to close the C.A.R.P. disk.

A special command sequence is *Command .* (Command period). This stops an action in progress. You most often use it to cancel a printing job after it has started.

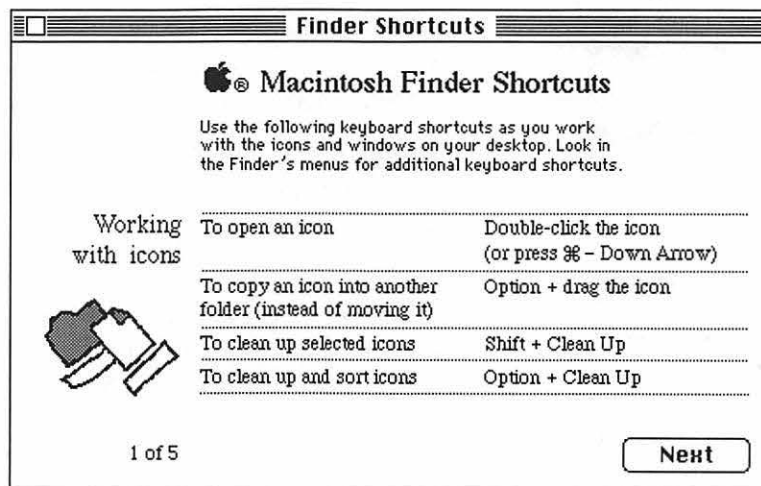
Finder Shortcuts

If you’re a fan of cryptic keyboard commands, there is a little corner of paradise in the Finder for you.

- 1 Pull down the *Help* menu (the one with the ?) and select *Finder Shortcuts*.

- 2 Now you can move through five full screens of keyboard shortcuts. What more could a keyboard fan ask for?
- 3 Don't try any of these now. Just select *Close Window* from the *File* menu to get back to where we started.

Microsoft Works has six more screens of these shortcuts.



Understanding Icons and Folders

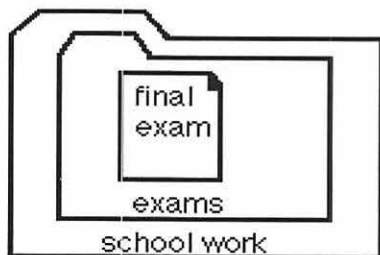
Now let's explore **icons** and **folders**. Icons are the little pictures you see on the screen. They are symbolic representations and are a key part of the Mac interface. These save you having to type in a code to give the computer instructions.

- 1 Pull down the *File* menu, drag down to *Open*, and release the mouse button. The C.A.R.P. window will open.
- 2 Press-and-drag the *File* menu, and select *Close* to close the window.

Mouse Movement Number 4—The Double-Click

A faster way to open an icon is to **double-click** on it. Move the mouse pointer inside the C.A.R.P. disk icon and give the mouse button two quick clicks.

If the window did not open, you might have wiggled the mouse as you double-clicked. Try holding the mouse a bit steadier before you double-click.



Folders

Folders are essential to the organization of your work on the Mac. Just as in an office, they form the basis of a filing system for your information. This is technically called the **hierarchical filing system**. In plain English this means that files are contained inside of folders which may in turn be contained inside of other folders. It's an efficient way to group your informa-

tion. For example, the file *Final Exam* might be contained inside the folder *Exams*, which is contained inside the folder *School Work*.

Your C.A.R.P. disk has separate folders for each of the tutorials in the book. This chapter works with the files in the *Practice Folder* folder.

New Folder

How do you create a new folder? Easy:

- 1** Double-click on the *Practice Folder* icon to open its window.
- 2** Pull down the *File* menu and choose *New Folder*. A folder icon called *Untitled Folder* appears on the screen.
- 3** To change its name, just start typing in a new name. Give it the name *First Time*.
- 4** If you type an error, just use the *Delete* key to erase the error and type in the correct letter(s).

The title of a file, folder, or disk can be up to 31 characters long and can contain any character except a colon.

- 5** Press the *Return* key, and the name changes.

Exploring the Keyboard

While we're at the keyboard, let's discuss some of the special keys found on it.

Delete Key

Characters are removed by going past the character and pressing the Delete key. The Mac normally does all of its erasing using this backspace delete technique.

Spacebar

The Spacebar inserts blank spaces, which can be deleted.

Caps Lock

When the Caps Lock key is depressed, the keyboard will type all uppercase letters, but it will not give you the characters above the numbers or above the punctuation. You'll need to use the Shift key to type those characters.

- 1** Move the pointer to the space following the letter *e* in the title of the *First Time* folder and click once.
- 2** Now click a second time. The cursor will appear as an I-beam, which means you are in text mode.
- 3** Press the *Delete* key (repeatedly) to erase the title.
- 4** Press the *Caps Lock* key.

- 5 For a new title, type in *FIRST TIME 1*. Notice that you got a one and not the exclamation mark; you would need to hold down the Shift key to get the exclamation mark.
- 6 Press the *Return* key. Your new title is applied.
- 7 Turn off the all caps mode by pressing the *Caps Lock* key again.

Return Key

The Return key not only starts a new paragraph when typing but is used to activate a response. I like to think of it as the “enter” key; in fact, on some keyboards it is labeled as Enter.

Command Key

You’ve already used the **Command** key, which works as a keyboard short-cut. It does not create a character on the screen but causes a command to be executed.

Arrow Keys

The four arrow keys near the bottom of your keyboard move the cursor when you are in text mode. This may be more efficient than using the mouse when you are typing.

Option Key

Next to the Command key is the **Option** key, which is sometimes used in combination with the Command or Shift key. The Option key is used to access special characters, such as bullets and accent marks.

- 1 Move the pointer to the end of the title *C.A.R.P.* below the icon of your floppy disk and click once.
- 2 Press the *Delete* key to delete the current title.
- 3 Hold down the *Option* key and while still holding it down, press the 8 key (don’t use the Shift key). This creates a “bullet,” which is more impressive than an asterisk when creating a chart.
- 4 Type in your own name to personalize your data disk.
- 5 Press the *Return* key.

Now let’s use the Option key to enter a letter with an accent mark.

- 1 Click at the end of the *FIRST TIME 1* folder title.
- 2 Delete the title and type an *M*.
- 3 Press the *Option* key and an *e*.
- 4 Now type *e*.

The letter *e* appears with an accent mark above. Typing *Option-e* makes the next letter (assuming it’s a vowel) typed have an accent mark.

5 Now finish the word *México*.

6 Delete *México* and change the folder's name back to *First Time*. Press the *Return* key.

Here is a list of a few other alternative characters created via the Option key:

Option ` creates a back-facing accent mark

Option n = ñ

Option 2 = ™

Option / = +

Option u = ü

Option g = ©

Option 4 = €

Esc Key

On older keyboards the Esc (escape) key can be used to back out of an operation or sometimes to undo the most recent action.

- 1** See if your keyboard has an Esc key. It will be either to the right of the Spacebar or in the upper left corner of the keyboard.
- 2** Click once on the *First Time* folder. Now it's selected.
- 3** Press the *Esc* key. Now it's deselected.

Tab Key

Indent paragraphs with the Tab key; do not use the Spacebar to indent or you will get irregularly spaced indents. The Tab key is also used to move from box to box in a dialog box, as you'll experience later in this book.

Control Key

The Control key (labeled as Ctrl) is a bit like our tonsils; it is a primitive thing left over from an earlier era. It's not used much on the Mac except when working on a modem.

Triangle Key

On some models of the Macintosh you can turn on the computer by pressing the large key with the triangle on it, located at the top of the keyboard. On most Mac models this key does absolutely nothing!

Doing Windows

Windows are one of the key strengths of the Macintosh computer, and it is important to know all the little tricks involved in using windows, since you'll find them in almost every application.

- 1** Have the *Practice Folder* window open. You might want to refer to Figure 3.3 as you work through this section.

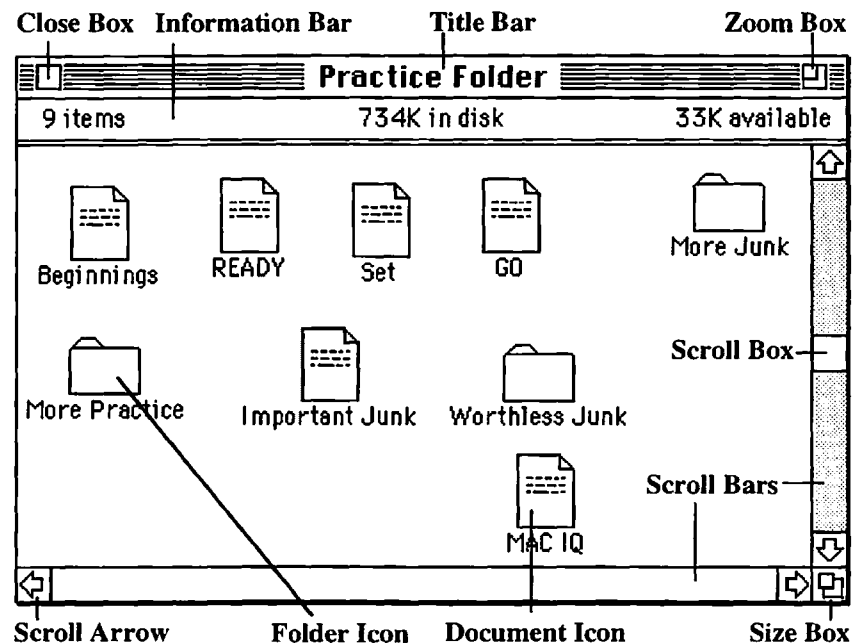


Figure 3.3

Title Bar

The **title bar** is the area at the top of the window which tells you the name of that window, whether it be a file, a folder, a disk, or even just a dialog box.

Moving or Dragging a Window

If you press-and-drag on the title bar, you can **move** the window around the Desktop.

- 1 Press the mouse on any part of the *Practice Folder* title bar except the two boxes in the corners, and drag the window around.
- 2 Just the outline of the window will appear until you let up on the mouse button.
- 3 You can even drag part of the window off the screen
- 4 Park this window near the top of the screen with part of another window's title bar visible.

Active Window

What do you notice is different about the title bars of the windows you currently have open? Only one has stripes in its title bar; this means it's the **active window**. The active window will be in front of the other windows. Any commands you initiate will be applied to this window.

- 1 Be sure you have some part of the *C.A.R.P.* (retitled as your name) window visible.
- 2 Now, simply click once anywhere in that window. That window now becomes the active window and is brought to the front.
- 3 Click in the *Practice Folder* window to make it active again.

Zoom a Window

Let's learn how to **zoom**, **size**, and **close** a window. On the upper right corner of the window is the **zoom box**.



- 1 Click once in the zoom box of the *Practice Folder* window. The window will enlarge.
- 2 Click in it again; it zooms back down to its previous size.
- 3 Click in it again, it returns to the large size.

The zoom box just toggles between two sizes. Now let's learn a more flexible way to change a window's size.

Size a Window

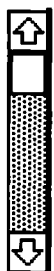


On the bottom right corner of the window is the **size box**. This functions not by clicking on it, but by dragging it.

- 1 Press-and-drag in the size box to make the window larger or smaller.
- 2 Experiment with this horizontally, vertically, and diagonally.
- 3 Finish by making the window about three inches square and dragging it to about the center of the screen.

Notice that some folders or files may be hidden when the window is small; don't worry, they are all still in there—they are just hidden from view.

Scroll Bars



Along the right and bottom edges of the window are the scroll bars. These allow you to view things that may not fit within the current display of the window. You'll need to use these to scroll the screen display in many types of programs, including graphics and word processing.

As you work with windows, you might notice that some scroll bars are gray and others are white. When a scroll bar is gray, this indicates that there are other items in the window you can't see currently. A white scroll bar means there is nothing more to scroll to.

- 1 Zoom the window to a large size. Notice the scroll bars may turn white.
- 2 Zoom it back to its small size.

There are three ways to scroll. The first is to press on the **scroll arrows**.



- 1 Click or press-and-hold on an arrow to see the screen scroll.
Did you notice that the **scroll box** moved as you pressed the arrow? You can also drag the box to move it. This is very useful for moving through several pages of a long word processing document quickly.

- 2 Drag each scroll box around.

If you click the pointer in any gray area of a scroll bar, the window will move.

- 3 Click in the gray area to either side of a scroll box.

Close Box



To close a window, simply click the close box in the upper left corner of the window. Close each of the windows now.

Some dialog boxes also need to be closed with the close box before you can proceed.

Selecting, Moving, and Copying Files

Let's now learn a few power user techniques for selecting, moving, and copying files.

- 1 Open your floppy disk by double-clicking on its icon.
- 2 Open the folder called *Practice Folder*.

Notice there are several files contained within it. We want to move those files to your *First Time* folder.

Moving a File or Folder

- 1 Open your *First Time* folder by double-clicking on its icon.
- 2 Click in the *Practice Folder* window to make it active. You may need to move another window to allow it to show.

NOTE: While working through the remainder of this section, be sure to single-click on a file to select it. If you make a mistake and double-click, you will open the application it was created in. If this happens to you, just select *Quit* from the *File* menu and you will be back in the Finder.

- 3 Click once on the *Beginnings* file icon to select it. It should become black.
- 4 Now, simply press-and-drag it into the *First Time* folder. Let go of the mouse button. Now the file has been moved to a different folder.

A folder or disk does not need to have its window open to move or copy to it. You can drop an item right into the folder's or disk's icon.

When you move an item within the same disk, even a hard disk, the item is simply placed in another location. When you drag an item to a different disk, a copy of the item will be created.

Copying a Folder

- 1 Open the hard disk of your computer by double-clicking on its icon.
- 2 Examine the folders on the hard disk, and decide on one to copy your files to. Do not open the folder.
- 3 Make the *Practice Folder* window active.
- 4 Position the window so that the folder on the hard disk that we want to copy to is visible behind our active window.

- 5 Press on the *More Practice* folder, and drag it to the destination folder in our hard disk's window. A dialog box will quickly flash on your screen, indicating the number of files copied.
- 6 Open the destination folder to confirm that the *More Practice* folder was copied onto it.

Multiple Selections—The Shift-Click

What if we want to copy or move several files at once? There are some power user ways to do this.



- 1 Make the *Practice Folder* window active.
- 2 Click ONCE on the *Ready* icon.
- 3 Now click on the *Set* icon. Notice that *Set* becomes selected and the *Ready* file has become deselected.
- 4 To make a multiple selection, click on the *Ready* icon.
- 5 Now press the *Shift* key and without letting go, click on the *Set* icon.
- 6 While still holding down the *Shift* key, click on the *Go* file.



Notice that all three files have been selected. This is called **Shift-Clicking** and is used in many applications to make multiple selections.

- 7 Let go of the *Shift* key and drag the selected files into your *First Time* folder. All three files will be moved.

Selection Marquee

Another way to select several items at once is to use a **selection marquee**.



- 1 Make the *First Time* window active.
- 2 Position the mouse in an empty space towards the upper left of the window, and press and drag the pointer diagonally until a dotted box is drawn around three of the files. Any file that is even partially enclosed in this marquee will be selected.
- 3 Press on any of the items, and drag them into your *Practice Folder* window.

Select All

Here's one more selection method; it allows you to select all the files in a folder with one command.



- 1 Make the *Practice Folder* window active. If files are still selected, deselect them by clicking outside of their selected titles.
- 2 Pull down the *Edit* menu and choose *Select All*. Notice that all of the files have been selected.
- 3 Click outside the icons to deselect them.

Select All is a great technique to use for making modifications to the entire text of a lengthy word processing document.

Taking Out the Trash

The **Trash** can icon serves two purposes: it is used to delete files and to eject floppy disks. This is a bit confusing, but be assured you cannot erase a whole disk by dragging it into the trash.



Placing Items in the Trash

- 1 Open the *Practice Folder* window if it's not already opened and active.
- 2 Select the *Worthless Junk* folder, and drag it into the Trash can icon.
- 3 When the Trash can becomes black, let go of the mouse button and your file will drop inside of it.

Notice the can is now bulging (to use the technical term); that means something is inside of it.

Removing Items from the Trash

- 1 To remove something from the Trash, double-click on the can.
- 2 The Trash window will open, showing you the contents of the trash. Now drag the *Worthless Junk* folder back into your *Practice Folder*.

You can also move something back out of the Trash by selecting the item and then choosing *Put Away* from the *File* menu. This automatically places it back where it came from.

Emptying the Trash

- 1 Drag the *More Junk* folder into the Trash.
 - 2 Go up to the *Special* menu, and select *Empty Trash*.
 - 3 A dialog box will open, asking you if you're sure you want to do this. Click the *OK* button. Now the item is gone forever, and the trash can is empty.
- **SYSTEM 6 USERS** In System 6 the Trash will be automatically emptied whenever you eject a disk, copy a file, start an application, or shut down the computer. In System 7 it is only emptied when you invoke the *Empty Trash* command.

Switching Among Applications

In System 7 you can have several applications or programs running at once. You can switch among these programs by using the *Application* menu.

- **SYSTEM 6 USERS** There is no *Application* menu, but you could turn on *Multi-Finder* to do the same type of thing.

- 1 Double-click on the file *Important Junk* in the *Practice Folder*.
- 2 This opens the document as well as the application it was created in.

By the way, we've now just opened our first **application**, or program, in this case a mini word processor called *TeachText* which comes with the Mac and is used for reading instruction documents.



- 3 Pull down the *Application* menu, and drag down to *Finder*.
- 4 When you release the mouse you will be switched back to working in the Finder. Notice the icon of the Finder is on the menu bar.
- 5 Drag down the *Application* menu, and select *TeachText*. We've switched back again.

If you click in any part of a different window you will also switch into the other application. This can be confusing. You can always tell which application you are in by noticing the icon of the *Application* menu or by pulling down the *Application* menu and seeing which item has a check mark next to it.

- 1 Size your *Important Junk* window a bit smaller so some of the Desktop screen is showing.
- 2 Click anywhere in the Desktop screen.
- 3 Notice the Finder's icon appears in the *Application* menu, and the now-familiar menu bar of the Finder is at the top of the screen.
- 4 Switch back to *TeachText* using the *Application* menu.

Cut, Copy, Paste, and the Clipboard

The **Clipboard** is a temporary holding tank that can hold only one piece of data at a time. Let's try using it now.

Cut

First we will want to cut some text.

man from
them. |

- 1 Be sure the *Important Junk* file window is active.
- 2 Click the mouse at the beginning of the first sentence of the document to put the cursor there. Notice that the cursor in a word processor is an I-beam.
- 3 Now press-and-drag the mouse to select all of the first sentence. Release the mouse button. The text should become highlighted to indicate that it is selected.
- 4 Now pull down the *Edit* menu, and choose *Cut*. The text appears to be gone, but it's in the Clipboard.

Paste

After you have cut something out, you will probably want to **paste** it somewhere. Let's paste something into the Clipboard.

- 1 Move the cursor to the end of the document, and click once.
- 2 Hit a couple of *Returns* to drop down to a blank line.
- 3 Pull down the *Edit* menu, and choose *Paste*.

Voilà, your text is back. Your text is still in the Clipboard also.

- 4 Select **Paste** again (or *Command-V* for you power users). Another copy of the text is created.

- 5 Select **Show Clipboard** from the *Edit* menu.

A window opens to show you the current contents of the Clipboard. The amount of data that you place in the Clipboard is limited only by your computer's available memory, but you may only store one item at a time. Remember, the Clipboard holds the same information until you choose to cut or copy something else. The selected data even remain when you change applications. This is a way to move data between programs.

- 6 Close the *Clipboard* window.

Copy

Besides cutting things out, you can **copy** them.

- 1 Select the second quote in the document.
- 2 Choose **Copy** from the *File* menu.
- 3 Move the cursor to another place in your document.
- 4 Select **Paste** from the *File* menu.

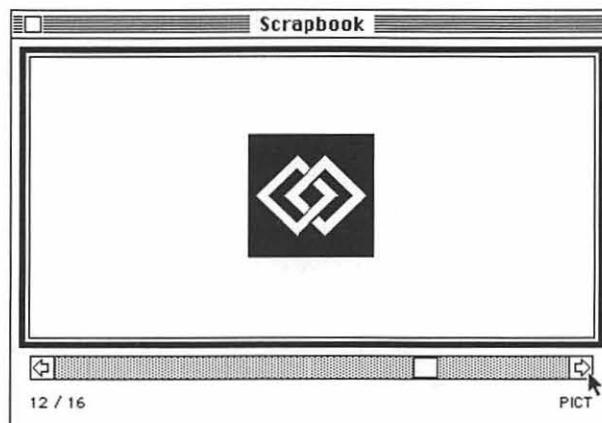
It's almost the same process as cut, but do you notice the difference?

The Scrapbook

The **Scrapbook** is the place to hold, more permanently, text or graphics cut or copied from almost any program. You might want to store a logo, a letterhead, or a frequently used paragraph in it. Unlike the Clipboard, the Scrapbook can hold numerous items. The Scrapbook is automatically saved as a file on your hard disk.

To paste something into the Scrapbook, you must first cut or copy it. Let's try it:

- 1 Select a sentence from your *Important Junk* document.



- 2 Choose *Copy* from the *Edit* menu.
- 3 Pull down the *Apple* menu, and choose *Scrapbook*. The hard disk will whirl, and the Scrapbook window will appear on the screen.
- 4 Choose *Paste* from the *Edit* menu. Your selection is now a part of the Scrapbook.

To copy an item from the Scrapbook you reverse the process.

- 1 Scroll through the Scrapbook using the scroll arrows until you see an item which is just text. It will be labeled as Text near the lower right corner of the window. If you can't find such an item, just choose the frame with the text you just pasted in. In Microsoft Works you could paste a graphic into your document, but TeachText handles only text.

- 2 Choose *Copy* from the *Edit* menu.
- 3 Close the Scrapbook by clicking in its close box.
- 4 Bring the cursor to the beginning of your *Important Junk* document, and click once.
- 5 Pull down the *Edit* menu, and choose *Paste*.

To delete an item from the Scrapbook, follow these steps:

- 1 Open the Scrapbook.
- 2 Scroll through it until you find the text you just pasted in.
- 3 From the *Edit* menu choose *Clear* (Clear removes it from the Scrapbook without putting it on the Clipboard).

Apple Menu Items and Desk Accessories



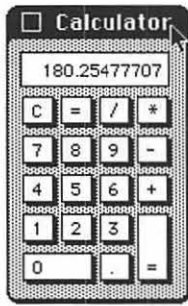
The Scrapbook you've just been using is a **Desk Accessory** or **DA**. These are handy little programs that work without your having to leave the application you're in. These DAs are found among the items under the *Apple* menu. Some of these come with the Macintosh, and others may be purchased or are in the public domain. In System 7 you can put any file or application in the folder called *Apple Menu Items* and it will appear under the *Apple* menu.

► **SYSTEM 6 USERS** You do not have a folder called *Apple Menu Items*. Only specially designed Desk Accessory programs can be installed under the *Apple* menu on your system.

The Calculator DA

Let's say you were typing a report and needed to calculate some numbers. You could use the Calculator DA.

- 1 In your *Important Junk* document, type in this sentence: *This month we sold 77 Widgets at \$87 each, raising a total of*
- 2 Slide down under the *Apple* menu until *Calculator* is highlighted (notice that the DAs are in alphabetical order).



3 When you release the mouse button, a small calculator appears. You can drag it around the screen by its title to a more convenient spot if you wish.

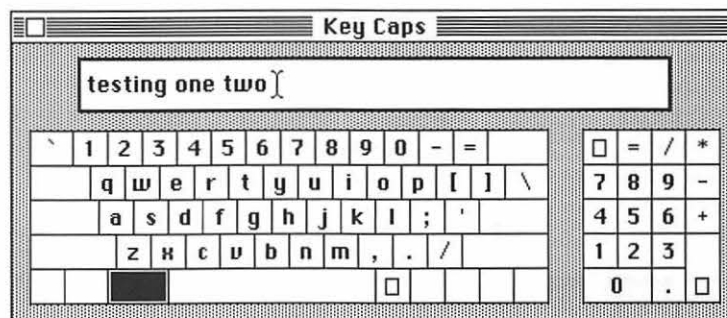
To enter a calculation, you can use the mouse, keyboard, or numeric keypad.

- 4** Find the answer to $77 * 88$.
- 5** Select *Copy* from the *File* menu.
- 6** Close the Calculator.
- 7** Select *Paste* from the *File* menu.

Key Caps

Another useful, if often overlooked, Desk Accessory is called Key Caps. This utility displays what each stroke of the keyboard will look like in a given font.

- 1** Select *Key Caps* from the *Apple* menu. A window will open displaying a picture of the keyboard.
- 2** Hit a few keys on the keyboard. Notice them in the display.
- 3** Hold down the *Option* key, and notice a whole new set of characters on the keyboard display.
- 4** Try this with the *Shift* or *Shift-Option* keys held down.
- 5** To preview a different font, pull down the newly appeared *Key Caps* menu and drag down to select a different font.
- 6** Select the *Symbol* font from the *Key Caps* menu. This font gives you special icons which you can insert in your text just like any other character. Option and Shift give you even more symbols.
- 7** Close the *Key Caps* window.



Saving

Now that we have created our literary masterpiece, let's learn how to save it. You will want to learn how to save your work to a specific folder or a specified disk. In this example, you'll want to save your work on your floppy disk instead of on the hard disk.

- 1 With the *Important Junk* file still open, select *Save* from the *File* menu. The disk drive whirls for an instant, but not much appears to happen.

In fact, when you save an existing file it actually overwrites the last version of the file. The file is automatically saved in the same location it was opened from, in this case the *Practice Folder* of your floppy disk.

- 2 Close the *Important Junk* file by selecting *Close* from the *File* menu.
- 3 Create a new file by selecting *New* from the *File* menu.
- 4 A blank document entitled *Untitled* is now created.
- 5 Type in a sentence or two, perhaps something about the weather or some great philosophical insight.
- 6 Now select *Save* from the *File* menu.

The Save dialog box appears. This is where you specify which folder and disk this new file should be saved to. Examine the parts of the dialog box in Figure 3.4.

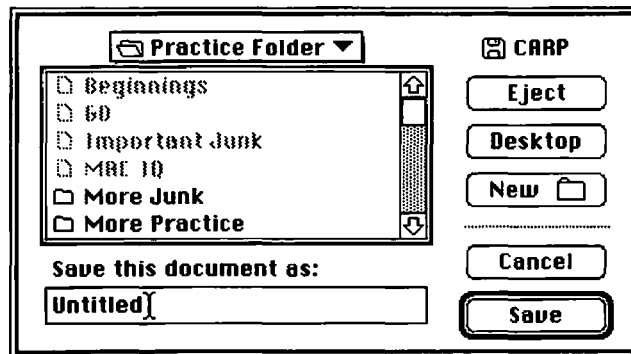


Figure 3.4

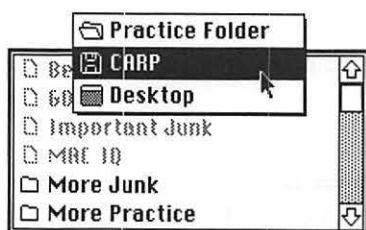
- 7 Click once on the *Desktop* button; a list of the disks in use will appear, in this case a hard disk and your floppy disk.
- 8 Click once on the name of your floppy disk, and click the *Open* button (a shortcut is to double-click on the name to both select and open it).
- 9 Now a list of the folders on your disk appears. We want to save inside the *Practice Folder* folder, so click on it and then click the *Open* button.
- 10 We could even nest the file inside of another folder, but we will keep it just inside the *Practice Folder*.
- 11 Click at the end of the word *Untitled*, delete that title, and type in *Masterpiece* as a title for the file.
- 12 Press *Return* or click the *Save* button.

► **SYSTEM 6 USERS** Your dialog box and procedures will be slightly different. Instead of a *Desktop* button you will have a *Drive* button. Click the *Drive* button until the name of your floppy disk appears in the folder label.

Save As

You can use the Save As command to save your work under a new name so as not to overwrite the existing version of your work, or you can use it to save your work on a different disk than the one it was opened from. In either case, once you invoke the Save As command, the original file will be put away and you will then be working on the new file.

- 1 We want to save a copy of your *Masterpiece* document under a different name in a different folder.
- 2 Choose *Save As* from the *File* menu. A dialog box appears.



At the top center is a **pop-up menu** with the name of the folder you are currently in. Below it is a list of other folders on that drive. Folders in black are available to switch to.

- 3 Press and hold the mouse button on the pop-up menu, and drag to the name of your floppy disk.

We will save your file at the first level of your floppy disk and not in any particular folder. If we wanted to save in a particular folder we would select and open it.

- 4 Delete the old title and type in *Improved Masterpiece* as a new title.
- 5 Hit *Return*, and notice the new name on your document's title bar.

You can have multiple files with exactly the same name only if they are in different folders. You can have the same file or different versions of it in the same folder by using the Save As command and giving each file a different name (e.g., *Draft1*, *Draft2*).

You can also put files on your floppy disk by saving to the hard disk and then dragging the files to your floppy disk after you quit the application (you'll then have two copies of the file). When you are in the Finder you can make a copy of a file by selecting *Duplicate* from the *File* menu. This will make a copy in the same folder with the word *Copy* appended to it.

Printing

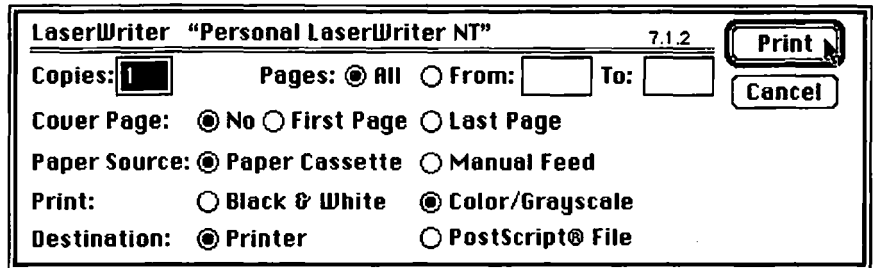
Although printing is done a little bit differently in various programs, we can get a general idea of the process by printing our document in TeachText.

- 1 With the *Improved Masterpiece* document still open, select *Print* from the *File* menu.

In the *Print* dialog box you can specify how many copies of the document to print as well as which pages. There are several other options also. We won't change any of these now.

- 2 Click the *Print* button.

Wait for the document to come out of the printer; it might take a minute or two. If you issue the Print command repeatedly, you will just slow things up. You can continue to work while you wait for your printout to come out.



Close vs. Quit

It is important to understand the difference between the Close command and the Quit command.

- 1 Select *Close* from the *File* menu.
- 2 Go ahead and click the *Save* button to save your handiwork.

Although it may appear that you are back at the Finder, in fact you're still in TeachText. You can check this by noticing the icon in the *Application* menu. The main problem with this is that the computer's random access memory is still occupied with the TeachText memory. We want to quit TeachText to free up some RAM so we can work with other applications.

- 3 Choose *Quit* from the *File* menu, and don't save the changes you've made.
- 4 Now you are back in the Finder and out of the TeachText program.

If you don't quit applications, you will soon get Out of Memory messages on your Mac when you try to continue to work.

Special Folders

There are two unique items under the *Apple* menu; these are *Control Panels* and the *Chooser*. These come with the Mac and must be part of the system.

Control Panels

Control Panels allow you to customize the computer to your specifications. You might think of these as adjusting the standard settings, like the knobs on your stereo.

- 1 Choose *Control Panels* from the *Apple* menu.
- 2 Double-click on *General Controls*. In this dialog box you can adjust the computer's clock and change the color and pattern of the Desktop.
- 3 We won't make any changes here, so click on this dialog box's close box.

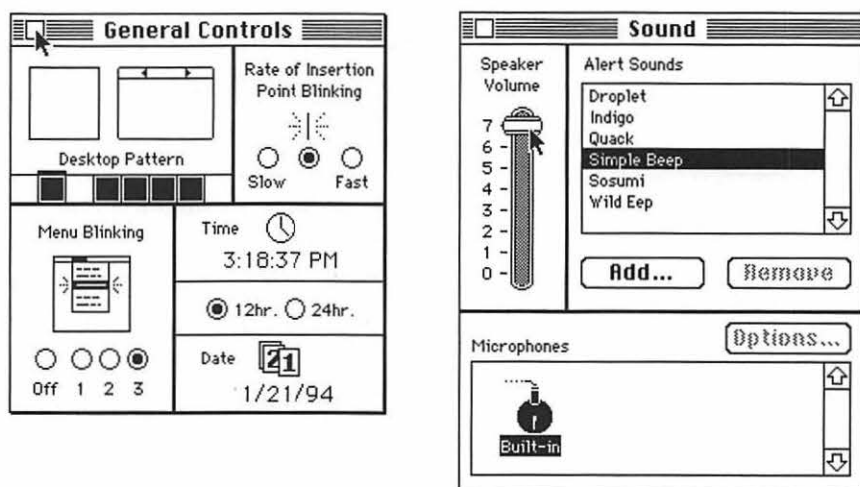
- 4 Double-click on *Sound*. You might need to scroll down to find it.
- 5 Play with the Speaker Volume setting by dragging the volume bar.
- 6 Change the computer's standard sound to something else by clicking on each of the other sounds.

The built-in microphone button allows you to record your own sound to add it to the list. In the interests of sanity and decency, many schools remove the Mac's microphone!

- 7 Close the *Sound* window. Your new settings are "remembered" by the computer.

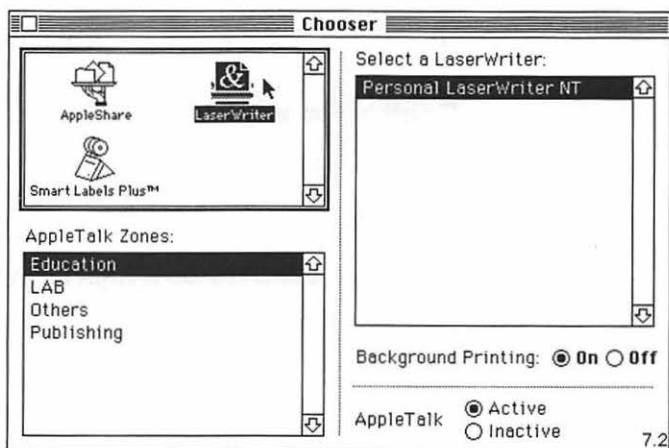
There are also Control Panels to adjust your monitor, mouse, memory, and keyboard.

► **SYSTEM 6 USERS** *The sound controls will be found as part of the General Controls panel, which comes up when you first access Control Panels. You will not double-click on file names of control panels but will select them from the list along the side of the General Controls window.*



The Chooser

The **Chooser** is where you select which printer you want to print to. If you have only one type of printer, you may not need to change this setting.



your Macintosh is connected to **AppleTalk** or another **network**, you may need to use the Chooser to establish communication with the network. If your documents are not printing, you may need to adjust the settings in the Chooser.

- 1 Select **Chooser** from under the **Apple** menu.
- 2 Don't make any changes at this time.
- 3 Close the **Chooser** window.

System Folder



There is a very special folder on your hard disk called the **System Folder**. This contains the start-up instructions for your computer. The computer won't work without it.

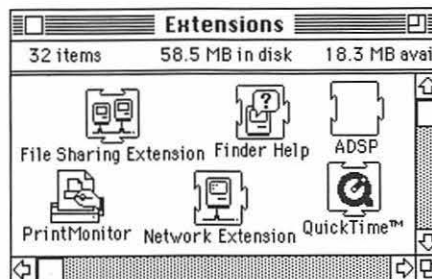
Fonts, sounds, and other certain types of files need to be stored in specific folders in your System Folder. Luckily, Apple introduced a nice feature in System 7 called **drag-and-drop**. You simply drag one of these files into the System Folder, and the computer will automatically drop it into the correct folder, even asking your permission first.

We're not going to work with the System Folder now. What you should know is that there should be only one System Folder on a hard disk, and if it's corrupted the computer will not work.

► **SYSTEM 6 USERS** *You don't have the advantage of drag-and-drop. You must use a utility called the Font/DA Mover to place these special files. It takes a bit of time to learn how to use the Font/DA Mover; check your systems manuals, or ask your lab supervisor for help.*

Extensions

Perhaps when you first powered up the computer you noticed that small icons on the bottom of the first screen appear and then disappear. These indicate what **Extensions** are in the system. Extensions (called **Inits** in System 6) are small programs that are placed in a folder called, logically enough, *Extensions*, which resides in your System Folder. These modify how your computer functions and are run automatically when you start the Mac. They continue to run invisibly in the background. A popular type of Extension is a **screen saver**, which blanks out your screen if you haven't used it for a specified amount of time, thus preventing an image from burning in the screen. Other Extensions check for **viruses** or change the Mac's icons. We won't play with any of these right now.



In System 7 you can also have any program or document automatically load on start-up by placing it in the *Startup Items* folder.

Directories

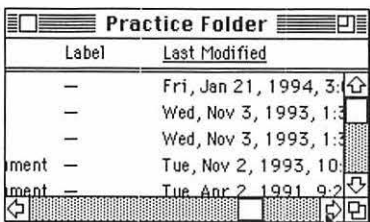
View By

Let's look at folders and disks again. To get a view of the contents of a folder or disk you view a **directory** in a window. We've been looking at icons in those windows, but there are other ways to view the contents. We can access the *View* menu from the Finder to change how the files are displayed.



- 1 Open the *Practice Folder* window.
- 2 Select *by Small Icon* from the *View* window.

Now we see cute little icons. This view might be useful if we had a great number of items to view. But it's not used very often. This next one is a lot more useful.



- 3 Select *by Date* from the *View* window.

Now the contents of the window are listed in chronological order with the items most recently saved at the top of the list. This is useful because you will more often want to work on the file you were using yesterday than the one from several months ago.

- 4 Experiment with each of the other views. They function as follows:

- by Name ...* Arranged in alphabetical order.
- by Size ...* Listed by file size, from largest to smallest.
- by Kind ...* Separated into applications, documents, and folders, with documents being grouped by the application they were created in (e.g., all PageMaker documents).
- by Label ...* Separated into the categories you identify from the Label menu (discussed in a later section).

► **SYSTEM 6 USERS** *Instead of by Label you will have by Color and a Color menu which function just like by Label and the Label menu.*

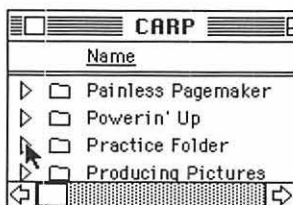
While in any view you can select a file just as if you were in icon view (select the little icons not the words). The computer will retain your View by settings until you change them.

Now change to *View: by Icon*. Notice that the information bar at the top of the window tells you how much space is available on your disk (this information is only shown when viewing by icons).

Outline View

Here's a neat little shortcut to see the contents of a folder without having to open its window first.

- 1 Close the *Practice Folder* window, and be in the *C.A.R.P.* window.
- 2 Change to *View: by Name*. Notice that next to each folder is a little triangle pointing to the left.



- 3 Click on the triangle next to *Practice Folder*. The triangle turns to point downward and the contents of it "spill out" to display its directory. This outline view can be continued for other nested folders.
- 4 Click the *Practice Folder* triangle again to collapse the view back to a shorter directory.
- 5 Switch back to *View: by Icon*. Outline view is not available when viewing by icons.

The Label Menu

System 7 allows you to attach labels to files to classify them into different types. When you choose *by Label* from the *View* menu, the directory will be sorted by these categories. You can change the names and colors in the *Label* menu from the *Labels* control panel.

- 1 Open the *Practice Folder* window.
- 2 Click once on the *Important Junk* icon to select it.
- 3 Pull down the *Label* menu and select *In Progress*.

Notice that the icon for *Important Junk* is now color coded as an In Progress item.

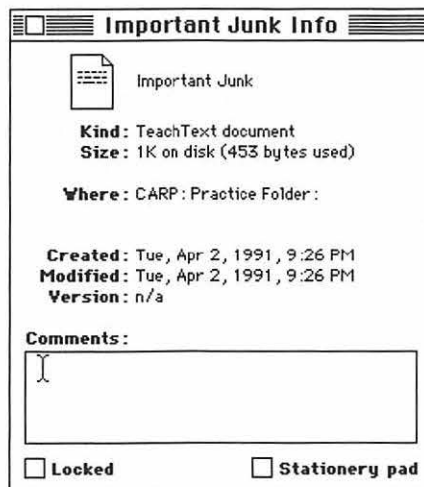
Get Info

To find out even more about your data, use the *Get Info* command.

- 1 Have the *Important Junk* file selected.
- 2 Access the *Get Info* command under the *File* menu.

A little window will open, telling you some revealing things about the file. The *Comments* box allows you to type some notes about the file.

- 3 Click in the *Comments* box, and add some notes. Your changes are automatically saved.





Locking a File or Folder

An important part of the *Info* window is the *Locked* box. When this box is checked, it prevents files from being renamed, thrown out, or changed.

- 1 Click in the *Locked* box in the *Info* window.
- 2 Now close the *Get Info* window, and drag the *Important Junk* file into the trash.
- 3 Select *Empty Trash* from the *Special* menu. The computer complains that the file is locked. Click *OK*.

Don't tell anyone, but if you hold down the Option key while you select *Empty Trash*, you can throw away a locked file.

Clean Up Window

You might have noticed that in the View by Icon mode the screen starts to get messy. If you want to put things into neat little rows, the computer can do it for you. With the *Practice Folder* open and nothing selected, use the *Clean Up Window* command from the *Special* menu, and watch the icons fly.

Aliases



Let's say you worked with Microsoft Works every day. Its file might be stored several layers deep. To launch it, you might need to open the hard disk, open a Word Processors folder, open the Microsoft Works folder, and finally double-click on the Microsoft Works icon. By creating an alias, you could just double-click on its icon from the Desktop.

► **SYSTEM 6 USERS** Forget it! You can't do this.

- 1 Select the *Important Junk* icon.
- 2 Choose *Make Alias* from the *File* menu.

A little file called *Important Junk Alias* is created. It takes up less than one K and is, in fact, just a "pointer" to where the real file is.

- 3 Drag the *Important Junk Alias* to the Desktop below your floppy disk icon.

If you were to double-click on the *Important Junk Alias* icon, it would open the file just as if it were the original. You can park an alias anywhere you want to, and you can rename it. This might be useful for keeping a frequently used document in several locations without having to make copies of it.

- 4 Delete the *Important Junk Alias* by dragging it into the Trash and Emptying the Trash.

Here's another power user's secret: close all open windows by holding down the *Option* key while you click the close box.

It's good manners to close all windows before quitting.

Find File

It's not unusual to "lose" a file on a disk. A file may be nested several folders deep, often in an unexpected folder. Before you give up your file as

lost or start opening all of your folders, consider using the Find File power tool.

- 1 Select *Find* from the *File* menu.

You don't need to type in the entire title of the file you are looking for. Find File can even search for a string of letters that are not at the beginning of a file name.

- 2 In the *Find* box, type in *Junk*.

- 3 Click on the *Find* button.

- 4 The computer searches for and displays the first file with the specified string of letters in its title.

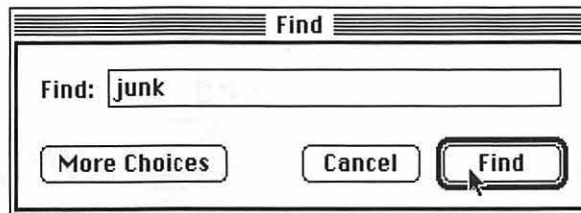
You could open that file by just double-clicking on it, but that wasn't the file we were looking for.

- 5 Select *Find Again* from the *File* menu (better yet, use *Command-G*).

- 6 The next occurrence of the string is displayed.

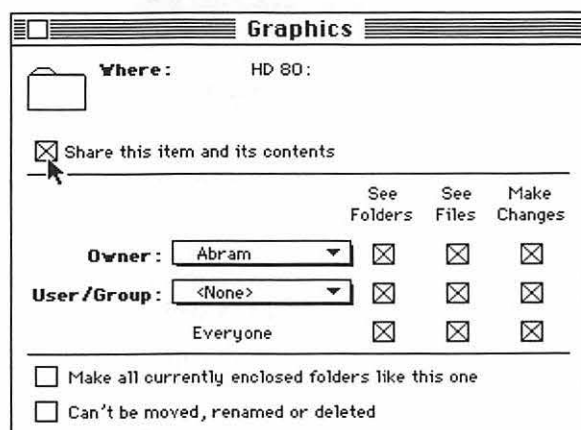
- 7 Continue to *Find Again* until the computer beeps, indicating all occurrences have been found.

► **SYSTEM 6 USERS** *Find File* is a Desk Accessory found under the *Apple* menu. It works almost identically to System 7's *Find File*.



File Sharing

If you are connected to a network, you can use file sharing to access files from other computers. You can also use it to send and receive electronic mail. There is a built-in security system for this feature. Your files are private until you turn on file sharing for particular folders. You can also set up



access privileges. Use of this feature is rather involved and is beyond the scope of this tutorial. You access *Sharing* from the *File* menu.

► **SYSTEM 6 USERS** *Although networking features are not built into the System 6 software, you can buy additional software which will do the same thing.*

Working with Floppies and Disk Management

Ejecting a Disk

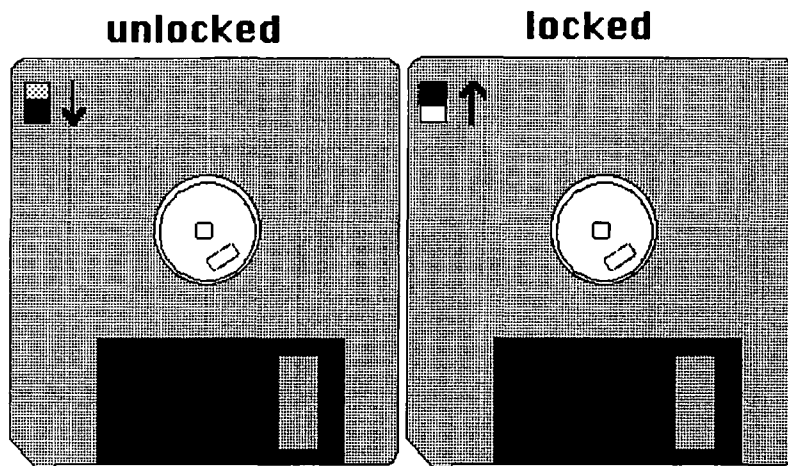
To eject a disk, drag its icon into the Trash. Remember, this never erases a disk. Drag your renamed C.A.R.P. disk's icon into the Trash can.

When you turn off the computer, any floppies will also be ejected. Do not use the *Eject Disk* command. This pops the disk out of the drive but does not take the disk's icon off the Desktop. You may not be able to continue to work until you reinsert the disk into the drive.

Locking a Disk

To lock a disk (preventing any changes to it):

- 1 Move the little black tab on the disk so you can see through the hole.
- 2 Slide it back so the tab covers the hole; the disk is again unlocked.



Formatting a Disk

Before we quit, let's work with floppy disks for a bit. When you buy a disk it isn't **formatted** for any particular computer, so it must be initialized.

- 1 Place a brand new floppy in the disk drive.
- 2 A dialog box will open, asking you several questions. Always format the disk **double-sided**.
- 3 Give the disk any name you wish.

If you ever reformat a disk, it will completely erase everything on it (*Erase disk* is on the *Special* menu).

Backups

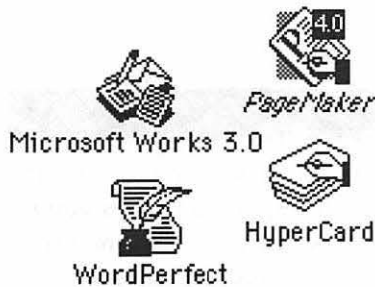
This brings up the subject of **backups**. If it's important, make a duplicate (backup) of it. To save yourself future heartbreak, get in the habit of saving often (every fifteen minutes or so) and backing up often (at least once a month).

Disk First Aid



Even if you follow all of the rules, sometimes disks will become unreadable. If it's your hard disk, seek professional help. If it's a floppy, run the *Disk First Aid* program from the *Utilities* disk that came with the Mac. This can often fix your floppies.

Applying Applications



Let's talk about **applications** for a while. So far we've mostly been working in the Finder, but to be productive you will need to use programs or, in "Macspeak," applications. Some of the most popular Macintosh applications are **word processors** such as Microsoft Word, WordPerfect, and MacWrite. **Graphics** programs include MacDraw, MacPaint, Aldus Freehand, and Illustrator. Excel is a **spreadsheet** program. Microsoft Works is **integrated software** that combines all of the above functions. PageMaker and QuarkXPress are **desktop publishing** programs used for composing printed pages. PowerPoint and Persuasion are **desktop presentation** programs used for creating slides, overheads, and handouts. HyperCard is an easy-to-use **programming language**. So you see, your Macintosh education is only just beginning.

Launching an Application

The Mac has several different ways of opening applications. You can double-click on the application's icon itself, or you can double-click on any document created with that application and it will open that document and the application.



- 1 Open the *TeachText* application by double-clicking its icon in the *Practice Folder* window.
- 2 *Quit* the program.

Now, try method number two.

- 1 Double-click on the *Beginnings* icon.
- 2 After you're in *TeachText*, you can select *Quit*.

Application Not Found and Importing Files

If you try to open a document and the application is not on any disk in the system, the computer will notify you. This often happens when you move disks to a different computer. Some applications can **import** documents created in other applications (e.g., Microsoft Works can open TeachText or

Word documents). To do this you need to launch the application and then use the *Open* command from the *File* menu.

Shut Down

Well, it's time for my boot heels to be wanderin', so let's learn how to shut this thing off. The recommended way to do this is to choose *Shut Down*. This "parks" or protects the hard disk and ejects any floppies. Let's do it now.

- 1 If you're in an application, choose *Quit*.
- 2 At the Desktop, close all windows (remember the Option key).
- 3 Select *Shut Down* from the *Special* menu.
- 4 On most Macs, you turn the power switch off by reaching behind the computer to the rocker switch (on Power Macs the switch will be on the front of the computer). Mac II's, Quadras, and Powerbooks will turn off by just selecting *Shut Down*.

Pep Talk

Well, that's our little lesson. Soon it will be time to go outside and enjoy the natural world for a while. The Mac will be waiting for you when you return, and this stuff only gets easier. It will soon become second nature to you. That's when you know it's time to learn some new applications. Have fun!

Assignment

Before you run out the door you might want to think about completing the following practice exercise, which reinforces the concepts learned in this and the previous chapter. There are two parts to this exercise: the first part has you copy the *C.A.R.P.* data disk onto two floppies, and the second has you fill in answers to test your Macintosh vocabulary.

EXERCISES/PART 1

COPYING YOUR DATA DISKS

We began this book by haranguing you on the importance of backing up disks, and yet we haven't done so with your data disk. Well, now that you have developed these skills in this chapter, we will have you make a backup copy of your data disk. But to further challenge your newfound skills, we will have you make numerous changes to the data. We are going to divide the data onto two disks so you will have lots of room to save your work as you proceed through the book's tutorials. Since by now you're an old pro with the Mac's System Software, we will tell you what to do, but

not how to do it. You may want to refer to the tutorial for help or even use Balloon Help.

- 1 You will need two blank 3.5-inch floppy disks. Either double density or high density disks will work (Macs built prior to 1989 cannot use high density disks). For one of the disks you can use the floppy you formatted while working through this tutorial; however, you will need to rename it as indicated in the next step.
2. Format both floppies double sided. Call one disk •C.A.R.P.1• and the other •C.A.R.P.2•.
3. Insert the original data disk that came with this book, and open it.
4. Delete the *Practice Folder* folder, and empty the Trash.

Now that you've messed up the *Practice Folder*, what if you want to run the tutorial again? Fortunately we have "hidden" another copy of the folder on your floppy disk.

5. Retitle the folder entitled *Mystery Folder* as *Practice Folder*.
6. Open the hard disk window.
7. Create two new folders called *CARP1* and *CARP2* on the hard disk.
8. Make the window of your original data disk active. Size it so all of its folders are visible.
9. Select the following folders from your original data floppy disk: *Practice Folder*, *Word Works*, *Producing Pictures*, *Doin' Data*.
10. Copy those folders into the *CARP1* folder of the hard disk.
11. Select the following folders from your original data disk: *Knowin' Numbers*, *Painless PageMaker*, *Powerin' Up*.
12. Copy those folders into the *CARP2* folder of the hard disk. You might need to move and size some windows to do this.
13. Eject your original floppy disk, and lock it.
14. Without copying the actual *CARP1* folder on the hard disk, select all of its contents and copy them to your •C.A.R.P.1• floppy disk.
15. Create a new folder on •C.A.R.P.1• called *Assignments1*.
16. Move the *MAC IQ* file out of the *Practice Folder* and into the *Assignments1* folder.
17. Color code the label of the *Assignments1* folder as *In Progress*.
18. Change the view so you can tell how much space is used and how much is free on your •C.A.R.P.1• floppy disk.
19. Without copying the actual *CARP2* folder on the hard disk, select all of its contents and copy them to your •C.A.R.P.2• floppy disk.
20. Create a new folder on •C.A.R.P.2• called *ASSIGNMENTS2* (in all caps).

Now you have plenty of room on both disks to save your work on, and you can put the original disk away as a backup. If you want to run any of the tutorials again, make another copy of the needed folder from the "pristine" original disk.

21. Trash the *CARP1* and *CARP2* folders from the hard disk, but don't empty the Trash.

22. Oops! We needed one of those trashed files. Take the *Important Junk* file out of the Trash, and drag it back on the hard disk.
23. Now empty the Trash.
24. Change the directory of •C.A.R.P.2• to display the contents in alphabetical order.
25. Change this display to give an outline of the contents of each folder.
26. Insert •C.A.R.P.1• and open the *Practice Folder* window.
27. *Get Info* about the file called *Beginnings*. Add the following comment to its info screen: *To be used in Chapter 3*. Now lock the file, and close the *Get Info* window.
28. Use Key Caps to figure out how to type this symbol: ✓ (a check mark) in the Geneva font. Change *Assignments1* to *Assignments1✓*.
29. Create an alias for *Beginnings*, and place it on the top level of •C.A.R.P.1• (not in any folder).
30. Launch *Beginnings*, and type a paragraph.
31. In your document, paste in the answer to 566 divided by 3.14.
32. Copy a sentence from your document, and paste it into the Scrapbook.
33. Copy a text item from the Scrapbook, and paste it at the end of your document.
34. Use *Save As* to save your document as *Exercise 1* in the *Assignments1✓* folder of your •C.A.R.P.1• floppy disk.
35. Print your *Exercise 1* document.
36. Quit *TeachText*, and switch back to the Finder.
37. Print the desktop window of both floppies with the names of all files on them visible.
38. Close all windows.
39. Retain your printouts for turning in.
40. Put your •C.A.R.P.1• disk back in the drive, and continue on to the next exercise.

EXERCISES/PART 2**TEST YOUR MACINTOSH IQ**

1. Open the *Mac IQ* file, and fill in a short answer to each of the terms listed in the *Test Your Macintosh IQ* document. No fair using the Glossary!
2. Save your file as *IQ Answered*.
3. Print a copy of *IQ Answered*.

CHAPTER 4

Word Works— Learning Word Processing via Microsoft Works

FILES USED IN THIS TUTORIAL

The following files are found in the Word Works folder of the C.A.R.P. disk:

<i>Second Letter</i>	<i>American History</i>
<i>Miss Pellings</i>	<i>Margins</i>
<i>Graphically Speaking</i>	<i>Graphics Demo</i>
<i>Lesson Plan</i>	<i>Letterhead</i>
<i>John Muir</i>	<i>First Letter</i> (created by user)
<i>Corrected Spellings</i> (created by user)	<i>Lesson Plan Template</i> (created by user)

Introduction

About Word Processing

Welcome to the world of word processing. Once you begin word processing, it will change your writing routine. Research shows that students who use word processing write more, take more chances, and have a better attitude about writing than do those who use conventional methods. This is because word processing affords a “plastic environment,” that is, an area where changes can be made easily and ideas explored risk-free. We want to think of word processing as not just using an electronic typewriter, but as a different method of writing. Where you compose, write, and edit at the keyboard, without writing your text out first on paper. You will want to save and store your documents to make it easy to revise them.

Applying Word Processing to Teaching and Learning

Words are the traditional way we communicate ideas and store information. Given this fact, it is only natural that word processing would be the most commonly used of all computer applications. This is also true in schools. Anything that makes writing easier will have a wide appeal; thus we see word processing being used in almost all grade levels and curriculum areas. Specialized word processing programs such as Bank Street Writer and Magic Slate make it possible for teachers to introduce students to word processing as early as second grade. These programs offer bigger letters for young eyes and menu-driven commands. The programs trade off sophisticated features for ease of use. Printing and saving files may be

the most problematic aspect of word processing for young children, so teachers may want to assist students with these operations.

In secondary schools, word processing is often initially taught as part of a language arts, business, or keyboarding class, but its use rapidly spreads to all curriculum areas. The writing across the curriculum movement is fostered by word processing. Numerous books are available which offer ideas and worksheets for using word processing across the curriculum; one good one is *Every Teacher's Guide to Word Processing: 101 Classroom Computer Activities for Every Grade* by Michael Milone (Prentice Hall, 1985). Also see Appendix F of this book, which includes classroom tips for Microsoft Works.

We are rapidly reaching a point where all college students will be required to be proficient at word processing. Many classes will require that all papers be word processed. Certainly the notion of writing a master's thesis or doctoral dissertation without using the power of word processing is not attractive. For academic papers, students may require the advanced features (such as footnoting capability) of a sophisticated word processing program.

There are other writing tools that the computer can offer beyond just word processing. Microsoft Works includes a spelling checker and thesaurus. You can buy a grammar checker to check style and readability. Idea outliners can be used to organize ideas into written form, and desktop publishing is a natural result of the development of sophisticated word processing programs.

For their own work, teachers find that word processing saves them time and gives their documents a more professional appearance. A teacher can create generic forms and personalize them for individual students or lesson plans. Correspondence, lesson plans, handouts, and reports are just a few of the things that teachers may use word processing for.

Using word processing in the classroom is not without its limitations. The first one is access. If a classroom has one computer in it, that would probably equate to less than one hour of computer time per student, per week. It's like trying to share one pencil among an entire class. A little bit of time spent teaching and practicing keyboarding skills will greatly speed up text entry. Computer labs and home computers can help with access, but this raises the problem of equity; which students are likely to have computers at home? Perhaps someday each student will be loaned a laptop computer for the year. One potential drawback is that with documents neatly printed on a laser printer, it is all too easy for students to confuse the appearance of their writing with the quality of it. However, the flip side of this is that neat appearance can give students more pride in their work, especially if they have penmanship problems. In short, there are few reasons not to jump into word processing.

Some Common Word Processing Concepts

Before beginning, it is helpful to get a quick overview of some common word processing concepts. For you old-timers out there who remember hitting a carriage return at the end of each line on your typewriter, you will need to break that habit. When a word doesn't fit on the current line, the computer will automatically start a new line. This is called **wrap around**

(or word wrap). Remember not to hit the Return key at the end of a line unless you want to start a new paragraph or skip a line.

The next concept is **backspace erase**. You need to go just past the letters you want to erase, and then press the Delete key to erase. This is true of almost all word processors. You will learn a way to do a forward erase using the mouse.

Word processors normally work in the **insert mode**. When you go back to add text, the existing text to the right of the cursor will be pushed along while the new text is inserted. By the way, the **insertion point** (or **cursor**) on a Mac word processor will look like an **I-beam**.

One of the first rules on the Mac is that you need to **select** something before you modify it. You will learn to select text and then apply a size or style or otherwise edit it.

Here's some advice you'll thank me for later: save your work at least every fifteen minutes. If you follow this advice you won't lose much of your work. Computers sometimes **crash**, and you might lose your work if you haven't saved it. You might also want to make a backup copy of important files, because sometimes disks get damaged. Always save your work. Don't just type it in and print it. Storing your files allows you to later load them again to edit or update them.

Type quickly; don't worry about making mistakes. Let the creative juices flow. After you have your ideas on the screen, then go back and proof and edit them. Concentrate on one writing process at a time. I save all of my spelling questions for the end, when I run a spelling check on the document. In fact, if you're as poor a speller as I am you will learn to love the spelling checking ability of your word processor. Version 3.0 of Works also offers a **thesaurus** and word count feature. You can also use a **grammar checker** program. However, these tools are not smart enough to eliminate the need for you to proof the document yourself (e.g., they don't know the difference between "your self" and "yourself").

Word processing can allow your writing to be less mechanical and more creative. But enough words; let's get into action!

Starting Up

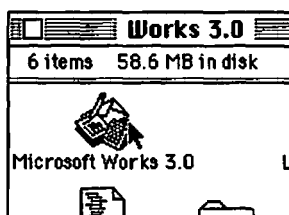
Starting Works

Microsoft Works must be installed on a **hard disk** or **network**. It comes on six floppy disks for installation.

- 1 If your copy of Microsoft Works is on a hard disk, open the hard disk icon and find the *Works* folder (the folder may also be called *MS Works*).

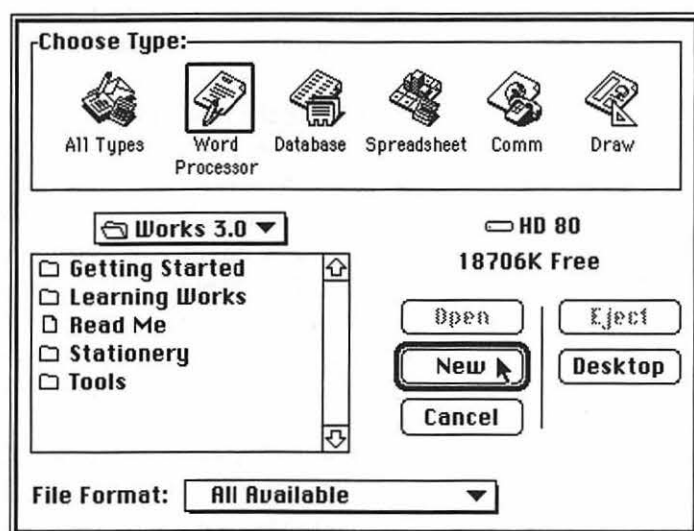
On a network just double-click the *Works* icon.

- 2 Double-click on the *Works* folder.
- 3 When that folder opens, double-click on the *Works* icon.
You will want to save and load documents on your floppy disk.
- 4 Insert your C.A.R.P. data disk.



New File

- 1 Click once on the *Word Processor* icon to enter the word processing module.
- 2 Click once on the *New* button to start a new document.
- 3 You will now be presented with a blank document called *Untitled 1*.



Quick Tour

A Quick Look at the Menus

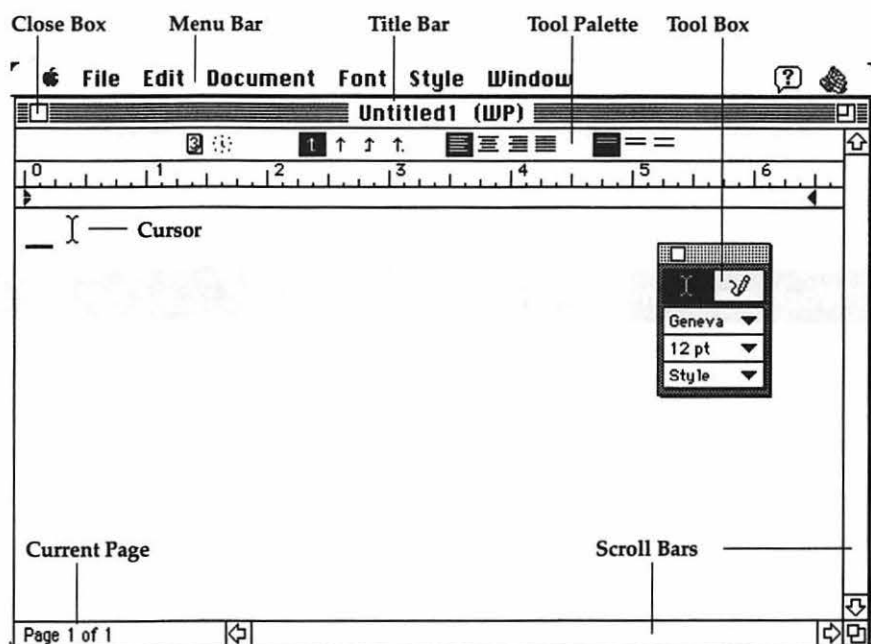
Before we start typing, let's take a quick tour of Works' menus and the document window (see Figure 4.1). Pull down each of the menus, but don't actually select any of the commands. You can probably guess what most of the commands do. This is known as being **intuitive**. Almost all Mac programs have the same first three menus: *Apple*, *File*, and *Edit*. Any command with an ellipsis after it (3 dots ...) will bring up a dialog box with additional options. When commands are **grayed out** they are not currently available to use. Appendix A has diagrams of all of the menus used in this tutorial.



Figure 4.1

A Quick Look at the Screen

By now you should be familiar with the basic parts of Mac windows, but you might want to look at Figure 4.2 to examine the parts of the Works word processing window. If the tool box and ruler are not visible on your screen, select *Show Tools* and *Show Ruler* from the *Windows* menu.



Text Entry

Entering Text

By now you're probably itching to do some typing, so let's do it.

- 1 Type three sentences.

Remember not to hit Return at the end of a line unless you want to start a new paragraph.

- 2 Type two more new paragraphs. For right now, don't worry about any mistakes you make. In fact, *be sure to include at least three typos.*

Moving the Cursor

Now let's get moving. You can use the arrow keys on the keyboard to move the cursor.

- 1 Move to the beginning of your document using the up and left arrow keys. You can also move the cursor via the mouse.
- 2 Move the mouse pointer to the end of your letter and click once. The insertion point (the I-beam) is now located there.

This is it.

Deleting

Let's fix your mistakes now. Remember that the Mac normally does a back-space erase.

- 1 Using the arrow keys, move the cursor to the right of a typo and hit the *Delete* key.
- 2 Type in the correct letter(s).
- 3 Fix the rest of your typos.
- 4 By the way, holding down the *Shift* key while you press *Delete* will do a forward delete in Works. Try it.

Inserting Text

- 1 Move the mouse to the end of the second sentence and click once.
- 2 At this insertion point, type in a new sentence. Notice how the new text pushes the existing text to the right.

Working with Files

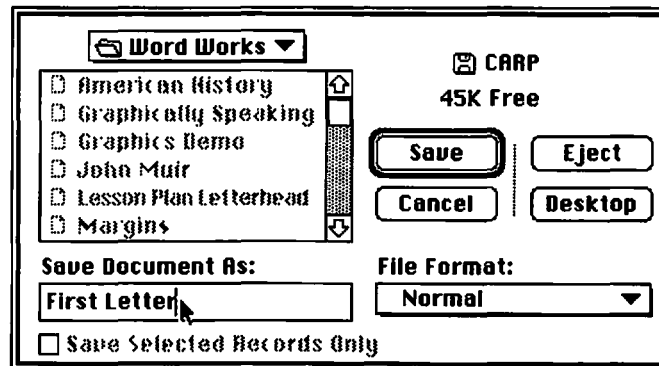
Saving

After my lectures about frequently saving, you're probably eager not to risk losing any of your masterwork.

- 1 Pull down the *File* menu, drag down to *Save*, and release the mouse button.

The Save dialog box appears. The names of the files will be different on your screen.

YOU WILL WANT TO SAVE ON YOUR C.A.R.P. DATA DISK IN THE FLOPPY DRIVE AND NOT IN THE WORKS FOLDER OF THE HARD DISK.



FOR SYSTEM 7 USERS

- 2 Click on the *Desktop* button.
- 3 Double-click on the C.A.R.P. data disk.
- 4 Double-click on the *Word Works* folder.
- 5 Type in the name *First Letter* for your document. You may need to use the arrow keys and Delete key to erase the *Untitled* label.
- 6 Click the *Save* button, or press the *Return* key.

FOR SYSTEM 6 USERS

- 2 Repeatedly click the drive button in the dialog box until the name of your floppy appears.

- 3 Double-click on the *Word Works* folder.
- 4 Type in the name *First Letter* for your document.
- 5 Click the *Save* button, or press the *Return* key.

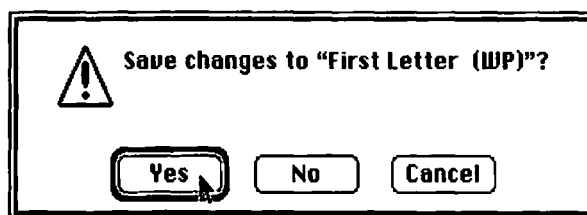
After you've saved the document once, you will not be presented with this dialog box again. The program will save the document automatically on the same disk under the same name (that is, it will update the existing file).

- 1 Type in one more sentence at the end of your document.
- 2 Select *Save* from the *File* menu.
- 3 Type in another sentence at the end of your first paragraph.

Close

To close a document:

- 1 Select *Close* from the *File* menu, or just click the **close box** in the upper left corner of your document window.
- 2 The computer will ask you if you want to save changes. Select *Yes*.



Quitting

To quit Works, simply choose *Quit* from the *File* menu.

You do not need to close your documents first; the *Quit* command closes all documents before quitting.

Opening a File

You could open a file by starting up Works and then using the *Open* command from the *File* menu, but there is a faster way. Simply double-click on the file you want to open. This will open both the file and the Works program. It will also cause the program to save your file in the same location it was in when you opened it.

- 1 From the Desktop Finder, double-click on your floppy disk icon to open it.
- 2 Find the *First Letter* icon, and double-click on it.

Works will now open that file and save it on the floppy disk.

Multiple Documents

Most Mac programs allow you to have several documents open and to cycle among them, even cutting and pasting among them. In Works you can have up to sixteen different documents open at once.

- 1 From the *File* menu, use the *Open* command.

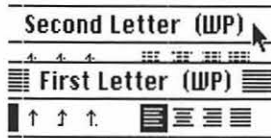
Navigate through disks if necessary to find the *Second Letter* file on your floppy disk. The file names are listed alphabetically, so you might need to scroll down to find the file name.

- 2 Double-click on the file name *Second Letter* to open it. Now you have two documents open.
- 3 Pull down the *Window* menu, and notice that it lists the names of both open documents, with a check next to *Second Letter*.
- 4 Drag down and select *First letter*.

The windows will cycle, and *First Letter* will become the **active window**.

You can also move between letters this way:

- 1 Drag the title bar of the *First Letter* document down to about the middle of the screen.
- 2 Now click on the *Second Letter* title bar. This becomes the active window, and *First Letter* moves to the back.



Editing Text

Scrolling

After your letter gets more than about twenty lines long it won't all fit on the screen at one time. You may need to use the **scroll bar** to move through your document.

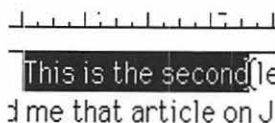
- 1 Make sure the *Second Letter* window is active. With the mouse, press on the scroll down arrow to scroll to the end of the letter.
- 2 Now press on the scroll up arrow to return to the top of the document.
- 3 The computer will also automatically scroll the screen as you use the up or down arrows on the keyboard. Try using the down arrow key now.



Selecting Text

Remember that on the Mac you must select something before you can modify it. So we will now learn how to select text.

- 1 Be sure you are still in the *Second Letter* document. Put the cursor right before the first word.
- 2 Press and drag the mouse over the first four words till they become highlighted (they are now selected).



- 3 Hit the *Delete* key. The selected text is gone.

You can highlight forward or backward. Try it. Click anywhere off the text to **deselect** it.

Selection Shortcuts

Here are some selection shortcuts. Try them.

- 1 Double-click inside any word to select one word.
- 2 Click once anywhere else on the screen to deselect.
- 3 Move the mouse to the very left of the screen, until it becomes an arrow. Click once to select one line of text.
- 4 As in step 3, move the mouse to the very left of the screen, until it becomes an arrow, then double-click to select one paragraph.
- 5 Choose *Select All* from the *Edit* menu.
- 6 Click once anywhere to deselect all the text.

Cut, Copy, and Paste

- 1 Select the entire second paragraph.
- 2 Now choose *Cut* from the *Edit* menu or press *Command-X* as a keyboard shortcut.
- 3 Move the cursor to the end of the letter. Hit a couple of *Returns*.
- 4 Now choose *Paste* from the *Edit* menu (or *Command-V*).

We have cut text and pasted it into another spot. That text will stay in the computer's **Clipboard** until we push it out with something else.

- 1 Choose *Paste* again, to demonstrate this.
- 2 To check what is in the Clipboard, select *Show Clipboard* from the *Window* menu and then close that window.
- 3 Now select the entire first paragraph.
- 4 Select *Copy* from the *Edit* menu. This now puts this text into the Clipboard.
- 5 Move the cursor to the end of your letter; click once.
- 6 Use the *Paste* command to make a copy of that text.

Copy works identically to *Cut*, except it does not eliminate the original text; it duplicates it.

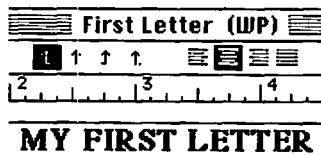
Undo

If you invoke the wrong command, you usually will have a chance to **undo** its effect by using the *Undo* command from the *Edit* menu. But be forewarned, the computer can only undo the last action you've taken.

- 1 Select the last sentence; choose *Cut*.
- 2 Now choose *Undo*. It's baaack!

Formatting Text

- 1 Go to the beginning of your *First Letter* document. Press the *Caps Lock* key on the keyboard.
- 2 Type in the title *MY FIRST LETTER*. Press the *Caps Lock* key again to turn it off.
- 3 Now select the title.
- 4 From the *Font* menu select *Times*, and from the *Style* menu choose *Bold* and size = *18 point*.
- 5 With the title still selected, experiment with some other fonts, sizes, and styles.
- 6 You can also make these types of changes using the *Tool Box* tearoff menu. Try it.
- 7 We want to center our title, so choose *Center* under *Alignment* in the *Style* menu.
- 8 Save your work on your floppy disk.



Find and Replace

Find and replace is a powerful tool found in most word processors. It allows you to replace a word (or a string of words) automatically with others. It is often used to change names, dates, and even improper word usage. First we will just search for a word, and then we will find and replace a word.

- 1 Load the file *American History*.
- 2 From the *Edit* menu select *Find*.
- 3 In the *Find What* box, type *Muir*. The first occurrence of *Muir* will be highlighted.
- 4 Click on the *Find Next* button. The next occurrence of *Muir* will be highlighted.
- 5 Continue to select *Find Next* until you get a dialog box telling you that all occurrences of the word have been found.

A more powerful technique is to do a find and replace.

- 1 From the *Edit* menu select *Replace*.
- 2 In the *Find What* box, type *America*.
- 3 Press the *Tab* key to move to the *Replace With* box. Type in *United States*.
- 4 Click on the *Find Next* button. The cursor will move to the first occurrence of *America*.
- 5 We want to make the change, so click on *Replace*. *Works* replaces *America* with *United States*.

- 6 Click on the *Find Next* button.
- 7 Replace all occurrences until the program tells you that all occurrences have been found.
- 8 Repeat this procedure to replace *he* with *Muir*. However, in the *Replace* submenu click the *Match Whole Words Only* option to prevent Works from selecting parts of words containing the letters *he*, such as *she*, *the*, *their*, and *head*.

Doing a Spelling Check

Spelling Check

Automatic spelling checkers have been a great boon to writers who concentrate more on their writing than on their spelling. Spelling checkers may also alert you to words you didn't know you were misspelling.

- 1 Open the file *Miss Pellings*.
- 2 Move the cursor to the beginning of the document. Select *Spelling* from the *Document* menu.

Works searches for its 60,000-word dictionary.

- 3 If it asks you to "Use Document Dictionary?" click on *Yes*.

If the program does not find the dictionary, it may prompt you to locate it. Navigate through the *Works* folder or *System Folder* to find the dictionary file. It might be in the *Tools* folder of *Works*.

The Spelling dialog box appears. Figure 4.3 shows the parts of this window. Misspelled words or any word not in Works' dictionary will be on the *Not in Dictionary* line.

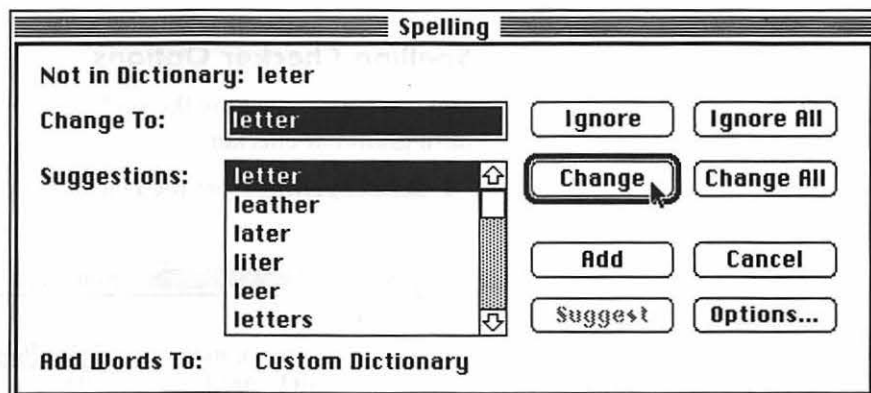


Figure 4.3

- 4 The first flagged word is *leter*. The suggested replacement is *leter*. Since that is correct, click the *Change* button.

- 5 The next unknown word is *Muir*. Since this is a correctly spelled proper name which is not in Works' dictionary, just click on *Ignore*.

If you clicked on the Add button, the word would be saved in a custom dictionary file and later not flagged as misspelled. You might do this with proper names or technical terms that are not in the dictionary but which you use frequently. However, since the Custom Dictionary is stored on the hard disk, you should only do this on your own personal computer.

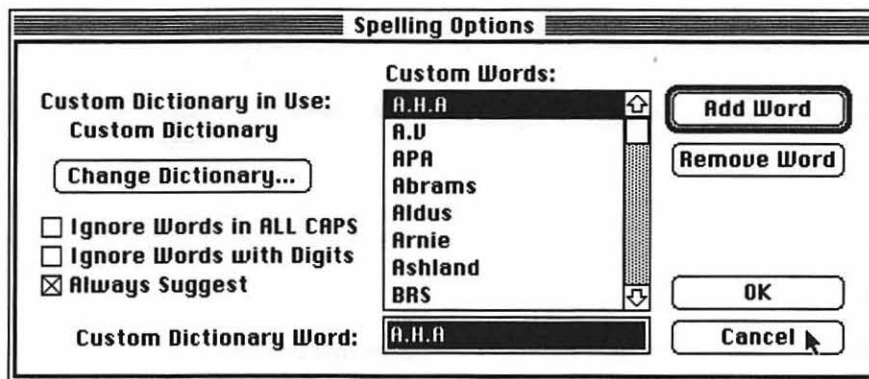
- 6 The next highlighted text, *dawn . . . during*, is not recognized because Works checks for capitalization after a period. Just press *Ignore* to ignore this interruption.
- 7 *Valuntering* is flagged. The suggested word is incorrect. Note that the word in the *Change To* box is highlighted. Type in the correct spelling, *volunteering*.
- 8 Click the *Change* button.
- 9 The next highlighted text, *Classom*, also does not have the correct spelling in the *Change To* box, but the correct spelling is found in the *Suggestions* list. Scroll down to the correct spelling, and click on the word *Classroom*. It automatically becomes the word in the *Change To* box. Click the *Change* button.
- 10 Continue to use the spelling checker to correct spelling errors or skip words which are correct but unknown.
- 11 Use *Save As* to save your work on your floppy as *Corrected Spellings*.

When you quit Works you will be asked whether the ignored words should be saved so the same words will not be flagged in future spelling checks. If you say yes, the words are saved to a new dictionary file. We won't save them.

Spelling Checker Options

You can customize how the spelling checker works. In fact, it can become a mini grammar checker.

- 1 Select *Spelling* from the *Document* menu.



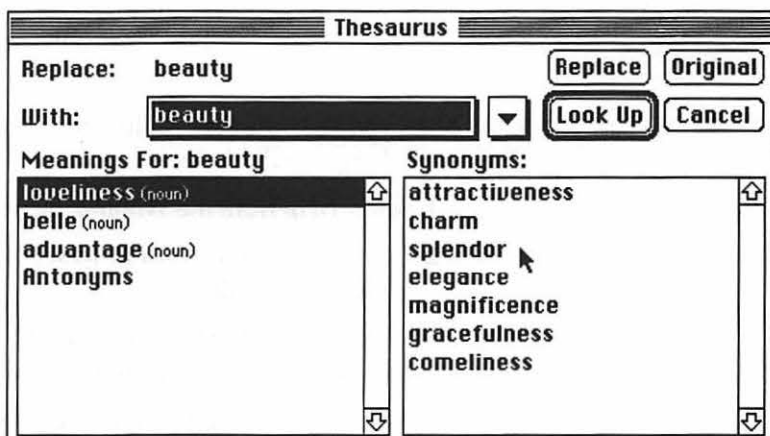
- 2 Click on the *Options* button. Examine the options, but don't make any changes for now.
- 3 Click on the *Cancel* button.

Using the Thesaurus

Version 3.0 of Works has added a thesaurus to its arsenal. You can try it now.

- 1 With the document *Corrected Spellings* open, move the cursor inside the word *beauty* in the second paragraph and click once.
- 2 Select *Thesaurus* from the *Document* menu.

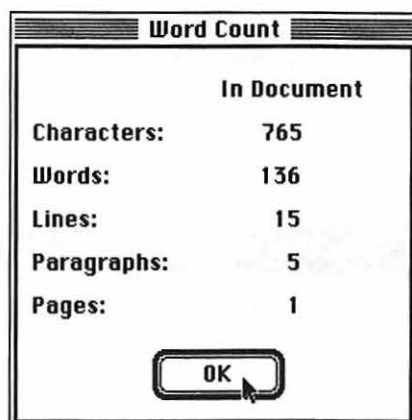
Works opens a dialog box, giving you possible synonyms from its 90,000-word thesaurus.



- 3 Click once on each of the various meanings.
- 4 Click once on *loveliness* as the meaning.
- 5 Then click on a synonym—try *splendor*.
- 6 Click on *Replace*. In a few seconds Works will make the change.
- 7 Try it again with the word *nature*.

You can also enter a word in the *With* box and then click *Look Up*, or you can look up a synonym to get another synonym. If things get really confused, click on *Original* to return to your first word choice.

A spelling checker and a thesaurus are great tools for a young writer, but neither replaces the need to proofread. As long as a string of letters is in the computer's dictionary it will not be flagged; thus the computer won't alert you to improper homonyms, grammar errors, or incorrectly used words.



Word Count

The program will give you some statistics about your document if you select *Word Count* from the *Document* menu. Try it now.

Help

Microsoft Works offers on-line help, so if you can't remember how to do something you don't necessarily have to get out the manual.

- 1 Select *Help* from the *Window* menu.
- 2 Click once on the *Word Processor* icon because we want assistance with that module.
- 3 Click once on the topic you want help with. Then scroll through the more detailed list, and click once on the desired item.
- 4 Another way to get help is to click on the *Search* button and to type in the command or topic you want help with.
- 5 To exit Help, click the close box of the *Help* window.

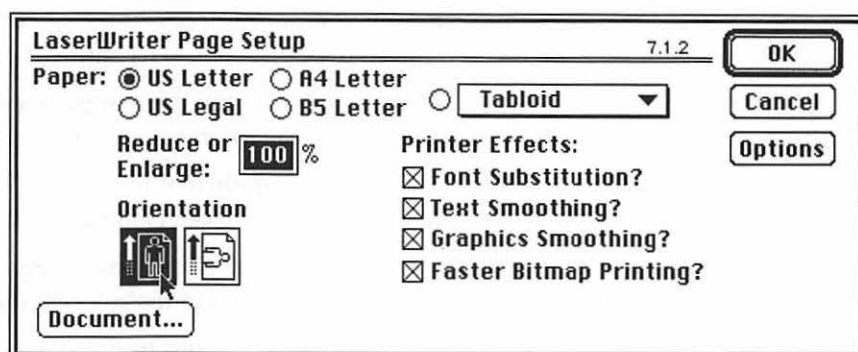
Setting Margins

To set up the margins for a new document, you will type in the margin numbers.

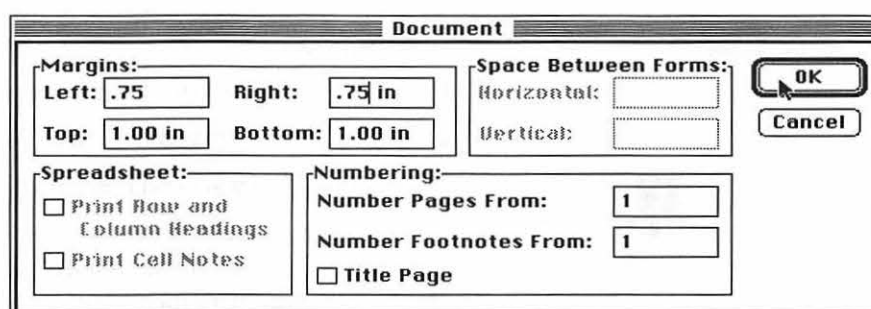
- 1 Select *New* from the *File* menu. Double-click on the *Word Processor* icon.
- 2 Select *Page Setup* from the *File* menu.

Notice that we can set up the page to be vertical or horizontal, or use different sized paper. We will learn later how to add headers or footers.

- 3 Click on the *Document* button in the dialog box.



- 4 We want to change the left and right margins to 3/4 inches, so click in the left margin box, delete 1.00, and type in .75 (remember the decimal point).
- 5 Use the *Tab* key to move to the right margin box, and change it to .75 also. Click OK.
- 6 Click OK in the *Page Setup* dialog box.



Control of margins, tabs, and indentation is done via the ruler that appears at the top of the window. If the ruler is not showing, pull down the *Window* menu and select *Show Ruler* (if Hide Ruler is displayed then the ruler is already visible).

Note that under the ruler there is a line with some strange markings on it (see Figure 4.4). In this exercise you will learn about these markings when you set margins and then type in some text. You will then change the margins, tabs, and indents. This is one of Works' least elegant features, and you may find this a bit tedious.

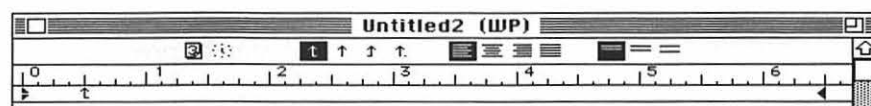


Figure 4.4

- 1 Select *Open* from the *File* menu.
- 2 Find the file *Margins* on your data disk, and open it.

- 3 First you must select which text you will reformat. Choose *Select All* from the *Edit* menu. The entire document becomes highlighted.
- 4 Press-and-drag the left margin marker (the BOTTOM triangle near the left of the ruler) to the 1-inch marker on the ruler.

If the top triangle moved instead of the bottom triangle, you have adjusted the indent marker. Don't worry about it for now.

- 5 Change the right margin by dragging the right triangle (the triangle near the right end of the ruler) to the 5-inch mark.

Note how the text has been realigned.

- 6 Deselect the text by clicking outside of it.
- 7 Try it again with just one paragraph selected.

Adjusting Tabs

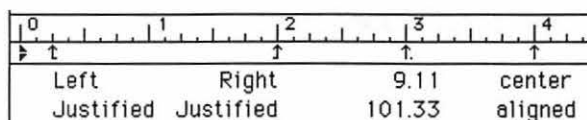
Tabs are used to preset paragraph indents, to set up outlines, and to line up items in a chart. Tabs are much better to use than spaces for these purposes. When you begin a new document, the tabs are preset at every half-inch across the page.

- 1 Move to the end of the *Margins* document.
- 2 Drag the margin markers back to 0 inches and 6 inches.
- 3 Press the *Tab* key several times to check the tab settings.

There are four types of tabs. Left tabs are normal tabs, used to align text in columns. Right tabs are often used to line up single-digit numbers. **Decimal tabs** align numbers such as prices by their decimal points. **Center tabs** align text in the center of a column.

- 1 Point the mouse in the Ruler Control line, and drag a left tab stop to below the 1/4-inch mark.
- 2 Drag a right tab stop to below the 2-inch mark.
- 3 Drag a decimal tab stop to below the 3-inch mark.
- 4 Drag a center tab stop to below the 4-inch mark. See Figure 4.5.
- 5 Press the *Return* key once.
- 6 Type in these lines ("tab" means press the Tab key):

tab Left	tab Right	tab 9.11	tab center
tab Justified	tab Justified	tab 101.33	tab aligned
- 7 Remove a tab stop by pressing on a tab marker and dragging it below the ruler control line.



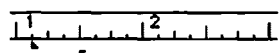
0	1	2	3	4
Left	Right	9.11	center	
Justified	Justified	101.33	aligned	

Figure 4.5

Indentation

A) If you work in an outline form you will want to know how to create hanging paragraphs, where the first line of a paragraph is indented differently than the rest of the paragraph (just like this paragraph).

Put on your reading glasses and try to find the indent marker in the ruler control line (the TOP triangle). It may be hiding directly on top of the left margin triangle.



A) If you work in an outline form you will want to know how to create hanging paragraphs, where the first line of a paragraph is indented differently than the rest of the paragraph (just like this paragraph).

- 1 Drag the left margin triangle to the 1.5-inch position, as shown in the illustration.
- 2 Drag the top triangle to the 1 and 1/8-inch position.
- 3 Type in the following outline ("Tab" means to press the Tab key once):
 - I. (Tab) Do not type a return at the end of each line, only to start a new paragraph. This is the first hanging paragraph.
 - II. (Tab) Notice the automatic indentation of the second and all subsequent lines of each paragraph.
- 4 Save your work.

Other Ruler Features

Line Spacing

Microsoft Works has an easy way to change between single, one and a half, and double line spacing.



- 1 Select some text (perhaps a paragraph).
- 2 Click on the icon in the ruler bar for the desired line spacing (try double spacing).

You can also choose spacing from the *Style* menu.

Alignment

Alignment permits you to change the justification of the text, choosing between left, center, right, and full justification. This works just like line spacing: select some text (perhaps a title) and click in the Ruler Bar on a type of alignment (try center justified).

You can also access *Alignment* from the *Style* menu.

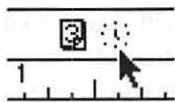


Date and Time Stamp

Works 3.0 adds an easy way to insert the time and/or date into a document. There are two ways to do this.



- 1 Move the cursor to the beginning of your document.
- 2 Click once on the little boxed 3 in the ruler (the *Date* tool). Today's date will be inserted at the cursor.
- 3 Another way to do this is to simply select *Insert Current Date* from the *Document* menu.



To add the current time, follow these steps:

- 1 Type this sentence: *I am writing to you at*
- 2 Now click on the clock icon in the ruler. The current time will be inserted.

You can also do this by selecting *Insert Current Time* from the *Document* menu.

In the Preferences section of this tutorial you will learn how to change the format of the date and time.

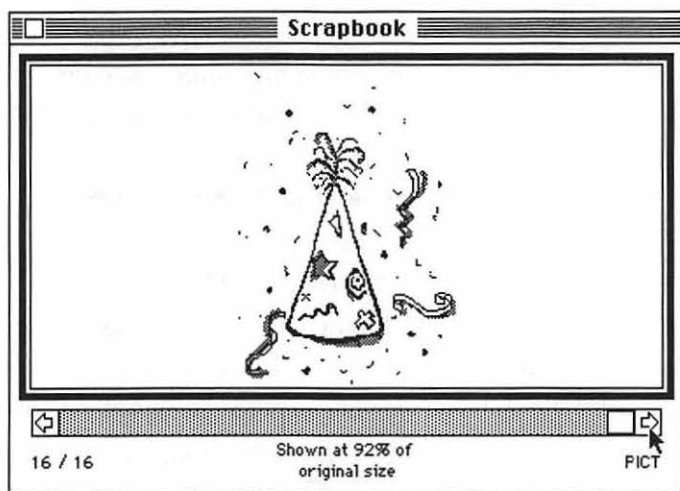
Copy Ruler Settings

Copy Ruler Settings and *Paste Ruler Settings* (in the *Document* menu) allow you to copy the format options of one paragraph and paste them into another. Formatting options include margins, indents, tab settings, line spacing, and justification. Works will continue the format option of one paragraph into the next unless you change them.

Paste from Scrapbook

Works allows you to combine text with pictures. You can create simple graphics in Works or create them in a graphics program and paste them in your text document via the Scrapbook or the Clipboard.

- 1 Close any open documents.
- 2 Open the document *Graphically Speaking*.
- 3 Scroll down to the end of the second paragraph.
- 4 From the *Apple* menu select *Scrapbook*.
- 5 Scroll through the Scrapbook to find a simple picture.
- 6 Select *Copy* from the *Edit* menu.
- 7 Close the Scrapbook by clicking its close box.
- 8 Now the picture is in the Clipboard. Check this by selecting *Show Clipboard* from the *Window* menu.
- 9 Paste the picture by selecting *Paste* from the *Edit* menu.



You are now placed in the draw mode, and the **graphics tools** are displayed in the **tool box**.

The small squares that border the picture are known as **handles** and indicate that this object is selected. You may drag a selected object around the screen.

- 1 Press and hold anywhere inside the picture (not on a handle), and drag the picture around the screen. Move it to the top center of the page.
- 2 You can resize a picture by dragging one of its handles. Make the picture smaller so it does not cover any of the text.
- 3 Select **Draw Off** from the **Window** menu. You're back to text entry mode.
- 4 Close the document, and save the changes you made.

Using the Draw Tools

This is an example of how a graph goes on top of text not wrapping around it.



- 1 Open the file *Graphics Demo*.
- 2 Try inserting some new lines of text at the beginning of the document.

Notice that the draw mode works like a layer on top of your text. The text will not **wrap** around the picture. This is useful for putting borders around text blocks but can be a hindrance when placing pictures in the middle of text areas.

Creating a Graphic

Works' graphics tools function much like those of any other Mac draw program, so we will not explore them in great detail.

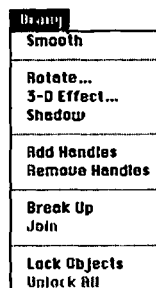
- 1 Select **New** from the **File** menu.
- 2 Be sure the **Word Processor** icon is selected, and click the **New** button.
- 3 Select **Draw On** from the **Window** menu.

Notice that we now have new menus. The graphics tools appear in the tool box. From this box you will choose tools to do your drawing (see Figure 4.6).

Let's draw a computer for use as a logo. First we will draw the surface it sits on.

- 1 Click on the **Straight Line** tool.
- 2 Press the cursor near the bottom left corner of your screen, and drag it several inches to the right. A line should be drawn. Release the mouse button.
- 3 Now let's make the line thicker. Click on the **Line Thickness** option.
- 4 To draw our keyboard, select the **Box** tool, then press-and-drag diagonally to form a small rectangle.

If you don't like your keyboard drawing, simply press the Delete key and try again.



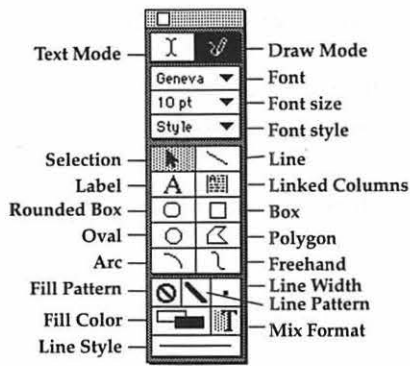


Figure 4.6

- 1 Now select the *Rounded Corner Box* tool to draw the main computer.
- 2 Use the same tool to draw the screen.
- 3 Let's apply a pattern to the screen. Click on the *Pattern* tool, and select a pleasing pattern.
- 4 Use the *Polygon* tool to draw a mouse (not the mammalian variety). To draw a polygon, you click once at each corner and click twice to finish the object.
- 5 Now use the *Freehand* tool to draw a cord from the computer to the mouse.

To go back and change or move an object, you must first select it with the *Arrow* tool. You will know an object is selected when it grows handles.

- 6 Click on the keyboard rectangle, and apply a fill to it.

Let's add a label.

- 1 Click on the *Text* tool.
- 2 Start below your desktop line, and draw a rectangle of the same width. This creates an invisible box for your text to fit in.
- 3 Type in *Computer Assisted Lesson Planning*.
- 4 Apply a font, style, and size (at least 18 point).
- 5 Click on the *Selection* tool.
- 6 Choose *Select All* from the *Edit* menu.
- 7 Select *Group* from the *Arrange* menu.
- 8 Your drawing now becomes one object. Click on it, and drag it to the top center of your page.
- 9 You can resize this drawing the same way you did your Scrapbook graphic, by simply dragging a handle.
- 10 Save your work as *Lesson Plan Letterhead*.

Now let's return to our word processing.

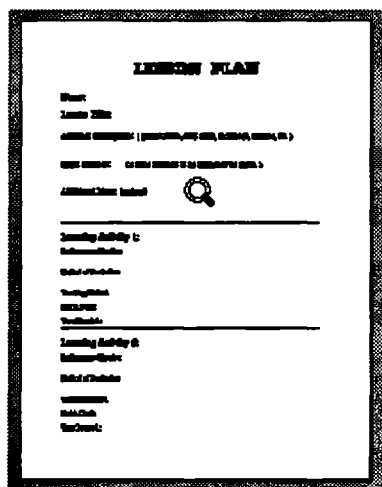
- 1 Select *Draw Off* from the *Window* menu, or click the *Text Mode* tool in the tool box.
- 2 Notice what happens if you type over the drawing. Be sure to insert a bunch of Returns, and type your text below the letterhead.
- 3 Save your work.

Printing

Print Preview

Printing on the Macintosh is simple, but what you get on paper may not exactly match what you see on the screen. For this reason we will learn to use Works' print preview option.

- 1 Open the document *Lesson Plan Letterhead*.
- 2 Select *Print Preview* from the *File* menu. A miniature picture of your page appears. Notice that the cursor has become a magnifying glass.



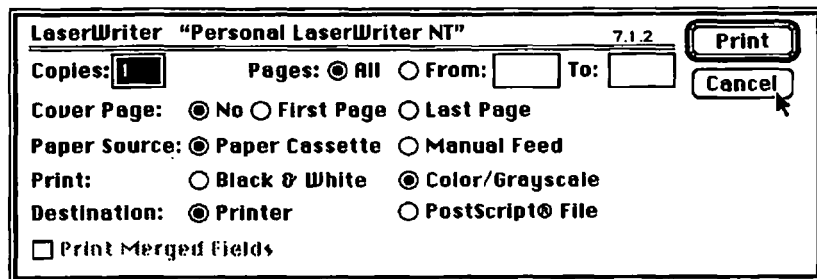
- 3 To magnify the text, aim the mouse at the desired portion of the page and click.
- 4 Only part of the page is visible. To view another part, press-and-drag the page in the desired direction.
- 5 To return to your document, double-click anywhere on the page.
- 6 You can view other pages by clicking on the *Previous* or *Next* buttons.
- 7 If you needed to make changes, you would click the *Cancel* button; however, you are ready to print, so click the *Print* button. The print dialog box appears, showing you several printing options, including the ability to print only some of the pages of the document or to print multiple copies.
- 8 Click the *Print* button in this dialog box.

If your document does not immediately come out of the printer, do not issue the Print command again. It will print out eventually, and you can go on working while you are waiting.

Printing

You can print without first previewing.

- 1 With the document *Lesson Plan Letterhead* open, select *Print* from the *File* menu.
- 2 The Print dialog box appears. Just click on *Cancel*, since we just printed this file a moment ago.



Notes about Printers and the Chooser

Most Macs these days are hooked up to **laser printers**, but some people have **dot-matrix** or **ink-jet printers**. In the Apple menu is an item called the **Chooser**. From this dialog box you can specify which printer you are connected to. If your document does not print after a few minutes, you might want to check and see what is selected in the Chooser. Note: there should normally be no need to change anything in the Chooser.

Notes about Fonts

On the Macintosh there are two basic types of fonts: **outline fonts** and **bit-mapped fonts**. If you are printing on a laser printer you will want to use outline fonts. To further confuse the issue, there are two types of out-

line fonts—**PostScript** fonts and **TrueType**. You will want to use the type of fonts that will output best on your particular printer. If you are printing on a dot-matrix printer (such as an Imagewriter) you will want to use **bit-mapped fonts**. If you are working on a laser printer or ink-jet printer you should use PostScript and/or TrueType fonts. If the output of large-size letters is jagged, then you are using the wrong type of font. Advanced users can check font types in the Font Folder of the System Folder (System 7 users only). Figure 4.7 shows what some popular fonts look like printed on an Apple LaserWriter. Using fonts effectively is an interesting and complex subject.

Avant Garde	Bookman
Brookfield	Boston
Courier	<i>Brush Script</i>
Geneva	Helvetica
New York	New Century
Palatino	Times
Monaco	<i>Zaph Chancery</i>

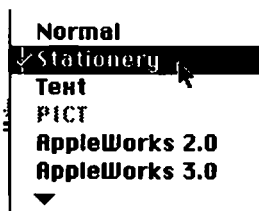
Figure 4.7

Working with Templates

Stationery

In Works you can save a document as a normal file or as **Stationery**. When you open a Stationery file, the computer will open an untitled copy of the file and not overwrite the original file. This is useful for filling in forms or creating a letterhead. In fact it would be a good idea to save a blank lesson plan form as a Stationery file.

- 1 Be sure to have the *Lesson Plan Letterhead* file open.
- 2 Now select *Save As* from the *File* menu.
- 3 In the *File Format* box, press down on *Normal* and slide down to *Stationery*.
- 4 Type in the title *Lesson Plan Template*. Be sure your floppy disk is the destination. If needed, click the *Desktop* button and navigate until the name of your floppy appears.
- 5 Click the *Save* button.
- 6 Now close the file, and reopen the *Lesson Plan Template Stationery* file. It should open as an untitled file.
- 7 Now fill in a few lines of the lesson plan, and save it under a different name as a Normal file (not Stationery).



Page Formatting

Page 1

Page 2

Page Break

When Works gets to the end of a page it will indicate a page break by placing a dotted line across your screen. But there are times when you will want to force a page break. For instance, you might not want to break a paragraph between pages, or you might want to start a new chapter on a new page. Inserting a page break is easy.

- 1 Open the file *John Muir*.
- 2 Position the cursor after the paragraph titled *John's Childhood*.
- 3 Choose *Insert Page Break* from the *Document* menu.

Notice the page break line. This new page break will affect how all following pages format, so let's fix page three's start.

- 1 Move the cursor to the line above *Chapter 2—John's Childhood*.
- 2 Choose *Insert Page Break* from the *Document* menu. We have now forced Chapter 2 to start on a new page.

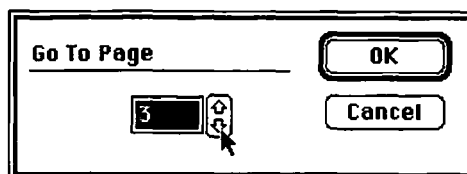
Quickly Changing Pages

In a long document Works has a neat little trick to jump you quickly to a desired page.

- 1 Simply choose *Go To Page* from the *Edit* menu, and then type in the desired page number or use the up and down arrows.

If the OK button becomes grayed-out, you have typed in a number higher than the existing number of pages.

- 2 You can also double-click on the word *Page* in the bottom left of the screen. Try it.
- 3 By the way, you can delete a page break the same way you delete any other character. Try it now.
- 4 Close the file without saving the changes.

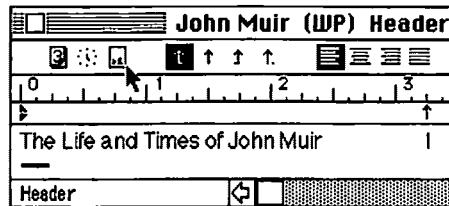


Headers, Footers, and Page Numbers

Headers and/or footers work as titles on a multipage document. They also usually include the page numbering.

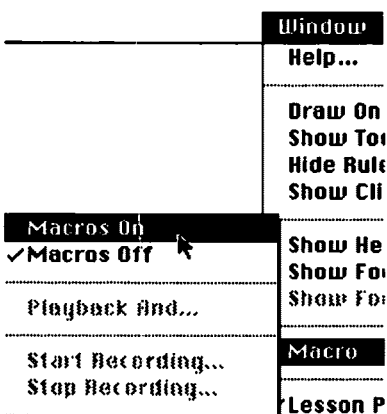
- 1 Open the file *John Muir*. We will want to add a header and page number to each page.
- 2 Select *Show Header* from the *Window* menu.

- 3 A window will open. Type in *The Life and Times of John Muir*, then press Tab, and then click on the 1 next to the clock in the Ruler Bar.
- 4 You can center the text by clicking on the alignment tools in the ruler, and you can apply text attributes just as you would to any other text.
- 5 Close the *Header* window.
- 6 *Show Footer* works exactly the same way; try it if you like.
- 7 You will not actually see headers or footers on the word processor screen. To see them, you must select *Print Preview* from the *Print* menu. Try it now. Be sure to check the page numbers.



Creating a Macro

The last activity we are going to do explores the powerful macros functions of Works. Macros let you reduce doing repetitive tasks to a couple of keystrokes. Creating a macro is like having a tape recorder built into your computer. You first assign an abbreviation to the macro, then you turn on the recorder. As you perform the task, Works stores all of your keystrokes and then “plays” them back later on demand, a great labor- and time-saving device. Let’s create a macro with which to sign your letters.



- 1 Open the file *Lesson Plan Letterhead*, and move to the end of it.
- 2 Drag down on the *Window* menu to *Macro*, and then drag to the side to select *Macros On*. These pop-out menus are a bit tricky, so you might have to try it twice.
- 3 Now, drag down on the *Window* menu again and then to the side and select *Start Recording* (notice that *Macros On* has a check mark next to it now).
- 4 Next you see the *Start Recording* dialog box. The cursor is in the key box. Type in an s (any letter can be used) to assign an abbreviation to this macro.
- 5 Press Tab to move to the *Description* box, and type in *Signature*. This describes to you what this macro does.
- 6 Now when you press Return, every keystroke, including mistakes and menu commands, will be recorded. Macros can even record drawing. Type in your name, and press Return.
- 7 Type in your street address, and press Return.
- 8 Type in your city, state, and zip code, and press Return.

- 9 Select all three lines, and apply a font, size, and style to them.
Here is an example:

*John Muir
101 Yosemite Street
Earth, Planet Universe*

- 10 To finish the macro, drag down the *Window* menu to *Macro* and then over to *Stop Recording*.
- 11 In the *Currently Recording* dialog box, click the *Stop* button.

Let's test your new macro in a different file.

- 1 Create a new document using the *New* command in the *File* menu.
Be sure to click on the word processor module in the New dialog box.
- 2 To invoke a macro, you use an Option key and keystroke combination.
We called our macro *s*, so simply hold down the *Option* key and press the *s* key. You can watch as the computer plays back the macro.

This process can be used to automate any repetitive task, such as a letterhead, long phrase, or a list of names. The macros are saved in a file which you must open when you start Works in order to use them.

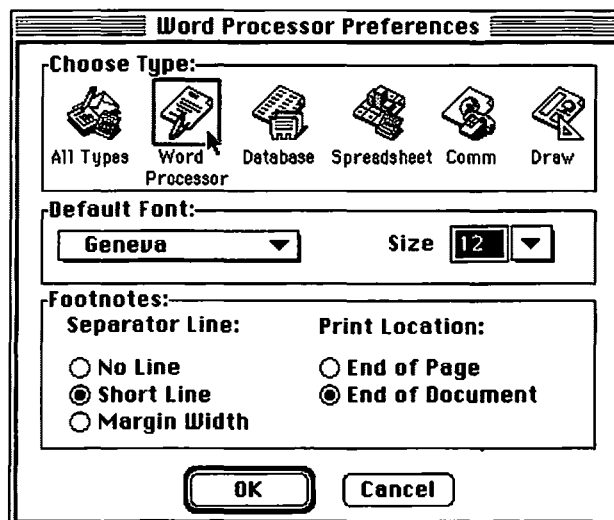
- 3 Select *Macros* from the *Windows* menu, and then slide over to *Macros Off*. Do not bother saving the macro.

Other Features

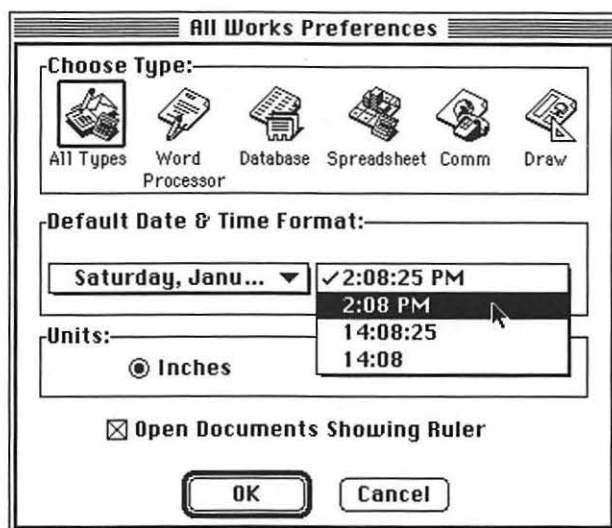
We've worked with most of Works' features, but there are a few others worth mentioning that we don't have time to practice with in depth. This will complete our explanation of just about all of Works' menu commands.

Preferences

- 1 At the bottom of the *Edit* menu, select the *Preferences* command.
- 2 Click on the *Word Processor* icon in the dialog box. Now you can set which font and type size the program will start up in, and the format of footnotes.



- 3 Hold down on the shadowed boxes to see other options.
- 4 If you click on the *All Types* icon in the dialog box, you can change the date and time format and the ruler scale.

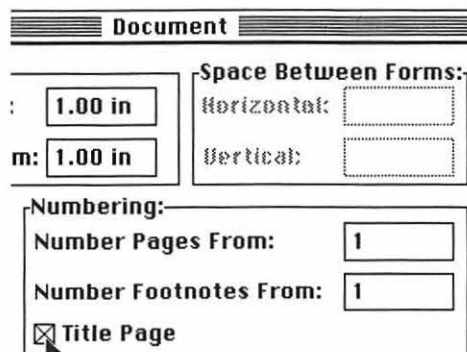


- 5 Again, drag down on a shadowed box to see the options.
- 6 Click on the *Cancel* button.

Title Page

In most documents you do not want a page number or header to appear on the first page. To suppress page numbering (as well as a header or footer):

- 1 Choose *Page Setup* from the *File* menu, then click on the *Document* button.
- 2 In this dialog box, check *Title Page* and *OK*.



You can check this with a print preview. The rest of the pages will still be numbered sequentially, starting with page number two.

Set Page Number

If you want your document to begin with a page number other than 1, you can set a different first page number.

- 1 Choose *Page Setup* from the *File* menu.
- 2 Click on *Document*.
- 3 In the numbering box, type in a new number in the *Number Pages From:* box.
- 4 You can check page numbering with a print preview.

Footnotes

- 1 Choose *Insert Footnote* from the *Document* menu.
- 2 A window will open, allowing you to type in a numbered footnote. Type in the footnote, then click the close box.

Works inserts the footnote number at the cursor position. The footnotes will appear either at the bottom of the page or at the end of the document (endnotes), as specified in the *Preferences* dialog box. The next footnote you create will automatically be numbered one higher. You can edit footnotes by selecting *Show Footnotes* from the *Window* menu. You will only see the footnotes with a print preview or on printouts.

Clear

The Clear command deletes selected text without putting it in the Clipboard. To try it, first select some text and then choose *Clear* from the *Edit* menu.

The Delete key does the same thing with a bit less effort. Beware, however: text that has been Cleared or Deleted can only be brought back by immediately using *Undo* from the *Edit* menu.

Undo

As noted above, you can back out of the last move you've made by selecting *Undo* from the *Edit* menu, but it can only go back to the last change you've made.

Draw Options

The *Draw* menu has many features which we did not explore. Experiment with them if you wish to. For more powerful graphics features, you could choose the Graphics module from the New File dialog box and then paste your graphic into the word processor.

Format Character

Format Character is a good tool to use to make several format changes to typed material at one time.

- 1 First select the text you want to format.
- 2 From the *Style* menu, choose *Format Character*. This opens a dialog box where you can make type changes. Click OK. The type will be reformatted.

Mail

Open Mail and *Send Mail* in the *File* menu allow you to deal with text documents which have been created in the communications module of Works.

Fields

You can perform a mail merge with the *Merge Fields* command found in the *Document* menu. In this procedure you insert a name or other piece of information (a field) from a database file into a word processor document. For example, this feature could insert a personal name into a form letter, with the names coming from a mailing list created as a database file.

Save Workspace

The *Save Workspace* command, found in the *File* menu, saves all currently open documents (even from different modules) into one workspace. When you start up Works again, you can just open the workspace file to open all of the grouped documents.

Assignment

This is your chance to apply your newly developed word processing skills. The goal of this project is for you to try out what you've just learned and to demonstrate your acquisition of these skills. We want to concentrate on the power of word processing, that is, the editing and formatting functions, not just text entry.

- Type in a one-page document.
- Do not bother to proof it. Include a couple of misspellings.
- Format it, save it, and print it.

Now take the same document and make the following changes:

- Delete a paragraph.
- Add a paragraph.
- Move a paragraph.
- Replace a word you have used repeatedly with another, using the Replace command.
- Use the thesaurus to change a couple of words.
- Run a spelling check.
- Change the font.
- Change the margins and the tabs.

- Change a portion of the text to a different typestyle, size, alignment, and line spacing.
- Add a heading which is enlarged, bold, and centered.
- Insert the time and date.
- Add a simple graphic.
- Have the document extend to a second page, and add a header and page number to page 2, but suppress them on page 1 (see the section called Title Page for help).
- Do a word count.
- Save the document under a different name, and print it out. Be sure your name is on it, and write in the word count.
- Turn in both versions of the document.

CHAPTER 5

Producing Pictures— Exploring Computer Graphics via DeskDraw & DeskPaint

FILES NEEDED

The following files are found in the *Producing Pictures* folder of the C.A.R.P. data disk:

<i>PD Clip Art</i> (folder)	<i>Types of Graphs</i> (created by user)
<i>Draw Practice</i> (created by user)	<i>Painted Face</i> (created by user)
<i>Draw Face</i> (created by user)	<i>Painted Face 2</i> (created by user)

Introduction

Today you will enter the exciting world of computer graphics. At times you will find creating images on a computer to be efficient, powerful, and easy, but at other times you may find it limiting, frustrating, and confusing. This tutorial aims to minimize the confusing aspects of the task by teaching you computer graphics in a systematic, well-planned manner. Given the Mac's user-friendly environment, you could learn computer graphics by experimenting with the various menus and tools, but I think you will find that this tutorial provides a more efficient, and more thorough, experience. We want to turn you into a graphics "power user," able to find not only a way to create an image, but the most powerful way to do it, while using some techniques you might not find on your own.

Applying Computer Graphics to Teaching and Learning

We live in a largely visual society. A great deal of our basic knowledge we get from visual clues. Yet in schools we spend very little time consciously working on visual communication. The powerful tools of computer graphics software offer visual communication and expression avenues even for students who think they have no "artistic ability." And besides, using computer graphics can be a lot of fun.

Working with graphics is a great computer activity for early learners. It's creative, fun, and engaging. Kid Pix (Broderbund software) offers tools that make sounds and produce all kinds of fun effects. DeskDraw and DeskPaint can be used by elementary school kids in a limited fashion.

For more advanced graphics works, schools might want to consider purchasing a graphics tablet, which makes drawing easier than using the

mouse. A scanner for digitizing photographs and drawings so they can be fed into the computer is a great addition. Computer generated visuals can be used across the curriculum, as part of math and science assignments, illustrated stories, and art projects. Computer graphics is also a branch of computer science. The growing trend to multimedia materials often involves creating and manipulating graphics.

For college and adult learners, graphics programs can be used to create illustrations, maps, and charts for research reports. Students in art classes are doing some very sophisticated work with computer graphics. Teachers may want to use a graphics program to create seating charts, instructional visuals, handouts, posters, and bulletin boards.

Perhaps the greatest problem with computer graphics is how to get the image off the screen and onto paper. Later in this chapter is a discussion of issues involving color output. Complex computer graphics may create enormous files, several megabytes in size. Storage of these may pose a problem in a lab or classroom situation. A less obvious problem is the issue of graphic design. Students should be given a working knowledge of the principles of graphic design including information about composition, movement, legibility factors, and other fundamentals of good design.

The Process

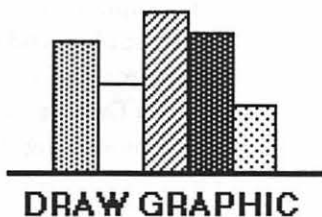
We will concentrate on the process of creating computer graphics, not on the finished product, at least for now. This means that if you learn one draw program you can easily pick up the operation of another, because you will be familiar with the concepts that go into using it. After you complete the first half of the tutorial (learning the program), you can work on the product aspect by trying to recreate some printed images using your newly gained skills. Having a strategy for creating your images before you actually start working will be an important skill to learn.

Draw vs. Paint Programs

On the Macintosh, graphics programs are divided into two categories: **draw programs** and **paint programs**. Each type has its relative advantages, limitations, and applications. In reality, most Mac artists use both types of programs and may even integrate their use on one image.

Draw Programs

A draw program is also called an **object oriented** program. This type of program treats every part of an image as a geometric object. Even a squiggly line is considered an irregular polygon. The objects are easy to move and change. One object goes in front of or behind another object. Objects are easy to modify, and text created in a draw program will print out clearly. This type of program is well suited for charts, diagrams, and technical drawings. Many graphic designers are attracted to the features of draw programs. We will be learning DeskDraw. Other popular draw programs include MacDraw, Aldus Freehand, Adobe Illustrator, and the draw module of Microsoft Works.





Paint Programs

A paint program treats the computer screen as a canvas. The images produced are called **bit-mapped** graphics because you are turning on or off bits or pixels. You create much as a painter applies paint. If you make a mistake in a paint program you often will not be able to alter it; you will need to paint over it or erase it. Paint programs won't print out as sharply as draw programs, and any printed text included in the graphic will be jagged.

Given the limitations of a paint program, why would anyone want to use one? Primarily for the artistic effects they offer—it's possible to blend colors, use different brush characteristics, fill in irregular areas. It's much like the freedom a painter has versus the precision an architect or designer needs. You will learn how to convert an image from DeskPaint to DeskDraw.

In the second half of this chapter we will be learning DeskPaint, which offers such effects as drawing with a charcoal pencil, painting with water-color brushes, and distorting the picture. Other popular Mac paint programs include MacPaint, Studio 8, and SuperPaint, which offers both a paint layer and a draw layer.

Which One Is Best?

For line drawings, maps, simple shapes, and borders, DeskDraw is usually better than DeskPaint. For mixing bit maps, objects, and text, DeskDraw provides more control and permits much better quality text printing than DeskPaint (and the text can be edited anytime). All images scanned in with a scanner are bit-mapped. For working with color, photographs, and "painterly" effects, DeskPaint is better. You'll have to decide which suits the job at hand.

A Note about Color

Color is great on the screen, but what do you do with it? Color printers are rare, and color copies are expensive. You may want to do screen presentations in color or prepare them for color slides, but for distribution, we usually need to work in black and white. We will work in black and white in DeskDraw and in color in DeskPaint.

Access These Programs as Apple Menu Items

Because DeskDraw and DeskPaint are relatively small programs, they should be installed as *Apple* menu items (**Desktop Accessories** for System 6 users). This means they are selected from under the *Apple* menu (🍏). Thus you can open DeskDraw or DeskPaint, work on a graphic, and then return to what you were doing without quitting the application first. For example, you could be working in a word processor, open DeskDraw, create an object, copy it, and then paste it into your word processing document.

About DeskDraw and DeskPaint

DeskDraw and DeskPaint are published by Zedcor Software and sold as one package. The package retails for about \$200 (under \$100 discounted).

Special student prices are available. We've spent way too much time on explanations; now it's time for exploration . . . Let's Get Busy!

Opening DeskDraw

- 1 Open DeskDraw by choosing it from the *Apple* menu (🍏).

If DeskDraw has not been installed as an *Apple* menu item, navigate the hard disk window to find the *DeskDraw* folder. Open that folder and then double-click on the *DeskDraw* icon. The hard disk will whirl for a few seconds, and you will be presented with a blank DeskDraw document.

- 2 Take a moment to study the different parts of the DeskDraw window, shown in Figure 5.1.

➤ **SYSTEM 6 USERS:** Note that there are now two menu bars. Be sure to invoke all DeskDraw commands from the lower menu bar.

- 3 Take a moment to pull down each of the menus, but don't select any commands quite yet.

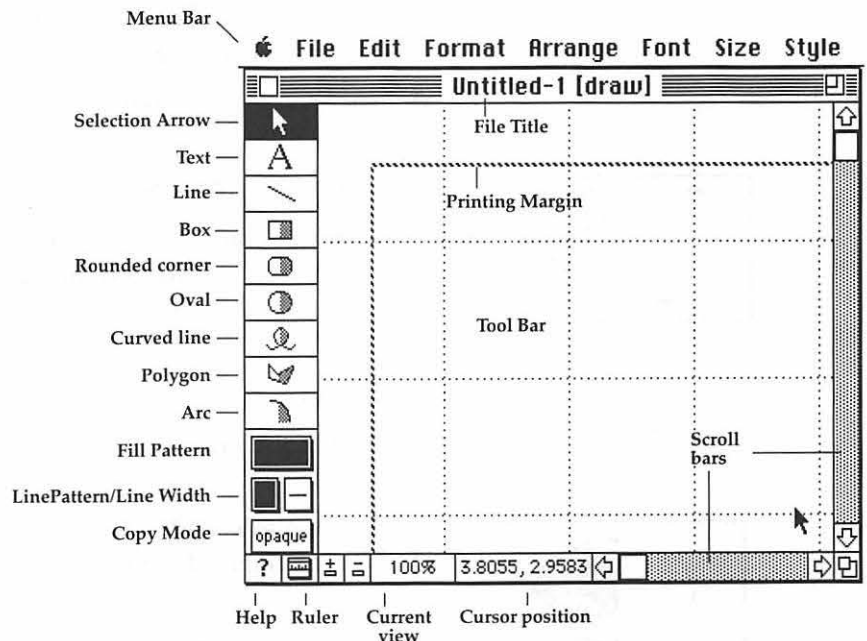


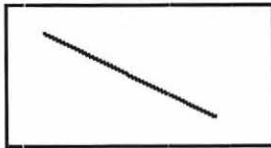
Figure 5.1

Using the Draw Tools

Along the left side of the screen you will see the *Tool Bar*. This is where you choose the various drawing tools to work with. Study Figure 5.1, which shows the Tool Bar. We will be working with each of these tools next.

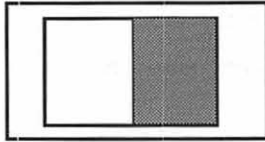
Line Tool

Let's begin by drawing some straight lines.



- 1 Select the *Line* tool by clicking on it.
- 2 Now bring the mouse into the drawing area, and press the mouse button down. Without letting go of the button, drag the mouse in the direction you want the line to go.
- 3 Let go of the mouse button. Magic! Your line will be drawn.
- 4 Try drawing a few more lines. You do not need to select the *Line* tool again. In DeskDraw, the last tool you use remains **active**.

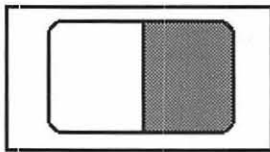
Box Tool



- 1 Click on the left side of the *Box* tool. The left side is the unfilled side. The right side draws filled, or solid, rectangles.
- 2 Press the mouse button down where you want one corner of the box to begin. Without letting up on the button, drag the mouse diagonally.
- 3 Let go of the mouse button, and your rectangle will appear.

If the rectangle is solid, press the Delete key, and be sure to click on the left side of the box tool and then draw a rectangle.

- 4 Draw a filled box by clicking on the right side of the box tool and then drawing a rectangle.
- 5 Experiment with making several different size boxes.

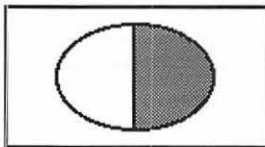


Rounded Corner Tool

The *Rounded Corner* tool works exactly like the *Box* tool except that the rectangles it makes will have rounded corners. Try making several of these boxes.

Oval Tool

The *Oval* tool works much like the previous tools (see, aren't computer graphics easy?).



- 1 Click on the left side of the *Oval* tool. The left side is the unfilled side. The right side draws filled, or solid, ovals.
- 2 Press the mouse button down where you want the oval to begin. Without letting up on the button, drag the mouse diagonally.
- 3 Let go of the mouse button, and your oval will appear.

We'll learn how to use the other tools later.

Selecting and Formatting

Remember the First Rule of the Macintosh? Before you can do anything with something, you must first **select** it. Therefore, before you delete or modify an object, you need to select it.

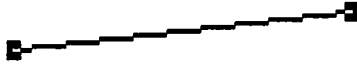


Selecting

- 1 Click on the *Arrow* tool, which can be thought of as the **selection tool**.
- 2 Now click on the object you wish to select. Let's select one of the straight lines.

Hot Tip—The Tip Does the Trick

The TIP of the arrow is the hot spot. To select a filled object, you can click inside it; for an unfilled object, you must click on its border.

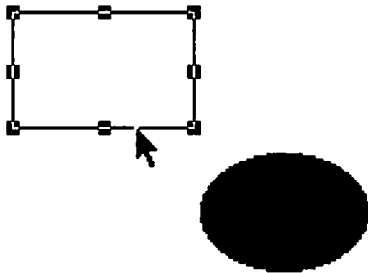


- 3 When an object is selected, it will grow **handles** at each end or corner.
- 4 The line is selected and we want to delete it, so simply press the *Delete* key on the keyboard.
- 5 Select and delete each of the objects you have created.

Congratulations. After much effort, you now have a blank screen!

Dragging

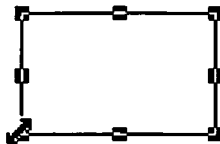
The way you move an object around the screen is by dragging it.



- 1 Draw an unfilled box.
- 2 Now draw a filled oval.
- 3 Select the box again. It will grow handles.
- 4 Press the tip of the arrow on the border of the rectangle, *not on a handle*. Hold down the mouse button, and drag the rectangle to right below the oval.
- 5 Select the oval by pressing anywhere inside the filled oval, and practice dragging it.

Resize

We want to make the rectangle larger. To **resize** an object, you simply select it and drag a handle. When you resize rectangles or ovals, the cursor will turn into a **double-ended arrow** when you are on a handle.

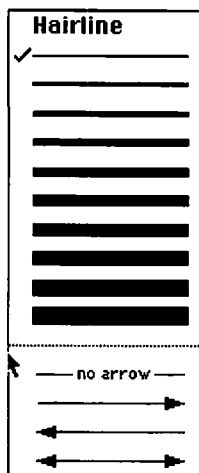


- 1 Select the rectangle.
- 2 Press any of the corner handles and drag it.
- 3 The box will resize. Now let go of the mouse button.

Changing Line Width, Line Color, and Line Pattern

You can change the thickness of lines and borders and even change them from solid lines into patterned or textured lines.

- 1 Select the rectangle if it isn't already selected.
- 2 Press on the *Line Width* tool, hold down the button, and slide over to the right.

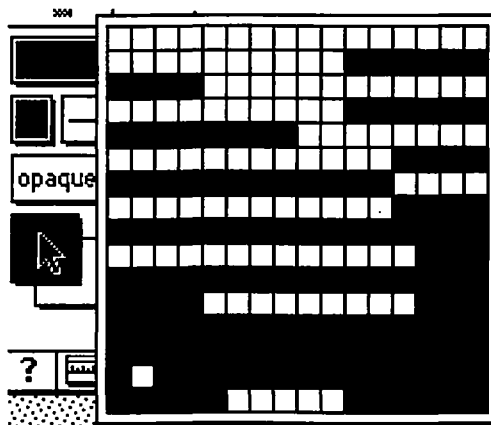


- 3** A series of different line widths will pop up. Slide down to a nice thick line.
- 4** Let go of the mouse button. The rectangle's border will be changed to the thick line.
- 5** Select the rectangle with the wide border.
- 6** Press on the *Line Color* (or *Pattern*) tool. Slide over and select a new line color or pattern.

Changing Fills and Patterns

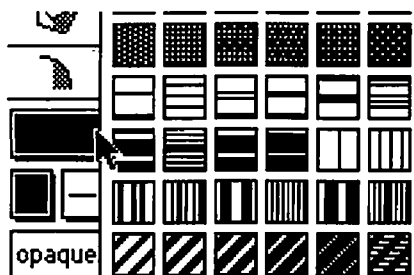
You can fill in objects with different colors or patterns. You can even fill an object that was originally drawn unfilled.

- 1** Select the oval you've drawn.
- 2** If you are working on a color computer, you can apply a fill by pressing on the *Fill Color* tool and sliding over to a desired color.
- 3** The oval becomes filled with that solid color.



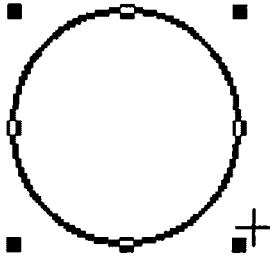
If you are working in black and white, you cannot apply colors, only patterns. In color, you can apply colored patterns.

- 4** To apply a pattern, make sure the oval is selected, press on the *Pattern* tool, and slide over to apply a desired pattern.
- 5** To unfill a polygon, select *N* (for None) in the color box. Try it now.



Hot Tip—The Shift Key = Constrain

To draw perfect circles and squares, use this little trick.



- 1 Select the *Oval* tool.
- 2 Hold down the *Shift* key on the keyboard.
- 3 Drag diagonally. Voilà, a perfect circle. The *Shift* key works to constrain the mouse movement.
- 4 Try drawing a square, holding down the *Shift* key while using the *Box* tool.
- 5 Try the *Shift* key with the *line* tool. It constrains it to 45-degree movements.
- 6 The screen is getting a bit crowded, so choose *Select All* from the *Edit* menu and hit the *Delete* key.

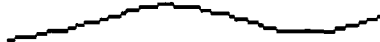
Let's finish off Part One by learning how to use the remaining three tools in the Tool Bar.

Other Tools

Curved Line Tool



The *Curved Line* tool lets you draw freehand. The line still forms a polygon which can be modified. There are two types of curved-line polygons, open and filled. Let's try an open curve first.



- 1 Click on the left side of this tool.
- 2 Press-and-drag the mouse to draw your curved line. Let's draw a wave.
- 3 When you release the button, the line is drawn. The computer automatically smooths the line.

The line width and pattern are determined by the current line width and line pattern settings.

Filled curves work a bit differently. Let's try one.



- 1 Click on the right side of the *Curved Line* tool.
- 2 Press-and-drag the mouse to draw a curved line. Let's draw another wave.
- 3 When you release the button, the filled object is drawn. The computer automatically draws a line to finish the polygon. This may give some unexpected results.

Polygon Tool

To draw triangles, stars, and other straight-sided polygons in DeskDraw you will need to use the *Polygon* tool.



Let's draw a pentagon.

- 1 Click the left side of this tool.
- 2 Press-and-drag to draw the first side of the polygon.
- 3 Release the button, then press-and-drag to draw another side.
- 4 Continue this for the other sides.
- 5 After drawing the last side, double-click. This may take some practice.

You do not need to enclose the polygon. Try drawing some other shapes.

Filled polygons work the same way. The computer encloses the polygon if you do not join the ends (be sure to double-click). Try it.

Arc Tool

The *Arc* tool draws nice smooth arcs either open or filled.

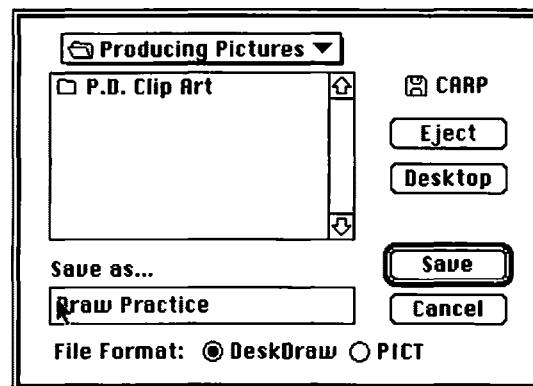


- 1 Click the left side of the tool.
- 2 Press-and-drag to draw your arc.
- 3 See what happens when you **constrain** an arc with the *Shift* key.
- 4 Draw a filled arc with the right side of the *Arc* tool

Save

Let's not risk losing your masterpiece. Let's learn how to save your image.

- 1 Choose *Save* from the *File* menu in the *DeskDraw* window.
- 2 Navigate your way to your floppy disk and the *Producing Pictures* folder.
- 3 Save the file as *Draw Practice*.



Menus and Commands—Creating an Image

Let's turn to exploring the options under the various DeskDraw menus.

New

In order to start fresh, we need a new sheet of paper. Hold down the mouse button on the *File* menu and drag down to *New*. Let go. The computer

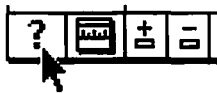
creates a new document, called *Untitled*, until you save it under another name.

Hot Tip—Command Keys

When you work with a program extensively, you may find it faster to invoke commands via **Command keys** rather than the pull-down menus. These are keyboard equivalents to the menu items. They are indicated by the cloverleaf and a letter to the right of some commands as they are shown on a pull-down menu. Some are standard to many Mac programs.

Help

DeskDraw has a built-in **help** feature to provide assistance with commonly asked questions. This can often be faster than referring to the printed manuals.



- 1 Click the *Question Mark (Help icon)* in the lower left part of the window.

If you get a message that help is not available, it means that the DeskDraw *Help* file was not copied into the *Desk* folder on the hard disk.

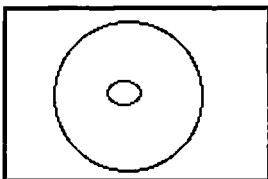
- 2 When help is activated, the mouse cursor will turn into a question mark.
- 3 You can click on any tool or menu command.
- 4 To exit help, click in the center of the window.

Undo

DeskDraw can often give you a chance to back out of a mistake. But you can only go back one move, so *Undo* has limited use.

- 1 Draw a box of any size and shape.
- 2 Select *Undo* from the *Edit* menu. The box is **undone**.
- 3 Draw another box.
- 4 Drag it to a new location.
- 5 Now select *Undo Drag*. The box moves back.
- 6 You want to delete the box. Select *Undo* again. It cannot delete the box; it can only *Redo Drag*.
- 7 Delete the box using the *Delete* key.

Creating an Image



- 1 Draw an unfilled circle that takes up most of the screen.
- 2 Drag the circle into the center of the screen.
- 3 Now draw a smaller oval in the center of the circle, as shown in the illustration.
- 4 Now copy it (from the *Edit* menu or by using *Command-C*).

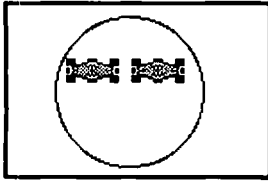


5 Now paste it. The second oval will be directly on top of the original one.

6 Move the ovals as shown in the illustration.

Hot Tip—Multiple Selections

We now want to fill in both ovals, so we will learn how to do a multiple selection using the **Shift-Click** method.



1 Select the left oval.

2 Hold down the *Shift* key and select the right oval. Notice that both ovals now have selection handles. We can keep selecting objects as long as the *Shift* key is held down.

3 We can now work on both ovals at once. Select a pattern to fill the ovals with.

Modifying Objects

Flip and Rotate



1 Using the *Polygon* tool, draw a triangle in the center of the screen, as shown in the illustration.

2 Be sure the triangle is still selected. Choose *Flip Vertically* from the *Arrange* menu.

3 Experiment with the *Flip Horizontally* and *Rotate* commands.

4 The *Free Rotate* command works a bit differently. After you select it, put the mouse on one of the corner handles. It will turn into a curved arrow, and the handles will change into circles.

5 Now press-and-drag the mouse around to rotate the object from that corner. Click again on the *Free Rotate* command to lock the polygon into position and to turn off Free Rotate.

6 Leave the triangle in the position you wish.

Reshape Line

After you have drawn a line or polygon you can **reshape** it.

1 Choose the *Freehand* tool to give your image an expression. You simply press-and-drag to draw the line. Draw any shape line you wish.

2 Choose *Reshape* from the *Edit* menu. Open the *Edit* menu, and look at *Reshape* to see the check mark next to it. As long as the check mark is next to *Reshape*, you will be in reshape mode.

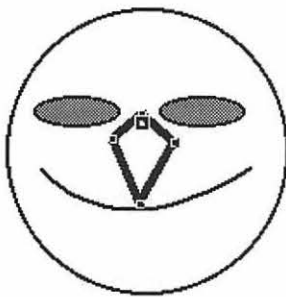
3 Choose *Unsmooth* from the *Edit* menu. This takes the smooth curves out of your line and gives you more points to edit.

- 4 Press-and-drag on any handle and let go. The line snaps to its new shape.
- 5 Try several more points.
- 6 Choose *Smooth* from the *Edit* menu to smooth out the edges.



Hot Tip—Adding Edit Handles

- 1 Hold down the *Command* key while you press on the border of the triangle. A new edit point is formed.
- 2 Reshape your four-sided triangle.



You can also delete points from a polygon by depressing the *Command* key while clicking on a handle.

- 1 Click off *Reshape* from the *Edit* menu to turn off reshape mode.
- 2 Save your work on your disk under the name *Draw Face*.

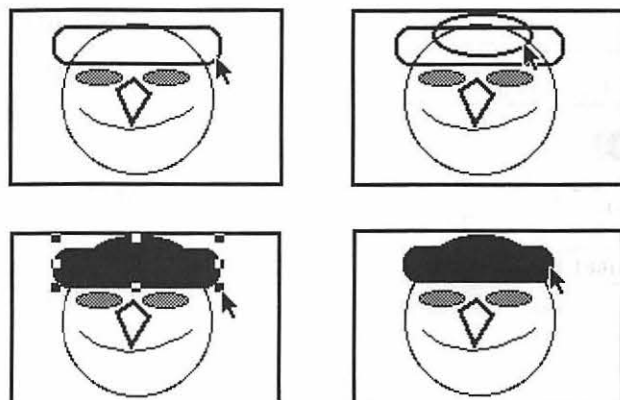
Working with Grouped Objects

Group

Multiple objects may be **grouped** (joined together as one object) to make them easier to manipulate. They may also be **ungrouped** (taken apart).

Let's top off our image by adding a hat.

- 1 Select the *Rounded Corner Box* tool.
- 2 Make a rounded corner box as shown.
- 3 Select the *Oval* tool. Make an oval as shown.



- 4 Make both objects solid black.
- 5 Using the *Shift* key, select both black objects.
- 6 Select *Group* from the *Format* menu. Notice the handles now indicate a single, grouped object.
- 7 Now drag the hat into position and resize it.

You can ungroup an object by selecting *Ungroup* from the *Format* menu.

Layers

In a draw program, solid objects act like pieces of paper either covering up other objects (being in front of them) or being hidden under other objects (being behind others). Now we will learn how to bring objects to the front and send them to the back.



- 1 Select the big circle that is the face.
- 2 Using the *Pattern* box, make the face solid white.
- 3 Select the hat.
- 4 Choose *Send to Back* from the *Arrange* menu (or press *Command-J*) to send the hat behind the face.
- 5 Choose *Bring to Front* from the *Arrange* menu (or press *Command-F*) to bring the hat back in front.

Select All

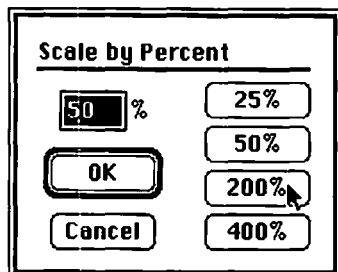
The simplest way to select all the objects in the document is to choose *Select All* from the *Edit* menu.



- 1 Choose *Select All* from the *Edit* menu. Notice that all objects have handles.
- 2 Select *Group* from the *Format* menu. The whole head is now one object.

Scaling

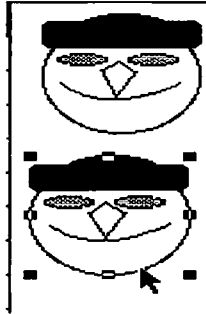
We've already learned to resize objects by dragging the handles; now let's learn a more exact way to *scale* them by percent.



- 1 Be sure the face is grouped and selected.
- 2 Choose *Scale by Percent . . .* from the *Arrange* menu (or press *Command %*).
- 3 Click on the 200% button to double the size of the rectangle.
- 4 Choose *Scale by Percent . . .* from the *Arrange* menu .
- 5 Type in 40% and press *OK*.

Duplicate

Duplicate is a powerful command to create multiple copies of an object. Subsequent duplications will continue in the same direction and at the same distance from one another at first. This is useful for creating forms, grids, and so on. It is faster than using Copy and Paste repeatedly.



- 1 Be sure the face is grouped and selected.
- 2 Choose *Duplicate* from the *Edit* menu (or press *Command-D*).
- 3 Press-and-drag the duplicate object to a position below the first face (as shown in the illustration).
- 4 Choose *Duplicate* from the *Edit* menu twice more (or press *Command-D* twice). The face is duplicated twice, with the second duplication appearing in the same relative direction and at the same distance from the first duplicate as it is moved from the original.
- 5 Save your work. Since you have already saved this once, the file will just be automatically updated, thus the screen won't change.

Changing Views

Scroll

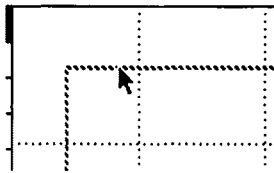
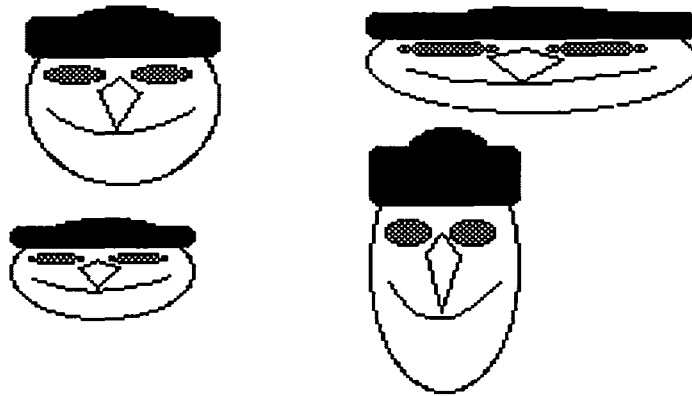
You may have noticed that as we duplicated the faces, the objects moved off the screen. This is because the window you see is not the entire full-page document. You need to **scroll** to see more of the page.

- 1 Press on the *Scroll Down* arrow. The window scrolls to the bottom of the page.
- 2 Press on the *Scroll Up* arrow. The window scrolls to the top of the page.
- 3 Press on the *Scroll Right* arrow. The window scrolls to the right side of the page.

Autoscroll

As you draw, move, or resize an object outside the current window, Desk-Draw automatically scrolls.

- 1 Select one of the faces, and drag it down till the screen scrolls.
- 2 Using the **scroll bar**, scroll back to the top.
- 3 Draw a vertical line from the top of the page to the bottom. Be sure to let the screen scroll as you draw. When you get to the bottom of the page, scrolling will stop.
- 4 Select a face and stretch it.
- 5 Continue to modify the other faces so they are each different.



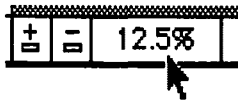
Margins

The striped line you see near the edges of the page are the margin lines. Anything outside those lines will not print. Later you will learn how to change these margins.

Zooming

You can **zoom** in or out to view documents at different magnifications.

- 1 Choose *Enlarge* from the *Format* menu (or press *Command-E*). DeskDraw will try to center the view over selected objects. This is a good way to do detail work.
- 2 Choose *Reduce* three times from the *Format* menu (or press *Command-R*). Now you have a view of the entire page. You can still edit the image from this view.
- 3 Choose *Actual Size* from the *Format* menu (or press *Command-1*). You can also click on 12.5% on the scroll bar to toggle between 100% and 12.5% (full page view).
- 4 You can also click on the + or - buttons to zoom in or out. Try it now.
- 5 Return to 100% view.
- 6 Save your work.



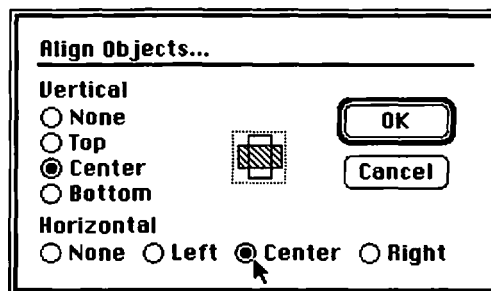
Aligning Objects

Align

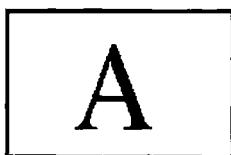
It is often useful to let DeskDraw line up objects rather than doing it manually.

- 1 Select all of the faces.
- 2 Choose *Align Objects . . .* from the *Arrange* menu (or press *Command =*).
- 3 Click on the *Left* button for horizontal alignment.
- 4 Click *None* for vertical alignment.

- 5 Click *OK* or press *Return*. The objects are all aligned on the left side.
- 6 Save your work.



Working with Text



Friend Number 1
is Brendan

Friend Number 2 is
Kayley

When text is typed in, it becomes an object. *Text objects* can be moved around the screen like other objects, and their bounding rectangles can be changed by dragging the handles.

- 1 Click on the text tool: A.
- 2 With the mouse button held down, drag a box about three inches wide and an inch deep just to the right of the top face. A text box should form.
- 3 The pointer becomes an *I-beam*. Type *Friend Number 1 is Brendan*. If you make a mistake, use the *Delete* key.
- 4 Click to the right of the next face down. Use the scroll bar if necessary to view the lower part of the graphic. Type *Friend Number 2 is Kayley* for this face.

Now we will learn to edit text.

You can edit this text any time by clicking on the Text tool and then clicking on the text block you want to edit.

Friend Number 1
is Brendan

Friend Number 2 is
Kayley

- 1 If the *Text* tool is not selected, then choose it. Click at the far right side of the first name you've typed.
- 2 Use the arrow keys on the keyboard to move within the text. Delete the entire name, and replace it with a new name.

Now we will learn how to modify the size, font, and style of text.

- 1 With the *Text* tool selected, click at the right side of the second name you've typed.
- 2 Press-and-drag over just the name to highlight it.
- 3 Choose *Times* from the *Font* menu. Notice that only the characteristics of the selected text are changed. The other text remains the same.
- 4 Choose *Bold* from the *Style* menu (or press *Command-B*).
- 5 Choose *24* from the *Size* menu.

Friend
Number 2
is
Kayl
ey.

If some of the text is not visible, you may need to resize the text box.

- 6 Click on the *Selection* tool. The text becomes an object with handles, just like other objects.
- 7 Click on the lower right handle, and resize the text block. When you make the text box smaller, notice how the words wrap to fit in the box.
- 8 Save your work.

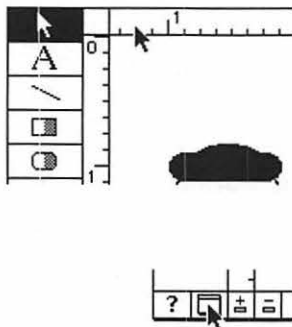
You can also change centering and line spacing. Centering works in relation to the text box, not the entire page size. Text can also be rotated with the different rotation types under the *Arrange* menu.

Printing

- 1 Before printing, be sure you have recently saved your work.
- 2 To preview the way the printed page will look, choose *Reduce* twice from the *Format* menu (or press *Command-R* twice).
- 3 Choose *Print . . .* from the *File* menu.
- 4 Click *OK* (or press *Return*). The image will be sent to the printer.
- 5 You can continue to work while you are waiting for your printout.

Other Options

Ruler



If you need to measure things or line them up on a point, you can use DeskDraw's built-in ruler.

- 1 Notice the ruler near the top and left of the DeskDraw window.
- 2 Hide the ruler by choosing *Hide Rulers* from the *Format* menu.
- 3 Display the ruler by choosing *Show Rulers* from the *Format* menu.
- 4 You can change the measurement system by choosing *Ruler Settings* from the *Format* menu. Press-and-drag the system from inches to centimeters. Select *OK*.
- 5 You can also toggle the rulers on and off by clicking the *ruler box* near the lower left corner of the window.

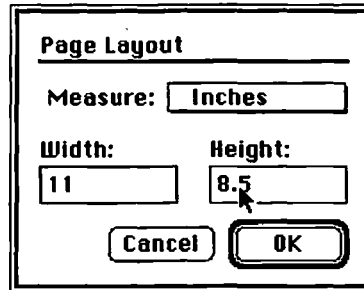
Auto Snap

Snap to grid settings cause objects to move to an invisible grid, which helps in alignment. You can turn off *Auto Snap* (*Format* menu) when small

movements are necessary. You can also nudge movements by using the arrow keys with selected objects. Try these with one of your objects.

Page Layout

Page Layout under the *File* menu allows you to set up the page to any dimensions you want. You type in the desired sizes. For a horizontal page you would type in *Height* = 8.5" and *Width* = 11". *Do not make any changes at this time.*



Page Setup

Page Setup is used in Macintosh programs to set the page size, paper orientation, number of copies, and other things specific to the particular printer being used. Do not make any changes at this time.

Preferences

Use *Preferences . . .* to set DeskDraw to your preferred settings. Any settings you make will be used for all documents opened, until you change them.

- 1 Choose *Preferences . . .* from the *Edit* menu.
- 2 Set up the options the way you like. DeskDraw will remember them and use them as **defaults** in the window currently open and in new windows you open.

Here is what the preference settings mean:

Document——

- | | |
|--------------|--|
| Measure | Sets the measurement system (inches or centimeters). |
| Width/Height | Sets the document size. |

Ruler Settings——

- | | |
|-------------|---|
| Ruler Lines | Sets line divisions in the window. Set it to .5 for ruler lines every half measure. Set it to 1 for ruler lines every measure. Set it to .25 for lines every quarter measure. |
| Auto Snap | Sets the snap-to increments. For instance, if you want an Auto Snap of half an inch, set Auto Snap to .5. |

Startup Text——

- | | |
|-----------|---|
| Font/Size | Sets the font and size you prefer to use. |
|-----------|---|

Other Options—

Show Ruler	Makes the ruler show at start-up.
Show Ruler Lines	Makes ruler lines always show at start-up.
Auto Snap	Enables Auto Snap.

- 3 Click *Cancel*. We won't change the preferences.

Working with Color

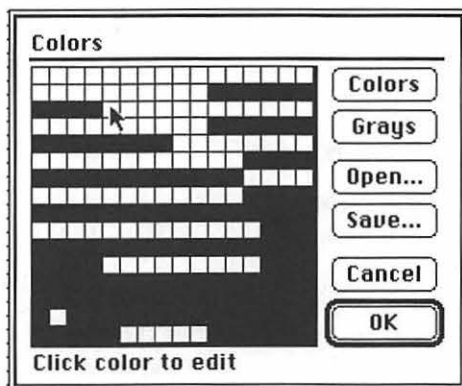
DeskDraw objects can be any of 16.7 million colors. Even color bit maps pasted from DeskPaint and other programs are supported.

To see color, you must have a color machine, and you must have set the screen to display color. This is done via the *Monitors Control Panel*.

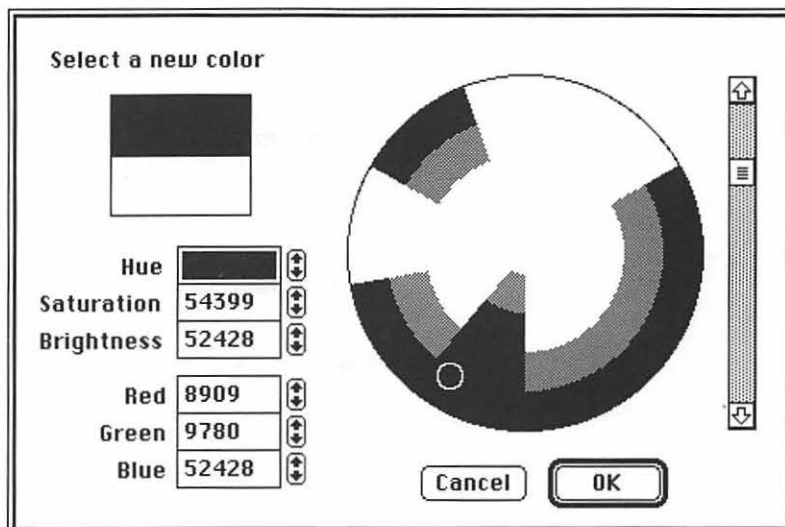
Changing Colors in the Palette

While the palette is limited to 256 colors, DeskDraw allows you to choose any color out of the 16.7 million colors available.

- 1 Choose *Colors* from the *Edit* menu.
- 2 Choose the color you want to edit by clicking on it.



- 3 You will be presented with the color picker wheel.



- 4 Choose the new color by clicking on the color picker wheel or by changing numeric values for *Hue*, *Saturation*, *Brightness*, *Red*, *Green*, or *Blue*. Overall brightness is changed by dragging the scroll box up or down.
- 5 Click *OK* when you are finished choosing your new color.
- 6 The new color will appear in the palette where you set it.

You can use the *Open . . .* and *Close . . .* buttons to open or save palettes.

This has been a quite comprehensive introduction to DeskDraw. Now let's give you a chance to apply your newfound skills with some drawing challenges.

Deskdraw Challenge (with Help)

The Bar Chart

See if you can use your DeskDraw skills to recreate the bar chart pictured in Figure 5.2. We will give you one method for creating it, without including the directions for how to use each tool. The chart should be about five inches wide and three-and-a-half inches high. Be sure to include the border.

- 1 Draw the outside border.
- 2 Draw the baseline.
- 3 Make the first bar with the *Box* tool. Apply a thicker-width border to it.
- 4 Duplicate the bar.
- 5 Position the second bar.
- 6 Duplicate the other six bars.
- 7 Select each bar, and resize using the top middle handle.
- 8 Select each bar, and apply a pattern.
- 9 Type in the text.
- 10 Highlight the text, and format it.

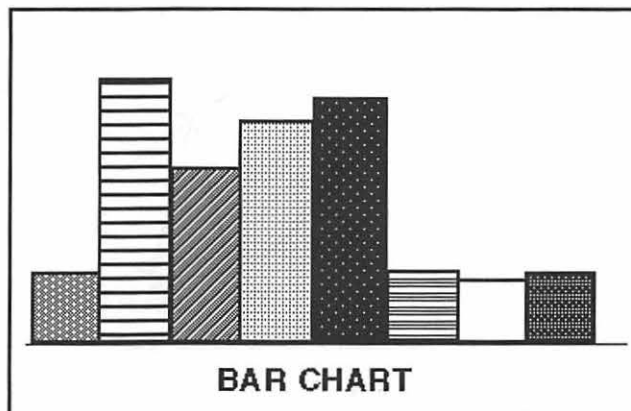


Figure 5.2

11 Drag the text box into position.

12 Save your work as *Types of Graphs*.

Deskdraw Challenges (on Your Own)

The Line Chart Challenge

Here's an easy one. On the same document as the bar chart, recreate the line chart shown in Figure 5.3. Make it the same size as the bar chart.

Choose *Page Layout* to make the page 11" wide by 8.5" high. Use *Page Setup* to make the page orientation horizontal (**landscape**). Add the title *TYPES OF GRAPHS* at the top center of the page.

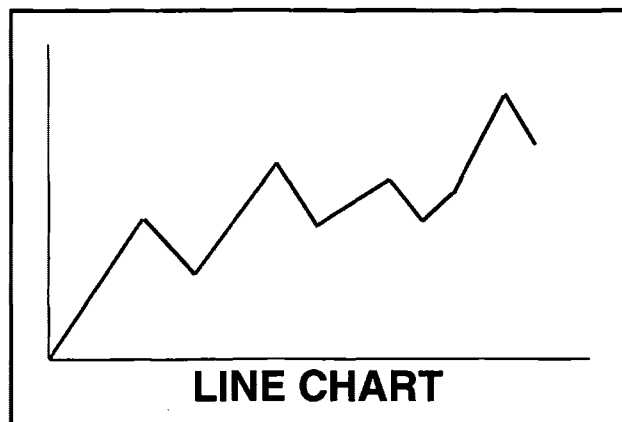


Figure 5.3

The Pie Chart Challenge

Add the pie chart shown in Figure 5.4 to your *Types of Graphs* chart. Do not fill in the slices.

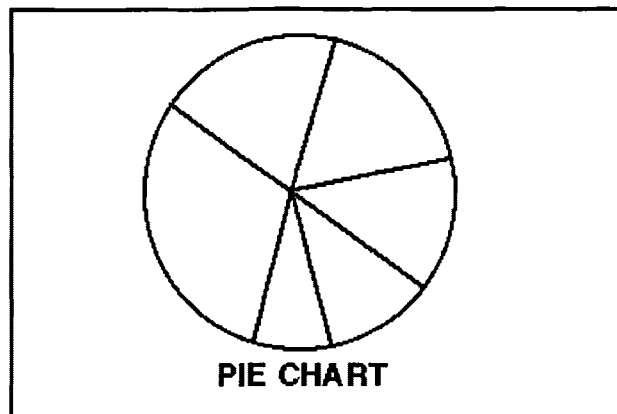


Figure 5.4

The Pictograph Challenge

Finish your visual with the pictograph shown in Figure 5.5. You might create the figure with some very wide lines, a box, and a circle. Be sure to duplicate the figures. How will you hide half a figure? Save your work.

Does the final layout of your chart look anything like Figure 5.6?

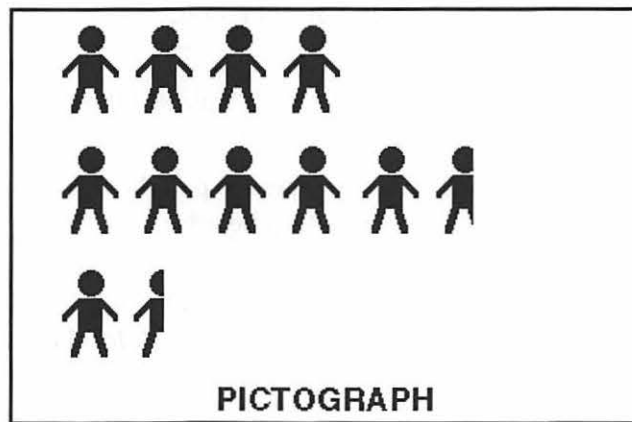


Figure 5.5

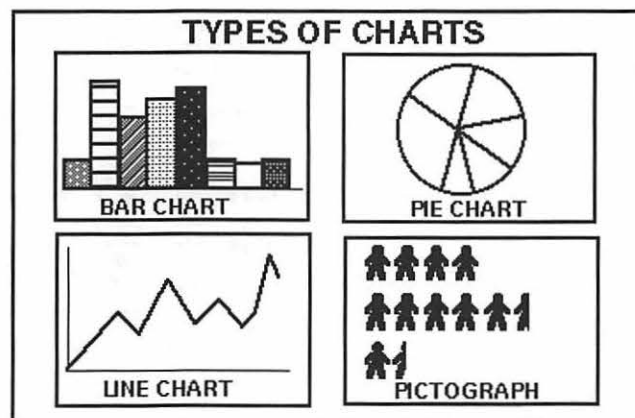


Figure 5.6

Opening Desktop

- 1 Open Desktop by choosing it from the *Apple* menu (🍏).

If it has not been installed as an *Apple* Menu item, navigate the hard disk window to find the *Desktop* folder. Open that folder and then double-click on the *Desktop* icon.

The hard disk will whirl for a few seconds, and you will be presented with a blank DesktopPaint document.

- 2 The DesktopPaint window will look like Figure 5.7. Take a moment to study the different parts of the window.

NOTE: If you are using an older version of *DeskPaint*, you may see different menus. Here are the primary differences. In the new version, the old *Format* menu has, for the most part, been replaced by the *Window* menu. The commands in the old *Arrange* menu have been replaced by tools. Many of the commands in the new *Options* menu are in the old *Format* menu.

- **SYSTEM 6 USERS** Note that there are now two menu bars. Be sure to invoke all *DeskPaint* commands from the lower menu bar.
- 3** Take a moment to pull down each of the menus, but don't select any commands quite yet.
- 4** The color mode at the bottom of your screen should say *256 colors*. If it doesn't, pull down the *File* menu and select *Page Layout*. Press-and-drag on the *Colors* box (it probably reads black and white), and drag down to *256 colors*. Click *OK*.

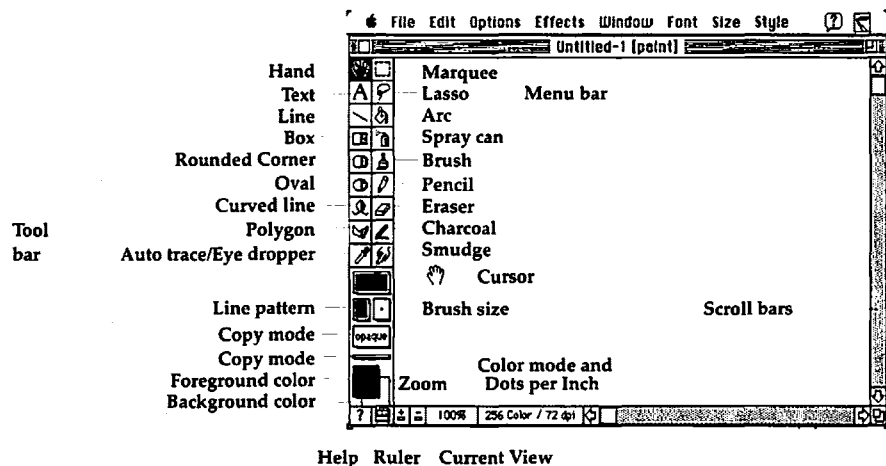


Figure 5.7

The Tool Bar = Painting Tools

Along the left side of the screen you will see the **Tool Bar**. This is where you choose the various painting tools to work with. Study the diagram of the Tool Bar (Figure 5.7). We will be working with these tools next. You should note that you can also select tools by pressing a designated key (without using the Command key).

Pencil Tool

Just as we did in *DeskDraw*, let's create a face. But this time we will use painting tools. The simplest tool to use is the *Pencil* tool.



- 1** Click on the *Pencil* tool (or press the *D* key)
- 2** Draw a simple face like the one illustrated.



Mistakes

Unlike draw programs, you cannot just press the Delete key to erase a mistake when using a paint program. In fact, there is no arrow or selection tool. This is because each **pixel** on the screen is addressed, not entire objects. Later, we will learn three techniques that can be used to select portions of the screen to delete or move.

Eraser Tool

The *Eraser* tool works like a real eraser; just rub over an area to erase or delete things.



- 1 Click on the *Eraser* tool (or press the *E* key).
- 2 Erase the right eye by pressing and dragging the eraser over it.

Hot Tip—Straight Lines

To draw or erase with straight lines, use the *Shift* key to constrain your movements. When drawing on black with the pencil, the pencil will erase.

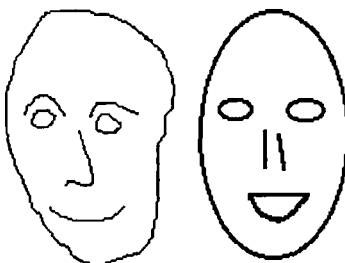
Undo

DeskPaint has the same undo characteristics as DeskDraw. You can only undo your last move. But unlike in DeskDraw, you cannot redo your last move.

Choose *Undo* from the *Edit* menu (or press *Command-Z*). The right eye should reappear. If not, paint a new one.

Line Tool, Box Tool, Rounded Corner Tool, Freehand Tool, Irregular Polygon Tool

These tools work just about the same as they do in DeskDraw. Take a moment to experiment with them. Try drawing another face.



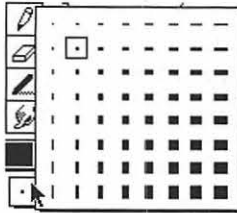
Paint Brush Tools

The *Paint Brush* is like the *Pencil* tool, except it has a wide tip. You can change brush widths and shapes.

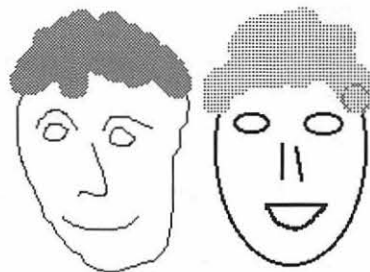


- 1 Click on the *Paint Brush* tool (or press B).
- 2 Press-and-drag on the *Color Box* to select a red color.
- 3 Press-and-drag to paint red hair on our first face.

Different Brushes



- 1 Be sure the *Paint Brush* tool is still selected.
- 2 Press-and-drag on the *Brush Size* box to select a big oval shape.
- 3 Now paint yellow hair on the second face.
- 4 Save your work as *Painted Face* using the *Save* command under the *File* menu.



Hot Tip—Brush Size

The brush size does not affect pencil lines. It is used as the line width tool in drawing polygons and lines, and to determine the eraser width.

Paint Bucket Tool

Here's something powerful that you can't do in DeskDraw. The *Paint Bucket* tool allows you to fill in any area of your image.



- 1 Click on the *Paint Bucket* tool (or press F).
- 2 Press-and-drag to select a pretty blue color.
- 3 Click the TIP of the paint coming out of the *Paint Bucket* tool inside each eye of the first face.



If the paint leaks out of the eye, it means that the area was not entirely bounded. Select *Undo*, and touch up the area with the *Pencil* tool to make sure there are no gaps in your border.

Spray Can Tool

The *Spray Can* tool is lots of fun. If you've ever had a secret desire to be a graffiti artist, this is the tool for you.



- 1 Click on the *Spray Can* tool (or press A).
- 2 The spray can continually sprays as you hold down the mouse.
- 3 Spray a nice pair of shoulders beneath the first face. Experiment with moving the spray can fast and slow.



Charcoal Tool

The *Charcoal* tool is identical to the spray can except that it only applies paint while it is being moved.



- 1 Click on the *Charcoal* tool (or press O).
- 2 Apply a pair of shoulders beneath the second face.
- 3 Save your work.

Smooth Tool

The *Smooth* tool smudges or blends the paint it is dragged over.



- 1 Select the *Smooth* tool (or press Y).
- 2 Smooth the lines in the second face. Try it fast and slow.

Eyedropper Tool (When Working in Color)

The *Eyedropper* tool allows you to “pick up” a color from one part of your image and apply it to another part.



- 1 Click on the *Eyedropper* tool (or press K). This tool will be replaced by the *Auto Trace* tool if you are not working in color.
- 2 Click the *Eyedropper* on any colored portion of your image. Notice that the foreground color in the Tool Bar has changed to this color.
- 3 You can now use any tool in this color. Choose the *Paint Brush*, and paint some hair in this color.

Auto Trace (When working in Black and White)



The *Auto Trace* tool is used to convert black and white paint images into DeskDraw objects. We will learn how to use it later.

Hand Tool

If your image goes off the screen you can use the scroll bars as you did in DeskDraw, but there is also another way of scrolling. The *Hand* tool grabs your image and lets you move it around in the window.



- 1 Click on the *Hand* tool.
- 2 Press the *Hand* down near the bottom right of your screen, and drag it up and off the screen. The screen will scroll with you.

Selecting

Notice that there is no arrow or selection tool in DeskPaint. This is because the image is not comprised of objects but is **bit-mapped**. We will need to **lasso** or surround a group of pixels to work on them.

Marquee Tool

The *Marquee* tool selects rectangular sections of an image.



- 1 Click on the *Marquee* tool (or press S).
- 2 Press-and-drag to draw a box around the left face. The *Marquee* tool functions just like the box tool.
- 3 The cursor will turn into a cross. Now drag the box to the bottom of the document.
- 4 Click outside of the box to place the face.



You might notice that when you select an area, the tools will turn into new symbols. These are *icons* which represent the modifications you can make to a selected area. Note that if you are using a version of DeskPaint that does not have an *Arrange* menu, you will need to use these icons as substitutes for the commands in the *Arrange* menu.

Lasso Tool

The *Lasso* tool selects irregular sections of an image.



- 1 Click on the *Lasso* tool (or press Q).
- 2 This tool functions much like the *Pencil* tool. The idea is to draw a lasso around the area you want to move.

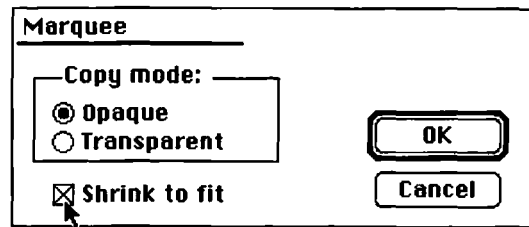


- 3 Press-and-drag to put a lasso around the face you just moved.
- 4 Drag the face back to the top of the screen.
- 5 Click outside of the lasso to finish the move.

You can also use *Cut* or *Copy* after you have selected an area with the *Marquee* or *Lasso* tool.

Hot Tip—Quickly Selecting Irregular Shapes

- 1 Select *Marquee* from the *Options* menu.
- 2 Click on the *Shrink to fit* check box. Click *OK* or press *Return*.
- 3 Click on the *Marquee* tool.
- 4 Draw a box larger than the second face. The marquee will neatly shrink to become a box around the face.



Hot Tip—The Lasso Tool

You can achieve the same effect of quickly selecting irregular shapes by selecting the *Lasso* tool and pressing the *Command* key while you click under the desired object. Try it if you want to.

There is no way to make multiple selections, but you can select the entire image by using *Select All* from the *Edit* menu.

Menu Items

Resize

Now that you know how to select an area, you can **resize** and **scale** it just as in DeskDraw.

- 1 Select a face with the *Lasso* or *Marquee* tool.
- 2 Hold down the *Command* key while you press-and-drag on the lower right corner of the marquee. This will resize the area just as in DeskDraw.
- 3 Select *Undo* from the *Edit* menu.

Hot Tip—Proportional Resizing

To **proportionally** resize an area, hold down *both the Shift and Command* keys while dragging a corner.

Modifying Images

Images can be modified by using the Selection tools. After you select an area of the screen, the tools in the Tool Box turn into new icons. These correspond to tools used to modify the selected area. The Selection tools are shown in Figure 5.8.

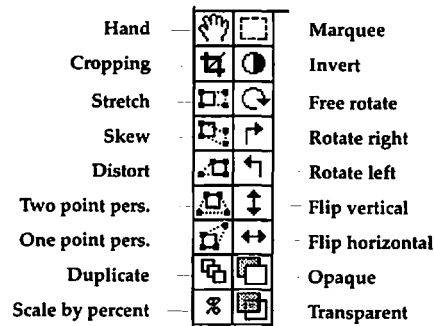


Figure 5.8

Scaling

- 1 Select a face.
- 2 Click once on the *Scale by Percent* tool in the *Selection tools* box (or press *Command-%*).
- 3 Click on a preset percentage, or enter a custom size. Press *OK*.

Duplicating

Let's make three more faces.

- 1 Be sure a face is selected.
- 2 Choose *Duplicate* from the *Edit* menu (or press *Command-D*).
- 3 Drag the face to the right of the original face.
- 4 Choose *Duplicate* twice more to create two prepositioned faces.
- 5 Save your work as *Painted Face 2* (choose *Save As* under the *File* menu).

There is no align command.

Flipping and Rotating

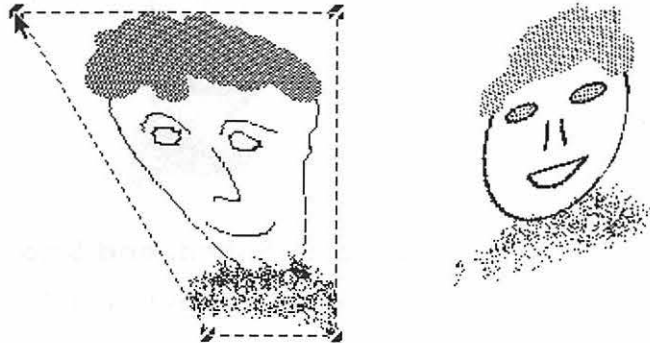
After selecting an area, you can **flip** or **rotate** it (using the Selection tools). Try it.

Distort, Skew, Stretch, Perspective

You can get really wild with these tools.

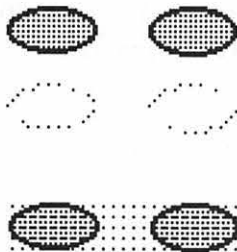
- 1 Select a face with the *Marquee* tool (not the *Lasso*).
- 2 Choose *Distort* from the Selection tools.

- 3 Grab the handle in the upper left corner of the marquee, and drag it up and to the left. Be sure the cursor is the pointer and not a cross when you drag the handle.
- 4 Let go of the mouse button. Click on the *Marquee* tool again. The face will be distorted.
- 5 Try stretching another corner.
- 6 On the other faces, practice with *Skew*, *Stretch*, and *One and Two Point Perspective* (in the Selection tools). If you don't like a distortion, use *Undo* to start over.



Lighten and Darken

We can lighten or darken the entire graphic by adding or subtracting dots, or pixels.



- 1 Use the *Fill* tool (the paint bucket) to fill in the eyes of a face with a black and white pattern.
- 2 Choose *Lighten* from the *Effects* menu.
- 3 Hold down the *Command* and + keys. Notice the image gets progressively lighter.
- 4 Choose *Darken* twice from the *Effects* menu.
- 5 Hold down the *Command* and - keys.

Inverting

Need a reverse image? The *Invert* tool does the trick.

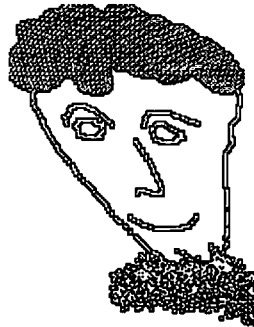
- 1 Select a face with the *Marquee* tool.
- 2 Choose *Invert* from the *Effects* menu.



Trace Edges

Trace Edges is a rather strange effect. It converts your selection to an outline.

- 1 Select a face with the *Marquee* tool.
- 2 Choose *Trace Edges* from the *Effects* menu.



Sharpen, Soften, and Smooth

These tools work only in color. Try them if you wish.

Working with Text



The *Text* tool operates much like DeskDraw's text tool does, with two notable exceptions: once the text has been placed it cannot be modified, and the text will print out as bit maps (jagged edges and all). For these reasons it is usually better to create text in a draw program.

- 1 Click on the *Text* tool (the A), or type T.
- 2 Click the mouse to the right of one of your faces.
- 3 Type in *Friend Number 1*.
- 4 Drag the cursor back over the text.
- 5 Apply a different *Font*, *Size* and *Style* from the menus. Resize the text box if necessary.
- 6 Click the mouse outside of the text box.
- 7 Now try to highlight the text again. It can't be done. The text is painted. You will need to erase it and retype it to apply different fonts or styles.

Friend Number 1



We can, however, change the size of the letters, but in a rather crude fashion.

- 1 Use the *Text* tool to type in *Friend Number 2* next to another face. Be sure to select your font, size and style before clicking the mouse again.
- 2 Use the *Marquee* tool to draw a box around your text.
- 3 Hold down the *Command* key, and drag one of the corners. You can stretch or shrink the text, and the letters will distort.

- 4 Since the text is a **bit map** you can flip, rotate, and otherwise play with the text. Try it.
- 5 Save your work.

Other Options

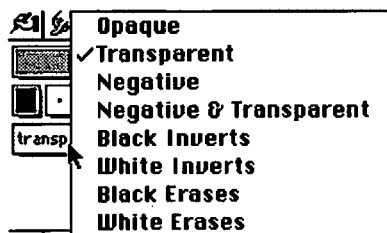
Preferences

Preferences allows you to set up DeskPaint to your custom settings. We won't play with these settings now, but you can take a look at them.

- 1 Choose *Preferences* from the *Edit* menu. Look at the options available.
- 2 Select *Cancel*.

Modes

So far, it seems that painting always covers up the paint beneath it. But we can apply color in many different *modes*.



- 1 Get back to your *Painted Faces* document.
- 2 Click on the *Paint Brush* tool.
- 3 Select a nice fat brush.
- 4 Choose *Transparent* from the *Modes* pop-up menu.
- 5 Paint hair over some existing hair. Notice this new effect.
- 6 Experiment with other modes.

The different modes also work when pasting or duplicating things.

Auto Trace

Auto Trace permits you to convert DeskPaint images to DeskDraw objects. You use this to import things into DeskDraw which you will wish to modify. You can directly import portions of a DeskPaint image into DeskDraw from the *Clipboard* (using *Cut* and *Paste*), but you will not be able to modify them. *Auto trace* works only in black and white mode.



- 1 Get a *New* document from the *File* menu.
- 2 Set the color to black and white using the *Page Layout* menu.
- 3 Draw a hand using the *pencil* tool.
- 4 Choose *Auto Trace* from the *Options* menu.
- 5 Set *Trace As* to *Polygons*, *Trace Type* to *Prefer curves*, and *Complexity* to *Medium*.
- 6 Click on the *Auto Trace* tool.
- 7 Click on a line of the hand. The hand will "shimmer."
- 8 Choose *Copy* from the *Edit* menu.
- 9 Now open DeskDraw from the *Apple* menu. Choose *Paste* from the *Edit* menu in DeskDraw.

- 10 You can now modify the hand just as you would any other object; you can even *Reshape* it from the *Edit* menu.
- 11 Quit DeskDraw without saving changes. Return to your DeskPaint screen.

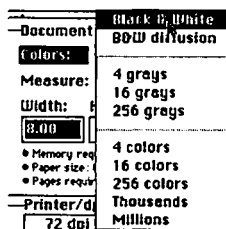


Browse Files

Browse Files is a utility which automates the process of looking through several paint files. It's useful for previewing *clip art*.

- 1 Choose *Browse Files* from the *File* menu.
- 2 Navigate through folders to find the *PD Clip Art* file in the *Producing Pictures* folder on your C.A.R.P. floppy disk.
- 3 The *Hand* icons activate forward, reverse, or pause browse. The *Movie Camera* moves to auto browse. You can change the speed by typing in a number from 0 (fastest) to 9 (slowest). The *Paint Brush* allows you to stop and edit an image.

Working with Color



To turn off color, you go to the *Page Layout* dialog box.

- 1 Select *Page Layout* from the *Edit* menu.
- 2 In the *Colors* pop-up menu, drag down to *Black and White*.

Normal color mode is 256 colors. Never choose *Millions of colors*; few Macs have enough memory to use this option.

- 3 Drag back to *256 colors* to continue to work in color.

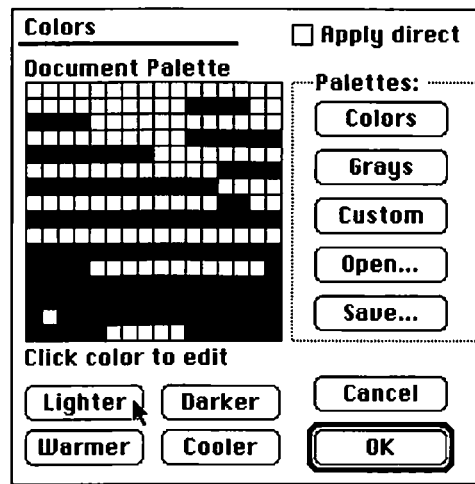
Picking Colors

Picking colors is almost like choosing patterns except you can choose both a background and foreground color. The foreground color is used for solid fills. The background color affects only patterned fills.

- 1 Click on a foreground blue.
- 2 Draw a filled circle.
- 3 Click on a foreground red and a background yellow.
- 4 Use the *Paint Can* to refill the circle. It should become red.
- 5 Select a pattern from the pop-up *Pattern* menu.
- 6 Refill the circle with the *Paint Can*. The circle should fill with this new mixed color.
- 7 Try some other color combinations.
- 8 The *Color Picker* bar keeps track of the last 14 colors used.

Changing Colors

Although you can only see a *palette* of 256 colors, you can in fact choose from 16.7 million colors.



- 1 Choose *Color Palettes* from the *Options* menu.
- 2 Click on any color to edit it. The Color Wheel will come up.
- 3 Click on a new color, or adjust the color with the arrows and scroll bar.
- 4 Click *OK*. Your edited color replaces the old one in the color palette.
- 5 You can alter the entire palette by selecting *Color Palettes* from the *Options* menu and then pressing the *Lighter*, *Darker*, *Warmer* (more red), or *Cooler* (more blue) buttons.

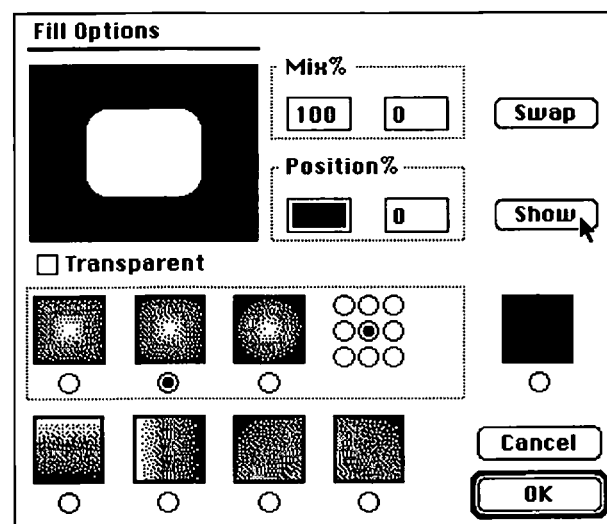
You can save and load custom palettes. Or you can choose a **gray-scale** instead of colors.

- 6 Click *Cancel* or *OK* to exit this dialog box.

Graduated Fills

The graduated fill option makes pretty shaded fills.

- 1 Make sure your pattern is set to solid.
- 2 Draw a filled square.
- 3 Click on the *Paint Bucket* tool.
- 4 Choose *Fill Options* from the *Effects* menu.



- 5 Click on the directional fill that graduates from the center to the edge. Click the *Show* button. Note the sample fill in the preview area.
- 6 Try some other options, or type in new mix or position options.
- 7 When you find a suitable fill, click the *OK* button.
- 8 Position the TIP of the paint pouring out of the *Paint Bucket* inside the filled box and click once.

Transparent fills over colored images can be quite spectacular.

Image Control

Image control allows you to adjust the contrast, brightness, and sharpness of your picture.

- 1 Choose *Image Control* from the *Effects* menu.
- 2 Experiment with dragging the settings. You can either affect all colors or work on Red, Green, and Blue separately. If things get really unattractive, click the *Reset* button.

Special Effects

We can't quit without playing with two of the most fun tools. Let's do some DeskPaint special effects.



Oil Paint

- 1 Draw a marquee around a colorful face.
- 2 In the *Effects* menu, drag down to *Special* and then over to *Oil Paint*.

Other Special Effects

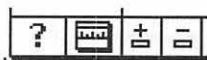
Experiment and discover!

Color Printing

If you are lucky enough to have access to a color printer, it is easy to print out your image: just use the *Print* command under the *File* menu. If not, you should learn how to print your image on a black and white laser printer.

- 1 Be sure your colorful *Painted Face* file is open.
- 2 Choose *Page Layout* from the *File* menu.
- 3 Choose *Black and white diffusion* from the pop-up color menu.
- 4 Click on *300 dpi* under the LaserWriter setting.
- 5 Click *OK* to convert your image to a black and white halftone ready for printing.

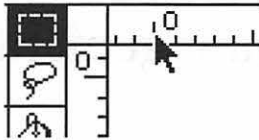
Help



Just as in DeskDraw, help is only a click away. Simply click on the *Question Mark* and drag the cursor to the tool or menu item you want information on.

Ruler: Move Zero Point

You can *Hide* or *Show Rulers* via the *Window* menu. You can also move where the ruler starts by dragging the zero point.

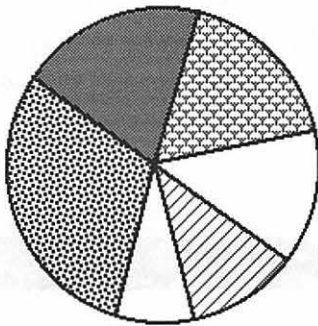


- 1 Select *Show Rulers* from the *Format* menu.
- 2 Click in the ruler where you want the new ruler to start. The ruler's zero point will move to this new position.

Deskpaint Challenge (Guided Discovery)

Integrating DeskDraw and DeskPaint

Let's use DeskPaint to fill in the slices we started in the DeskDraw Pie Chart Challenge.



- 1 Open DeskDraw.
- 2 Open your *Types of Graphs* visual.
- 3 Select the circle of the pie chart. *Copy* it.
- 4 Open a new DeskPaint document.
- 5 Select *Paste*. The circle will appear.
- 6 Draw the lines for the slices.
- 7 Fill in each slice with a pattern.
- 8 Select the entire pie graphic, and *copy* it.
- 9 *Close* DeskPaint, and return to your DeskDraw *Types of Graphs*.
- 10 Select *Paste*. Move your pie chart into position. *Save* your work.

Deskpaint Challenges (On Your Own)

Choose any two of the images pictured in Figure 5.9 to recreate. You can modify them. Finally, create an image of your own. It does not need to be anything complicated, but try to experiment with some of DeskPaint's effects.

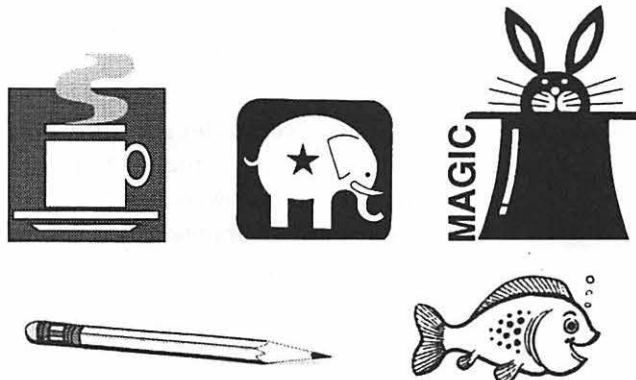


Figure 5.9

CHAPTER 6

Doin' Data— Learning Database Management via Microsoft Works

Files Used in this Tutorial

The following files are found in the *Doin' Data* folder on the C.A.R.P. disk:

<i>Whales</i>	<i>References</i>
<i>Business Contacts</i>	<i>Friends and Family</i> (created by user)
<i>Customers</i>	<i>Baseball Filled In</i> (created by user)
<i>Music Collection</i>	<i>References Template</i> (created by user)
<i>Baseball Team</i>	<i>Thesis Reference</i> (created by user)

Introduction**Welcome to the Information Age**

It has been said that we have moved into the Information Age. The growing significance of high-quality, vital information in a modern economy has led to the assertion that information is our most valuable commodity. In the book *The Wealth of Information*, Tom Stoner (Wiley 1983) describes the place of information in current society:

Information has upstaged land, labour, and capital as the most important input into modern productive systems. Information reduces the requirement for land, labour, and capital. It reduces the requirements for raw materials and energy. It spawns entire new industries. It is sold in its own right, and it is the raw material for the fastest growing sector of the economy—the knowledge industry.

What has brought us into the Information Age is the computer, and specifically the advent of electronic **database management systems**. Business and government have already responded to the needs of a post-industrial economy. The software industry primarily sells information and ideas. When you buy computer software, you are paying for the development of the program, not the actual disks it comes on.

The educational system is beginning to adapt to the change to the information age, as Simonson and Thompson state in their book *Educational Computing Foundations* (Merrill, 1990):

As information and knowledge continue to expand rapidly, skills in accessing and using this information will be very important. The ability to locate and use quality

information will be more important than the ability to memorize facts. Increasingly, teachers will be seen less as dispensers of information and more as facilitators in helping students learn the process of using information.

What Is a Database?

A database is simply a collection of **data**. We have all used nonelectronic databases in our everyday lives. A phone book, a recipe file, a collection of magazines, a box of household bills—all of these are collections of data. What these databases lack is a well-defined organization system. Finding specific information, ordering it, or drawing inferences from it may be difficult to do; the facts are there, but they are “buried.” An electronic database lets the computer store, sort, and find the information with amazing speed, flexibility, and accuracy. Given the proper database file, you could search your magazine collection to find all the articles on whales, or all the articles on baleen whales, or only those articles on baleen whales that are over 60 feet long. The price you pay for doing it on a computer is having to first set up the database, and then having to enter the data accurately into the computer. But once the data are in the computer, what power you have!

Besides using database files which you create, there are other types of databases; these are commercial, on-line, and CD-ROM databases (see Appendix C). You can purchase commercial databases for use in education or business. For example, disks are sold containing databases on countries of the world, U.S. presidents, and bibliographies. On-line databases are usually accessed with a **modem** over a phone line. In these cases, your computer is tapping into a larger database. For example, the **ERIC** database contains over one million records of educational articles. You can dial up databases of demographics, consumer reports, or even genealogical records. Increasingly, libraries are putting their card catalogs on computers; these, in fact, are electronic database files. **CD-ROMs** allow enormous amounts of data to be stored on one optical disc. You can purchase an entire U.S. census on a CD-ROM, or you can get the ERIC database on a couple of disks.

Some Basic Database Terms and Concepts:

Before we begin to work with databases it would be helpful first to explain some terminology and basic concepts. Most of these apply to any electronic database, but a few are specific to Microsoft Works.

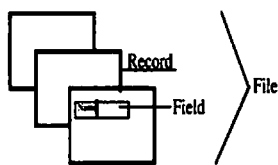
There are three basic parts of a database: file, record, and field.

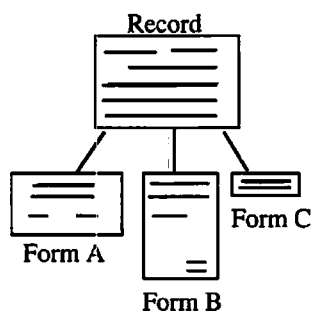
A **file** is a collection of information on a specific topic; it is the whole database. For example, we will work with files on whales, items in a music collection, and business contacts.

A **record** is all the information about one entry in a file. In the *Whales* files, one record is on the sperm whale. In the *Music Collection* database, one record is on the *Sound of Music* soundtrack.

A **field** is one item of information contained within a record. For example, in the Sperm whale record, we have separate fields for whale name, length, and food eaten.

Microsoft Works uses some additional terms. A **form** is the printed representation of a record. You can print out the same record in up to 16 different





forms. An **entry** is the information contained in a field. Works has you set up **filters**, which are selection criteria. By applying a filter to a database you will select only certain records. Works also has you set up reports. A **report** is a printed list of selected records.

Using Databases for Teaching and Learning

Database management can be used in a wide variety of curriculum areas. It is especially good for fostering an interdisciplinary approach to handling information. Three distinct advantages come with using databases in the classroom. First, students gain skill in using a key Information Age tool. Second, students develop higher-order thinking skills including classifying, drawing inferences, and hypothesizing. Third, databases can be repositories of facts and knowledge. The preceding section outlined some of the different types of commercial databases. Be sure to read Appendix F for ideas on using databases in the classroom.

For elementary school use, teachers might want to forego computer use and display the database on large sheets of paper, having the students enter the data with felt pens. Eventually a transition is made to the computer. Popular subjects include endangered species, plants, rocks, and presidents.

In secondary schools, a natural use of databases is the social studies and science curriculum, where information needs to be stored and recalled. But they can also be used in less obvious areas. In language arts, students can keep track of books they have read as part of a classroom book report database. Students could search for a certain type of book and print out reading lists. For learning databases (see the following section) a popular activity is to have the students create a classroom database. Each student enters his or her age, address, hobbies, favorite song, and the like into the database. They can then in turn sort, search, and report the data.

For college and adult learners, databases can be created to keep track of references in a research report or to record the results of an experiment. Being able to search large on-line databases in such areas as careers, natural resources, and publications is an increasingly useful skill.

Administrative uses of databases include keeping student records, maintaining inventories of books or other materials, and creating personalized form letters via a mail merge (merging address lists into a word processed document).

Learning and Teaching Database Management

Learning how to use an electronic database is a formidable task for most adults, and it can be too difficult for young learners. It has been suggested that full use of electronic databases shouldn't begin until about eighth grade. There are several reasons for this. First is that it involves using higher-order thinking skills, including inference, application of logical rules, and testing hypotheses. The concepts of set theory and Venn diagrams should be understood first. Second, data entry must be accurate; if a word is spelled wrong, a search of the database may not find the needed data. Thus keyboarding skills need to be polished.

Beverly Hunter (*My Students Use Computers*, Reston, 1985) has suggested a three-stage model for teaching database skills. We will apply this model in our tutorial. The first stage is **Using**, during which students work with an existing database developed by someone else. They learn to search,

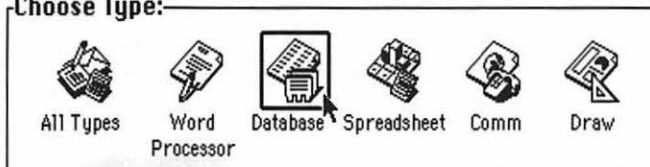
sort, and print information. With younger learners you can start by doing these activities off of the computer, working with paper card files. The second stage is Building. In this phase students enter information into the database. They need to use research and organizational skills to compile the information. We will have you add new whale species into our existing whales database file. The final level is Designing Files. In this stage, learners create their own files from scratch. The design of fields, forms, and reports takes considerable planning and organization. If the designer of the database does not ask the right questions or asks them in the wrong form, the database will not be able to produce effective results. Your assignment will have you design your own database.

Starting Up

Starting Up Works and Opening a File

- 1 Double-click the *Microsoft Works 3.0* folder icon.
- 2 In that window, double-click the *Microsoft Works 3.0* icon. Wait for the program to load.
- 3 We want to use the database of Works, so click once on the **Database** icon.

Choose Type:



- 4 Insert your floppy disk. We want to open the *Whales* file, which is in the *Doin' Data* folder of your floppy disk.

You will need to navigate through the drives and folders to find the *Doin' Data* folder. Use the drive button (or press **Desktop** in System 7) to change drives. Change folders by double-clicking on the *Doin' Data* folder in the list of files dialog box.

- 5 Click once on the *Whales* file name, and then click once on the **Open** button (a shortcut is to click twice on the file name).

As with any other file, you can also open a file by double-clicking on it from the *Desktop Finder* or by using the **Open** command from within Works' *File* menu.

Quick Tour

A Look at the Menus

In any Mac program it is a good idea to pull down each of the menus and, without selecting any commands, take mental note of the commands. You

can probably guess what many of the commands do. As with most Mac programs the first three menus are *Apple*, *File*, and *Edit*. (See Figure 6.1.) You are familiar with many of these commands. The rest of the menus may be less familiar to you, but we are about to explore them.

Take a minute to pull down each of the menus. Examine them, but do not select any of the commands. Notice that many of the commands have keyboard equivalents (accessed by Command-keystroke combinations).



Figure 6.1

A Look at the Screen

The database screen will look different in different views, but Figure 6.2 is a diagram of the parts of the window that are common to several views.

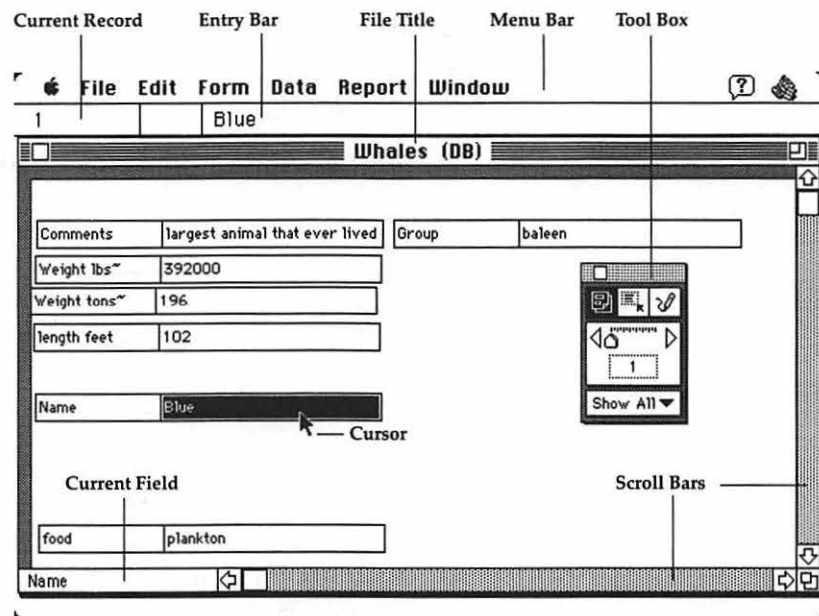


Figure 6.2

The Tool Box

The **tool box** is a new feature of Works which acts as a shortcut for some of the menu commands. For example, it will let you change views with just a click of the mouse. It also lets you move through a database quickly or change font sizes and styles. It changes in each view. We will be working with the tool box throughout this tutorial.



- 1 If the tool box is not on the screen, select *Show Tools* from the *Window* menu. If the menu says *Hide Tools* you are OK.
- 2 Move the tool box around by dragging it by its top bar.
- 3 Close it by clicking its close box.
- 4 To get it to appear again, select *Show Tools* from the *Window* menu.

Different Views

One of the most confusing aspects of working with a database is that you are not always looking at all of the file at once. Conversely, there are several different ways of looking at the same data. Let's now look at the various views in the database module. There are several different views, each with its own purpose.

Design View

- 1 While still in the *Whales* database, select *Design View* from the *Form* menu.

The design view is where you create the blank fields to set up your database. You can also move and resize fields. You cannot enter or see field information in this view.

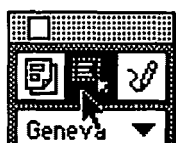
- 2 Drag the Name field to the top of the screen. To move it, simply put the pointer in any part of the field other than on a handle and drag it into position.
- 3 Drag the Comments field to the bottom of the screen.

Data View

Select *Data View* from the *Form* menu. In this view you enter the information onto a form. You can also use this view to see information one record at a time, to search for specific information, or to sort information. Use data view to look at one record at a time and to see the information in a way that corresponds to a real form.

List View

Select *List View* from the *Form* menu. List view sets up a **table** to show all the data in columns and rows. This is useful for viewing information from several records at once. You can still enter or change data in this view. Changes in the placement of the fields in this view will not affect the appearance of the data view forms.



Switching Views Shortcuts

- 1 To switch quickly to the design view, click on the *Design* tool in the tool box.
- 2 To switch quickly to the data view, click on the *Data* tool in the tool box.
- 3 To switch quickly to the list view, double-click anywhere in the white space of the form, or press *Command-L*.
- 4 To switch quickly from the list view to the data view, double-click to the left of the first field of any record.

Blue	plankton
Fin	fish
Bowhead	plankton

Forms View

You should be aware that the display of data you see in data and design view can be arranged into many different arrangements, and you can add borders or graphics. Works allows up to 16 different forms to be created in a single database. We will work with the forms later in this tutorial.

Report View

A report is a table of all of the records that meet the selection criteria you have specified. You can arrange the fields in a report table in any order or style, but you cannot change any data while in report view. Works allows up to 16 different reports to be associated with a single database; these are accessed from the *Report* menu. Take a look at that menu, but do not select any commands yet. Notice that the *Whales* database currently has three reports associated with it. We will work with reports later in this tutorial.

Print Preview View

When you sum the totals in a report column or do other arithmetic functions, you will need to do a **print preview** to see the results. Print preview allows you to see what the form or report will look like on paper. We will work with print preview later in this tutorial.

Moving through a Database

As we noted before, you cannot see all of the database information at one time on the computer's screen; thus we will need to move efficiently through the database. There are at least four ways to do this, using the scroll bars, the keyboard, the menus, or the tool box.

Moving via Scroll Bars

- 1 Be sure the *Whales* database is still open.
- 2 Switch to data view if you're not there already.
- 3 Press a scroll arrow to move horizontally or vertically. You can also click in the scroll bar or drag the scroll box. This shows you other parts of the same form.
- 4 Switch to list view. Try the horizontal scroll bar in this view. When the scroll bar is white, there is nothing to scroll to.

Moving via the Keyboard

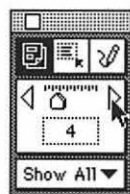
- 1 Move to data view. Use the left arrow and right arrow keys on the keyboard. Try the up and down arrow keys. These move you through the fields of *one* record. The Tab key does the same thing. These keys work in all views.
- 2 To move to the next record use *Command =*. Try it several times.
- 3 To move to a previous record, use *Command -*.

Moving via Menus

- 1 Be sure you are in data view. From the *Data* menu, select *Next Record* or *Previous Record*.
- 2 Try moving also from the list view. In list view a faster way to switch records is to just click the mouse on another record.

Moving via the Tool Box

The tool box is a nice fast way to move through records in any view.



- 1 Switch to data view. Click the mouse once on the forward or back arrow in the tool box to move one record at a time. Notice that the number of the current record is displayed.
- 2 To move quickly, press and hold down the mouse button on the forward or back arrow.
- 3 To move proportionately within the database, drag the **slider bar**. For example, to move a record in the middle of the database, drag halfway down the slider bar.

Working with an Existing Database

Adding a Record

You can add a record at any location in the database in both data and list view. You can later sort the record order also.

- 1 Be in data view in the *Whales* database.
- 2 Move to the Gray whale record.
- 3 From the *Data* menu, chose *Insert Record*.
- 4 A blank record is now created.
- 5 Move to list view, and click once in the Minke record.
- 6 From the *Data* menu, chose *Insert Record*.
- 7 A second blank record is inserted.

Filling in a Record

We want to enter in the data for the blank records we've just created. You can enter the data from either data or list view.

- 1 Double-click to the left of the first blank record to move to data view.
- 2 If you are not in the Name field, use the arrow or Tab key to get there.
- 3 Type in *Humpback*. An entry can be up to 250 characters, but you may not be able to see it all in the field; don't worry, it's all there.
- 4 As you type, the entry will be displayed in the entry bar. If you make a mistake, use the Delete key to back up and erase it. You can move the cursor with a mouse click, but don't use the arrow keys on the keyboard (which moves you to the next *field*).



- 5 When the entry is correct, click the *Enter* box (the check mark). The data are now entered into the record.
- 6 Move to the Group field, using the Tab key or the forward arrow.
- 7 In the Food field, type *Salmon*. Oops! That's wrong. Click the *Cancel* button (the X) to undo the entry.
- 8 Move to the next field. Type in *has very large pectoral fins* in the Comments field. Press *Return*. The Return key is the best way to finish an entry because it enters the data and drops you down to the next field.
- 9 Enter the rest of the data as follows, hitting a *Return* at the end of each entry.
 Group = (leave blank) Weight lbs = 96,000
 Weight Tons = 53 Length Feet = 62
 Food = *plankton, fish*
- 10 After you enter the last field of data, hitting the *Return* key takes you to the next record. But we realized there is an error in the Humpback record. Return to it by pressing *Command-*.
- 11 Tab to the Weight lbs field. The correct weight is *106,000* pounds. Type it in. Notice the item is changed after you enter the new data. You can always go back to change or update a field.
- 12 Press the *Tab* repeatedly; notice that after the last field the computer wraps back around to the first field.

Adding Data in List View

- 1 Switch to list view. Click once in the Name field of the blank record.
- 2 Fill in the record for the Beluga whale. List entry works about the same as data view entry. You can click the entry box and tab to the next field (do not press the *Return* key, it drops you into the next record).
 Food = *squid, fish, crabs*
 Comments = *name means "white one" in Russian.*
 Group = leave blank Weight lbs = 3000
 Weight tons = 1.5 Length Feet = 20

Copy Down

Works has a shortcut to copy the same information into several consecutive records.



- 1 Be in list view. In the record for the Blue whale, click on the baleen entry in the Group field.
- 2 Drag straight down through the next seven records (through the record for the Minke whale).
- 3 From the *Edit* menu, select *File Down*. Baleen is copied into each of the next seven records.
- 4 Fill down *toothed* for all the records below it.

Saving

We don't want to risk losing any of our data, so we'll get in the habit of saving often. I recommend saving at least every fifteen minutes. Select *Save* from the *File* menu. Since this was an existing file, the computer will automatically overwrite and update the file, without going through any dialog boxes. If you wanted to save the updated file as a different file, you would do a *Save As*.

Creating a New Database

Before beginning a new database, you could either close the *Whales* database or keep it open. Works can keep open 16 files at once (including a mix of files from different modules). In other words, you can have a database file, a word processing file, and some spreadsheets all open at the same time. For the sake of simplicity, let's close the *Whales* database.

- 1 Select *Close* from the *File* menu, or simply click the close box. If Works asks you to save changes, click the *OK* button.
- 2 From the *File* menu, select *New*. Click once on the *Database* icon, and then click on the *New* button.
- 3 Works immediately puts you into the data creation dialog box. You are in this mode only when you first create a database. Later, we will use the design view to change the fields.

Working with Fields

Types of Fields

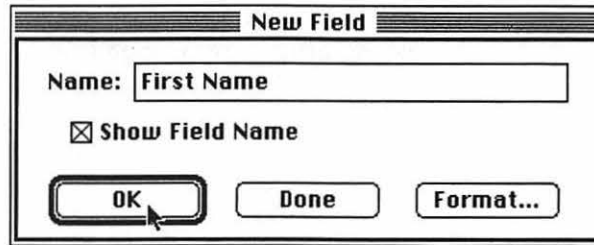
Although you may not see it on the screen, fields can be of four different types. The normal or default type is *Text*; any characters can be in this field. The second type is *Number*; the computer can perform arithmetic functions on these. You can format numbers to include or exclude decimal places and even to include a dollar sign. The next two types of fields are *Date* and *Time*. With these, Works can change the appearance to include writing out the day and month.

Creating a Field

Let's create a database to keep track of your friends and family. Before creating a database, you would want to give careful consideration to the fields and types of data you want to keep track of.

In the following sections, be careful not to hit a *Return* unless the instructions tell you to. If you make a mistake, just continue on; we'll later learn how to edit the fields.

- 1 In the *Name* box, type in *First Name*. Click on *OK*.



Notice that in the back window the first field is now called *First Name*. If you did not want the name of the field to appear on the form, you would click off the *Show Field Name* box, but we do want it to appear, so make no change there.

- 2 For the second field type *Last Name*. Instead of clicking *OK*, you can press the *Return* key as a shortcut.

- 3 For the third field, type in *Phone No.* and then press *Return*.

Works did not accept the period. A field name must begin with a letter and cannot contain certain characters such as periods, asterisks, hyphens, or parentheses. A field name can be up to 63 characters long.

- 4 Click *OK*. Click at the end of the *Phone No.* field and change it to *Phone:*

- 5 Now press *Return*. The colon was allowed.

- 6 For field 4, type in *Address*. Press *Return*.

- 7 For field 5, type in *City*. Press *Return*.

- 8 For field 6, type in *State*. Press *Return*.

- 9 For field 7, type in *Zip*. Press *Return*.

- 10 For field 8, type in *Age*. Do not press *Return* yet.

So far all of the fields have been the default text type, but now we are going to create some other types of fields.

- 1 Click on the *Format* button.

- 2 Choose the *Number* option.

- 3 Keep the *Appearance* as *General*. This will exclude decimals from the display. Keep *Formula* as *None*. Press *OK*.

- 4 Type in the next field as *Birthdate:* and click on *Format*. Select *Date*.

- 5 Scroll through the range of date appearances, and click on the second-to-the-last format. This will let us know what day of the week our loved one's birthday fell on.

- 6 Type in the next field as *Best Time to Call:*

- 7 Click on *Format*. Select *Time*.

- 8 Scroll down to any format you like, and click on it.

- 9 Type in the next field as *Spend on Gift*. Click on *Format*, select *Number*, and scroll down in the *Appearance* area to *\$1,234.56*. Chose

Alignment as Right. This will allow your numbers to line up on the right side. Click **OK**.

- 10** After you create the last field (field 12 is showing as blank), click on **Done**. This takes you out of the design mode and into the data view, so you can start filling in the records.

Saving a New File

Save your work as *Friends and Family* on your floppy disk. Use the **Save** command from the **File** menu, and navigate through the disks and folders to save it in the *Doin' Data* folder.

Creating a Computed Field

Computed fields allow numeric calculations to be performed on a field. For example, you could multiply an employee's Hourly Wage field by the Number of Hours Worked field to create a Total Pay Field. Works can do some sophisticated calculations, including computing statistics and comparisons based on logical arguments.

If you have a great deal of calculations to make, it is probably better to use a spreadsheet. A general rule of thumb is that if there are more number entries than text entries, you should use a spreadsheet. If you need to manipulate the text (perform sorts, create reports) you will need to use a database. Let's use computed fields to get some stats on our school's baseball team.

- 1** Open the file *Baseball Team*.
- 2** In list view, click on the top of the Total Hits field.
- 3** Select **Format Field** from the **Form** menu.
- 4** Click on **Number** for type.
- 5** Click on **Formula** at the bottom of the dialog box.
- 6** Press-and-drag on the **Function** button to select Hits Game 1.
- 7** Now type a + sign.
- 8** Press-and-drag on the **Function** button to select Game 2.
- 9** Drag down to Game 3 (Works defaults to adding a + between fields).
- 10** Drag down to select Game 4 and Game 5.
- 11** Click **OK**.
- 12** Notice the totals in the list and that the formula is displayed in the entry bar.

Let's find the batting average for each player.

- 1** Click on the top of the Batting Average field (scroll over to see it).
- 2** Select **Format Field** from the **Form** menu.
- 3** Click on **Number** for type.
- 4** Click on **Formula** at the bottom of the dialog box.

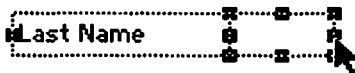
- 5 Press-and-drag on *Function* to select Total Hits.
- 6 Type in a / (the division symbol). Now slide down to select At Bats. This is the formula for computing a big league batting average.
- 7 Change the *Appearance* to 1234.56 and the *Decimal Places* to 3. Click OK.
- 8 Notice the batting averages displayed.
- 9 See if you can figure out the formulas for the Most Hits in a Game and Fewest Hits in a Game fields (hint: they are in the statistical functions).
- 10 Select *Save As* from the *File* menu, and save this file as *Baseball Filled In*.

Changing the Width of a Field

Before we start filling in fields, we can take a quick look at how to change the look of the fields.

- 1 Switch back to the *Friends and Family* database using the *Windows* menu.
- 2 Switch back to *Design view* from the *Form* menu. Notice that one of the fields has handles on it. That field is currently selected.

The Last Name field is too short to contain a very long name, so we will resize it.



- 3 Select the Last Name field by simply clicking ONCE on the field.
- 4 We want to resize the blank space, so simply drag the right center handle out. See what happens when you try the other handles.
- 5 The field name space can also be changed. Select the Phone: field. Drag the left handle to the right until just Ph shows.

Changing the Layout of the Fields

- 1 Select the First Name field by clicking on it once.
- 2 We want to move the First Name field just to the right of the Last Name field. Simply drag it by putting the pointer in any part of the field other than on a handle and dragging it into position.

Changing the Font, Font Size, or Style of a Field

- 1 While still in the design view, select the field you want to change (let's choose the Last Name field).
- 2 From the tool box choose the font you want to change to. Press down on *Geneva*, and drag down to *Times*.
- 3 Let's make the lettering a bit more noticeable. Form the tool box select *14 point*.
- 4 Change the style to *Bold* from the tool box.

If you have several changes to make, there is a more powerful way to do this.

- 1 Select the First Name field.
- 2 From the *Form* menu, chose *Format Character*.
- 3 In this dialog box, change the font to *Times* and the style to *Bold* and type in 13 for a custom point size. Notice the sample at the bottom.
- 4 You can even change the text color. Perhaps red would stand out nicely? Click the *OK* button.
- 5 Switch to data view to examine what the form looks like.
- 6 Save your work.

Adding or Deleting a Field

If you find you need to change the fields in your database, don't fret; you can add, delete, or modify a field at any location in the database in both design view and list view.

- 1 Switch back to design view. Chose *Place Field* from the *Form* menu.
- 2 Click on the *New* button.
- 3 In the *New Field* dialog box, type in *Comments* as a field name. Click the *OK* button.
- 4 Works places the new field at the top left of your form. Drag the *Comments* field down to the bottom of your screen.

Deleting a Field

- 1 To delete a field, simply click on it and then press the *Delete* key. Do this with the *Best Time to Call* field.

Renaming a Field

Renaming a Field is almost as easy as deleting a field.

- 1 Click on the *Birthdate*: field.
- 2 From the *Form* menu, choose *Field Name*.
- 3 In the *Name* box, type in *Date of Birth*. Click the *OK* button. You could also change the field's format in this manner.
- 4 Switch to data view.
- 5 Fill in three records with data about your own friends or family members. Remember to tab from field to field within records and to hit a *Return* after the last field (*Date of Birth*) to move to the next record. The last field is not always the bottom one on the screen.
- 6 Save your work. Close all open files.

Saving as Stationery

A stationery document is a blank **template**. When you open one, it does not open the original file but creates a new untitled document. You fill this one in and save it without overwriting the original document. Stationery documents are good to use as blank forms for filling in. For example, you might have stationery documents for employee records, invoices, or collections.

All of the reports, forms, filters, and default settings are saved as part of the stationery file. Works comes with several stationery database files, but we will create our own.

- 1 Open the blank database document called *References*.
- 2 Add two new fields (perhaps called Comments 3 and Comments 4). Remember how to add fields? Go to design view, select **Place Field** from the **Form** menu, click on the **New** button, and give the field a name.
- 3 The new field will be placed at the top left of your form. It may be hiding under the existing first field. Drag it out of the way.
- 4 Rearrange the form.
- 5 Select **Save As** from the **File** menu.
- 6 In the **File Format** pop-up list, choose the **Stationery** option.
- 7 Type in *References Template* as a name for the file. Click the **Save** button.
- 8 Close the file.

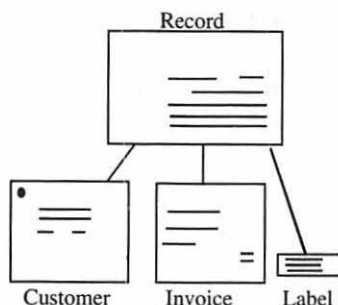
When you select close, you will be closing the original *References* file. Template files are not worked on; only blank copies of them are worked on. Opening a stationery file is just a bit different than opening a regular file.

- 1 From the **File** menu, choose **New**.
- 2 Click once on the **Database** icon.
- 3 Choose the **Show Stationery** check box.
- 4 From the list of stationery documents, select *References Template*, then click **Open**.

Works creates a new, untitled document, which is a copy of the template you've created.

- 5 Fill in one record.
- 6 Select **Save** from the **File** menu (file format = *Normal*).
- 7 Let's call this file *Thesis References*. Click **Save**.
- 8 Close the file.

Forms



Although we spent some time setting up the design of our *Friends and Families* form, it is only one way that we can set up the appearance of the record. In Works you can set up 16 different forms. These forms do not need to contain all of the fields and can also include graphics. When you save the database, you also save all forms associated with it. You might use different forms of the same database to generate invoices, mailing labels, and customer records.

Creating a Form

- 1 Open the *Business Contacts* file.
- 2 Notice that at the bottom of the **Form** menu, there is a check next to *Untitled Form 1*. This is how we will later select among different forms.

- 3 From the *Form* menu, select *New Form*.
- 4 In the *Name* box, type in *Client Cards* (do not hit *Return*).
- 5 We can have the form be the size of a full page, an envelope, or a mailing label. But we want to make half-page forms, so we click on *Custom Size* and type in a height of 5.05 and a width of 7.67 (no change).
- 6 Click on the *Fields* button. Click on *Company*, and then click on the *Place* button.
- 7 Hold down the *Shift* key and select the *Contact*, *Street*, *City*, *State*, *Zip*, and *Phone* fields. Click on *Place*. Then click *OK*.
- 8 Click *OK* in the *New/Set Up Form* dialog box.

The screenshot shows a dialog box titled "New/Set Up Form". It has a "Name:" label followed by a text box containing "Client Cards". To the right of this are three buttons: "OK", "Cancel", and "Fields...". Below the "Name" section is a "Standard Sizes:" section with three radio buttons: "Page Size", "Envelope", and "Label". The "Page Size" radio button is selected. To the right of these radio buttons is a large empty rectangular box. Below the "Standard Sizes" section is a "Custom Size:" section with a radio button that is also selected. Under "Custom Size", there are two text boxes: "Height:" with the value "5.05" and "Width:" with the value "7.67 in".

Copying a Form

When you want to create a form that is similar to an existing one, you can duplicate it, give it a new name, and then modify it. Let's try that with our *Business Contacts* database.

- 1 In design view or data view, from the *Form* menu choose the *Untitled Form 1* form.
- 2 From the *Form* menu, select *Duplicate Form*.
- 3 In the *And Name It* box, type *Client Purchases* for a name for this new form. Click *OK*.
- 4 Delete the *Street*, *City*, *State*, *Zip*, and *Phone* fields (hint: use the *Shift* key).
- 5 Rearrange the form.

Placing Fields on a Form

When designing a form, you can create new fields or place additional existing fields.

- 1 Remain in the design view of the *Client Purchases* form.
- 2 From the *Form* menu, chose *Place Field*.
- 3 If we wanted to place an existing field, we would highlight it and click on *Place*, but we want to create a new field, so click on *New*.

- 4 Now this process is the same as when we created fields while starting a new database. Type in *Favorite Lunch Spot* for a name for this field. We'll just make it a text field so we do not need to work with the Format options. Click *OK*.
- 5 You can now drag this new field into place and even resize it if desired.
- 6 Save your work.

Using the Drawing Tools

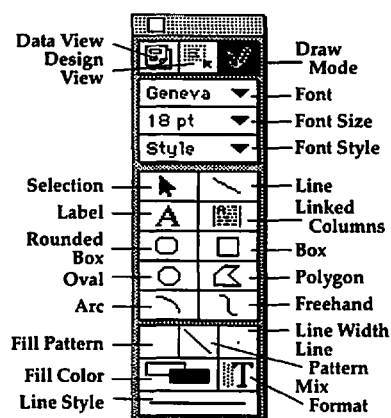


Figure 6.3

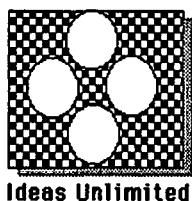


Figure 6.4

Microsoft Works builds in the ability to create graphics from within the database module. These graphics cannot be inside fields; they are separate objects on the page. Typical uses would be as a logo, letterhead, or border. Works places drawn objects that you create on a separate layer from the database information. Thus the objects can appear to be inside fields, but they are actually on top of the fields. The objects will remain on the form as you move among the records. They will not appear in list or report view.

- 1 Remain in design view in the *Client Purchases* form.
- 2 If the tool box is not on your screen, select *Show Tools* from the *Windows* menu. Click the *Pencil* in the tool box. You can also select *Draw On* from the *Window* menu.
- 3 The tool box now changes to display the drawing tools; these are similar to the tools in any Mac object-oriented drawing program. Figure 6.3 shows the function of each tool. You might have also noticed that there is now a *Draw* menu in the menu bar. We will explore those options in just a bit.

We are going to create a logo for our company to place on our invoice form. We are going to recreate the logo you see in Figure 6.4. We will draw it in the bottom right of your form and then later rearrange the form to have it at top left.

- 4 Take a few minutes to experiment with some of the draw tools and draw menu commands. Then select each of your experiments and delete them, leaving only our logo.

Rearranging the Form

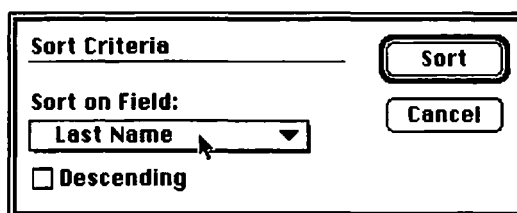
- 1 With the logo selected, choose *Cut* from the *Edit* menu.
- 2 Leave the draw mode by clicking on the *Design view* tool in the tool box. Select *Duplicate Form* from the *Form* menu.
- 3 Give it the name *Invoice*. Click *OK*.
- 4 Select *Paste* from the *Edit* menu. You are now back in the draw mode.
- 5 Drag the logo to the top left of the form.
- 6 Go back to design view. Click on the first field, and drag it down below the logo.

- 7 Continue to drag each field out of the way of the logo and into position.
- 8 Let's add an address to the invoice. Click again on the *Draw* tool. Select the *Text Box* tool.
- 9 Drag a box from the right side of the logo to the right edge of the screen. Make it as deep as the logo.
- 10 Now type in your company's address and phone number on three lines. Do not hit a *Return* at the end of the third line.
- 11 Select the text and apply a font, size, and style.
- 12 You can drag or resize this text box around with the *Arrow* tool.
- 13 Save your work. Close the file.

Sorting Data

It's easy to have a database alphabetize data or put it in numerical order. This is done with the Sort command.

- 1 Open the file *Music Collection*. Be in data view.
- 2 Move through several records. Notice they seem to be in no particular order.
- 3 Let's put them in alphabetical order by artist name. Select *Sort* from the *Data* menu. The *Sort Criteria* dialog box is displayed.
- 4 From the *Sort On Field* pop-up list, select *Last Name*.
- 5 Choose the *Sort* button.



- 6 Drop into list view. Are the records (no pun intended) in alphabetical order according to last name? Are there some surprises?

This is a good time to lecture you on the importance of how you set up the fields and how you enter the data. Notice that I set up a field for *Last Name* and one for *First Name*. If I had just one field for Artist Name, then the field would be sorted by first name and James Taylor would come before Ry Cooder. Or I would have to enter the names carefully like this: Taylor, James. The computer isn't smart enough to drop the word "the" from the start of a group's name. Therefore, The Beatles come just before The Rolling Stones in our sort. You should enter group names in the Last Name field without the word "the."

That last sort was so much fun, let's do another one. Let's find our most valuable recordings.

- 1 Still in list view, select *Sort* from the *Data* menu. The *sort criteria* dialog box is displayed.
- 2 From the *Sort On* field pop-up list, select *Value*. We want to have the highest-priced recordings first, so we will click on the *Descending* check box. In an alphabetical sort, descending order would be Z–A, and in a date or time field it would be in reverse chronological order.
- 3 Choose the *Sort* button.
- 4 Move through the records. What's your most valuable recording? What's second, what's last? Where are records with blank fields located?
- 5 If two records have the same data, then what happens? The previous sort strategy serves as a secondary sorting order.
- 6 Select *Save* from the *File* menu. The database is now saved in its new sort order.

Matching Records with Find and Match

Find and Match are quick and dirty ways to find a specific piece of information in any field in a database. These methods of searching are not nearly as powerful as those we will do in the next section on filters. You can use find or match in either data or list view.

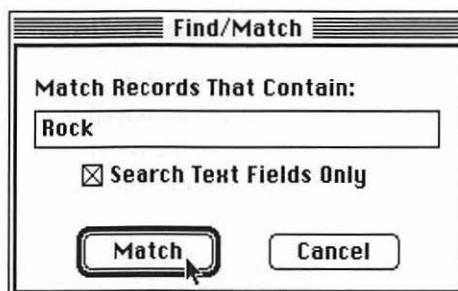
Find

- 1 With the *Music Collection* database open, switch to data view.
- 2 Choose *Find* from the *Edit* menu.
- 3 In the dialog box, type in *Jazz*. When the *Search Text Fields Only* box is clicked on (the default mode), Works will search more quickly by skipping numeric, date, and time fields. It does not matter if it is upper- or lowercase, and you needn't type in the whole word.
- 4 Click on the *Find Next* button. Works highlights the first entry that contains that information. It might find it more than once within one record.
- 5 To continue finding the same data, select *Find* from the *Edit* menu again. The same word (*Jazz*) will still be in the box, so choose the *Find Next* button again. When you have found all of the occurrences, Works starts over with the first occurrence.
- 6 You can see this would be a bit slow to find 20 or 30 occurrences of the same data, so we'll quit this for now and later show you a more powerful way to search.

Match

Match works much the same way as Find, except that when it finishes, it only displays those records that contained the searched-for data.

- 1 With the *Music Collection* database still open, switch to list view (data view would work also) and select *Match Records* from the *Data* menu.
- 2 In the box, type *Rock*. Click the *Match* button (or simply press *Return*).



- 3 Works displays all records which contain the word "rock." Scroll over to the Category field to confirm this.
- 4 To return to seeing all of the records, select *Matching Records* again from the *Data* menu (thus deselecting that option and turning off the check mark).

Printing

Just as there are several ways to view a database, printouts of a database can take several different formats. You can print from design view, data view, or report view (but not list view). You can print all of the records or just selected records. The printout can be on different forms and page sizes. Before you do a printout, it will save paper to do a print preview first.

Print Preview

- 1 Have the *Music Collection* file open. Be in data view.
- 2 From the *File* menu, choose *Print Preview*.
- 3 A miniature version of the printed page appears on the screen. The pointer turns into a magnifying glass.
- 4 Click anywhere on the page to see that area in full size. Now the cursor turns into a hand. Drag the hand to the other parts of the page.
- 5 To reduce the page, double-click the page, or click the close box.
- 6 To move to other pages, click on the *Next* or *Previous* button. Try that now several times.
- 7 After previewing, choose the *Print* button to print, or choose the *Cancel* button to return to your document without printing. Let's choose *Cancel* for now. When a job is actually printing, you can cancel it by simultaneously pressing *Command* and *period*.

Title	Boats, E
Last Name:	Buffett
First Name:	Jimmy
List price	\$52.00

Printing from Design View

When you print from design view, Works prints a single copy of the active form. Remember that you can have up to 16 different forms associated with one file, so you should choose a form first.

Printing from Data View

When you print from data view, the program fills the printed page with as many whole forms as possible; no partial forms are printed. If you do not want to print all of the records, you will determine which ones to print by applying a filter. Later on we will learn how to adjust margins and space between forms.

- 1 Be in data view of your *Business Contacts* file. Select the *Client Cards* form from the *Form* menu.

We will print all of the records, so we will not apply a filter. We will be working with filters in the next section.

- 2 From the *File* menu, choose *Print Preview*. Just click on *OK* if you get a warning message about the form being too wide.
- 3 Preview a couple of records, then click on the *Print* button (you could have skipped the print preview by just selecting *Print* from the *File* menu).
- 4 Click on *Print* in the *Print* dialog box.

Printing from Report View

Report view prints out the data in rows and columns, much like list view. But you must first set up the format of those columns. Again, there can be up to 16 different reports associated with a single database. We will be getting to dealing with reports in a following section, so we will save printing reports for then.

Print One

If you're *really* in a hurry, you can select the *Print One* command from the file menu, instead of the *Print* command. This command skips all dialog boxes, and prints using the current print settings. Since we just printed out the records, we will not do that now (the current print setting is for all records in the data view using the *Contacts* form).

Understanding Filters and Information Retrieval

Filters

Filters are the power tools of Works' database. A filter is used to find specific information in a database. You put in a set of criteria; records that contain that data are found; the rest of the records are filtered out. For example, you could set up a filter to find only those records where a student is missing an assignment, or perhaps to find the records for any em-

employee who is bilingual, who is less than 30 years old, and whose personnel records do not contain any disciplinary actions (see Figure 6.5). In order to set up effective filters, it is important to understand a bit of the science called *search strategy*. This is an important skill for librarians, researchers, and anyone else who relies heavily on information.

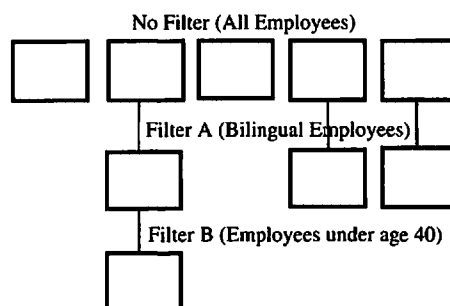


Figure 6.5

Search Strategy

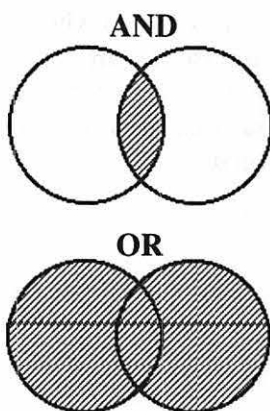
If this was a class in information science, we could get into Boolean logic and Venn diagrams and all kinds of technical stuff, but I think we can explore the basics of searching and filters in just a few paragraphs and diagrams.

You set up a filter to find certain information in a database. The filter is comprised of rules. These rules are generated in Works by selecting them from a list of comparison phrases. These phrases include the following:

- | | |
|-------------------------|----------------------|
| ■ equal | ■ not equal |
| ■ contains | ■ does not contain |
| ■ ends with | ■ does not end with |
| ■ greater than | ■ less than |
| ■ greater than or equal | ■ less than or equal |
| ■ is blank | ■ is not blank |

Information in a specified field must meet the selected comparison phrase (**rule**) or it is filtered out. For example, we could set a rule that in the Salary field the number must be greater than or equal to 20,000, to find only those employees with salaries at or above \$20,000. But you could also do that search with an alternative rule (salary equals 20,000 or salary is greater than 20,000). We want to set up searches (filters) which are efficient and accurate. This becomes especially important when you set up filters that contain several rules (e.g., salary is greater than 20,000 and salary is less than 40,000 or salary is blank or salary contains comments). Unlike some databases, Works does not allow parentheses to group rules and it does not allow the use of wildcard strings (leaving blank characters within a word or number). Works allows up to six selection rules per filter, and you can create up to 16 filters for one database. The filters are saved along with the database file.

In rules containing both the "AND" and "OR" connectors, Works gives **precedence** to the AND statements. For example, the filter Subject equals



"Crime" AND "Los Angeles" OR "New York" would be filtered as ("Crime" AND "Los Angeles") OR ("New York").

When a record containing a field which meets the selection rule(s) is found, it is called a *hit*. If a search results in too many hits, you will want to narrow the search. Using the connector AND will make the criteria harder to meet, thus narrowing the search. But if your search results in just a few hits, you can broaden the search with the connector OR. In fact, you could string together several ANDs or ORs to really narrow or broaden a search. It is important to realize that after you perform a search, all of the records are still in the database, not just the hits. You can get back to seeing all of the records with just one command. You can also save just the hits as a separate file.

Creating a Filter

- 1 Open the file *Customers*.
- 2 From the *Data* menu, choose *New Filter*.
- 3 In the *Filter Name* area of the dialog box, type *Rumack's Records* for a name for this filter (do not press *Return*).
- 4 From the top pop-up list of fields, drag down to *Contact*.
- 5 Notice that the *Contact* field name is now in the top *Field* box. Hold down on the top comparison box, and drag down to *contains*.
- 6 Click in the *Compare To* box, and type in *Rumack*.
- 7 We'll only apply one rule, so click *OK*.
- 8 Works displays only those records that meet the rule "Contact contains Rumack." Move to list view to see all of those records.

Filter Name		Define Filter
	(none)	
	Company	Comparison:
	✓ Contact	equal
And	Total Sales	equal
	Street	equal
	City	equal
	State	equal

Using Existing Filters

- 1 First make sure we're working with all of the records, so choose *Show All* from the *Data* menu.
- 2 From the *Data* menu, choose the filter from the list you want to apply. Take your choice.

Inverting a Filter

When you invert a filter, you see all of the records which meet the opposite of the filter rule.

- 1** Select *New Filter* from the *Data* menu.
- 2** Let's call this filter *Small Spenders*.
- 3** Set the rule as, "Total Sales is greater than or equal to 10,000." Click **OK**.

Now you see all of the records of the big spenders, but we want to see those smaller customers.

- 4** Select *Show All* records.
- 5** Select the *Small Spenders* filter from the *Data* menu.
- 6** Select *Define Filter* from the *Data* menu.
- 7** Click on the *Invert* filter box in the dialog box. Click **OK**.

Now you will see displayed all of those records where the Total Sales is not greater than or equal to \$10,000.

- 8** Select *Show All* records.

Multiple Rules

Let's make a more powerful filter using multiple rules.

- 1** Select *New Filter* from the *Data* menu.
- 2** Let's call this filter *Seriously Past Due*.
- 3** Set the rules as, "Total Sales are greater than 10,000 AND Current Balance is blank AND Last Pay Date ends with 93." The first AND won't become selected until the second field is defined.
- 4** Check you results.
- 5** Select *Show All* records.

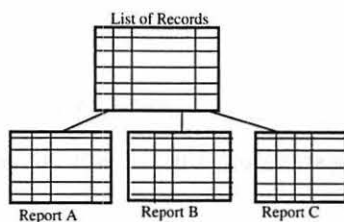
Duplicating a Filter

You might want to copy a filter so you can create a new one based on it, without starting all over (e.g., you may want to change just one rule).

- 1** First make sure we're working with all of the records, so choose *Show All*.
- 2** From the *Data* menu, choose the *Seriously Past Due* filter.
- 3** From the *Data* menu, chose *Duplicate Filter*.
- 4** In the *And Name It* box, type *Semi-Serious Past Dues*. Click **OK**.
- 5** Change the first rule to "Total Sales is less than or equal to 10,000." Click **OK**.

Working with Reports

We have already seen how we can view a database in list view, but when you want to print information in columns and rows you must first create a report. A report can include all or part of the information in the database. When you want to print only selected information, you first apply a filter.



Each database file can have up to 16 reports created in it. Just as in printing forms, you can have different reports print the same information in a different form or order (see Figure 6.6). The difference is that a form represents a single record while a report prints a table of multiple records. A report can also calculate totals and subtotals on fields, and it can change these sums when field information changes.

- 1 Have the *Customers* file open. Be in list or data view, and select *Show All*.
- 2 From the *Report* menu, chose *New Report*.
- 3 In the *Name the Report* box, type *Big Spenders Report*.
- 4 Click the *Create* button.
- 5 You now see the list view of all of the records, but we want to see only the big spenders, so choose the *Big Spenders* filter from the *Data* menu.

Changing the Look of Reports

We could print the report as currently displayed, but we want to rearrange the fields and change the margin.

- 1 To move a field, you just position the pointer on the field name and drag it into position. Let's drag the *Contact* field to the left of the *Company* field. You will be in position when the *Contact* field is highlighted.
- 2 Continue to reposition several other fields.
- 3 Any fields beyond the right margin marker will not print out, so let's slide the right margin marker over to the 7.5-inch mark (notice the screen autoscrolls right). If part of a field is inside the margin, that part will print.
- 4 To exclude fields from printing, just move them outside the right margin. Drag the *Current Balance* and *Last Pay Date* fields inside of the right margin, and be sure the *Street*, *City*, and *State* fields are outside the right margin.
- 5 Another way of including more fields inside the margins is to make the fields narrower. As we did earlier, we just need to press on the edge of the field name margin and drag the line in. Let's make the *Contact*, *Total Sales*, and *Current Balance* fields narrower. Notice that more fields now fit inside the margin.

0	1	2	3	4	5	6
Contact	Company	Phone	Total Sales	Current Balance	Last Pay Date	
Bill David	Bill's Tools	(555) 277-7654	\$11,000		3/4/93	
Jill Clam	The Chowder House		\$13,300		4/1/93	
Sam Cutie	Cutie's Cookie Shop	(555) 552-6969	\$11,000		1/2/93	

You can also change the font, font size, style, and color of a field just as we did when we first created fields. We won't do that now, however. You

should be aware that changes in the appearance of fields in the report view will affect other reports and list view, but not data view or forms.

You can also perform a sort in a report. When you do this, the order of all database views and forms is affected.

Printing a Report

In an earlier section we worked with printing but did not print out any reports; let's do that now. A report will be printed out in rows and columns. To print a report, you first select a report and a filter.

- 1 From the *Report* menu, select *Out of Staters Report*.
- 2 From the *Data* menu, choose the *Out of Staters* filter.
- 3 If you wanted to print without a grid around the fields, you could turn off *Show Grid* from the *Form* menu. Try that now.
- 4 Chose *Print Preview* from the *File* menu. Magnify the page. Double-click to return to full-page view.
- 5 I think it needs the grid, so click on the *Cancel* button to stop the print job.
- 6 Turn the *Show Grid* option back on from the *Form* menu. Now do a print preview, and notice the appearance of the grid.
- 7 Select *Print* from the *File* menu, and print this report.

Calculating Totals in a Report

Works can calculate and print a total of all of the numbers in any numeric field. It can also print subtotals, when the data in another field change. For example, in an inventory database, you could get a subtotal value each time the item type field changes (pencil subtotal = \$100, rulers subtotal = \$200, field total= \$300).

Works does not display the totals on the report screen; to see them you will need to print them out or do a print preview.

- 1 Remain in the *Customers* database. Select *New Report* from the *Report* menu. Call this report *Totals*. Click *Create*.

Did you notice that when we go into report view a new menu (*Totals*) appears in the menu bar? We will use this menu now.

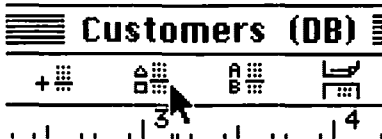
- 2 Click on the Total Sales field. That field name will be displayed (dimmed out) at the top of the *Totals* menu.
- 3 Select the *Sum This Field* command from the *Totals* menu. The field total will be printed when you print the report.
- 4 Check the total with a print preview. You may need to drag the field to the left to make it fit within the right margin.
- 5 Here's another way to total a field. Click on the Wholesale Item 1 field. Notice in the *Totals* menu that that field name is now seen.
- 6 Instead of using the menu command, it might be faster to just click on the *Sum* button in the ruler. Do that now.

Customers (DB)				
+				
1	3	1	1	4

Subtotals

Getting a subtotal when the field contents change works almost the same as summing a field.

- 1 Sort the records by State (use the *Data* menu).
- 2 Highlight the Total Sales field. If it's not already on, click on the *Sum* button in the ruler, or choose *Sum This Field* from the *Totals* menu.
- 3 Highlight the State field; this will serve as the key field on which the subtotal will be based.
- 4 On the ruler, click on the *Subtotal* button, or select *Subtotal When Contents Change* from the *Totals* menu.
- 5 Let's take a look at our totals and subtotals. Drag the State field inside the printing margin. Select *Print Preview* from the *File* menu.
- 6 Click the magnifying glass on the form, and drag around to examine the subtotals following each state's records.



Subtotals When First Character Changes

There's one other way to generate a subtotal; that is when the first character in a field changes. You might use this method to set up a code for categories (e.g., subtotals on items Apencils, Bpencils, Cpencils).

- 1 Go to list view. Drag the Last Pay Date field into the first field margin.
- 2 Sort the data by Last Pay Date.
- 3 Select *New Report* from the *Report* menu. Call it *Monthly Totals*.
- 4 Highlight the Total Sales field. Click on the *Sum* button in the ruler.
- 5 Highlight the Last Pay Date field. This will serve as the key field on which the subtotals will be based.
- 6 On the ruler, click on the *Subtotal 1st* button, or select *Subtotal When 1st Char. Changes* from the *Totals* menu.
- 7 Check the results in a print preview. Can you spot a problem with the monthly totals and figure out a solution?

Printing a New Page After a Subtotal

If you want to have each group of subtotaled records printed on a separate page, you just need to enter one more command.

- 1 On the ruler, choose the *New Page* button, or select *New Page After Subtotal* from the *Totals* menu.
- 2 Check your page breaks by doing a print preview and selecting the *Next Page* button.

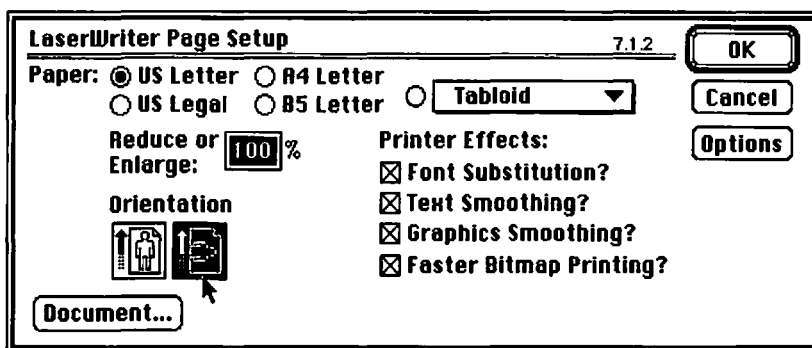
Other Formatting Features

The *Report* menu also has options to Rename, Delete, or Duplicate a Report. These are fairly self-explanatory, so we will not work with these options now.

Page Setup

If you want to change the printed page size, change the orientation to print out horizontally, or change the margins, you will need to access the *Page Setup* menu.

- 1 From the *File* menu, select *Page Setup*.
- 2 Let's keep the page size as US Letter, but let us change the orientation to horizontal.
- 3 To change our margins, click on the document button.
- 4 Under Margins, type in .75 for all four margins (don't forget the decimal point). For printing multiple forms on one page (such as mailing labels) we would want to specify how much space to allow between forms. Click the *OK* button. Click the *OK* button in the *Page Setup* dialog box also.
- 5 Do a print preview to see how your page looks.

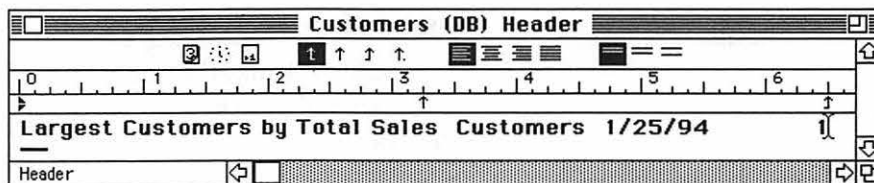


Header

Just as in the word processing module of Works, you can create **headers** or **footers** which will appear on each printed page of your database. These might contain the name of the report, page numbering, and the date.

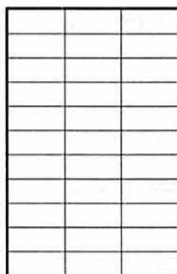
- 1 Be in the data view of the *Customers* file.
- 2 Select *Show Header* from the *Windows* menu.
- 3 In the *Header* window, type *Largest Customers by Total Sales*, insert a couple of spaces, then select *Insert Document Title* from the *Document* menu. Press a couple more spaces, and click on the picture of the 3 in the ruler bar (this inserts today's date), press *Tab* and click on the little 1 in the ruler bar (this inserts a page number). Clicking on the clock would insert the time.
- 4 Apply any formatting you want to the text.
- 5 Click the close box of the *Header* window.
- 6 To see what your form will look like, select *Print Preview* from the *File* menu. If you need help, refer to the section on print preview for more information on previewing.
- 7 Click the *Cancel* button.

You can always edit the header by showing the header and making your changes.



Printing Labels and Envelopes

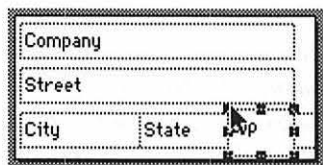
Mailing Labels



Sheet of
Avery Labels

In Microsoft Works 3.0 you can create and print mailing labels and envelopes entirely from within the database module. You can also use the same database file to perform a mail merge (to produce personalized form letters) with the word processing module. Each label or envelope is a form, and a whole page of labels can be printed at once. Works has a variety of forms built into it to print on commonly used label sheets and envelope sizes, which can be fed directly into your printer.

- 1 Be sure you are in the database file *Customers*.
- 2 From the *Form* menu, select *New Form*.
- 3 In the *Name* box, type *Mailing Labels 1*.
- 4 Under *Standard Sizes*, choose *Label*, and then choose the *Avery 5160* size from the list. This will create on a page of labels for use in a laser printer, and Works will automatically set up the page size for you. If you had a custom label size, you could type in a height and width for it, and then you would need to set up the page size.
- 5 Click the *Fields* button. The *Auto Place Field* dialog box comes up.
- 6 Click once on the *Company* field and click on the *Place* button. Hold down the *Shift* key and select the *Street*, *City*, *State*, and *Zip* fields. The *Shift* key allows multiple selections.
- 7 Click on the *Place* button. Your selected fields now have a check mark next to them. When you place fields on a label or envelope form, the field name and borders will automatically be hidden.
- 8 Choose the *OK* button.
- 9 Click *OK* in the *New/Set Up Form* dialog box.
- 10 To make proper labels, you will need to change the appearance of the form. Move and resize the fields by dragging them, or change their appearance using the tool box.
- 11 Go into data view.
- 12 Do a print preview. Then select *Cancel*.



Bill's Tools
101 Muir Street
Port Orford

Setting Up and Printing Envelopes

The process here is almost identical to creating labels; however we'll get fancy and include a return address.

- 1 Open the database file you created called *Friends and Family*.
- 2 From the *Form* menu, select *New Form*.
- 3 In the *Name* box, type *Envelope 1*.
- 4 Under *Standard Sizes*, choose *Envelope*, and then choose the *Letter Size Envelope* from the list.
- 5 Click the *Fields* button. The *Auto Place Field* dialog box comes up.
- 6 Click once on the First Name field, and then click on *Place*. Hold down the *Shift* key and select the Last Name, Address, City, State, and Zip fields. The *Shift* key allows multiple selections.
- 7 Click on the *Place* button.
- 8 Choose the *OK* button.
- 9 Click *OK* in the *New/Set Up Form* dialog box.
- 10 Resize and drag the fields into position for an envelope.

Including a Return Address

To create a return address on every form, you will create the text using the draw tools.

- 1 Click on the *Draw* tool in the tool box, or choose *Draw On* from the *Window* menu.
- 2 Select the *Text* tool (the *A*). Drag a rectangle to contain the address in the upper left of the envelope.
- 3 Type in your return address. Format the text.
- 4 Go to data view.
- 5 Do a print preview, and then select *Cancel*.

To print a range of envelopes, you would select *Print* and type in the desired page numbers. Each page represents an envelope (one record).

Other Commands

We have explored just about all of Works' database commands, with just a few exceptions. Below is a brief explanation of each of the remaining commands. They function similarly to other Works modules.

Save Workspace: Saves all currently open files as one connected set of files. Allows you to load all of those files at once.

Clear: Cuts an entry without placing it in the Clipboard.

Preferences: Allows you to set/change the default font, font size, and field type.

Set Up Form: Used in design view to rename or resize a form.

Mail: Used with the Microsoft Mail program to send or receive files.

Macros: Works the same in all modules. Makes an electronic recording of a procedure, which can be played back repetitively.

Works' Capabilities

As in any computer program Microsoft Works 3.0 has certain capabilities/limitations. For most users these should not be too limiting. Works' database module allows you to have:

- Up to 256 characters in a field.
- Up to 254 fields per record.
- Up to 16 different forms per database.
- Up to 6 rules in a filter.
- Up to 16 different reports and 16 filters per database.
- The number of records in a database is limited only by the available RAM, easily over 1,000 records.
- Up to 16 different files open at once (from any module).

Works comes with stationery files for use in education, home, and business applications.

Assignment

Now is your chance to apply your newly acquired database skills. You will create a database from scratch, arrange and format the fields, fill in ten records, create a form, perform a couple of sorts, create and apply three filters and three records, and finally produce several different printouts to document your work.

Your database can be on any subject you wish, for education, personal productivity, or business applications. Some ideas for a database are information on dinosaurs, states, countries, inventory, personnel, any type of collection, or article references.

Minimum requirements for your database are as follows:

- Input 10 records of 5 fields each.
- Print a record in data view.
- Print three different reports using three filters.
- Perform three different sorts.
- Type in your selection rules and your name in the header of the reports.

You do not have to fill in every record, and the information does not need to be actually true.

CHAPTER 7

Knowin' Numbers— Exploring Spreadsheets and Charting via Microsoft Works

Files Needed

The following files are found in the *Knowin' Numbers* folder of the C.A.R.P. data disk:

<i>cell references</i>	<i>gradebook</i>
<i>cholesterol trial</i>	<i>retirement</i>
<i>paste funct . . . average</i>	<i>complete bal sheet</i> (created by user)
<i>car loan</i>	<i>balance sheet</i> (created by user)
<i>amortization</i>	

Introduction**What Is an Electronic Spreadsheet?**

The spreadsheet module of Microsoft Works is really an elaborate calculator, which also allows you to chart your data. With it, you can easily do repetitive calculations, prepare budgets, and keep an updated record of classroom grades. You can use it to plot the results of classroom experiments and illustrate data handling methods. Data tables and graphs have the advantage of being useful for introducing higher-level thinking into knowledge-based instruction.

You can use graphs to help students to visualize statistics quoted in textbooks. For personal productivity, you can use the application's internal programming to obtain financial information, for example, loan repayment schedules, rates of return on investments, and the like. With an LCD viewer connected to an overhead projector, a spreadsheet can become a creative tool for classroom demonstrations.

Microsoft Works' spreadsheet can perform most of the same calculations that can be done on a quality scientific calculator, including trigonometry, logarithms, exponentials, logical functions, and simple statistical analysis.

The Principle

Data are entered into the spreadsheet in cells, arranged in columns and rows. The spreadsheet can become an accountant's ledger, or it may just be

a table of data made in preparation for drawing a graph. For applications requiring mathematical manipulation of data, you enter your own formulas into the spreadsheet, using the functions that are programmed already.

When entering new data or editing existing data, Works uses your formulas to calculate the new answers automatically and then alters any graphs you've drawn. This is a major strength of a spreadsheet, allowing you to experiment and quickly see what will happen if you change numbers. For example, you might ask questions such as, What will happen to my profit margin if I increase my employees' salaries by 1¢ an hour? What about 2¢? What will happen to the demand for oil if the population of the United States increases by 30 percent in the next twenty years? What if it increases by 25 percent? By 15 percent? Using a spreadsheet frees you from performing repetitive calculations.

Using Spreadsheets for Teaching and Learning

As with word processing, the original uses for electronic spreadsheets were in business applications. Corporations used spreadsheets to record and manipulate numerical data such as budgets and financial forecasts. But recently teachers have begun to use spreadsheets as instructional tools. When you add the graphing and charting capabilities of many spreadsheet programs, their application to the classroom becomes evident.

Because of the complexity of the mathematical formulas contained within them, spreadsheets are rarely used in elementary schools. However, if a teacher provides a very simple spreadsheet, upper elementary school students should be able to work with it.

In secondary schools, spreadsheets are often used in science and math classes. Science students can record and calculate their results in a spreadsheet. Math students can work word problems in spreadsheets. In social studies, teachers may want to purchase preproduced spreadsheets containing demographic or geographic data. In health classes a spreadsheet can be used to examine nutrition concepts. See Appendix F for some specific ideas for using spreadsheets in the classroom.

College and adult learners can use a spreadsheet program as a substitute for a statistics or graphing package. In Microsoft Works, a portion of a spreadsheet can be inserted into a word processing document.

The most common application of spreadsheets as a tool for the teacher is their use as an electronic gradebook. In fact, some commercial gradebook programs are little more than customized spreadsheets. If you need to deal with budgets or statistics, spreadsheets may be very useful to you. The charting and graphing ability of Works' spreadsheet should be attractive for teachers for doing classroom demonstrations.

Computers are very exacting. This is both a curse and a blessing. The calculations that you get from a spreadsheet will be very accurate if you enter the data and formulas exactly correctly. However, we know that students and teachers aren't always exact. Because of this, teachers should foster the idea that debugging is a natural part of working with spreadsheets. Another problem is that when working with large spreadsheets it is difficult to see the entire document at once. Microsoft Works has the ability to split the screen to see different parts of the spreadsheet simultaneously, but you might want to do debugging using printouts.

About the Tutorial

You will learn much of what the spreadsheet has to offer by building up a monthly balance sheet and then creating some graphs of your data. A monthly balance sheet is a simple record of the month's income and expenses, and it is therefore also a record of the month's savings or increased debt. You won't use the most direct route, but you'll learn more this way, as you explore some of the functions you wouldn't normally need to use when preparing a simple balance sheet. At the end there will be some activities for you to try on your own.

Opening Works' Spreadsheet

- 1** Inset the C.A.R.P. floppy disk with the *Knowin' Numbers* folder on it into the computer.
- 2** From the Finder, double-click on your data floppy disk's icon to open it.
- 3** Find the *Knowin' Numbers* folder, and double-click on it.

Before making your own spreadsheet, you will look at a spreadsheet and chart we have already created.

- 4** In the *Knowin' Numbers* window, double-click on the *cholesterol trial* file icon. That file and Microsoft Works will be opened.

This particular spreadsheet could be used in a science class to teach data analysis and graphing skills. Page 1 of the spreadsheet contains a (fictional) data table and a summary of the decrease in blood cholesterol concentration during the medical trial of a drug.

Look at Figure 7.1 to examine the parts of Microsoft Works' spreadsheet window.

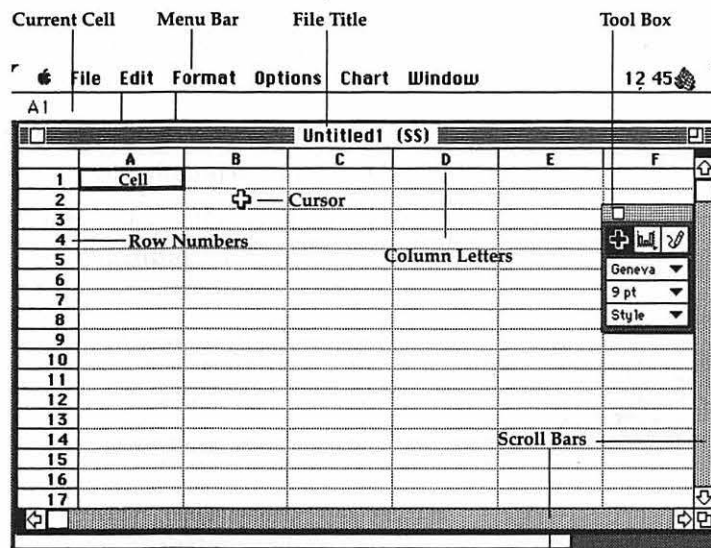


Figure 7.1

- 5 Pull down each of the menus, but don't actually select any of the commands.
- 6 Press the pointer on the scroll arrow to scroll down to the bottom of the page.

The values in the summary are linked to the spreadsheet table, so if you were to change one of the values in the table, it would automatically change the corresponding value in the summary.

- 7 Scroll down to page 2.

On page 2 you will see a chart that was prepared from the spreadsheet's data. This demonstrates how drawing a graph can make data easier to visualize and understand. When you have finished surveying the spreadsheet, proceed as follows:

- 1 Close the file by clicking once in the *Close* box.
- 2 From the *File* menu, select *New*.
- 3 Single-click on the *Spreadsheet* icon.
- 4 Click on the *New* button, which opens a blank spreadsheet called *Untitled 1*.
- 5 If the Tool Palette appears in the window, click in its close box to hide the tools. You do not need to use the Tool Palette yet, and it will only get in the way.

Entering Numbers into the Spreadsheet Window

Look at the spreadsheet window. Notice that it is divided into rows and columns, giving a **grid** of rectangular boxes known as **cells**. Rows are horizontal groups of cells; columns are vertical groups of cells. Cells lie at the intersections of rows and columns and are labeled by their positions in the grid, for example A1, B7. Cells can contain three types of information: numbers, formulas, or text labels. Spreadsheets can be large, with up to 256 columns and 16,382 rows. A maximum of 238 characters will fit into a single cell. To enter data into a particular cell, you first need to select it.

- 1 Move the pointer (now a cross) to cell B1.
- 2 Click the mouse button once.

Notice that the cell is selected in the window (recognized by its bold outline), and the cell coordinates are given in the upper left corner of the screen at the cell indicator.



- 3 Try selecting different cells.
- 4 Now trying using the arrow keys on the keyboard instead; they work too.
- 5 Select cell A1.
- 6 Type the number 4000. Notice that 4000 appears at the **entry bar** at the top of the window.
- 7 Click in the **Enter** box (the box with the check mark). The number 4000 is now entered into cell A1.

A3		100
	A	
1		4000
2		3000
3		100
4		

8 Type *5000* into the entry bar. This time you don't want to enter the number.

9 Move the pointer to the *Cancel* box (with the X), and click once.

Now enter more values using two other methods:

1 Select cell A2.

2 Type *3000* into the entry bar.

3 Press the *Return* key to enter the number into the cell. Cell A3 is now automatically selected.

4 Type *100* into the Entry bar.

5 Click the cross on cell A3 to enter the number into the cell.

When you are entering columns of data, it is quicker to use the *Return* key because it puts you on the next row, ready to enter the next information.

Calculating Totals

It is easy to sum the data in a column or row. To sum all of the values in column A and display the total in cell A5, perform the following steps:

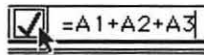
1 Select cell A5.

2 Type =

3 Select cell A1.

4 Select cell A2.

5 Select cell A3.



Notice that the entry bar displays the coordinates of cells A1, A2, and A3, and that Works automatically inserts addition symbols between them.

6 Click on the *Enter* box. The total now appears in cell A5.

Editing Data and Creating Formulas

Watch what happens when you replace a value.

1 Select cell A3.

2 Type *200* into the entry bar.

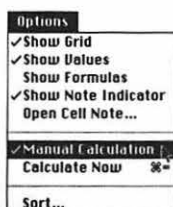
3 Watch the total change as you click on the *Enter* box.

The total in cell A5 has been adjusted to reflect the replaced value. This is an important feature of spreadsheets. Recalculations can be delayed until you are ready by working in the manual calculation mode.

1 Select *Manual Calculation* from the *Options* menu.

2 Type *100* into the entry bar.

3 Watch the total as you click on the *Enter* box. It did not change.



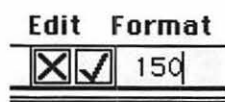
- 4 Select *Calculate Now* from the *Options* menu, and watch the total change.
- 5 Toggle off the manual calculation mode by selecting *Manual Calculation* again.
- 6 Return the value in cell A3 to 200.

Recalculation of the total can happen because you inserted a **formula** into cell A5.

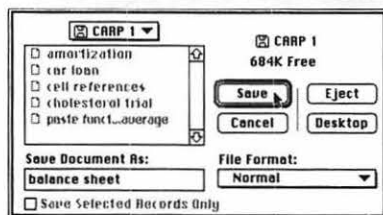
- 1 Select *Show Formulas* from the *Options* menu to see the formula.
- 2 Return to the value by selecting *Show Values* from the *Options* menu.

Being able to write formulas is a strength of spreadsheets, as it makes light work of complex and repetitive calculations. Instead of replacing the contents of a cell, you can also edit and delete the contents at the entry bar.

- 1 Make sure that cell A3 is selected.
- 2 Click in the entry bar.
- 3 Use the *Delete* key to delete the number.
- 4 Type in 150.
- 5 Enter the new value.



Saving Your Work



It's a good idea to save your work frequently.

- 1 Select *Save* from the *File* menu.
- 2 Click once on the *Desktop* button.
- 3 Double-click on the name of your floppy disk.
- 4 Delete the existing title, and type in the name *balance sheet*.
- 5 Click once on the *Save* button.

Now for a demonstration of the power of Works' spreadsheet:

- 1 Select *Open* from the *File* menu.
- 2 Double-click on the *Knowin' Numbers* folder.
- 3 Select the file called *amortization* if it isn't already selected.
- 4 Click on the *Open* button.
- 5 Spend a minute looking at the spreadsheet. Scroll around to see what information it contains.
- 6 Scroll until the title "Mortgage Data" is at the top of the screen.
- 7 Select cell F10, which contains the number \$20,000.00.
- 8 Move the cursor to the entry bar.
- 9 Click just past the number 2, and delete it.
- 10 Type in the number 3.
- 11 Watch the numbers in the spreadsheet, and click on the *Enter* box.

	E	F	G	H
9	MORTGAGE DATA			
10	Mortgage Amount:	\$20,000.00	(CHANGE THIS INFORMATION)	
11	Interest Rate (%)	10.00	(CHANGE THIS INFORMATION)	

	F
	MORTGAGE DATA
mount:	\$20,000.00



This shows you what happens if the mortgage is changed to \$30,000. It takes a few seconds to do the calculations, but soon every dollar amount in the spreadsheet, except for the monthly mortgage payment, will change to reflect the change in the size of the mortgage.

- 1 Select cell G11.
- 2 Change the annual interest rate to 9.5.
- 3 Click on the *Enter* box.
- 4 When you have finished exploring, click in the *Close* box to close the file.
- 5 Click on the *No* button when it asks you if you want to save the changes.

Selecting Groups of Cells

Before you can manipulate groups of values in columns or rows, you must first be able to select the values. To select an entire row or column, simply click on the heading (i.e., on the letter or number).

- 1 Select row 3 by clicking on the number to the left of row 3. Note how the first cell remains white, but it is still selected.
- 2 Select column D by clicking on the letter above the column.

2	3000
3	150

D

	A	B
1	4000	
2	3000	
3	150	
4		
5	7150	
6		
7		
8		
9		
10		
11		

To select several cells in a column:

- 1 Press-and-drag the mouse from cell B6 downwards to cell B23.
- 2 Release the mouse button.

To select several cells in a row:

- 1 Press-and-drag from cell A4 to cell E4.
- 2 Release the mouse button.
- 3 Now click the mouse in a different part of the screen to deselect the selected area.

To select all of the data in the spreadsheet:

- 1 Choose *Select* from the *Edit* menu.
- 2 Slide the pointer right, and from the pop-out menu select *All*.

Notice that you can also use *Select* and *Last* to move to the last cell in your spreadsheet.



A	B	C
4000		
3000		
150		
7150		

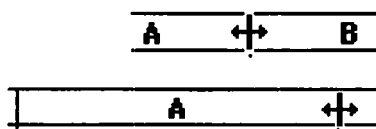
- 1 Now select a range of cells by pressing and dragging diagonally in the window.
- 2 Try clicking in the last cell you selected in the selected area. Notice that the selected area disappears.

- 3 Select a range one more time.
- 4 Hold down the *Shift* key.
- 5 Now press-and-drag from the last cell in a direction away from the selected area.

Doing this increases the size of the selected area. Pressing and dragging inwards makes the selected area smaller.

- 6 Move the spreadsheet cross out of the selected area, and click to deselect.

Changing Column Widths

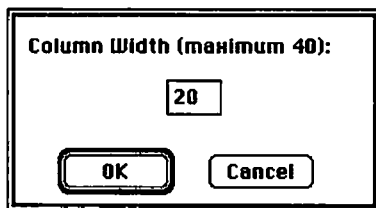


Column widths can be changed in two ways. Let's try the first way.

- 1 Move the mouse to the line between column headings A and B. Watch the pointer turn into a double-headed arrow.
- 2 Press-and-drag the mouse a little way to the right, then release. Adjust the column width to make it approximately double the original width.

Let's try the second method.

- 1 Select a cell in column B.
- 2 Choose *Column Width* from the *Format* menu.
- 3 Press the *Delete* key.
- 4 Enter the value 20 to make the column 20 characters wide.
- 5 Click *OK*.



The advantage of this method is that you can improve the appearance of the spreadsheet by making columns exactly the same width.

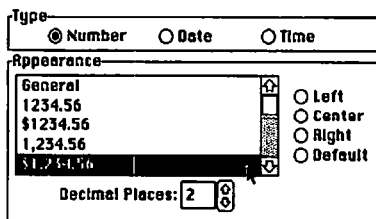
Specifying Cell Formats

Works allows you to select the way in which dates, times, numbers, and text are presented in each cell, and whether the cell has a border around it or not.

Numbers

You are going to construct a monthly balance sheet, in which you will want to display your numbers in dollars. To do this, you must choose an appropriate format.

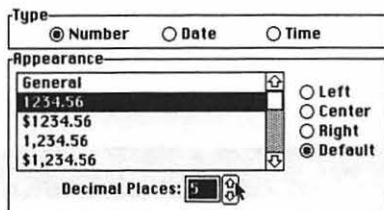
- 1 Select all of column A by clicking the mouse once while the pointer is on the letter A at the top of the column.
- 2 Pull down the *Format* menu, and select *Format Cells*. You will be presented with the *Format Cells* dialog box.
- 3 The values in column A are numbers, so click on the *Number* button.



- 4 Look at the different format options presented. Select **\$1,234.56**.
- 5 Leave the number of decimal places as 2.
- 6 Click **OK**.

Decimal Places

As you have already seen, you can specify the number of decimal places displayed in your data.

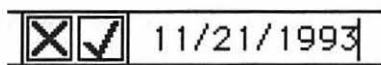


- 1 Select cell A1.
- 2 Choose **Format Cells** from the **Format** menu.
- 3 Choose the format **1234.56**. Notice that the **Number** button is selected already.
- 4 Change the number of decimal places to 5 by clicking on the small up arrow to the right of the **Decimal Places** box.
- 5 Click **OK**.

If any cell is not wide enough to display the complete number, a series of number signs (#) will appear.

- 6 Make column A narrower to see the number signs.
- 7 Widen column A again.
- 8 Return cell A1 to the original format with two decimal places.

Dates



- 1 Select cell B1, and type today's date with the arrangement mm/dd/yyyy.
- 2 Enter the date by clicking in the **Enter** box. Do not use the **Return** key.
- 3 Select **Format Cells**.

Notice that Works has recognized your entry as a date, and it gives different options for display.

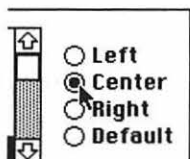
- 4 Spend a minute exploring the options.

Times



- 1 Enter a time (hr: min: sec) into cell C 1.
- 2 Select **Format Cells**.
- 3 Explore the format options available for times.

Justification of Entries

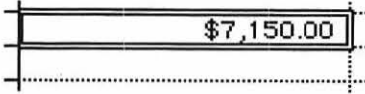


- 1 Select cell A1.
- 2 Select **Format Cells** from the **Format** menu.
- 3 Click on the **Center** button of the **Appearance** box.
- 4 Click **OK**.

Cell Borders

To add emphasis to a cell, you can draw a border around it.

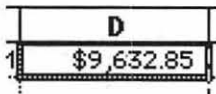
- 1 Select cell A5.
- 2 From the *Format Cells* dialog box, select *Outline Selection*. Notice that if you prefer, you can choose to outline individual sections of the border instead.
- 3 Click *OK*.
- 4 Select a different cell, and you can see that the dotted grid line becomes solid.



Deleting the Contents of Cells

You can delete the contents of cells while retaining the existing format.

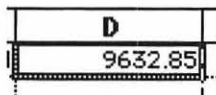
- 1 Select cell D1.
- 2 Enter the number 9632.85 using the *Enter* box.
- 3 Using the *Format Cells* dialog box, change the format to \$1,234.56.
- 4 Place the cursor next to the number in the entry bar, and click.
- 5 Use the *Delete* key to remove the number.
- 6 Click on the *Enter* box.
- 7 Enter the number into the cell again in the original format, 9632.85.



The last format you selected from the dialog box is still the format used in the cell. Because you used the *Delete* key, the format was not deleted although the number was.

You can also delete the contents of cells while removing the existing format.

- 1 Note the format of the number at the entry bar.
- 2 Select *Clear* from the *Edit* menu.
- 3 Enter the number in the original format, 9632.85 using the *Enter* box.



When you enter the number this time, it is displayed in the cell in the same format in which you entered it. The cell's format was removed using *Clear*.

- 4 Using the *Clear* command, delete the contents of all cells except for those in column A.

Moving Groups of Cells

Using Cut and Paste

Moving data around in a spreadsheet uses the same principle as cutting, copying, and pasting in a word processing document.

- 1 Select column A.
- 2 Choose *Cut* from the *Edit* menu.

- 3 Click on the heading for column C.
- 4 Choose *Paste* from the *Edit* menu.

Using the Move Command

When using *Cut* and *Paste*, the data are stored in the **Clipboard**. Data can be moved without storing them in the clipboard by using the *Move* command.

- 1 Be sure that column C is selected.
- 2 Select *Move* from the *Edit* menu.
- 3 Enter B1 to define where you want to move the data.
- 4 Click **OK**.

You will learn more about moving data and formulas later in the section on relative and absolute cell references.

Inserting New Rows or Columns

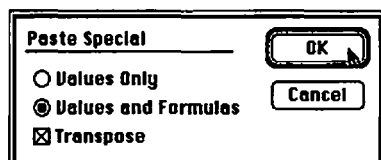
You "forgot" to enter a value of \$50 into your accounts, so you should insert it now. To insert it at row 3:

	A	B
1		\$4,000.00
2		\$3,000.00
3		\$50.00
4		\$150.00

- 1 Select row 3.
- 2 From the *Edit* menu, select *Insert*.
- 3 Select cell B3.
- 4 Enter the number 50 into cell B3.
- 5 It has been a while since you last saved your data, so select *Save* from the *File* menu.

Transposing Rows and Columns

What if you changed your mind and decided that your data would look better if they were displayed in a row instead of a column?



- 1 Select column B.
- 2 Choose *Cut* from the *Edit* menu.
- 3 Select cell A5.
- 4 Select *Paste Special* from the *Edit* menu.
- 5 Click on the *Values and Formulas* button in the prompt window.
- 6 Check the *Transpose* box.
- 7 Click on **OK**.

Now transpose your data back to column B:

- 1 Select row 5.
- 2 Select *Cut* from the *Edit* menu.

- 3 Select cell B1.
- 4 Select *Paste Special* from the *Edit* menu.
- 5 Click on the *Values and Formulas* button.
- 6 Check the *Transpose* box.
- 7 Click *OK*.

Adding Text Labels

To make your spreadsheet easier to understand, you can place text labels into cells. The main point to remember about text labels is that if your label contains a number, date, or time, *you must designate it as text*. Otherwise, the spreadsheet program may interpret your entry as a value to be included in its calculations. To designate a number as text, simply type a double quotation mark before typing the label (e.g., "3.142").

	A
1	her salary
2	his salary
3	savings interest #3
4	home publishing hobby
5	

- 1 Select cell A1, and type *her salary* at the entry bar.
- 2 Enter the text into the cell.
- 3 In cell A2, enter *his salary*.
- 4 In cell A3, enter "savings interest #3. Note the quotation mark, which is needed because of the number included in the text label.
- 5 In cell A4, enter *home publishing hobby*.
- 6 Widen any columns that you need to.

Now for some major reorganization of your spreadsheet:

D	E
	expenses
taxes	2500
food	300
car	100
insurance	300
pension plan	300
mortgage	800
other	500
	4800

- 1 Insert two blank rows at the top of your display.
 - 2 Into cell B1, type *income*. Make column B a little wider.
 - 3 Into cell E1, type *expenses* and widen the column.
 - 4 In column E, type in the following values to make a column, starting in cell E3: 2500, 300, 100, 300, 300, 800, and 500.
 - 5 In column D, type the following labels: *taxes*, *food*, *car*, *insurance*, *pension plan*, *mortgage*, and *other*, positioning them adjacent to the values in column E.
- Total up the expenses as before, and display the answer in cell E11.
- 6 Select cell E11.
 - 7 Type =
 - 8 Click, in turn, in each cell from E3 to E9.
 - 9 Click in the *Enter* box.
 - 10 Now add an outline border to cell E11. Can you remember how?
 - 11 Make sure that the format of column E is the same as that of column B (i.e., \$1,234.56).

To complete your balance sheet you need a statement of the month's savings.

monthly savings (income minus expenses) =

- 1 In cell A14, type and enter *monthly savings (income minus expenses) =*

Notice how text which is too long for the cell flows over into adjacent cells. It only does this if there is nothing entered into the adjacent cell already. This is useful as a way of typing longer entries when you don't want to have wide cells.

Next, insert the required formula into cell E14:

- 2 Select cell E14.
- 3 Type = *B8-E11*
- 4 Click on the **Enter** box to enter it.
- 5 Make sure the format is consistent with the others.
- 6 Put a border around it.

Adding Professional Touches

To make your balance sheet look more presentable, you can add a few professional touches.

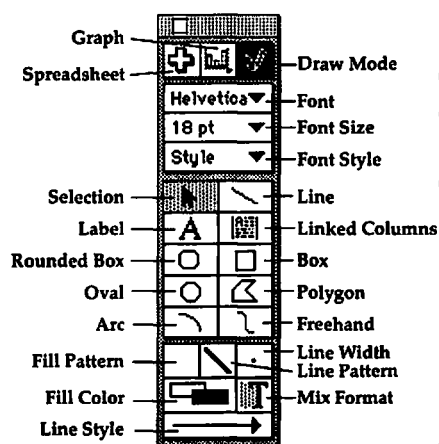


Figure 7.2

Using Draw Tools

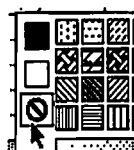
One of the useful features of Works' spreadsheet tool is that you can use draw tools with it. Figure 7.2 shows the draw tools available. You will use them to add a title. Another way to add a title is to use a header. Before you can add the title you need to make some room for it.

- 1 Insert four rows of spaces at the top of your spreadsheet. Can you remember how? (Select row 1 and choose **Insert** from the **Edit** menu four times. To speed things up, you could use **Command-I**.)
- 2 Select **Draw On** from the **Window** menu.

As you do this, notice how the last three menus at the top of the screen change. This means that you cannot perform some spreadsheet operations while the draw tools are on.

- 3 Select the **Text** tool.
- 4 Press-and-drag to stretch a box right across the top of the spreadsheet from cell A2 to cell F2.
- 5 In the box, type *Balance Sheet for January 1994*.
- 6 Using the Tool Palette, increase the size to 20 point and select **Outline** for the style. (Don't forget to select the text first.)
- 7 From the **Arrange** menu, select **Alignment . . . Center**.
- 8 Using the **Box** tool from the Tool Palette, draw a box around the title.

Make sure the box does not have a fill pattern; it must be unfilled. To remove a fill pattern, press in the **Fill Pattern** box and drag out to the no sign (which is a circle with a line through it).



Adding Emphasis

You can add further emphasis to certain cells in your spreadsheet using bold text.

- 1 Select cell E18.
- 2 Select *Format Character* from the *Format* menu.
- 3 Place a check mark against the *Bold* label.
- 4 Click *OK*.

Grid Lines

- 1 Under the *Options* menu, choose *Show Grid* to toggle the grid lines off.
- 2 Note the appearance of the selected cell, and then click in a blank cell and note the appearance again.

balance sheet (SS)					
	A	B	C	D	E
1	Balance Sheet for January 1994				
2					
3					
4					
5		income		expenses	
6					
7	her salary	\$4,000.00		taxes	\$2,500.00
8	his salary	\$3,000.00		food	\$300.00
9	savings interest #3	\$50.00		car	\$100.00
10	home publishing hobby	\$150.00		insurance	\$300.00
11				pension plan	\$300.00
12		\$7,200.00		mortgage	\$800.00
13				other	\$500.00
14					
15					\$4,800.00
16					
17					
18	monthly savings (income minus expenses) =				\$2,400.00

Adding Page Numbers and Headers

You can add text or page numbering to the top or bottom of printed pages, using *headers* and *footers*. You will add page numbering at the bottom of each page.

- 1 Select *Show Footer* from the *Window* menu. The *Footer* window will appear.
- 2 Press the *Tab* key once to center the cursor.
- 3 In the *Footer* window, select the *Page Number* symbol.
- 4 Close the window by clicking in the close box in the top left corner.



Now you are going to make a copy of this file and store it under a different name. You will make a chart from this file later.

- 1 Select *Save As* from the *File* menu.
- 2 Delete the existing file name, and type in *complete bal sheet*.

- 3 Click on the *Save* button.
- 4 Close this file by clicking in the *Close* box.

To open the original file:

- 1 Select *Open* from the *File* menu.
- 2 Select the file *balance sheet*.
- 3 Click once on the *Open* button.

Sorting the Data

\$2,500.00
\$300.00
\$100.00
\$300.00
\$300.00
\$800.00
\$500.00

Perhaps your spreadsheet would look better if the expenses column is organized so that the biggest numbers are at the top.

- 1 Toggle the grid lines back on by selecting *Show Grid* from the *Options* menu.
- 2 Make sure that the *Spreadsheet* tool in the Tool Palette is selected.
- 3 Select the cells in column E that contain the expenses values.
- 4 Choose *Sort* from the *Options* menu.

The *Sort* command allows you to sort up to three columns at one time; you will just use 1st key column command, as you only want to sort one column.

Sort		OK
1st Key Column: E	<input type="radio"/> Ascending <input checked="" type="radio"/> Descending	Cancel
2nd Key Column:	<input checked="" type="radio"/> Ascending <input type="radio"/> Descending	
3rd Key Column:	<input checked="" type="radio"/> Ascending <input type="radio"/> Descending	

- 5 Leave the *1st Key Column* entry as *E*, and select the *Descending* button to sort your numbers from high to low. If the cell contents are text, they will be sorted in backwards alphabetical order.
- 6 Click *OK*.

But now you have a problem. You are spending \$800 a month on food; your numbers no longer tally with the text. To correct this you need to tie the numbers to the text.

taxes	\$2,500.00
food	\$300.00
car	\$100.00
insurance	\$300.00
pension plan	\$300.00
mortgage	\$800.00
other	\$500.00

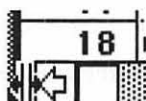
- 1 Select *Undo* from the *Edit* menu to undo the sorting.
- 2 Select the range of cells containing the expenses data AND the text labels that go with them.
- 3 Select *Sort* from the *Options* menu, and replace *D* with *E* as the *1st Key Column*. Column *E* contains the numbers you want to be sorted.
- 4 Select the *Descending* button.

5 Click **OK**.

6 Click somewhere in the window to deselect. Now everything is right.

Viewing in Split Screen Mode

If you are working on a large spreadsheet, you cannot see the whole spreadsheet on the screen at one time. Using the *pane-splitting* function you can, however, see up to four different parts of a large spreadsheet at one time. At the far left of the horizontal scroll bar, and the top of the vertical scroll bar, there are small black rectangles called split bars.



1 Place the pointer on the top of the rectangle on the vertical scroll bar; the arrow turns into a pane-splitting two-way arrow.

2 Press-and-drag the pane splitter down to the middle of the scroll bar to split the window into two panes.

3 Drag the vertical pane splitter into the middle of the scroll bar to create four panes.

Now for a small challenge:

4 Using the four sets of scroll bar arrows, try moving the contents of the panes so that the word "income" shows in all four panes (see Figure 7.3).

	A	B	C
5	income		
6			
7	her salary	\$4,000.00	
8	his salary	\$3,000.00	
9	savings interest #3	\$50.00	
10	home publishing hobby	\$150.00	
11			
12		\$7,150.00	
13			

	A	B	C
3	income		
4			
5			
6			
7	her salary	\$4,000.00	
8	his salary	\$3,000.00	
9	savings interest #3	\$50.00	
10	home publishing hobby	\$150.00	

Figure 7.3

It is possible to use the pane splitter to freeze a part of the spreadsheet so that it won't scroll. This allows you to see one part of the spreadsheet while scrolling around in another.

1 Move the horizontal pane splitter (on the vertical scroll bar) to just below the spreadsheet title.

2 Under the **Format** menu, select **Freeze Tiles Vertical**. Notice that the upper scroll bar has now turned white and scrolling is prevented. Only the upper and left panes can be frozen.

- 3** Unfreeze the panes by toggling off the *Freeze Tiles Vertical* command.
- 4** Remove the pane splitters by dragging them back to their original positions.

Finding a Cell

Microsoft Works' spreadsheet application allows you to find a particular cell by its coordinates or its content.

- 1** From the *Edit* menu, select *Find*.
- 2** At the prompt, type the word *mortgage*.
- 3** Click *OK*.

The cell containing *mortgage* is now selected on the screen. This may appear to be a useless function, but in a spreadsheet containing hundreds or even thousands of cells, it can be a big time-saver.

Cell Notes

It might be important to provide more information about the contents of a particular cell. To do this, you can write cell notes.

- 1** Select cell A9, which contains *savings interest #3*.
- 2** From the *Options* menu, select *Open Cell Note*.
- 3** Type: *This is just a practice note for the tutorial*.
- 4** Click in the *Close* box.
- 5** Select a different cell.
- 6** Look in the upper right of the selected cell.

savings interest #3

Cells that are accompanied by a note have a note indicator. This won't jump out at you, so look closely.

- 7** If you can't see the note indicator, toggle on the *Show Note Indicator* command by selecting it from the *Options* menu.

If you wish to print cell notes along with the spreadsheet:

- 1** Select *Page Setup* from the *File* menu.
- 2** Click on the *Document* button.
- 3** Check the *Print Cell Notes* box.
- 4** Click *OK*.
- 5** Click *OK* on the *Page Setup* box.

Protecting the Contents of a Cell

If you want to prevent a cell's contents from being changed or deleted, you can protect the cell.

- 1 Select cell B9 (containing \$50.00).
- 2 From the *Format* menu, select *Protect Cell*.
- 3 Try to change the contents of the cell by editing it at the entry bar. See—it's protected.

Fill Down and Fill Right

It is possible to copy a cell's contents into multiple adjacent cells.

- 1 Select cell E9 (containing \$500.00).
- 2 Press-and-drag to the adjacent cells F9, G9, and H9.
- 3 Select *Fill Right* from the *Edit* menu.
- 4 Now delete the contents of the adjacent cells using the *Undo* command from the *Edit* menu.

If you wish to copy a cell's contents into the rows beneath it, use the *Fill Down* command. *Fill Down* and *Fill Right* can also be used to copy a formula into adjacent cells. When you do this, the formula changes to reflect the specific cell into which it is copied, making everything correct. For example, if a formula in cell D11 contains a reference to cell F11, the reference will change to cell F15 when the formula is copied into cell D15 using *Fill Down*. This is called relative referencing, and it can save you a lot of work. Bear this in mind when you begin to do the assignments at the end of this chapter.

Relative and Absolute Cell References

One thing you have not yet learned is the important difference between relative and absolute cell references.

- 1 *Open* the file *cell references*.
- 2 Select cell A4. This cell contains the formula for the rectangle whose dimensions are given in row 2.
- 3 Look in the entry bar to see the formula.
- 4 Select *Cut* from the *Edit* menu.
- 5 Select cell C4.
- 6 Select *Paste* from the *Edit* menu to paste the formula from cell A4 into cell C4. The area of the rectangle is now 0 and incorrect.
- 7 Select *Show Formulas* from the *Options* menu.

Look at the formula displayed in cell C4. It now reads =C2*D2. This is because the particular cells to which the formula are referenced have moved relative to the formula. But the contents of the original cells do not move with them. This formula was written to provide a relative cell reference.

To avoid this kind of error when moving formulas, the formula must specify that the cells referenced to it must not move, even if the formula does. The formula must contain absolute references. To give a formula ab-

solute references to cells, a dollar sign must immediately precede the cell reference.

- 1 Move the formula back to cell A4 using *Cut* and *Paste*.
- 2 Edit the formula at the entry bar to read $=A\$2*\$B\$2$.
- 3 Enter the formula.
- 4 Move the formula to cell C4 again, and see how this time the correct formula is given.
- 5 Select *Show Values* from the *Options* menu to demonstrate the correct answer.

If you move a cell that contains data referenced to a formula (as opposed to moving a cell containing a formula with references to data), the formula is NOT changed to account for this and the answer will be incorrect.

- 6 Close the file *cell references* by selecting *Close* from the *File* menu.
- 7 Don't save the changes when prompted.

Another way of converting a cell into an absolute reference is to use the *Absolute Reference* command under the *Edit* menu. This must be used with preprogrammed functions. The right-hand parenthesis must be deleted before this command is used and then replaced afterwards.

Printing a Spreadsheet

Dividing a Large Spreadsheet into Pages

If a spreadsheet is too large to fit on a single page, Works will automatically divide into two or more pages for printing. A dashed line in the spreadsheet denotes the positions of page breaks. The default page breaks may not be in the most appropriate positions so you will want to learn how to manually set your own. You will insert two page breaks and then change the orientation of the page so that your spreadsheet will conveniently fit onto one page.

Manually insert a horizontal page break after row 20:

- 1 Select row 21.
- 2 Select *Set Page Break* from the *Format* menu.

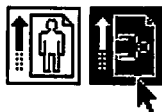
A dashed line appears, marking the page break. Now insert a vertical page break between columns G and H:

- 1 Select column H (to the right of where you want the page break).
- 2 Select *Set Page Break* from the *Format* menu.
- 3 Click in the spreadsheet window to deselect.

Other Preparations for Printing

Printing a spreadsheet is similar to printing in the other Works' applications. There are three print-related commands under the *File* menu: *Page Setup*, *Print Preview* and *Print*.

D	E
	expenses
taxes	\$2,500.00
mortgage	\$800.00
other	\$500.00
total	\$3,800.00

Orientation

Margins:			
Left:	.50	Right:	.50 in
Top:	.50	Bottom:	.50

Spreadsheet:	Numbering:
<input type="checkbox"/> Print Row and Column Headings	<input type="checkbox"/> Number Page
<input checked="" type="checkbox"/> Print Cell Notes	<input type="checkbox"/> Number Foot
	<input type="checkbox"/> Title Page

Page Setup

- 1 Select *Page Setup* from the *File* menu.
- 2 Select the *Landscape* orientation icon. You need to do this in order to fit the balance sheet onto one page. Landscape orientation means that the paper is printed so that it is wider than it is high as you held it for reading.
- 3 Select the *Document* button.
- 4 Make all margins 0.5".
- 5 Leave the setting for the *Page Numbering From* as 1.
- 6 Do NOT check the *Title Page* box.
- 7 Make sure that the *Print Cell Notes* box has a check mark in it.
- 8 Do NOT check the *Print Row and Column Headings* box.
- 9 Click *OK*.
- 10 Click *OK* again.

Print Preview

- 1 Select *Print Preview* to see the spreadsheet before printing it.
- 2 If you get an alert box, just click *OK*.
- 3 Move the pointer over the miniature page. It will turn into a magnifying glass.
- 4 Click the mouse once. This magnifies a section of the spreadsheet, allowing you to check the details.
- 5 A hand will appear in the window which allows you to press-and-drag the page around to view it. Try it.
- 6 Click on the *Close* box.
- 7 Click on the *Next Page* button to look at the cell notes.

You are not ready to print yet. But if you were, you would just need to click on the *Print* button.

- 8 You don't want to print the chart yet, so return to the spreadsheet by clicking on the *Cancel* button.
- 9 Toggle off the grid lines from the *Options* menu.
- 10 Make any final adjustments to make your spreadsheet look good.

Print

- 1 It's a good habit to always save before you print, so select *Save* from the *File* menu.
- 2 Select the *Print* command from the *File* menu to obtain the *Print* dialog box.
- 3 Select the *Print* button.
- 4 Just click *OK* if you get an alert box.

Preprogrammed Functions

Works has 64 preprogrammed functions which can be pasted into cells for use in calculations. Many of these are specialized and are geared to mathematical and scientific applications. Some are more general and could be useful for anyone. These functions make Works a powerful tool that can be used for many different, complex applications.

The general syntax for a function is: FUNCTION NAME (ARGUMENTS separated by commas or colons). Arguments are just the values used in the calculation, and they can be numbers, cell references (which contain numbers), or other functions.

Commas are used to separate individual values or cells, whereas colons are used to define a range of cells. In other words, (A1,A10) means cells A1 and A10, but (A1:A10) means the range of cells from A1 to A10.

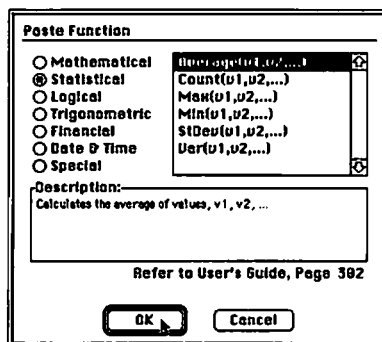
There are seven categories of preprogrammed functions. They are as follows (including the number of functions in each category):

mathematical	12
logical	9
financial	8
statistical	6
trigonometric	10
date/time	10
special purpose	9

For more detailed information about how to use the functions, refer to *The Microsoft Works User's Guide*. You will now learn how to paste some simple functions into the spreadsheet and then explore the financial functions.

1 Open the file on your floppy disk called *paste funct . . . average*.

This spreadsheet shows the result of ten measurements made in a science experiment. You will calculate the arithmetic mean (average) of these values by pasting in the average function.



2 Select cell B15, which is where you will display the average.

3 Type =.

4 From the *Edit* menu, select *Paste Function*.

5 Click on the button for *Statistical* functions.

6 As the average function is already selected, you will not need to select it. Click *OK*.

7 Look at the entry bar. It reads = *Average(v1,v2, . . .)*. The v1,v2, . . . are prompting you to enter the values which you want to average.

8 Hit the *Delete* key.

9 Type *B4:B13*. Letters can be upper or lower case.

10 Click on the *Enter* box. The average is displayed in cell B15.

If you wish, you can display the formula in the cell by choosing *Show Formulas* from the *Options* menu and widening the column.



- 11** Now see if you can calculate the standard deviation of the measurements, and display it in cell B17. Standard deviation is a measure of the variation in the results. The function code is *StDev*.
- 12** Next, calculate the sample size and display it in cell C19, using the *count* function.

Financial Functions

There are eight financial functions. We will only discuss the five most commonly used. These functions and their arguments are as follows:

PV(rate,nper,pmt,fv,type)	present value of an investment or principal of a loan.
FV(rate,nper,pmt,pv,type)	value of an investment or principal of a loan after you make or receive the last payment.
Pmt(rate,nper,pv,fv,type)	amount of monthly payment or investment return.
Rate(nper,pmt,pv,fv,type,guess)	interest rate or rate of return.
Nper(rate,pmt,pv,fv,type)	number of payments for the duration of an investment or loan.

It is important to remember that these are simple financial calculations which only apply to fixed rate, fixed period, fixed payment loan amortizations and investments, with payment periods in months or years, but not in days. As many loans and investments satisfy these conditions, it is still a useful tool for financial planning. However, financial institutions usually calculate interest rates daily rather than monthly, so your spreadsheet calculations will be good approximations but not identical to those that banks provide.

If you have a variable rate loan or investment you can still use these functions, but you must remember to update your calculations every time there is a change in the interest rate. This is similarly true for variable payment and variable period loans and investments.

You will start by calculating what the monthly payments will be on a 3-year car loan that has an interest rate (APR) of 9.5% and a principal of \$8000.

- 1** *Open* the spreadsheet file called *car loan*.

Note that the interest rate is written as a decimal percentage. Also note that the principal is given as a negative number because it is a LOAN. Depending on how the cell is formatted, the negative number may be displayed in parentheses in place of the minus sign. The principal of an INVESTMENT would be given as a positive number.

Since you are calculating monthly payments, you will set your values to represent months. You must first convert the annual percentage rate (APR) to a monthly percentage rate.

- 2** Select cell A9.
- 3** Type *monthly percentage rate* =
- 4** Click on the *Enter* box.
- 5** Select cell D9.

- 6 Type =
- 7 Select cell D1.
- 8 Type /12.
- 9 Click on the *Enter* box.

Now you are ready to do the calculation. The syntax is: *Pmt*(monthly rate,number of payments,principal,value of loan at end of repayments, type).

- 1 Select cell D7.
- 2 Type =
- 3 From the *Edit* menu, select *Paste Function*.
- 4 Click on the *Financial* button.
- 5 Select *Pmt(r,np,pv,fv,t)*.
- 6 Click *OK*.
- 7 Hit the *Delete* key.
- 8 Select cell D9 to enter the monthly percentage rate into the entry bar, and type a comma.
- 9 Select cell D5, and type a comma.
- 10 Select cell D3, and type a comma.
- 11 Type 0, to indicate that after 36 months you want the principal to be \$0.
- 12 Type a comma.
- 13 Type 1. The syntax type refers to whether you make the payment at the beginning (0) or the end (1) of each month. The default value is 0.
- 14 Click in the *Enter* box.

=Pmt(D9,D5,D3,0,1)	
	car
	D
7	254.25078

The monthly payments will be \$254.25. Now you will work backwards and calculate the APR, given the other information.

- 1 Select cell A11.
- 2 Type *APR* =
- 3 Enter it.
- 4 Select cell D 11.
- 5 Type =
- 6 Select *Paste Function* from the *Edit* menu.
- 7 Select the *Financial* button.
- 8 Scroll down to select the *rate* function.
- 9 Click *OK*.
- 10 Select cell D5, and type a comma.
- 11 Select cell D7, and type a comma.
- 12 Select cell D3, and type a comma.
- 13 At the Entry bar, type 0,1,10%/12

=Rate(D5,D7,D3,0,1,10%/12)	
	car loan (\$\$)
	D E
11	0.0079167

The 10%/12 is an estimated monthly interest rate that is used as a starting point for the calculation. If you do not include a value here, the default value will be 10 percent. This will give you an incorrect answer because you are currently working in months and not years, so the annual rate must be divided by 12. Note that you could have used 9.5%/12 in the previous calculation instead of calculating the monthly interest rate separately.

14 Click on the *Enter* box.

The answer is the same or very close to the actual monthly periodic rate. If there is a difference, it is due to the number of significant figures used in the calculation.

15 Spend a couple of minutes changing the values of the interest rate, principal, and number of payments.

From these examples you should be able to work out how to use the other three financial functions listed at the beginning of this section. Just follow the syntax very carefully, and don't mix values referring to months and years in the same calculation.

16 Select *Close All* from the *File* menu. Do not save changes.

Drawing Graphs Using the Spreadsheet

Works' spreadsheet tool can easily convert the data in the spreadsheet into graphs and charts. It can draw bar charts, line graphs, and pie charts. You can easily transform them from one chart type to another.

The charts created in Works are automatically *linked* to the spreadsheet that contains the data, but they can be *unlinked*. The advantage of keeping a chart linked is that when you alter data in the spreadsheet, the chart automatically changes too. But there is a limit to how much you can customize a linked chart. By unlinking a chart (which cannot then be relinked), you turn it into a collection of draw objects which can be manipulated as you please using the draw tools.

You will use the expenses data which you have already entered into the spreadsheet to draw a chart.

Drawing a Basic Bar Chart

Unfortunately, the next step is a little cumbersome, but it's not difficult. You will need to fill in the *Define Chart* dialog box with details taken from the spreadsheet. The quick way to do this is to use the old-fashioned pencil and paper method (remember that?). The slow way is to use the computer and move back and forth between the dialog box and the spreadsheet.

1 Open the *complete bal sheet* file.

2 Use the scroll bars to look at the *expenses* data in your spreadsheet.

3 Make a mental note that your data are organized in columns rather than rows (in this case).

Now you must identify which columns of data will be used as the two axes on the graph. You will choose the vertical (y) axis to represent the expense amounts and the horizontal (x) axis to represent the expense categories.

Works uses the name “values” to refer to the vertical axis and the name “labels” to refer to the horizontal axis (despite the fact that often the labels-axis will represent values and not text labels!). So, for your chart, column E contains the values and column D contains the labels.

4 Make a note of which row contains your legend name.

This is the name that will be placed in the chart next to a shaded box, and it is the key used to identify graphs with multiple sets of data. If you have multiple sets of data, you will have more than one legend in the column (or row).

The legend for your one numerical data column will be *expenses*. This is in row 5.

5 Next, note which rows contain your data (rows 7–13 in this case). If you were working in rows you would note the column letters.

6 Finally, if you want to define your own range for the vertical axis, note the range of values you would like. For this chart, you will use the default setting from zero to the largest value.

7 Choose *New Chart* from the *Chart* menu. The *Define Chart* dialog box will now appear.

8 Entitle your chart *Expenses for January*.

9 With the pointer on the *Chart Type* box, press the mouse to reveal the different options for your chart.

10 Select *Bar chart* for the type. You may have to drag upwards or downwards to do this.

11 Make sure the *Labels* box has a check mark in it so that the expense label appears on the chart.

12 Make sure the *Grid* box does not have a check mark in it.

13 Click on the *Data by: Columns* button as your data are arranged in columns.

14 Fill in the remainder of the window with the information you have already noted. You have values in only one column. Use the default settings for the maximum and minimum values of the vertical axis. Fill in *From: Row Through: Row* with the numbers of the first and the last rows that contain the expenses data. See Figure 7.4.

Define Chart

Chart Name:

Chart Type: ☒ Labels ☐ Grid ☐ Semi-Lag

Definition:

Data by: ☐ Rows ☒ Columns

Labels in: Values in: 1. Column From:

Legend in: 2. Column Row

3. Column Through:

4. Column

Vertical Axis: Minimum Value Maximum Value

Figure 7.4

15 Click *OK* and the graph will appear in the window. See Figure 7.5.

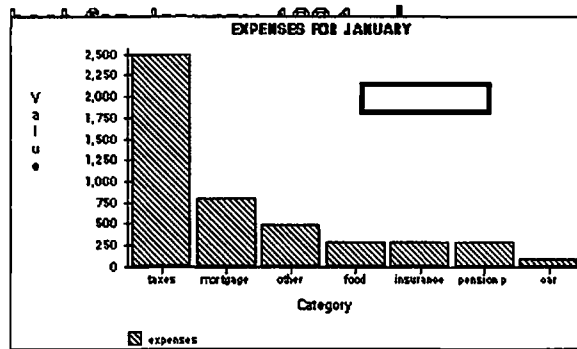


Figure 7.5

NOTE: If you fill in some of the boxes and then try to change the *Column/Row* buttons, the program may crash. Hot tip: don't do it.

If you wish to redefine the parameters of an existing chart, use the *Define Chart* command under the *Chart* menu. A quicker way to bring up the *Define Chart* dialog box is to select the chart and then double-click inside it.

Moving Charts and Altering their Size and Shape

To move a chart window, press inside the window and drag it.

To resize a chart:

- 1** Press-and-drag on a side handle to change the width or height, or press-and-drag on a corner handle to change both.
- 2** Move and resize the chart to make it large enough for you to see it comfortably.

Touching up the Chart

Using the *Touch Up* command, you can edit the names you gave to the axes and chart title and alter the general appearance of the chart.

- 1** Make sure the *Draw* tool in the Tool Palette is selected.
- 2** Make sure the chart is selected.
- 3** Under the *Chart* menu, select *Touch Up*.

Look at what's happened to the draw tools in the Tool Palette; many of them have become dotted lines or are grayed out. The touch up mode operates in the same way as the draw tools, but there is an important difference. You can use the draw tools to add text and shapes to the chart, and you can even group them to the chart so that they move as one. However, you cannot alter the existing features of the chart with the draw tools. To do that, you need to use the touch up tools.

First, alter the chart's title and axes' names.

- 1 Select the *Text* tool.
- 2 Move the pointer around the chart window, and notice that it turns into an I-beam as it approaches the title and the names of the axes.
- 3 Click once on the word *value*.
- 4 Select the letters in the box.
- 5 Delete them.
- 6 Replace the letters with the word *dollars*, typing a *Return* after each letter.
- 7 Now replace *category* with *expenses categories*.

Next, make the title more distinctive:

- 1 Select the pointer.
- 2 Select the chart's title by clicking on it.
- 3 Using the Tool Palette, change the style to *Shadow* and make sure the size is *14 point*.

Fill Pattern, Border Pattern, Line Width, Color, and Transparency

The fill pattern, border pattern, line width, color, and transparency functions are used in a similar way to the equivalent functions in DeskDraw, or to the draw tools in Works' other modules. For detailed instructions on how to use these, refer to the relevant sections of this book. You can customize the appearance of your graph's bars using these tools.

- 1 Select the bars as a group by clicking on one of them.
- 2 Choose your favorite fill pattern, border pattern, line width, and color from the lowest of the Tool Palette's three main sections.

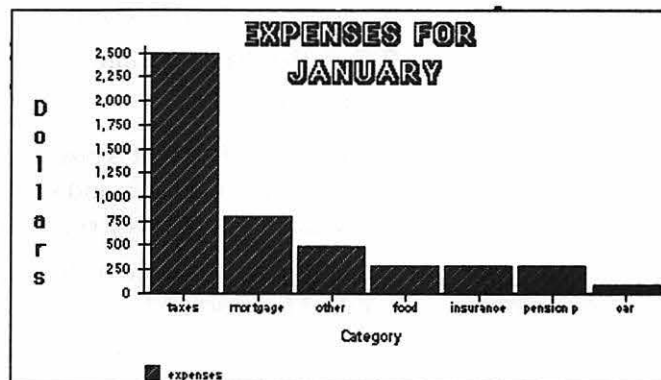


Figure 7.6

Experiment for a couple of minutes. Figure 7.6 shows one possible arrangement of patterns and line widths. Notice that the fill pattern in the legend box changes with the fill-pattern of the bars. The *Overlay* tool controls the transparency of a chart element; that is how the element appears

when it overlaps with another. When your chart looks good, it's time to save it.

- 1 Click outside the chart to deselect the bars.
- 2 Save the chart using *Save* from the *File* menu. The chart is automatically saved along with the spreadsheet.

Exploring

- 1 Reduce the size of the chart so that you can view it simultaneously with spreadsheet columns D and E.
- 2 Select the *Spreadsheet* tool (the cross), and select the cell that contains the \$2500 expenses paid in taxation.
- 3 Change the expenses paid to 100.
- 4 Watch the first bar of the chart as you click on the *Enter* box.

The chart automatically reflects the change in the spreadsheet, demonstrating the link between the spreadsheet and the chart. This could be used for live demonstrations of graphing in the classroom. Now you'll spend some time changing the chart type to see how the data look in other formats.

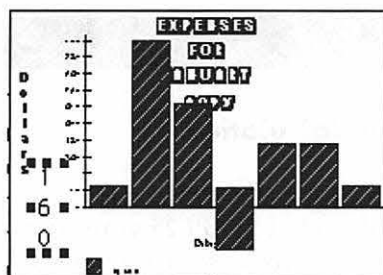
- 1 Select the *Draw* tool from the Tool Palette.
- 2 Double-click on the chart to bring up the *Define Chart* dialog box.
- 3 Select the *Pie Chart* option.
- 4 Click *OK*.
- 5 Select *Touch Up* from the *Chart* menu.
- 6 With the pointer press-and-drag out a piece of the pie. Wow!
- 7 Toggle off the *Touch Up* mode from the *Chart* menu.
- 8 Double-click on the chart to bring up the *Define Chart* dialog box.
- 9 Turn the chart back into a bar chart.
- 10 Click *OK*.

To get a feel for what is possible with the charting capabilities of Works, you will unlink the chart and explore a little. First you will duplicate the chart so that you can save a copy that will remain linked to the spreadsheet.

- 1 Choose *Duplicate* from the *Edit* menu. Notice that the new chart is called *Expenses for January copy*.
- 2 Drag the original chart to a blank area at the bottom of the spreadsheet.
- 3 Select *Expenses for January copy* by clicking in the chart.
- 4 From the *Arrange* menu, select *Ungroup*. A warning message will appear, but just click *OK*.

The copy is now unlinked, and all of the draw elements are selected.

- 5 Click on the *Text* tool to remove the handles.
- 6 Click on the pointer, and select any one of the smaller bars on the graph.



- 7 Press-and-drag to move it around the chart.
 - 8 Move one of the tiny vertical axis numbers to the bottom left of the chart.
 - 9 Use the Tool Palette to enlarge the type size of the number.
- As you can see, with an unlinked chart the possibilities are endless.

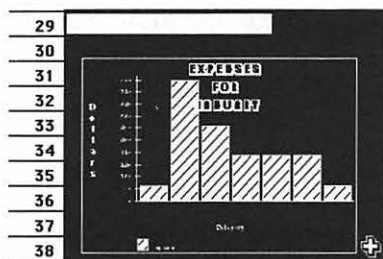
Deleting Charts

It is easy to delete a chart. Let's try it.

- 1 Press-and-drag the pointer to draw a marquee box around the copy.
- 2 Hit the *Delete* key.

Printing a Chart Only

- 1 Ensure that your chart is in a blank part of the spreadsheet and the *Spreadsheet* tool is selected.
- 2 Select the range of cells which lie underneath the chart by pressing and dragging.
- 3 Select *Print* from the *File* menu.
- 4 Click *OK* at the message prompt.
- 5 Select the *Print* button. Aren't you proud?



Quitting

- 1 Select *Quit* from the *File* menu.
- 2 Do not save the changes when prompted.

Other Commands and Capabilities

<i>Close:</i>	Closes the window that is currently active.
<i>Save Workspace:</i>	Saves all open documents under one collective name.
<i>Print One:</i>	Prints the document without a dialog box.
<i>Open Mail:</i>	Used with Microsoft's Mail program to prep files for electronic mail.
<i>Send Mail:</i>	Used with Microsoft's Mail program to send files via electronic mail.
<i>Preferences:</i>	Allows you to set default settings for the spreadsheet.
<i>Help:</i>	Opens on-line help screens.
<i>Show Clipboard:</i>	Displays the contents of the Clipboard.
<i>Macros:</i>	Creates automated task routines.

Microsoft Works' Spreadsheet Capabilities

Maximum of 238 characters in the entry bar.
Maximum of 200 characters in a formula.
Maximum of 256 columns in a spreadsheet.
Maximum of 16,382 rows in a spreadsheet.
Maximum of 16 files of any type open at once.

Assignments

Part 1- Guided Practice: Financial Calculation

- 1 Open the spreadsheet called *retirement*

You are thinking about retirement, although it is still 25 years away, and decide to open an investment account with a fixed rate return of 8.5%. You make an initial investment of \$1,500 and then plan to pay \$100 per month into the account. How much money will you have in the account when you retire?

- 2 Insert the appropriate data in the spreadsheet to compute the amount available upon retirement.

Compiling a Gradebook

For this guided practice you will compile a gradebook and draw charts to illustrate a student's academic progress.

- 1 *Open* the file *gradebook* in the *Knowin' Numbers* folder.
- 2 Center the scores for the assignments in the cells.
- 3 Arrange the last names of the students in cells A7 to A12 in ascending alphabetical order, so that the grades and averages stay correct (hint: select only columns A–F).
- 4 Add cell notes to those cells which contain no grades to explain why the work wasn't turned in.
- 5 Put the correct formulas into cells G11, I11, and J11.
- 6 Change the number of decimal places for the average grades to 0.
- 7 Insert the grades for Anna Phylactic (row 20) into their correct alphabetical place.
- 8 Center the grades for Anna Phylactic.
- 9 Complete the data for Anna Phylactic, and format it consistently.
- 10 Alter the formats of each of the dates to the general format 11/24/95, and center them.
- 11 Change the last names of the students into a font of your choice, and make them bold.
- 12 Using the draw tools place a title of your choice above the data of the spreadsheet and surround it with a box.
- 13 Place a page break between columns F and G.
- 14 Change the text label *max score poss* to *max score possible*.
- 15 Make column H 20 characters wide.
- 16 Widen any other columns necessary to fit in all of the text labels.
- 17 Hide the spreadsheet grid.
- 18 Draw a line graph that displays the grades for all of the assignments turned in by Ivan Earache, Lucy Lastic, and Anna Phylactic. Use the

assignment dates for the horizontal axis labels and the grades for the vertical axis grades.

- 19** Move the chart to a clear space at the bottom of the spreadsheet.
- 20** Make the chart taller.
- 21** Unlink the chart, and embellish it with your own labels to make it look good.
- 22** Print the chart only.
- 23** Print the remainder of the spreadsheet. Select the correct page numbers for printing so that you don't print the chart out twice.

Part 2: Challenge Assignment: Creating a School Van Expenses Log

Use the spreadsheet to design a daily expense log for a school van. Ten school clubs use the van and must pay for their use on a per mile basis. Make your spreadsheet cover a typical one month period. Of course not every club will use the van every day.

Underneath the main spreadsheet, have a separate place to calculate how all of the separate expenses figure into the total expenses for the van (use your own estimates). Calculate the amount each club owes at the end of the month based on your estimate of mileage. Calculate the total cost of running the van that month.

Prepare a chart to compare how much each club used the van during the month.

C.A.R.P. Project

For your own research project, you could create a spreadsheet of applicable data you have found in your research efforts. You could also have Works generate charts or graphs of the data.

CHAPTER 8**Painless PageMaker****Files Used in This Tutorial:**

The following files are found in the *Painless PageMaker* folder of your C.A.R.P. floppy disk.

<i>Newsletter</i>	<i>Computing Plan</i>
<i>Exercise __</i> (created by user)	<i>Photo TIFF</i> (copy to hard disk if possible)
<i>Light Bulb.eps</i>	<i>Lorum Ipsum</i>
<i>Audio Tape.eps</i>	

Be sure your floppy disk has at least 200 K of free space, or copy the *Photo TIFF* file to your hard disk and delete it from the C.A.R.P. floppy disk.

Introduction

*"...A quick
entry to the
world of
desktop
publishing"*

This tutorial offers you a quick entry into the world of **desktop publishing**. In about three hours you will learn and practice using most of the basic features of desktop publishing software. This is followed by applying your newly developed skills in recreating some preproduced layouts. You should plan on spending about an hour doing this.

You will be learning Aldus PageMaker, which is the most popular desktop publishing program. It is available in versions for both the Macintosh and IBM compatibles. In fact, PageMaker files can be transferred easily between those platforms. Aldus offers special student pricing on the program.

Using Desktop Publishing for Teaching and Learning

First came word processing, and then computer users wanted page layout programs. Desktop publishing lets you work on the appearance of the document as well as the content. PageMaker and other desktop publishing programs give writers the power to become graphic designers.

Because PageMaker is a very sophisticated program, it is too difficult for use by elementary school children. However, a few programs exist that

are designed to be simple enough for young children. Especially popular with teachers is the Children's Writing and Publishing Center from the Learning Company. It combines several writing tools along with its layout capabilities. It comes with clip art and has many management features of use to teachers. Story Maker by Spinnaker uses the metaphor of creating a story book. Children select, size, and position clip art and backgrounds and then create text to narrate their story. Different screens are linked together like pages in a book.

In secondary schools, you will increasingly find desktop publishing being taught and used as part of journalism classes and by the staff of student newspapers. Many classes embrace the concept of students being able to "publish" their work. This may take the form of class newsletters or class books which might be collected in the school's library. Desktop presentations could be a follow-up to desktop publishing.

Teachers and administrators can find myriad uses for desktop publishing, creating all different types of printed materials, including handouts, worksheets, professional reports, and public relations materials.

College students and adult learners often use desktop publishing to create flyers, newsletters, or brochures for clubs or organizations they belong to. Beware: if your organization finds out you know desktop publishing, you may find yourself drafted as newsletter editor.

The complexity and cost of desktop publishing software can be a problem for schools. Aldus offers an academic version of PageMaker at a reduced price. As with computer graphics, a lack of knowledge of the fundamentals of graphic design may result in some unattractive publications.

Content

The practice document you will work on is a report being readied for publication in a school newsletter. It includes illustrations and typical publication techniques (pull quotes, section headings). However, with desktop publishing you can make all types of printed materials: signs, tickets, announcements, newsletters, and even overheads. A preproduced copy of the school newsletter is printed at the end of this chapter. You might want to look it over before you start and to refer to it while you are working on the tutorial.

A Note about Versions of PageMaker

This tutorial was written in reference to PageMaker version 4. As the book went to press, version 5 was released. If you are using this newer version it should pose no major difficulty, but a few things will be different. Those changes are listed in the next section. You will be able to tell which version you are using by looking at the name of the PageMaker folder, by checking the opening screen when you start up the program, or by selecting *About PageMaker* from the *Apple* menu, while working in the program.

In this tutorial, differences in commands and procedures to use in version 5 are placed in parentheses immediately following the version 4 instructions and begin with the notation V5=. There is a section on miscellaneous version 5 commands at the end of the text of this tutorial.

Version 5 Differences

- New file format: Version 5 files will be in this new version's format. PageMaker 5 will import version 4 files by opening an untitled copy. PageMaker 4 will not open version 5 files.
- Slightly different menus: In version 5, a couple of new menus have been added, and several of the existing commands have been moved into these new menus. As noted previously, these new command locations are indicated in parentheses in this tutorial.
- New control palettes: PageMaker 5 introduces several new **palettes** or floating windows to control placement of objects, text attributes, and color.
- Slightly different Toolbox: PageMaker 5 adds a *Rotation* tool into the Toolbox (renamed the Tool Palette) and deletes the *Rounded Corner Box* tool.
- New features: Several enhancements over version 4 have been added to this new version, including improved rotation ability, the ability to have several documents open at once (in contrast to version 4's limitation of opening only one file at a time), faster printing, inclusion of Aldus Additions (small publishing utilities), and improved type controls. These new features are explained in more detail near the end of this tutorial.

Opening A File

Starting Up PageMaker and Opening a File

- 1 Double-click on the *Aldus PageMaker* folder icon.
- 2 In that window, double-click the *PageMaker* icon. Wait for the program to load.
- 3 Insert your C.A.R.P. floppy disk. We want to open the *Newsletter* file, which is in the *Painless PageMaker* folder of your floppy disk.
- 4 From the *File* menu, select *Open*.

You might need to navigate through the drives and folders to find the *Painless PageMaker* folder.

- 5 Click once on the *Newsletter* file.

This is a **template** file for which you could substitute your own text. PageMaker comes with a disk full of templates.

- 6 Click on the *Copy* button (we'll want to leave the original unchanged).
- 7 Click the *OK* button, or double-click on the file's name.

If you are using PageMaker version 5, the computer might alert you that it is importing or converting the file. Don't worry about this now. As with any other program, you can also open a PageMaker file by double-clicking on it from the **Finder**.

Quick Tour

Pull down each menu and inspect it, but don't select anything yet (see Figure 8.1). Notice that many of the commands have keyboard equivalents (accessed by Command-keystroke combinations). We'll use keyboard commands extensively later in this tutorial to turn you into a power user.



Figure 8.1

A Look at the Screen

Figure 8.2 is a diagram of the parts of a PageMaker window. The screen will appear slightly different in different views.

The area around the page is called the *Pasteboard*. Items placed in this area can be dragged onto any page of the publication.

Setting Preferences

The *Preferences* dialog box lets you change how your text and graphics will appear on the screen. It is most often used to change the measurement system.

- 1 Pull down the *Edit* menu and select *Preferences* (V5=File menu and *Preferences*).
- 2 We won't make any changes now, so click the *Cancel* button.

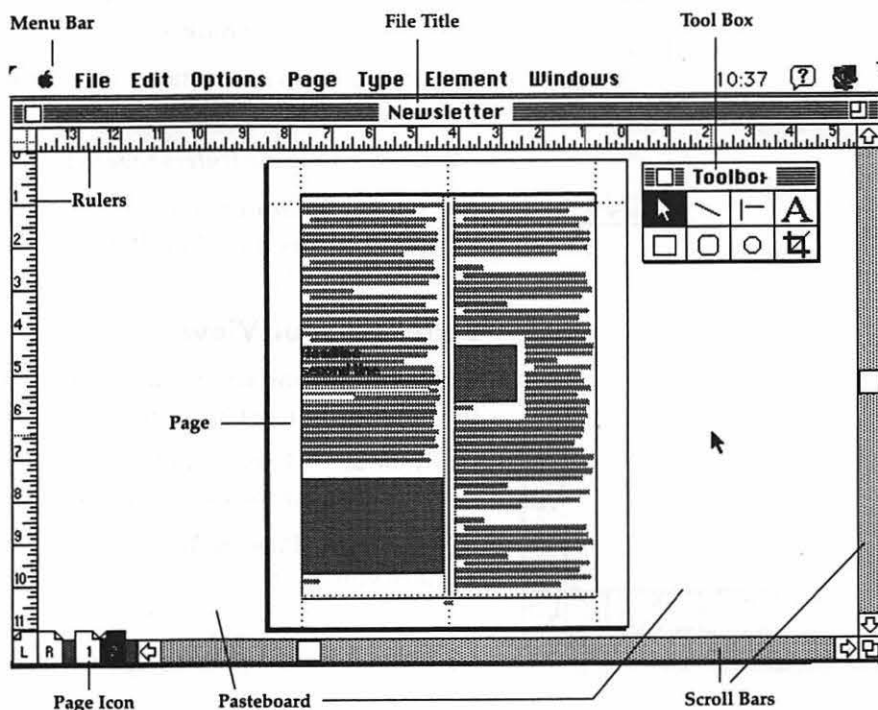
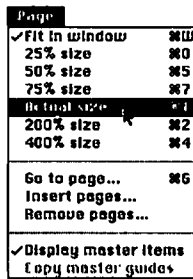


Figure 8.2

Changing Your View of a Document



The *Page* menu (V5= *Layout* menu . . . *View* command) is used to change how closely you view your document. For detail work, you will want to work at actual size if not larger. To see more of the page, you will want to view at a smaller scale.

- 1 Pull down the *Page* menu and select *Actual Size*.
- 2 Experiment with each of the various views.

When the view is smaller than a certain size, you will not be able to read the text on the screen.

Keyboard Shortcuts

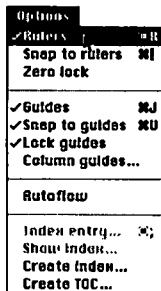
In PageMaker you will need to change views very often, so you might as well learn to use the Command-keystroke combinations as menu shortcuts.

- 1 Hold down the *Command* key and press 2 to view the document at twice normal size. This view is quite useful for doing detailed work.
- 2 Use the keyboard commands to switch to each page view.

Notice the keyboard shortcuts in other menus. The more you use PageMaker, the more you'll use keyboard shortcuts.

Setting Display Options

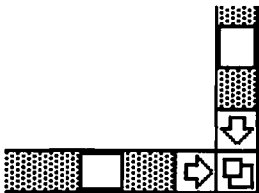
Toggle commands have a check mark next to them when they are on. When you select them again, they are toggled off and the check mark is removed.



- 1 Pull down the *Options* menu, and see if the *Rulers* command has a check next to it (V5= *Layout* menu . . . *Guides and Rulers* command . . . slide over to *Rulers*).
- 2 Select *Rulers* and notice that the rulers on your screen either appear or disappear.
- 3 Be sure to leave *Rulers* toggled on.
- 4 Toggle *Toolbox* on in the *Windows* menu if it is not already on (V5= *Window* menu . . . *Tool Palette*).

Scrolling Your View

In most views you will need to scroll the image to see the different parts of the page. As in most Mac programs, this is done with the **scroll bars**.



- 1 If the scroll bars are not visible, select them from the *Windows* menu (V5= *Layout* menu . . . *Guides and Rulers* . . . *Scroll Bars*).
- 2 View your *Page* in *Actual Size* (V5= *Layout* menu . . . *View*). At this size you can't see your whole page, so use the scroll bars and scroll box to change your viewing window.
- 3 Go to *Fit in Window* (do you remember the keyboard shortcut?).

This gives you a view of not only the page but also the **Pasteboard**. You can move things off your page and onto the Pasteboard as a holding place. We'll come back to it in a minute.

Display Master Items

Master items are things that will appear on every page, such as page numbers, headers, and borders. From the *Page* menu, toggle *Display Master Items* on and off and back on again (V5= *Layout* menu).

Help Window

PageMaker has a nice on-line help feature. In it, you can get information on most of PageMaker's commands or on specific tasks.

- 1 Under the *Windows* window, select *Help* . . .
- 2 Click the *Commands* button.
- 3 Scroll down to a desired command. Click once on it, and then click the *Select* button (V5= first click on whichever menu the command is in).
- 4 If you hold down on the *More Help* button, you will be able to jump to related help screens (V5= *See Also* button).
- 5 Click on the *Topics* button to find information on how to do a specific desktop publishing task. *Select* one to read (V5= can also click on *Keyword*).
- 6 When you are finished with the on-line help, click the *Quit Help* button.

Shhh! Here's a secret way to get fast help on how to use a command:

- 1 Press *Command -?* (without using the Shift key). This turns the cursor into a question mark.
- 2 Now, just drag the cursor over the command you want help on.
- 3 Click *Quit Help* to get back to our publication.

Let's Turn Pages

This newsletter is more than one page long, but we only see one page at a time, so we need to learn to turn pages.



- 1 Click on the *Page 2* icon (near the bottom left).
- 2 Click on the *Page 1* icon.
- 3 Click on the *L* icon (the Left Master), this is where you create items that will be on every page of your document.

Let's start to create our own document. Close this document, and we'll start a new one.

- 4 Select *Close* . . . and don't save changes.

Creating A New Document

- 1 Select *New* from the *File* menu.

The *Page Setup* dialogue box pops up on the screen (see Figure 8.3). This is where you can set the page size and margins.

- 2 Click on the *# of pages* box; delete the 1 and type in 3.

As in all Mac programs, you can move from box to box with the Tab key or by clicking the mouse.

- 3 Be sure *Double Sided* and *Facing Pages* are NOT checked. If they are, click on them again.

- 4 Leave the left margin as 1.00, and change the other margins to .50 (don't forget the decimal point; the *in.* is optional). Use the Tab key or click the mouse to move from box to box.

- 5 Click the *OK* button.

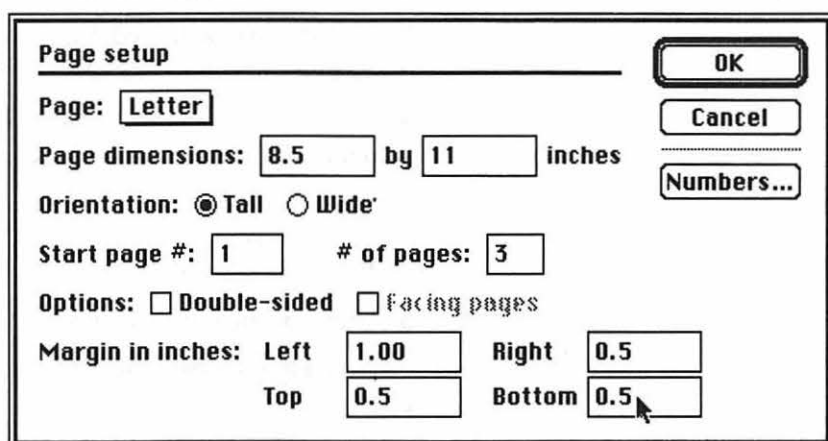
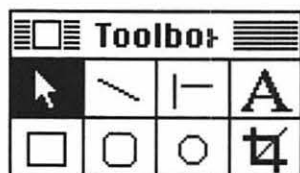


Figure 8.3

Your page 1 now appears, with your margins indicated as dotted (or colored) lines.

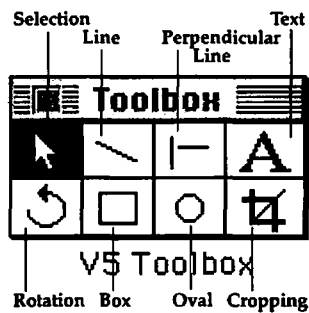
- 6 If the scroll bars, rulers, or tool box are not showing on the screen, toggle them on from the *Windows* menu (V5= *Layout* menu . . . *Guides and Rulers* and *Window* menu . . . *Tool Palette*).

Using the Toolbox



PageMaker's drawing tools are always available to you via the Toolbox. They are rather limited (for example, there is no freehand drawing tool) but often adequate. You will want to import more complex graphics.

The Toolbox is toggled on and off from the *Windows* menu. You can move it anywhere on the screen by dragging it by its title bar. To use a tool, just click on its icon in the Toolbox. When the cursor is on the page, it will change into a crossbar. Do not use the *Text* tool (the A) or *Cropping* tools

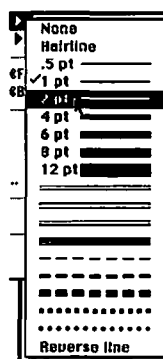


(the one below the A) for now (V5= do not use the *Rotation* tool, the one below the *Pointer* tool).

- 1 Experiment with drawing shapes on page 1.
- 2 Holding down the *Shift* key works as the **constrain** key for circles, squares, and lines. Experiment with it.
- 3 Try to move and resize the objects you've drawn. Select them with the *Pointer* tool, and drag on the line or resize them via a handle.
- 4 You may undo your last move or resize by using the *Undo . . .* command in the *Edit* menu. But remember that you can only undo (or redo) your most recent operation.

Lines and Fills

Let's experiment with lines and fills.



- 1 Select an object. Go to *Actual Size* view.
- 2 Choose a new line width from the *Line* pop-out menu under the *Elements* window.
- 3 Try several different line styles.
- 4 Select another object, and try various fills from the *Fill* menu under the *Elements* menu.

Paper means the object is a white solid object (as opposed to *None*, which is transparent). *Solid* means the object is 100 percent filled.

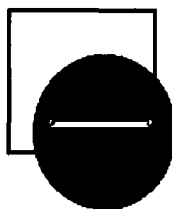
- 5 You can select multiple objects by *Shift-clicking*.

To Make Reverse Lines

Making reverse lines is easy.

- 1 Select a box or oval, and make it solid.
- 2 Now draw a line on top of it (but completely inside of it).
- 3 Select *Reverse line* from the *Line* options on the *Element* menu.

Voilà, it's white (or the reverse of what's behind it).



To Deal with Overlapping Objects

If you have overlapping objects, you'll want to be able to control how they appear with respect to one another.

Select a filled object, and choose *Bring to Front* or *Send to Back* from the *Element* menu.

To Select Objects Below the Top Layer

- 1 Drag one filled object so it is covering another object.
- 2 Click on the object with the *Pointer* tool. It becomes selected. But we want to select the object behind it.
- 3 Do a *Command-click*. Each click selects one level deeper.

To Delete an Object

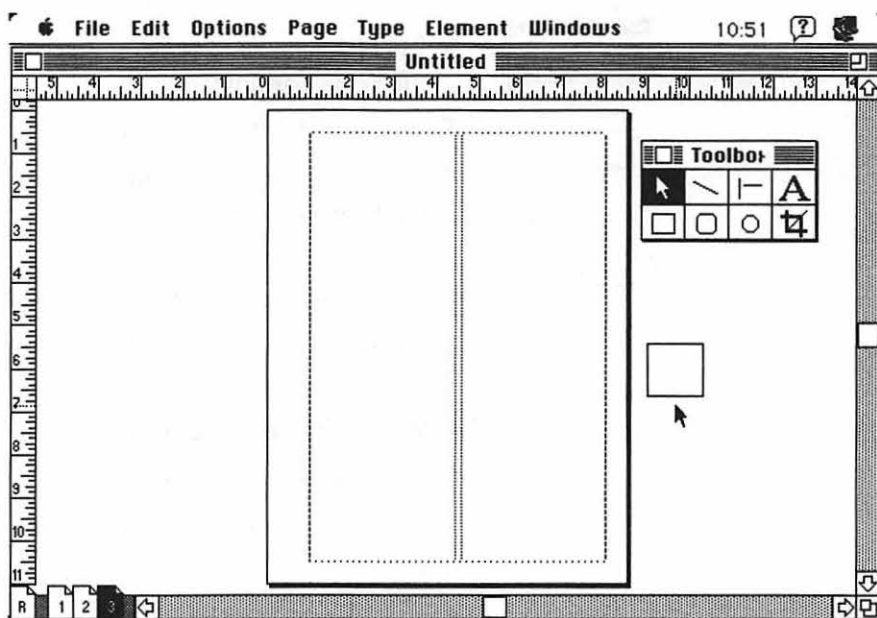
There are two ways to delete an object.

- 1 Select an object, and press the *Delete* key.
- 2 Select an object, and use *Cut* from the *Edit* menu.

Back to the Pasteboard

- 1 Select an object, and drag it to the Pasteboard.
- 2 Now go to page 3 by clicking on its icon.
- 3 Select *Fit in window* from the *View* menu (V5= *Layout* menu . . . *View*).
- 4 You can now drag your object onto page 3 from the Pasteboard.

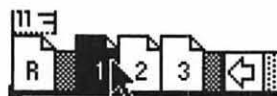
The Pasteboard is a good place to “park” things until you know where to place them.



Back to Page One

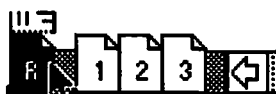
- 1 Click on the *Page 1* icon.
- 2 Choose *Select all* from the *Edit* menu.
All of your objects are selected.
- 3 Now press *Delete*.

We've now got a blank sheet of paper—quite an accomplishment!



Creating Master Pages

PageMaker uses master pages to collect the design elements that will appear on every page of your publication. You'll later learn how to hide all or selected master items.



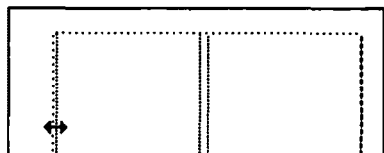
- 1 Click the *Right Master Page* icon (R).

We are creating a report that will be printed on one side only. Books and magazines have different margins for left-hand and right-hand pages; these are known as facing pages. This is specified in the *Page Setup* dialog box. If we were doing facing pages, we would have both left and right master pages.

- 2 In the *Options* menu, select *Column Guides* (V5= *Layout* menu).

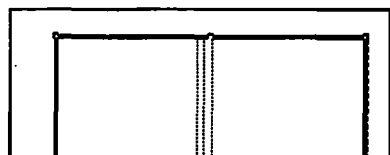
- 3 Type 2 for the *Number of columns*, and click *OK*.

Notice your page now displays column lines as well as margin lines.



Adjusting Column Widths

You can change the width of the columns by dragging the margin guides. Move the left and right column margins (the blue lines) in just a bit (perhaps 1/4"). Notice that the cursor changes to a double arrow when you move margins.



Create a Border

- 1 Draw a border around the entire printed page. The *Box* tool is better to use than the *Line* tool for this.
- 2 Make the line width 2 point.
- 3 Be sure the box fits inside or on top of the printed margin guides. Check this in *Actual Size* view.

Create a Header

We'll put a title header in the upper left corner of your page.

- 1 Be sure you are in *Actual Size* view, or you may not be able to read your typing.
- 2 From the *Toolbox*, select the *Text* tool (the A) and click where you want the text to begin (just inside the top left of the border box).
- 3 Type *My Final Report* for the title. Use the *Delete* key if you make any typos.

Adding Page Numbers

- 1 Select the *Text* tool, and click in the bottom center of the page.
- 2 Type *Page*, and then press *Command-Option-P*. Be sure to hold down the *Command* and *Option* keys, and then press the *P* key. The page should display *Page RM*. If you see a 1 or other symbol, you have done this wrong.

Command-Option-P is a little magic code that tells PageMaker to automatically number the pages, starting with the number specified in the *Page Setup* dialogue box (it defaults to 1).

- 3 Move to page 2 to check this.
- 4 Move back to the master page.
- 5 Adjust the final position of your page number and/or header by pressing on it with the *Pointer* tool and then dragging it.

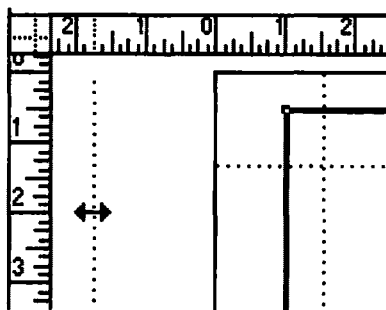
Moving Outlines or Images

If you select an object or text and immediately drag it, just an outline of the object will appear as you move it. If you select and then hold down the mouse button until the watch on the screen disappears, the actual image of the object will be seen as you move it.

- 1 Select your header, and immediately drag it around.
- 2 Select the header again, but continue to hold the mouse button down until the watch goes away. Now drag the actual text image into place.

Guidelines for Guidelines

PageMaker has a neat little trick for providing rules for you to line things up on. You can simply drag them in from the ruler guidelines. Be sure the *Rulers* command is toggled on in the *Options* menu (V5= *Layout* menu . . . *Guides and Rulers*). These lines will not print out; they are for your reference in aligning items. You can have as many of these as you wish. They can be on master pages or on individual pages.



To Bring in a Vertical Guideline

- 1 Press-and-drag a guideline from the ruler on the left side of your screen.
- 2 Drag in two more of these guidelines.

To Bring in a Horizontal Guideline

Press-and-drag a guideline from the ruler near the top of your screen to bring in a horizontal guideline.

To Delete a Guideline

Drag a guideline back into the ruler to delete it.

To Set the Ruler to a New Zero Point

Press-and-drag the cross in the upper left corner to your new zero point. Set the ruler to zero at your left and top PRINTED margins.

To Prevent the Zero Point from Moving

Select *Zero Lock* from the *Options* menu (V5= *Layout* menu . . . *Guides and Rulers*). This will keep the zero point from wandering off.

Saving Your Work

Let's stay in the habit of saving our work frequently (at least once every fifteen minutes).

- 1 Select *Save* from the *File* menu.
- 2 Be sure you are in the *Painless PageMaker* folder of your *C.A.R.P.* data disk.

If you are not in that folder, navigate to that folder and disk using the *Desktop* and *Open* buttons. See the section on saving in Chapter 3, *Getting Started on the Macintosh*, if you need help with this.

- 3 Save the files as *Publication*, not as a *Template*.
- 4 Type *Exercise.AA* (substitute your initials) for the title, and press *Return* or click *OK*.

All future saves of this file will be under this title unless you use the *Save As . . .* command from the *File* menu.

Locking the Column Margins

- 1 Go to page 1.
- 2 Choose *Lock Guides* from the *Options* menu (V5= *Layout* menu . . . *Guides and Rulers*).
- 3 Try to move any of your guides now. It can't be done.

This is a good thing to do to prevent accidental resizing of your columns as you work.

Snap To Guides

Be sure *Snap to Guides* from the *Option* menu is toggled on (V5= *Layout* menu . . . *Guides and Rulers*). This causes objects to line up right on the guides when placed near them. If you have trouble with small moves or adjustments later on, you may need to turn this option off.

Placing Text

Autoflow

- 1 Toggle *Autoflow* on from the *Options* menu (V5= *Layout* menu).

This will cause the text to automatically flow from column to column when you place it into your publication, which is exactly what we are about to do.

- 2 Be absolutely sure you are on page 1.
- 3 Choose *Place . . .* from the *File* menu.
- 4 Navigate disks and folders to find the file *Computing Plan*. Click *OK*.



The computer will count the letters as it prepares to import them. Notice the cursor has changed into the Autoflow shape.

- 5 Place the cursor near the upper left corner of the first column. Click once, sit back, and watch the magic happen.

PageMaker flows your text from column to column and page to page until all of the text is placed. It will even create new pages if needed.

Besides Autoflow, PageMaker has two other text flow modes. Manual text flow stops at the bottom of the first column and makes you reload the cursor and then click to continue the flow in the next desired column. Semi-automatic flow also stops at the bottom of each column, but it remains ready to place the next column of text as soon as you click the mouse.

- 6 Go back to page 1. Select *Fit in window* view.

Resizing Text Blocks

We want to make some room for a fancy headline, so we will need to move and resize your text boxes. A **text block** has handles on either side of it and **window-shade handles** at the top center and bottom center of it. You resize a text block by dragging these handles or window-shade handles.

We will want to move the text blocks down, but we want to do this by making the text blocks smaller, not by moving the text down and off the page.

Making Text Blocks Shorter

- 1 To move the text, press anywhere in the first column and drag the box down.

But you can see the text moves off the bottom of the page, sooo . . .

- 2 *Undo* the move, and let's try this.

- 3 Press on the window-shade handle at the top middle of the text box.

- 4 Now drag it down to about the 2.5-inch marker.

The extra text is automatically pushed into the following columns.

- 5 Shorten the second column to the 2.5-inch mark in the same way.

- 6 If the text is covering the page numbering, drag the bottom window-shade handles up a bit also.

Position Statement:

Deciphering Window-Shade Handles

When a window-shade handle has a + on it, that means the story continues into the next or preceding column. When the window-shade handle is empty, that indicates it is the beginning or end of the story. If the window-shade handle has a triangle on it, that means there is more text in the story than is currently placed.

Making Text Blocks Narrower

- 1 Make the left column slightly narrower by clicking on it and then dragging its left top handle in about one-eighth of an inch.
- 2 Drag the top right handle of the second column slightly in also.

In PageMaker, text will automatically adjust when you adjust handles, so you never have to worry about losing text this way.

Hiding Master Items

You normally don't put a header or page number on the first page of a publication. We could make the header and page number for this page disappear by toggling off *Display Master Items* from the *Page* menu, but this would also eliminate our border, so we will do it manually.

- 1 With the *Box* tool, draw a box around the header.
- 2 From the *Element* menu, select *Fill- Paper* and *Line- None*. This covers the header with a white box.
- 3 Do the same to hide *Page 1*.

It's not very elegant, but it does the job. The unwanted master items are covered by invisible boxes.

Creating a Headline

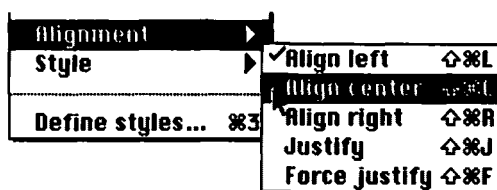
Now that we've moved the text down, we have room to insert our headline.

- 1 While on page 1, choose the *Text* tool from the Toolbox.
- 2 Press-and-drag across the top of page 1 to create a text block down to the 2.5-inch mark.
- 3 Type *MY FINAL REPORT*, and then press *Return*.
- 4 Now type your name and today's date.
- 5 You might want to move to *Actual Size* view to check your typing.

Selecting and Formatting Text

Working with text in PageMaker is very similar to any Macintosh word processor. You first select the text and then apply formatting options.

- 1 With the *Text* tool still selected (the cursor will be an I-beam), press-and-drag the cursor across the two lines of your title to highlight them.
- 2 To center them, choose *Alignment* from the *Type* menu and slide over to *Align Center*.
- 3 To set a typestyle, select *Font* from the *Type* menu and slide over to apply any font you wish.



4 Let's make it bold. Choose *Type . . . Type Style . . . Bold*.

5 Deselect your text by clicking outside it.

In PageMaker you can select one word by double-clicking within it and an entire paragraph by triple-clicking in it.

6 Try the triple-click to highlight just the top line of the title.

7 Let's make the title large. To enlarge it select *Type . . . Size . . . 36 point*.

We want to find a point size that will reach all the way across the page without going off of it.

8 Select *Type . . . Size . . . Other*.

9 Type a number in the dialogue box that better fits the page.

You can type any size from 1 to 650 points. Size 72 point equals about 1 inch high.

10 Keep trying other font sizes to find one that fits all the way across the top line.

11 Select your name and date, and apply an effective size (smaller than the title but larger than the body copy).

12 Click before the date, and press the *Tab* key several times so the date will reach the right margin. If the date spills over onto another line, press the *Delete* key to bring it back up to the correct line.

Changing All of the Text

If you want to change the font, format, or alignment of the entire story, you will want to use this power user's shortcut.

1 Select the *Text* tool in the Toolbox.

2 Click once anywhere in the body of your text.

3 Now choose *Select All* from the *Edit* menu. All of the body text becomes selected.

4 Let's change all of the text to 12 point Times.

5 Let's make the columns of text line up on both their left and right edges. Select *Alignment* from the *Type* menu, and slide over to *Justify*.

Justify pushes partial lines of text all the way over to the right edge by adding lots of spaces. Beware: justified text can be difficult to read because of the uneven spaces between words.

Type Specs

You might be feeling that all of this going back to the menu to keep changing text attributes is a bit cumbersome, and you're right. PageMaker has provided a faster way to make several format changes at once; this is the powerful *Type Specs* option.

1 Scroll down the left column until you see the words *Basic Premises of Our Program*, and then highlight them.

2 Now choose *Type Specs* from the *Type* menu.

A dialogue box opens showing you all of the current attributes of the selected text (see Figure 8.3). You can click in any box to change options. You will need to press-and-drag down some boxes to see the available options. You can tab from box to box.

3 Lets make our selections:

Font = Times Size = 14 point

Type style = Bold Italic Case = Small Caps

4 Press *OK*. The specifications are applied.

5 *Save* your work.

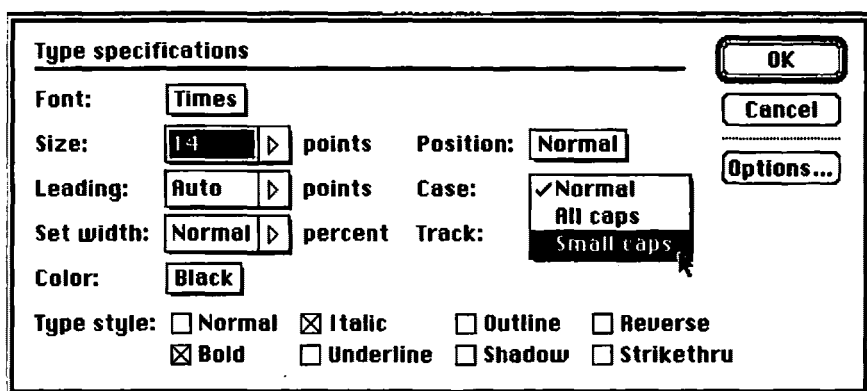


Figure 8.4

Text Editing

We want to edit the story that we placed into our document. There are three ways to do this: by inserting text, by pasting text, and via the Story Editor.

Insert Text Mode

1 Go to *Actual Size* view.

2 Use the *Text* tool, and click after the first sentence of the story.

Now you are in the insert mode, and the cursor changes to an I-beam.

3 Type in your own sentence. Do not press *Return*.

This is the I beam 

To Delete or Cut Text

Select the entire second paragraph, and choose *Edit...Cut*. The text is now on the **Clipboard** and can be pasted elsewhere.

To Paste Text

Click somewhere in column 2 and select *Paste*. Your text from the Clipboard is now moved. Remember you can also paste to the Pasteboard or the Scrapbook.

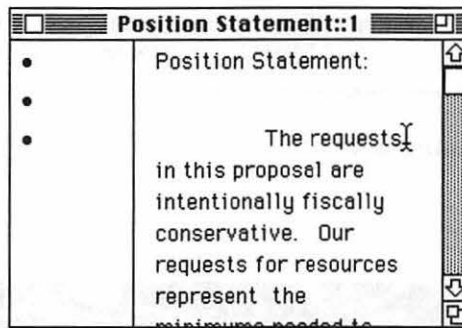
The Story Editor

You probably noticed that when you typed, the letters displayed quite slowly. This is because the computer needs to redraw the screen. Page-Maker has a nifty little feature which is ideal for creating text more quickly; it is called the Story Editor.

There are two ways to get to this feature. The first is by selecting *Edit Story* from under the *Edit* menu; the second uses a tricky shortcut... the triple-click. We want to add another sentence to the end of the first paragraph.

- 1 Using the *Pointer* tool, click three times anywhere in the first column. If this doesn't work, select *Edit Story* from the *Edit* menu.

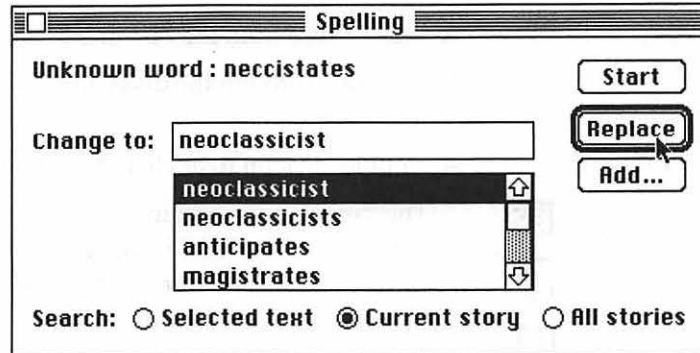
A window should open, displaying the text of your story. This appears as unformatted text, which makes it faster to edit. When you finish editing, your changes will automatically be put into the document and the formatting will be done.



- 2 You can resize this window by dragging the size box in the lower right corner. The margins of this window will have no effect in the document.
- 3 Let's add a new third paragraph to our story. Click after the second paragraph, and hit a *Return*.
- 4 Write a paragraph about your experience using this tutorial.
- 5 Notice that we have different menus when in the Story Editor mode.

Using the Spelling Checker

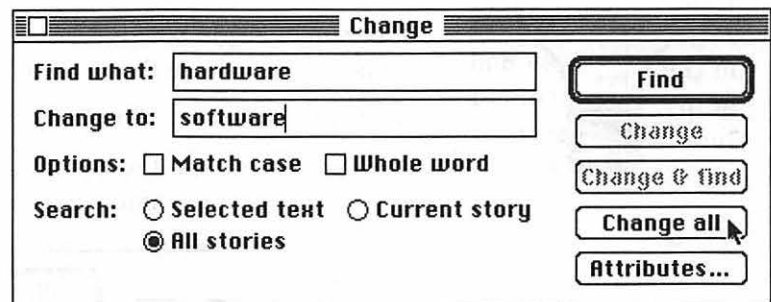
From the Story Editor you can also check the spelling of your document. This is found under the *Edit* menu and works much like any other spelling checker. In version 5 the spelling checker is found under the *Utilities* menu and is available to use at any time. We won't use it now.



Find and Change

We can also use the Find and Change commands. As a matter of fact, the writer of this story mixed up the word "hardware" with the word "software."

- 1 Use the *Change* command, under the *Edit* menu, to find all occurrences of *hardware* and change them to *software* (V5= *Utilities* menu ... *View*).
- 2 Close the *Change* window by clicking the close box in the upper left of its window.



- 3 We're ready to return to our page layout procedures, so click the close box of the story window.

The computer groans for a few seconds and reformats your document to reflect your editing changes.

- 4 You can always access your story again by triple-clicking in it with the *Pointer* tool or by clicking once on it and choosing *Edit Story* from the *Edit* menu. Try it.
- 5 Close the story window.

Paste a Graphic

All this work with text is getting rather dry, so let's add some pictures to liven things up. First, we will place a graphic in much the same way we placed text.

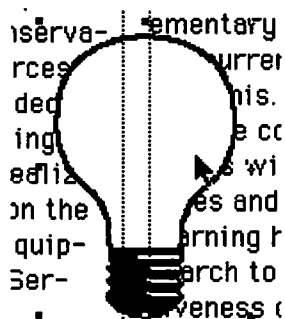
- 1 Go to page 2, and choose *75% view*.
- 2 Select *Place* from the *File* menu.
- 3 Navigate through the disks and/or folders until you find the *Light Bulb.eps* file.
- 4 Double-click on it, or click the *OK* button.



The cursor now becomes the PS symbol. This means PageMaker is ready to place an *EPS* (Encapsulated PostScript) format graphic. PageMaker can also paste *Paint*, *TIFF*, and *PICT* files, so almost any graphic can be imported into your document.

- 5 Click the cursor near the middle of the page.
- 6 Using the *Pointer* tool, press-and-drag the graphic to the center of the page.

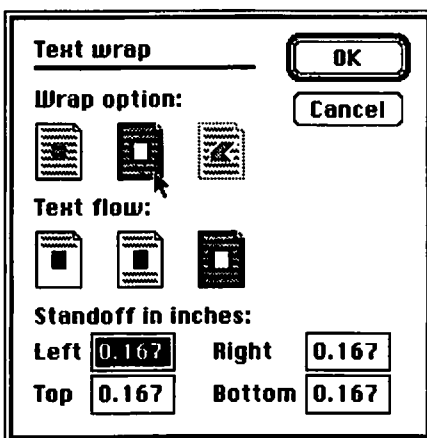
Be sure not to drag a corner handle, or you will resize the graphic. If you've already made this mistake, choose *Undo* from the *Edit* menu. If that still doesn't fix it, delete the graphic and place it again.



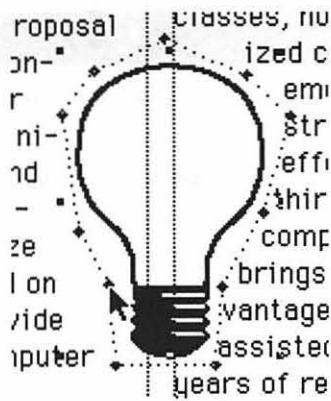
Text Wrap

The text is probably behind the light bulb. Now we'll learn to make the text flow around the picture, just as you've seen in professional publications.

- 1 Be sure the light bulb is selected (i.e., has handles around it). If not, click on it with the *Pointer* tool.
- 2 Choose *Element... Text Wrap*. A dialogue box comes up.
- 3 We want to choose the top middle option—text all around the picture—so just click the middle icon and select *OK*.



Now we see the text wrap around a box that contains the light bulb. We could draw a frame for the light bulb, but we're going to get even fancier.



You can custom wrap the text around any shape by simply dragging the diamonds around it.

- 4 Drag the four diamonds to try to wrap the text around the shape of the light bulb.
- 5 You need more diamonds (wrap points), so simply click on the dotted line and one will appear.
- 6 Continue to add diamonds, and finish your text wrapping.
- 7 With the light bulb still selected, choose *Element . . . Text wrap* and you will notice that PageMaker has changed your choice to the custom wrap icon (the third icon).

Cropping a Graphic

That last task was so much fun, let's place another picture. Cropping a picture cuts off part of it without changing its size.

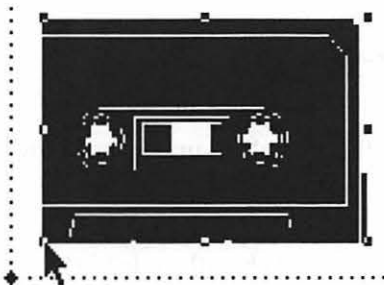
- 1 Go to page 3 and view it as 50%.
- 2 If there is still a rectangle on the screen from your first drawing practice, get rid of it. Remember to use *Command-click* to select items from back layers.
- 3 Select *Place*, and navigate to find the *Audio Tape.eps* file.
- 4 Place the image about halfway down in the middle of the first column.
- 5 To crop off part of the image, select the *Cropping* tool in the Toolbox.
- 6 Click in the graphic. Put the *Cropping* tool right over any corner handle, and drag in to crop the image.
- 7 After this, you can press inside the box and a hand will appear. As you drag it around, the view of the picture will move with it.

The Cropping tool is very valuable for editing scanned-in photographs. We'll work with a photograph later in this tutorial.

Resizing a Graphic

We can make the cassette smaller by dragging on a corner handle. You can *Undo* resizing.

- 1 Select the *Pointer* tool. Click on the cassette, and then drag a corner. Keep the *Shift* key held down to keep it in proportion. Make the cassette about half the width of the column.
- 2 Let's put a box with double lines around the graphic.
- 3 Flow the text around the box, using the *Text Wrap* command.
- 4 Select the *Text* tool, and click in the lower left corner of the box.
- 5 Add the caption *Figure 1-Early storage device* under the cassette. You may need to reposition the text into place.



Adding Pages

By now, with all the stuff we've added, your document may not fit on your existing number of pages.

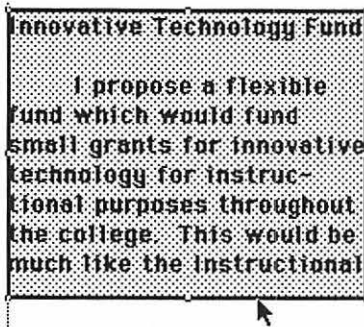
- 1 Go to the last page, and choose *Page . . . Insert pages* (V5= *Layout* menu).

Notice that there is also a command to remove pages.

- 2 Select *After Current Page*, number of pages 1.
- 3 Go back to your last page with text on it.
- 4 Click the bottom window-shade handle of the last text column (the triangle means there is additional unplaced text associated with it). The cursor turns into the Autoflow symbol.
- 5 Go to your new page, and click in the first column. The remaining text will flow onto the new page.
- 6 Save your work.

Shaded Boxes

We can make text stand out by putting it in a shaded box.



- 1 Find the *Innovative Technology Fund* headline. It is probably on page 3 or 4 of your publication.
- 2 Create a box to go around the *Innovative Technology Fund* text. If the text continues into another column, just draw the box to the bottom of the first column.
- 3 From the *Element* menu, apply a 10% fill to the box.
- 4 From the *Element* menu, select *Send to Back*, to put the box behind the text.

Creating a Pull Quote

Magazines and newspapers use a technique called a pull quote to make an important quote or sentence stand out. Let's create a pull quote on page 1.

Create a Blank Space for Your Quote

- 1 Go to page 1. With the *Pointer* tool, select the second text column.
- 2 Press-and-drag the bottom handle of the text block up to about the 6.5-inch mark, creating a blank area where the pull quote will appear.
- 3 Click the *plus sign* in the bottom window-shade handle to load the manual text flow icon.
- 4 Leaving about 1 inch of space for the pull quote, position the loaded text icon where the text will continue, and click.

computer experiences:

*"... We aim to keep
our program
simple, small, and
flexible"*

Educational Technology (re)

Choose the Sentence and Copy It

- 1 With the *Text* tool, highlight a sentence you want to excerpt.
- 2 In the *Edit* menu, choose *Copy*.

Place the Pull Quote

- 1 Place the I-beam in the corner of the blank pull quote area, and press-and-drag diagonally to form a text box.
- 2 When you release the mouse button, the insertion point will appear.
- 3 In the *Edit* menu, choose *Paste*.

Enlarge the Pull Quote

- 1 Highlight the pull quote text.
- 2 With the *Type* menu, choose a larger type size (usually 4 points larger) and perhaps a different typestyle (bold or italics work well here).

Add Lines or a Box to Separate the Pull Quote

It's usual to highlight a pull quote even further, so let's do that. Using the *Line* tool and *Lines* menu, draw two lines of any style, one above the quote and one below it.

Using Styles



Using Defined Styles

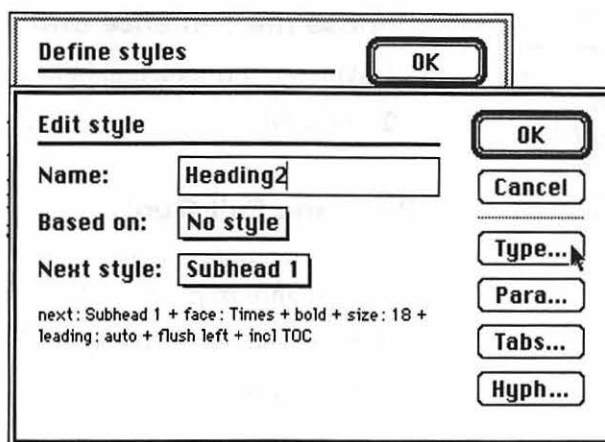
We want our section headings to stand out from the text. PageMaker can save text styles along with the document. Several styles are built into the program. Let's use one.

- 1 On page 1, highlight *Position Statement*.
- 2 From the *Type* menu, select *Style . . . Subhead 1*.
- 3 You can display a *Styles* window from the *Windows* menu (V5= *Window* menu . . . *Style Palette*).
- 4 Go through your document and apply this style to the heading of each section.

Defining a Style

Each document in PageMaker has a default style sheet containing several styles. You can edit these or add new ones.

- 1 Select *Define styles* from the *Type* menu.
- 2 Click on *New*, which will bring up the *Edit Style* dialog box.
- 3 Type in a new name for the style; let's use *Heading2*. Do not hit the *Return* key.



- 4 Click in the *Based On* box. If there is a name in the *Based On* box, choose *No Style*.
- 5 Click on the *Type* button, which brings up the familiar *Type Specs* dialog box.
- 6 Make your choices for a style for your section headings.
- 7 Click on *OK*.
- 8 The *Edit Style* dialog box will appear. You could get fancy and define Paragraph Specifications, Tab Stops, and even text Color if you wished to. We won't use those now, so click *OK*.
The style *Heading2* now appears in the *Styles* window. Click *OK*. You can apply it just as you did in the Using Defined Styles section. As a matter of fact, let's replace a few Subhead 1 selections with the *Heading2* style.
- 9 Select a heading of a section, and select *Heading2* from the *Styles* window (V5= *Style* palette).

Using Borderlines

- 1 Be on page 1. From the Toolbox, choose the *Line* tool and add a 2 point line to separate the title from the text.
- 2 Put hairlines above and below each section heading. Hint: draw the two lines, and *Shift-select* both of them. From the *Edit* menu, *Copy* them and *Paste* them in as needed.

Printing

- 1 Before printing, go through all the pages of your document and check and adjust all text placement and margins.
- 2 Print a draft of your document. Select the *Print* command from the *File* menu.

Just issue the *Print* command once. It may take several minutes for your document to be printed. You can continue working in the meantime. If you have time, go back and make some corrections and/or changes and print a finished copy. Note that the *Print* dialog box lets you print just the

Print to: LaserWriter

Copies: ☐ Collate ☐ Reverse order

Page range: ☒ All ☐ From to

Paper source: ☒ Paper tray ☐ Manual feed

Scaling: % ☐ Thumbnails, per page

Book: ☒ Print this pub only ☐ Print entire book

Printer: Paper:

Size: 8.5 H 11.0 inches Tray: ☒ Select

Print area: 8.5 H 11.0 inches

Buttons: Print, Cancel, Options..., PostScript...

needed pages rather than the entire document. You should get into the mindset of proofing your work from hard copy and making revised drafts before finishing.

Other Advanced Topics

Scanned Photos

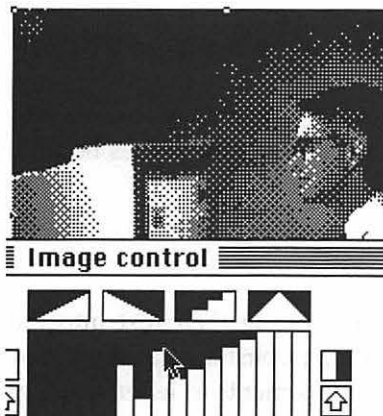
To bring in scanned photographs, use a scanner and save them in your scanner software as **TIFF** files. Use PageMaker's *Place* command to import them into your document. TIFF files are in a **gray-scale**. These files can be altered using PageMaker's *Image Control* commands, which allow you to adjust the contrast and brightness of the image. Scanned photographs often don't print out too well on a laser printer, so many designers insert them afterwards using traditional pasteup methods. Beware: TIFF files are much larger than PICT or Paint files, so use the TIFF format only if you need to work with a gray-scale.

- 1 Place the *Photo.tiff* file on the last page of your document.
- 2 Experiment with the *Image Control* options from the *Options* menu (V5= *Element* menu). The triangles set up predefined high-contrast effects.
- 3 Remove the *Photo.tiff* graphic to save space on your disk. Click on the photo, and press the *Delete* key.

Text Rotation

PageMaker can rotate small amounts of text in 90-degree increments (version 5 of PageMaker allows rotation of text or graphics in any degree).

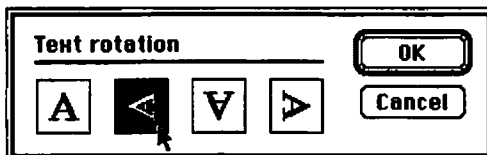
- 1 Go to the last page of your document. Be in actual size view.
- 2 Find some blank space and, using the *Text* tool, create a small text box (perhaps 1 inch high by 3 inches long).
- 3 Type in the words *Text Rotation*.



Text Rotation

VERSION FOUR ONLY:

- 4** Select the *Pointer* tool. Click once on your new text.
- 5** Choose *Rotate Text* from the *Type* menu.
- 6** Click on the second *A* in the dialog box. Click *OK*.
- 7** Select *Edit . . . Copy*.
- 8** Paste, rotate, and move three more lines of *Text Rotation*.

**VERSION FIVE ONLY:**

- 4** Select the *Rotation* tool in the Tool Palette. Click once on your new text.
- 5** Drag a corner handle to rotate your text.
- 6** Select *Edit . . . Copy*.
- 7** Paste, rotate, and move three more lines of *Text Rotation*.

PageMaker allows you to print **color separations** to prepare originals for multicolor printing jobs. You define and apply colors much the same way as you do text styles. You can also create documents with some on-screen color displays and color graphics, but beware: these files become gigantic.

Custom Text Adjustments

Editors used to spend great amounts of time fitting their text into the amount of space allowed for the article. Desktop publishing has simplified the process greatly. Now we can make fine adjustments to letter spacing, line spacing, text size, column size, and even spacing size to tweak the document to fit into the allotted space.

- 1** From the *Type* menu, select *Paragraph*.
- 2** Examine the many *Paragraph* options in this dialog box.
- 3** Click on the *Spacing* button. These options allow you to set some sophisticated word and letter spacing attributes. These are beyond the scope of this tutorial.
- 4** *Cancel* out of both dialog boxes.

Adjusting the Space between Lines

Leading is a way to set how space is placed between lines of text. It gets its name from the old printing press technique of placing strips of lead be-

tween lines of metal type to be typeset. PageMaker's automatic leading is 120 percent of the type size used. But you can adjust this.

- 1 Select a paragraph of text.
- 2 Press on *Leading* from the *Type* menu. Slide over and drag down to select a large leading size. Notice how the lines moved farther apart.
- 3 Try it again with a small leading size.

This may come in handy if you need to squeeze one more line of text on a page.

- 4 With the paragraph still selected, select *Leading* and slide over to *Auto*.

Compressing or Expanding Letters

The *Set Width* command from the *Edit* menu can be used to squeeze or stretch letters (V5= *Type* menu . . . *Set Width*). This actually distorts the letters into a new form; it does not change the space between letters. It can be applied to any selected amount of text.

Adjusting Letter Spacing

Tracking is the opposite of using the set width command. This command adjusts the amount of space between letters. It is thought of as changing from loose to tight spacing or tight to loose spacing.

- 1 Select the headline on page 1.
- 2 From the *Type* menu, select *Track*, and then slide down to *Tight*. Notice the letters are very close together.
- 3 Try this again, but select *Loose*.
- 4 If the letters get too far apart, they may not fit on one line. Apply the correct track to prevent this.

You can adjust the individual space between two letters. This is called kerning and is used by graphic designers to improve the look of headlines. For instance, an A and a V should be quite close together, in fact overlapping.

- 1 With the *Text* tool selected, click between the N and the A in the word *FINAL* in your headline.
- 2 To move the letters farther apart, press *Command-right arrow key* (repeatedly).
- 3 To move the letters closer together, press *Command-left arrow key* (repeatedly).

Importing from the Scrapbook, from DeskDraw, or from the Clipboard

Because PageMaker's drawing tools are limited (remember, there's no free-hand line tool), you often need to import pictures. But it is inconvenient to quit PageMaker, create your graphic, quit that application, and start up PageMaker again. If you keep often-used pictures (such as your logo) in the

Scrapbook, they will always be accessible inside PageMaker. If you create something in another application and *Copy* or *Cut* it to the Clipboard, you can *Paste* it directly into PageMaker without having to use the *Place* command.

- 1 Without quitting PageMaker, open DeskDraw or DeskPaint from the Apple menu.
- 2 Create a simple image in DeskPaint or DeskDraw.
- 3 Choose *Select All* and *Copy* the image.
- 4 Close the DeskPaint or DeskDraw window, without saving changes.
- 5 Select an insertion point in your PageMaker document.
- 6 Choose *Paste*.
- 7 Position and size the graphic. Do a text wrap if needed.
- 8 Try the same thing with a graphic from the Scrapbook.

Recovering from Disaster

If you make a really big mistake and the *Undo* command won't work, you can select *Revert* from the *File* menu. This command restores the document into the form it was when you last performed the *Save* command on it.

Exporting Text to Your Word Processor

You can export all or a selected portion of your document's text into a file format which your word processor can read. Unfortunately, at this time Aldus has not provided an export filter for Microsoft Works 3.0, so you will need to save it under a different format and import it into Works. This is accomplished from a dialog box called up from the *Export* command in the *File* menu.

Table of Contents and Index

PageMaker has the ability to let you mark items for inclusion in a table of contents or index; this is invaluable for book writing. See the PageMaker manual for instructions on how to use these features.

Linking Files

When using large files (such as scanned photos), you can keep the PageMaker file manageable by using the *Link To . . .* command. This allows you to just put a "place holder" in your PageMaker document where the needed items are to go. When the computer prints the document, it will insert the needed files automatically.

Creating a Book

The *Book* dialog box, accessed from the *File* menu, allows you to build a list of files that are connected into a book. You use this to generate the table of contents and index, and to print all of the parts of the book as a single unit.

New Commands Added in Version Five

Multiple Paste—Allows you to duplicate selected objects and to specify the number of copies you want and their position on the page relative to one another.

Editions—Uses Apple System 7 Publish and Subscribe capabilities to share files in a variety of programs. Thus when one file is updated, the changes are applied in the linked files. For example, you could change your document in your word processor and those changes would also appear in the text of the PageMaker story that is linked to it.

Paste Link—Relative to the Editions command just described, this pastes the Clipboard's contents into linked files.

Paste Special—Allows you to specify the format (PICT, text, etc.) of an object when you paste it into your publication.

Insert Object—Lets you create an object in another program and insert it as a linked object in PageMaker.

Edit Original—Launches the program in which the selected element was originally created, so you can edit a linked graphic or story.

Aldus Additions—Utilities to simplify common desktop publishing tasks such as grouping objects, aligning the top of text columns, and saving printing options.

Copy Master Guides—Deletes any custom guidelines and restores the original nonprinting master guides.

Fill and Line—Allows you to apply options to both the fill and line of an object from the dialog box called up from this command.

Remove Transformation—Removes all rotation, skewing, and flipping applied to an object. Reverts it to its original orientation.

Restore Original Color—Removes a color applied from within PageMaker to an imported graphic and restores it to its original color.

Tile—Allows multiple publication windows to be arranged on the screen in a split screen format, much like the pattern of tiles on a floor.

Cascade—Arranges multiple publications into diagonally overlapping windows.

Control Palettes—Presents a floating window that can be opened to offer easy and exact control of object positioning, sizing, and even flipping. This concept is much like the floating tool box in Microsoft Works. When you switch to text mode, the palette changes into one that controls type specifications and paragraph options.

Library Palette—Allows you to store and recall frequently used elements, such as clip art.

Conclusion

Even though we've only worked with PageMaker for a few hours, you've had a pretty good overview of PageMaker and desktop publishing. I hope you've seen the power and utility of it. I believe it truly represents a revolution in communication. Desktop publishing will make us consider not just what we write, but how it appears. You will profit by learning about

graphic design and typography principles. This will lead you into the field of visual literacy, the study of creating and interpreting visual images. You may never go back to the typewriter or word processor again.

Pagemaker Challenge

On the following pages are printed layouts of various types of publications. Using the skills you've just learned, try to recreate them using PageMaker.

For text for the articles, place the file *Lorum Ipsum*. This is special text that designers use to "dummy up" pasteups.

For graphics, you can just draw boxes or place a graphic from the *PD Clip Art* folder in the *Producing Pictures* folder of your *C.A.R.P.* disk. Don't worry about being too exact with type sizes or styles. In fact, you may want to modify the designs. The important thing is for you to get a sense of accomplishment and empowerment from the new skills you've just developed. Have fun!

A Note about Placing Stories Created in Microsoft Works 3.0

When you do your Computer Assisted Research Project or other original publications in PageMaker, you will probably want to *Place* word processing files that you created in Microsoft Works 3.0. Unfortunately, at this time Aldus has not provided an import filter to read this format of file. Fortunately, there is an easy solution. When you are in Works 3.0, save a copy of your document in the Works 2.0 format, using the *Save As* command. This format of file should import fine.

Helman School NEWS

Fall 1995

Vol. 1 Issue 1

*Helman
Teachers
Learn
Desktop
Publishing!*

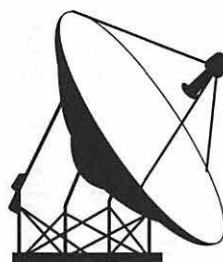


This is the first issue of this newspaper.

Lo rem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip

ex ea commodo consequat.

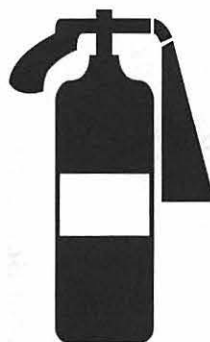
Duis autem vel eum iriure dolor in hendrerit



in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto



odio dignissim qui blandit praesent luptatum zzril delenit



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TEST YOUR MACINTOSH I.Q.

HOW MANY OF THESE MACINTOSH TERMS DO YOU KNOW?

1 Megabyte RAM	In this exercise you are to	Save As
20 Megabyte Hard Disk	type in this column of text	Command Key
800 KB 3.5" Mini Floppy	and format it in 18 point	Option Key
Mouse	Times to fit exactly into	Scuzzy Interface
System Software	this space. To do this you	Startup Disk
Pull-Down Menus	can alter the leading,	Object Oriented
Icons	width, or track. The text	Bit-Mapped
Files & Folders	should fit into this space	HyperCard
Windows	as shown.	PageMaker
Zooming a Window	The other columns of	Works
Close Box	text also need to be typed	Shut Down
Double Clicking	in. Their formatting is up	
Press and Drag	to you. Good luck and	
	have fun!	Your Name Goes Here



ABOUT THIS COMPANY:

Place Lorem Ipsum text here. Quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue duis dolore te feugait nulla facilisi. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

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Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit

NOTES:

(create this text)

A brochure is folded in thirds to 8 1/2" by 3 1/2". Page 1 of the document contains:

- the front panel
(in the right column)
- the back panel
(in the center column)
- the foldover panel
(in the left column)

Page 2 of the file would contain the inside panels.

Company name
Address
Address



 Company name
create this logo.

Create a Headline of Your Choice

Replace this text by placing a piece of clip art here. You can find some in the P.D. Clip Art folder inside the Producin' Pictures folder of your data disk.

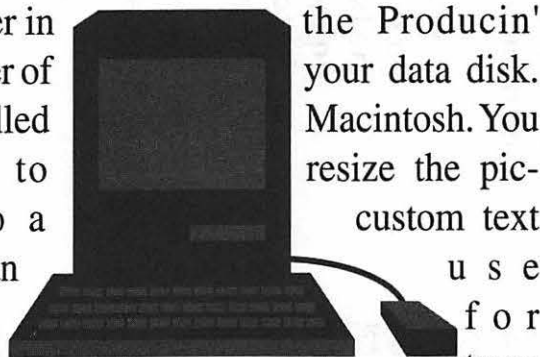
CAN YOU PUT SOME TEXT IN REVERSE UP HERE?

You Can Use Pagemaker to Make Attractive SIGNS

&

POSTERS

See if you can get this text to wrap around this graphic. The computer can be placed from the PD Clip Art folder in the Pictures folder of the Producing your data disk. The file is called Macintosh. You will need to resize the picture and do a custom text wrap. You can use the Lorem Ipsum text for type this text or some in. Make the text 18 point.



TYPE YOUR NAME HERE IN A FANCY FONT & STYLE

MY FINAL REPORT

Arnie Abrams

April 30, 1995

Position Statement:

The requests in this proposal are intentionally fiscally conservative. Our requests for resources represent the minimums needed to maintain and build our teaching of educational computing. We realize the financial strains placed on the college in trying to provide equipment for the new Computer Services building.

Basic Premises of Our Program:

In all of our educational computing instruction we aim to emphasize applications of the technology over operation of equipment. Although a certain amount of "nuts and bolts" instruction is needed, most of our efforts are geared at demonstrating how computers can be effectively integrated into the curriculum. That is to say, not how to operate computers but how to apply them. For students needing basic operational skills two independent study courses are offered.

Learning Pagemaker this way has been tremendous fun. Although at times it is a bit confusing.

The next tenet is to stress curriculum integration. The goal here is to use computers in many education classes, not to limit them to specialized computing classes. The elementary curriculum block instructors are currently planning efforts to facilitate this. The third premise is that we believe computer assisted instruction

brings with it unique learning advantages and issues. Therefore, our requests are based on what we perceive to be possible with currently available funds, not on funds from grants, video poker, or other schemes which we have only an outside chance of obtaining in the near future. This is the sentence I added in the insert mode. We do not offer this proposal as a "wish list", but as an explanation of the directions our efforts are going in.

Computer assisted learning has had twenty years of research to support the potential effectiveness of electronic learning and educational technology. It also provides some challenges to the structure of public education and necessitates discussing implementation issues. Finally, we aim to keep our program simple, small, and flexible. We wish to maintain a small lab and offer just a few effective classes and special workshops.

"...we aim to keep our program simple, small, and flexible"

Current Computing Courses:

Our course listings for our new fifth year program include the following computer experiences:

Educational Technology (required of all Ed students)-

My Final Report

10 clock hours devoted to computers.

ED 544 / 444 - Computer Applications

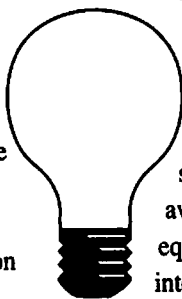
ED 545 / 445 - Integrating Computers into the Curriculum

ED 407- 1st Computer Experience -
1 credit independent study course

ED 407 - Appleworks- 2 credit independent study course.

Summer Workshops - special topics such as software evaluation and desktop publishing.

It should be noted that other than the Ed Tech course the rest of the courses are elective courses, which have created significant new student credit hours for the department. Many of these students are inservice graduate students returning to upgrade their skills. A growing population has been international students.

**Implementation Strategies:**

How will educational computing be implemented in our department? I propose starting with a "beachhead plan". That is start with one secure base and gradually fan out to many areas. The beachhead will be the Educational Technology and Educational Computing Classes and the skills will eventually be integrated into all other education courses. We also believe that our computing classes will be of value for students in numerous majors, including communications, business, and Computer Science. We will continue to require computer classes for the Educational Media endorsement and Interdisciplinary Studies majors.

Teaching Logistics:

I've had the advantage of teaching computer classes for the past nine years, during which time I've learned many lessons. It should be noted that my teaching methods continue to change and evolve. Most importantly is the dropping of the notion of the way to teach computing is to sit all the students at computers and tell them what buttons to push. The bulk of our in-class activities are demonstrations or curricular activities, these may be either instructor or student led. The hands-on learning is primarily done during lab hours. I foresee some of the hands-on occurring in our lab and some in a centralized lab.

When should students work in a central lab and when in the department's lab? Obviously it needs to be a mix, but some of the factors would be; software availability, qualified assistance, specialized equipment (videodisc, CD ROM), hours, and integration with classes.

For demonstrations it is important to have a large display screen which is portable to go into our classrooms. This seems best accomplished on LCD panels with overhead projectors. We have one panel, but another could be useful.

Needs:

It should be noted that the Education department does not have access to any funds to support the computing program, no lab fees or centralized support, outside of a limited supply budget. The department's equipment budget is already inadequate. It is unwise and unfair to try and support a program based on those overextended funds. In the past our funding has come from Instructional Improvement grants, the Academic dean's discretionary funds, the school's equipment budget, and a one time

My Final Report

allotment from a campus wide student computer resource fee.

Software Needs:

In public schools there is currently a software dilemma. The Apple II is the most frequently found computer in schools, with the largest amount of educational software supporting it, and it promises to remain dominated for the next few years. A new model of the Apple II, the GS has improved performance yet offers downward compatibility. However the Macintosh is rapidly making inroads into the classroom. There are rumors that Apple will introduce a color

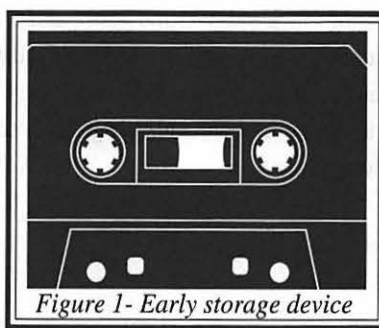


Figure 1- Early storage device

model especially targeted for public schools. Still, the amount

of educational software for the Mac is limited. So, do we prepare teachers for the installed base, or what we perceive to be the future? We are making a slow transition. We will try to demonstrate and teach with both. Our 6 Apple II's seem to be adequate for our existing needs, but our one Macintosh will not meet the future demands we expect. We look forward to centralized support for Apple II's and Macintoshes.

Consumable supplies are a small expense, but one that needs to be filled. This is currently being funded by the computer center. Maintenance, repair, and installation has been covered with department funds but this should be supported by centralized resources.

Finally there is training. Our faculty is highly motivated and dedicated, I do not foresee needing to give them funding or release time to learn and implement computer education. However funding of workshops or instructional support would be of a great help.

Software Needs:

When it comes to computer software we have a unique situation in Education. While most disciplines, such as Business or Computer Science, rely on a few generic application packages such as Word Perfect or Lotus, we need to demonstrate CAI programs in a wide variety of curriculum areas. Every year new courseware comes out which improves on the older programs. We need to consistently update our educational software collection, not to mention upgrades and licensing fees. We currently have about 130 programs, ranging from physics to early childhood education. We view software almost as a consumable supply. Its much like our use of educational films and videos. In fact, I suggest since we have a film budget each year, we need a software budget. This could probably be kept to about \$600 a year. However, it should be noted that programs are getting more expensive not less, often in the \$100 to \$200 range. We haven't been able to afford to purchase any software for the past two years.

Innovative Technology Fund

I propose a flexible fund which would fund small grants for innovative technology for instructional purposes throughout the college. This would be much like the Instructional Improvement Grants, however limited just to instructional technology (both software and

My Final Report

software). The Instructional Improvement Grant Committee have grown increasingly over-burdened with requests for equipment. This fund would relieve that strain and offer a vital source for instructors to get some resources for their innovations. It does not need to be a great deal of money, I suggest between \$30,000 and \$50,000 campus-wide a year, with individual grants of \$5000 or less. The application process would need to be simple and the award process would need to be quick and flexible, again much like the Instructional Improvement Grants. The awards would be based on student benefit and importance to the curriculum. Examples of grants would be an interactive video set up, a laser printer, or graphics software.

Faculty Computing Needs:

The department has not purchased computers for any of the teaching faculty. It is recommended that the college pursue means to fund placing a computer on the desk of each faculty member who will use it in their teaching.

The Future:

In the near future I foresee that the Education department's students will be using the computer as a tool, tutor, and tuttee. They will use it as a communication and presentation tool, they will produce instructional materials on the computer, as well as for completing assignments. They will use it as a management tool and they will use it to teach their subject matter in new and powerful ways. Our faculty will demonstrate and use computers seamlessly in their teaching. It will be integrated throughout our curriculum. The Education Department may evolve into the campus' Macintosh specialists, teaching such areas as

desktop publishing and presentations, multimedia, Hypercard and hypertext. I believe that the Education department will offer classes, workshops, and instruction which will be valuable to students from a variety of disciplines.

Summation:

In short, we can't maintain and build a program based on our existing resources. However, the good news is that with only about \$5000 per year I believe we can maintain our program. Our lab is most of the way complete, we have a good software collection, and most importantly we have the curriculum, enthusiasm, and expertise to teach the information. We have most of the pieces in place and are well on our way to having a vibrant and valuable program in educational computing.

CHAPTER 9

Powering Up Powerpoint

Files Used in This Tutorial

The following files are found in the *Powerin' Up* folder of the C.A.R.P. disk

Life of John Muir

Understanding Computers (created by user)

Computers Outline

Software Presentation

Univac

You will need about 200 K of free disk space on your floppy disk to save your work in this tutorial.

Introduction

The Importance of Communication

We live in the Information Age. Every day we are bombarded with data. So far in this book you have learned to write up your information, produce pictures to illustrate it, organize and calculate the data, and even prepare it for printed publication. In this chapter, you will learn how to use a **desktop presentation program**, which will allow you to present your information to groups in a highly professional and powerful manner. It's been said that "what's important is not what you know, but what you can communicate." PowerPoint is all about powerful communication.

Applying Desktop Presentations to Teaching and Learning

A big part of teaching is presenting. Think of yourself as an information specialist; how will you get the information in your knowledge base across to the learners? Desktop presentations are a great way to help learners visualize your information. They can even include some limited animation and video clips. In PowerPoint, you have the ability to easily create speaker's notes and handouts to accompany your presentation. The program is excellent for preparing presentations of master's or doctoral research documents. Desktop presentations are good to use with any age group and also for out-of-school situations such as presentations to community groups, adult education, or sales meetings. After creating a Com-

puter Assisted Research Project (C.A.R.P.), students can present a synopsis of their research report in PowerPoint.

A recent trend in schools is to have students present the results of their work; this may serve as a capstone experience for a class. Presentations may be given by all age groups. If PowerPoint is too difficult for elementary school children to learn, then programs such as HyperCard or Story Maker may be used. HyperCard is an entire programming language that can be used to create presentations, but it does not offer templates or some of the specialized presentation features that PowerPoint affords. Certainly, students in business classes will want to become adroit at giving electronic presentations, since they are apt to need this skill in their careers. The ability of PowerPoint to work with QuickTime movies and animation may be of use to students who want to get involved in multimedia.

What Is a Desktop Presentation Program?

Microsoft's PowerPoint program is a desktop presentation program. It allows you to take an outline and turn it into a visual presentation, using display type, graphics, animation, and even video clips. You could present this information in an on-screen presentation using a computer hooked to a large monitor or to an LCD panel and overhead projector. You could also have your presentation turned into 35mm slides, using a film recorder (available through service bureaus for about five dollars per slide). Another option is to output your presentation to videotape and even add a recorded soundtrack. You could also just print out traditional overhead transparencies or handouts.

Some Basic Presentation Terms and Concepts

Before we power up the program, let's agree on some common terminology and introduce some basic concepts.

- Each frame of your presentation is called a **slide**, no matter what form it will eventually take when it is used.
- A **master** is created for all slides, handouts, and note pages. The master items are automatically applied to all slides unless you specifically choose not to apply them to a particular frame.
- You can modify, update, and copy presentations. Some big corporations have a presentation pool from which individual speakers compile custom presentations.
- One advantage of using these types of programs is that they facilitate creating a standardized look to the entire presentation, including such items as the border, color schemes, and text styles. A spelling checker also comes in handy.
- You will work and create in different views: creating an outline, setting up master items, drawing on a slide, running a slide show, sorting the slides, and producing handouts and note pages.
- One of the most common parts of a presentation is the bullet chart. This is an outline of the points to be discussed in that part of the presentation. Normally, each line of text on a bullet chart has a dot or bullet in front of it.

WHAT IS A COMPUTER?

- A Machine That Follows Directions
- Manipulates Pieces of Information
- Works Only With Information on Hand

- The normal process for creating a presentation in PowerPoint is first to create an outline, then format a master slide. You can then import pictures, clip art, or templates. You will want to apply the color to the background later, thus not slowing down the computer while you are creating the show.
- Just because you are using a powerful computer program doesn't automatically make your presentation effective. Remember the communication basics: keep it simple, use graphic design and speech communication guidelines, and remember who your audience is and how the presentation will be used.
- Preparing and/or giving a presentation on the computer introduces some complications and limitations. You may encounter technical problems. When you're on the road, how will you display the show? When you work on different computers, you may encounter font incompatibilities. You will probably need to present in a darkened room, and your presentation may have a "canned" look. Spontaneity and audience interaction may be limited. Even with those limitations, all in all desktop presentation programs are usually a very useful and efficient way to create and present a presentation.

About Microsoft PowerPoint



PowerPoint is a full-featured desktop presentation program. Along with Aldus' Persuasion, it represents the most powerful and popular program in its area. Some Mac users use HyperCard, an authoring language, for similar purposes, but it is not as easily or as effectively applied in the presentation arena. A major strength of PowerPoint is that it allows you to create your entire presentation first as an outline and then it automatically formats the outline into slides. Its graphic tools are fairly sophisticated, and it can import most kinds of pictures and graphs. It is excellent at recoloring pictures. Many users do not use it for on-screen presentations, preferring to use it to create 35mm slides, overheads, or handouts. A Windows version is available which functions identically. In fact, presentations created in either platform can be run on the other, without any conversion needed.

A Note about Color

It is possible to work in PowerPoint on a black and white Mac, but it's not easy and not nearly as much fun as with a color system. If you are planning output in color (35mm slides, on-screen shows, or video), it is possible to begin your presentation in black and white and then finish it on a color system. But once color is applied, you should stay on a color system. You can do a black and white presentation for overheads or a monochrome LCD panel; just use patterns instead of colors and avoid color clip art.

You can work through this tutorial on a black and white Mac, but the color features will either be displayed as patterns or not be available.

Starting Up

To use PowerPoint 3.0 you must be using System 7 on your Mac. If you are using System 6, you will not be able to run PowerPoint 3.0; you might try to find a copy of the older version, 2.0. Microsoft PowerPoint must be installed on a hard disk or network.

NOTE: You will need a lot of memory to run PowerPoint, so be sure to quit any open applications before starting.

You could open a file by opening the *PowerPoint* folder on the hard disk, launching PowerPoint, and then using the *Open* command from the *File* menu; but there is a faster way. Simply doubleclick on the file you want to open. This will open both the file and the PowerPoint program. It will also cause the program to save your file in the same location where you opened it.

- 1 From the **Finder**, double-click on your data floppy disk icon to open it.
- 2 Find the *Powerin' Up* folder icon, and double-click on it.
- 3 In the *Powerin' Up* window, double-click on the *Life of John Muir* file icon. PowerPoint and that file will be opened.

Quick Tour

A Quick Look at the Menus

Pull down each of the menus, but don't actually select any of the commands. Almost all Mac programs have the same first three menus, *Apple*, *File*, and *Edit*. The *Text* menu has all of the commands for editing and formatting text, including a spelling checker. Notice that many of the commands have **pop-up menus**, as indicated by a sideways-pointing triangle.

Many of PowerPoint's menu commands can be accessed by clicking on tool buttons. In this tutorial, we will concentrate on using these icons rather than the menu command equivalents. Appendix A has diagrams of all of the PowerPoint menus and tool buttons.

A Quick Look at the Screen

By now you should be familiar with the basic parts of a Macintosh window, but you might want to look at Figure 9.1 to examine the parts of the PowerPoint window.

Microsoft brings the use of tool palettes and tool bars to new heights with PowerPoint. Some of these will change in different views. Take a quick look at the buttons in the Tool Bar and Tool Palette. If the window is small, some of the icons might not be visible. Resize the window to fill as much of the screen as possible.

Working with Files

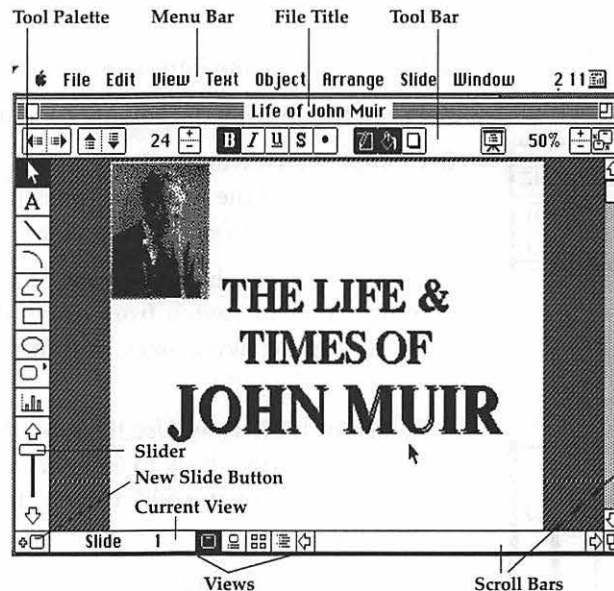


Figure 9.1

As in a database program, you work in PowerPoint by changing between different views. Besides looking at slides at different magnifications, you will also go into slide show mode to view your presentation. While creating the slides, you will need to change views to work on the slide master, presentation outline, slide sorter, handouts, and note pages.

Getting Help

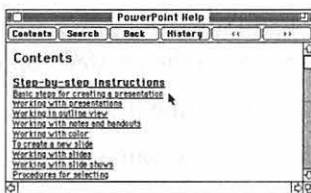
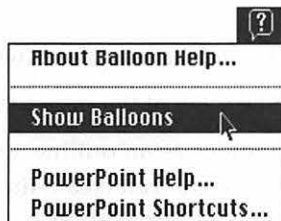
As in Microsoft Works, there are two different help systems available in PowerPoint.

- 1 Select **Show Balloons** from the **Help** menu (the ?). This gives you explanations of each command and tool in a little bubble when you place the cursor on that item.
- 2 Select **Hide Balloons** when you are ready to get down to work; otherwise you may go batty when all the balloons keep popping up.

The second help mechanism is to select **PowerPoint Help** from the **Help** menu. This brings up an on-line help system that functions much like the one in Works. Because we explored the use of the help system in Microsoft Works, we won't access it now. However, you are encouraged to use help systems whenever you need more assistance.

Running a Presentation

Right now you are in slide creation mode, but let's see what this presentation would look like when actually being presented.

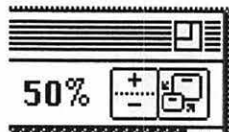


- 1 Select *Slide Show* from the *File* menu.

A show can run either on a timer or in manual mode. We'll run this one automatically.

- 2 Click on the *Show* button in the dialog box.

When the show ends, you are back in slide creation mode.



- 3 Change the viewing scale by clicking on the plus or minus in the right corner of the Tool Bar. You can also do this using the *View* menu. Change to each of the views, from 25% to 400%.

Just as in a graphics program, you will need to get in the habit of changing views to switch from doing detail work to viewing the entire screen. At large viewing sizes, you may need to use the scroll bars to see other parts of the slide.



- 4 Switch to 100% view. Use the scroll bars to view the various parts of the frame. Switch back to 66% view (if you can't see the whole frame on your monitor, use 50% view instead of 66% throughout this tutorial).

- 5 To switch to working on the next slide, click on the down arrow of the *Slide Changer*.

To make big jumps between slides, you drag the changer bar.

- 6 Drag the bar down to the bottom; this brings you to the last slide in the show.

Unlike when using real slides, when you want to rearrange the order of the slides in a desktop presentation you don't need to plug in a light table.



- 7 Click on the *Slide Sorter* button at the bottom of the screen.

- 8 Press on the fifth slide and drag its arrow to between slide 1 and slide 2. Release the mouse button. You've now dragged this slide into the number two position. It's easy!

The buttons at the bottom of the screen provide a few other views.



- 9 Click the fourth button to see a text outline view of the presentation.

In PowerPoint, you can first create your slides as an outline and then let the program automatically format the text, or you can create the text in slide creation mode, or even use a combination of both methods.



- 10 Click the second button to view the note pages for the slides.

You can easily create speaker's notes or handouts. The program automatically inserts a miniature version of each frame in the printed copies.



- 11 Switch back to slide creation mode by clicking on the first button.

Did you notice that many of the slides had the same border and header? These are created on a master slide.

- 12 Select *Slide Master* from the *View* menu.

- 13 Switch back to viewing the slides by clicking the *Slide View* button.

Well, it's been fun looking at someone else's presentation, but let's get creative and make our own show.

Close

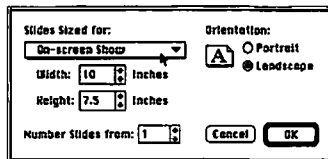
First let's close the books on John Muir.

- 1 Select *Close* from the *File* menu, or just click the **close box** in the upper left corner of the window.
- 2 The computer will ask you if you want to save changes. Select *Don't Save*.

Creating a New File and Setting Up Slides

- 1 Select *New* from the *File* menu. You are now presented with a new document called *Untitled* and are on slide 1.

Warning! Warning! Danger! Danger! The first thing you should do when starting a new presentation is to set up the screen size. You need to tell the computer in what format the frames will be used: as an on-screen show, as 35mm slides, or as overhead transparencies. If you begin work without this step, you may have to rearrange all of your artwork to get it to fit in the desired presentation format.



- 2 Select *Slide Setup* from the *File* menu.

You are now presented with a dialog box to determine which format your show will be in. This format will be applied to the entire presentation.

- 3 Hold down in the *Slides Sized For:* box, and drag up to select *On-Screen Show*.
- 4 Be sure the *Orientation* remains as *Landscape* (a horizontal format). Click **OK**.

You do not need to access the *Page Setup* command now because it only controls the printing of the frames.

Exploring the Drawing Tools

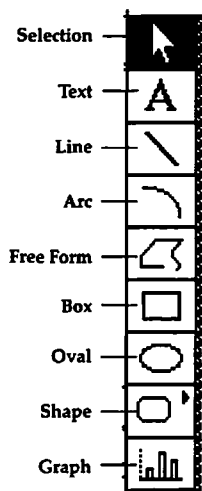


Figure 9.2

In this section, refer to Figure 9.2 to identify the tools in the Tool Palette. PowerPoint's drawing tools are pretty much your standard draw tools with a couple of exciting exceptions.

- 1 Be in 66% view (50% on smaller monitors). If you are not there now, click on the plus or minus in the Tool Bar.
- 2 Experiment making some lines, arcs, rectangles, and ovals by using their respective tools.

Remember, the Shift key is used to constrain the drawing to perfect squares, circles, quarter arcs, and perpendicular lines. Moving and resizing objects is done as it is in DeskDraw.

- 3 Select an object with the *Selection* tool. Move it around by pressing anywhere inside it and dragging it.
- 4 Select an object. Resize it by dragging any of its handles.

The Shape Tool

Because you often need to use symbols in presentations, Microsoft has created a tool called the Shape tool.



- 1 Press-and-hold on the *Shape* tool. A submenu of different shapes pops up.
- 2 Drag over to select a snazzy shape.
- 3 Now draw the shape the same way you would a box, by pressing and dragging diagonally.
- 4 Experiment with making a couple more shapes.
- 5 With the *Selection* tool, select one of the shapes you just drew.
- 6 Select *Change Shape* from the *Object* menu, and slide over to select a shape. Watch your object transform.
- 7 Resize the shape by dragging one of its corner handles.

Freeform Tool

How do you draw curved lines? With the Freeform tool. This tool can be used to draw freehand lines or straight lines, or a combination of the two. The ends of the line can be open-ended or connected into a polygon. Either way, the line becomes an object.



- 1 Select the *Freeform* tool.
- 2 Hold down the mouse button, and drag the pencil around to draw a squiggly line.
- 3 Let go of the mouse button; the cursor becomes a cross hair. Move the mouse and click once; a straight line is stretched.
- 4 Without pressing the button, move the mouse and click to form another straight line.
- 5 Without connecting with the starting point, double-click. An open object is created.
- 6 Repeat the process, but after drawing the last line move the pointer to the starting point and click once: a closed object is created.

The bottom tool in the Tool Palette creates a space to paste in a graph. We will work with it later in this chapter.

Formatting and Coloring an Object

- 1 Use the *Selection* tool to select a closed object you have drawn.
- 2 From the *Object* menu, pull down to *Fill*. A popup menu of colors or patterns appears.

In the following steps, just select from the list of colors or patterns displayed in the menu. We will work with the top menu options later.

- 3 Drag over and down to apply a fill.
- 4 From the *Object* menu, drag down to *Line* and then over to apply a color to the line.

- 5 From the *Object* menu, drag down to *Line Style* and then over to apply a thicker line style. The striped lines cannot be applied to Freeform objects.
- 6 From the *Object* menu, select *Shadow* and drag over and down to a color to give your object a drop shadow.
- 7 From the *Edit* menu, choose *Select All*. Hit the *Delete* key. Another blank screen! Our usual false start.

Creating a Master Slide

Well, enough fooling around; let's get down to creating a real presentation. Here's the scenario: you are to give an important presentation on Computer Literacy 101 to a college class. You will present it using a color LCD panel on an overhead projector connected to your Mac. You will also want to create handouts for the students and speaker's notes for yourself. The presentation will include about fifteen frames. You will add colored backgrounds to the presentation late in the process.

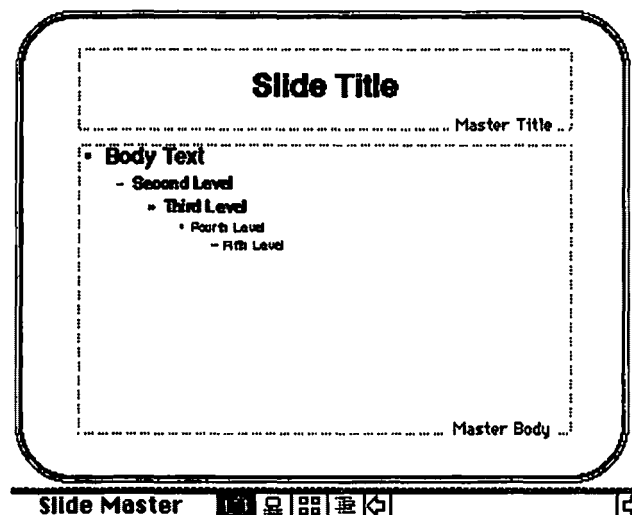
Just as in PageMaker, there is a special "space" in PowerPoint where you can create master items. These are things that will go on every slide in your presentation. Master items might include a border, presentation title, date, and slide numbering.

Creating a Border

- 1 From the *View* menu, select *Slide Master*.

Notice that the bottom of the screen is labeled Slide Master.

- 2 Go to 33% view (click the - icon).
- 3 Use the *Shape* tool to select a rounded corner box shape.
- 4 Drag to create a border just inside the edges of the slide.
- 5 Make the *Fill* for the border *None*.
- 6 Apply a line style to the line.



Add a Title

- 1 Click on the *Text* tool (the *A*). Notice that the cursor turns into a text insert symbol.
- 2 Switch to 100% view.

When a presentation is begun, PowerPoint includes preformatted title and body text objects. You can edit or delete these objects. We won't work with preformatted items on the master slide.

- 3 Scroll down and left to just inside the left bottom corner of your border. Be sure you are outside of the existing text box, and click once.
- 4 Type in the words *Understanding Computers*.

The text takes on the formatting currently displayed in the Tool Bar. But we want to change the format to an appropriate size and style. You do not need to drag over the text in PowerPoint; just having its text box selected does the trick.

- 5 Click on the *Selection* tool, now click on your text.
- 6 Pull down the *Text* menu. Notice it has commands for all different formatting features. We will apply most of these from the Tool Bar rather than the menu.
- 7 Drag down to *Font* and over to apply any font you wish.
- 8 Notice the font size is displayed in the Tool Bar. Click on the minus sign next to it (perhaps repeatedly) to change the size to 18 point.
- 9 Click on the *B* in the Tool Bar to turn bold style off.
- 10 Click on the *I* to change to italics. No, wait . . . click on the *I* again to turn italics off again.
- 11 Click on the *Selection* tool. Now click on the title again. Fine-tune the position of the title by dragging it into exact position.

A Note about Fonts

One of the complexities in working with on-screen presentations is choosing fonts. In most Mac applications you are not really concerned about the screen display, because you are going to use a printout. In desktop presentations, that may not be true. Generally speaking, just choose type that looks good on the screen, and don't worry about the printouts. When you present on other computers, if the presentation's fonts are not installed, the text may appear jagged or its position may shift. For printouts or other computer incompatibilities, PowerPoint has a command to substitute fonts.

Inserting the Date and Page Numbering

Let's put the date and slide number in the bottom center of each slide.

- 1 Click on the *Text* tool.
- 2 Click at about the middle inside bottom of the border.
- 3 From the *Edit* menu, drag down to *Insert* and over and down to *Date*. Hit a *Tab*.

- 4 From the *Edit* menu, drag down to *Insert* and over and down to *Page Number*.

The symbols you see are magic codes to instruct PowerPoint to insert the day the presentation is printed or given, and each frame number of the show. You could also add the current time.



- 5 Drag the date and page number into position using the *Selection* tool.
- 6 Click the first view button on the bottom of the screen to switch back to slide view. Notice that the master items have appeared. The real date and page number will only appear when you run or print the show. Don't believe me? Do the next step!
- 7 Click the *Slide Show* button. See the date and page number filled in? Click the mouse to return to slide editing.

Saving

After my lectures about frequently saving, you're probably nervous about losing your masterwork.

- 1 Pull down the *File* menu, drag down to *Save*, and release the mouse button.

The *Save* dialog box appears. The names of the files may be different on your screen. If the *Powerin' Up* folder name is displayed in the title box, skip to step 5 below. If not, you will need to reset the save destination as shown in steps 2 through 4.

YOU WILL WANT TO SAVE ON YOUR C.A.R.P. DATA DISK AND NOT ON THE HARD DISK.

- 2 Click on the *Desktop* button.
- 3 Double-click on the data disk icon.
- 4 Double-click on the *Powerin' Up* folder.
- 5 Click in the *Save Presentation As:* box, and type in the name *Understanding Computers* for your document.
- 6 Click the *Save* button, or press the *Return* key.

After you've saved the document once, you will not be presented with this dialog box again. The program will automatically save the document on the same disk under the same name (i.e., it will update the existing file).

Creating a Title Slide

Let's start our show with a flashy but tastefully done title slide.

- 1 Check the bottom of your screen to see that you are viewing slide 1. If not, click the *Slide View* button to switch back from Slide Master view.
- 2 Switch to 66% view.
- 3 Select the *Text* tool, and click near the top center of the screen.
- 4 Depress the *Caps Lock* key and type *UNDERSTANDING COMPUTERS*.

- 5 We deleted the title and body text boxes when we selected all and deleted, but we can get them back again.
- 6 From the *Slide* menu, select *Add Title*. This sets the selected text as the title object for the slide.
- 7 We want a really big title. Pull down the *Text* menu, and slide down to *Size* and over and down to *72 point*.
- 8 Apply a handsome font, perhaps New York (select *Text* menu . . . *Font*).
Did your words break up into three lines? We can fix that.
- 9 Select the *Selection* tool, and click on your title. Drag a corner handle to make the text box the width of the screen. Now your title should remain intact. If that did not work, you will need to use a smaller font size.
- 10 Perhaps you would like to apply a color or style to your title? Do this by experimenting in the *Text* menu.
- 11 Center your title by selecting *Alignment, Center* from the *Text* menu.

Hiding Master Items

It looks kind of dumb having the title repeated in the bottom of the screen so let's delete it. From the *Slide* menu drag down to *Follow Master*. Slide over and down to toggle off *Background Items*. This hides all of the objects created on the *Slide Master*.

Cut, Copy, and Paste

Just as in any other Mac application, you can cut or copy an item from one part of the document and paste it to another part. To get our border, we will need to copy and paste it.

- 1 Go to the Slide Master.
- 2 With the *Selection* tool, click on the border so it is selected.
- 3 From the *Edit* menu, select *Copy*.
- 4 Switch back to viewing slide 1.
- 5 Choose *Edit* and *Paste*. If necessary, drag the border into position.
- 6 Save your work.

Working with Text and Formatting

Let's create a bullet chart for slide 2.

To Add a New Slide

Click on the + at the bottom of the slider bar. Notice the slide is now labeled Slide 2.

WHAT IS A COMPUTER?

- A Machine That Follows Directions
- Manipulates Pieces of Information
- Works Only With Information on Hand

Creating a Bullet Chart

- 1** Click in the title box, and type *WHAT IS A COMPUTER?* Release the *Caps Lock* key.
- 2** Format the title to an appropriate font, size, and style.
- 3** Click on the body text object.
- 4** Type in the first line as *A Machine That Follows Directions*, and press *Return*.
- 5** For the second line, type *Manipulates Pieces of Information*. Press *Return*.
- 6** For the third line, type *Works Only With Information on Hand*.
- 7** Format the body text to an appropriate font, size, and style (about 36 point).
- 8** On any line of text, click the *Bullet* icon to remove or include a bullet.

Working from Outline View

We've just created some slides by typing directly on them, but there is a faster way to create a series of slides. This involves creating your text in outline view.

1 **UNDERSTANDING COMPUTERS**

2 **WHAT IS A COMPUTER?**

- A Machine That Follows Directions
- Manipulates Pieces of Information
- Works Only With Information on Hand

- 1** Switch to outline view by clicking on the fourth view icon at the bottom of the screen. You could also access this by selecting *Outline* from the *View* menu.

You now see an outline of the current presentation. Notice how slide 2's bulleted items are indented. The Tool Bar has changed to display four arrows in the left corner.

- 2** Click the *New Slide* button (the bottom +).

The slide's text will automatically take on the formatting from the Slide Master. Bullets will be automatically created as specified in the Slide Master.

3 **COMPUTER LANGUAGES**

- Machine Languages
 - Binary
 - APL
- Compiled Languages
 - BASIC
 - Pascal
- Authoring Systems
 - Hypercard
 - DBase III

- 3** For a slide title, type *COMPUTER LANGUAGES*. Now press the *Option* key while you hit a *Return*.

Pressing *Option-Return* drops you to the next level of the outline. If you hit just a *Return*, you will move to the next slide.

- 4** Type *Machine Languages*. Hit a *Return* (no *Option* key), then hit a *Tab*. This drops you to a third outline level.

- 5** Type *Binary*. Hit just a *Return*.

Now you can create a second item at the same level as *Binary*.

- 6** Type *APL*. Hit *Return*.

- 7** Type *Compiled Languages*. Now click the leftmost arrow in the Tool Bar. This promotes the item to the next highest level. Notice the change in indenting and formatting.



8 Hit *Return*. Type *BASIC*. Now click the second arrow in the Tool Bar. This demote button drops the item to the next outline level. Hit *Return*.

9 Type *Pascal*. Hit *Return*.

10 Click the *Promote* button (left arrow icon). Type *Authoring Systems*.

You can promote or demote items before or after you type them, or change them at any time in the process. In fact, you might want to just type in your outline and then use the arrows to indent the lines.

11 Hit *Return* and then *Tab*. Type *HyperCard*.

12 Hit *Return*. Type *DBase III*.

13 Go to slide view to examine your new slide.

Our third slide is now finished. You could go back and change text formatting if you wished to. You could also drag over individual text and apply formatting to just those words. It is best to try to keep to the master slide formatting so you'll have a consistent look throughout your presentation.

Moving through an Outline

1 Go back to outline view.

2 Notice that you can move through the outline using the up and down arrows on the keyboard. Try it.

3 You can also move to another spot by clicking the mouse on it. Try it.

4 If you double-click on a slide's number, you will jump back to viewing that slide. Try it with slide 3.

5 Go back to outline view.

Inserting an Outline

The normal process of creating a PowerPoint presentation would be to type in most of your presentation in outline form and then create additional slides as needed. But in the interest of saving time we will load in an outline that has already been prepared.

1 Be sure the cursor is in slide 3.

2 From the *Edit* menu, pull down to *Insert* and then over and down to *Outline*.

3 A dialog box opens, asking you to identify where the outline file is.

The outline could have been created as another PowerPoint file or as a word processing file in another application.

4 Select the *Computers Outline* file from the *Powerin' Up* folder, and click on *Insert*.

Notice that the new outline is appended to the current one. New slides will be created in the current master slide format. Only the title and body text objects will appear.

Moving through the Show

If you click on the *Slide Show* icon, the show will start at whatever slide is on the screen. This can be either a timesaver or an inconvenience. If you want to see the entire show, either drag the slide changer up to slide 1 or use the *Slide Show* command in the *File* menu.

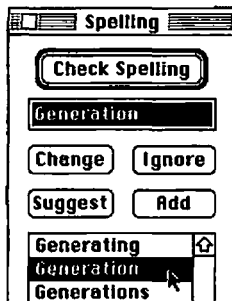
- 1 Select *Slide Show* from the *File* menu.
- 2 Click the mouse through the show. When it finishes, save your work.

Advanced Text Features: Find, Spelling, and Smart Quotes

Now that we have a sizable amount of text to work with, let's quickly explore a few of PowerPoint's text editing tools. These function much like the tools in Microsoft Works or any other Mac word processor.

Using the Spelling Checker

If it's awkward to have spelling mistakes in a printed document, it's really embarrassing to have spelling errors on the screen when you're making a presentation to a group. Fortunately, PowerPoint has a spelling checker built in.



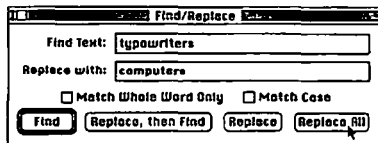
- 1 Select *Spelling* from the *Text* menu.
- 2 Click on *Suggest* to find the spelling, and then double-click on the right word.

You will need to click the *Check Spelling* button after changing each misspelled word.

- 3 Follow the dialog boxes to fix the several spelling mistakes in the document. *Ignore* the technical terms not found in the dictionary.
- 4 After the check finishes, close the spelling dialog box.

Find and Replace

Sometimes you may want to use an older presentation, but you may want to update or otherwise change it. A good way to do this is to search for the term and replace it with the new term.



- 1 Select *Find/Replace* from the *Text* menu.
- 2 In the *Find Text* box, type *Typewriters*. In the *Replace with* box, type *Computers*.
- 3 Click on the *Replace All* button.
- 4 Close the *Find/Replace* window.

Smart Quotes

High-falutin' publishing types look down on straight quote marks. They prefer curly quote marks. PowerPoint defaults to typing these high-class *smart quotes*. But if you're just plain folk, you can type straight quote marks by toggling off *Smart Quotes*.

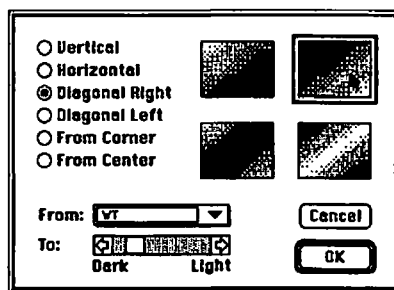
"Computers can't think"

- 1 Go to slide view of slide 3, 100% view.
- 2 Click at the end of the last line, and hit *Return*.
- 3 Pull down the *Text* menu, and toggle off *Smart Quotes*.
- 4 Type in this line: "Computers can't think."
- 5 Delete the line of text.
- 6 Toggle *Smart Quotes* back on.
- 7 Retype the line: "Computers can't think." What type of quotes do you prefer?

Advanced Graphic Features

All this work with text is getting a bit dry, so let's explore some sophisticated graphics features. First, we need to insert a new slide to draw our graphics on.

- 1 Be in slide view of slide 3. Drop to 66% size.
- 2 Click the *Add Slide* button to insert a new slide.
- 3 With the *Box* tool, create a small box in the center of the screen, perhaps two inches square.
- 4 Let's fill it in with a pretty shaded fill. In the *Object* menu, drag down to *Fill* and then over to *Shaded*. A dialog box appears, prompting you to decide what type of shading to apply to the object.
- 5 Click on a few of the various directions. Select one you like.
- 6 Drag down on the *From* box to select any color you wish.
- 7 Press on the arrows to change the darkness of the shading.
- 8 Click on *OK*.



Adding a Drop Shadow

- 1 From the *Object* menu, drag down to *Shadow* and over and down to select black as the color for the shadow.
- Let's make the shadow deeper.



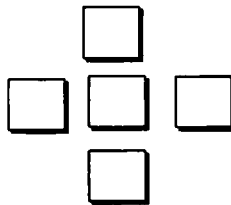
- 2 From the *Object* menu, select *Shadow Offset*.
- 3 Leave the options as *Down* and *Right*, but click twice on the two up arrows to make the offset 8 points in each direction. Click *OK*.

Duplicating an Object

Here's an easy one.

- 1 With the box still selected, choose *Duplicate* from the *Edit* menu.
- 2 From the *Edit* menu, select *Duplicate Again*.
- 3 From the *Edit* menu, select *Duplicate Again* again (is there an echo in here?).
- 4 From the *Edit* menu, select *Duplicate Again* again. You should now have five boxes.

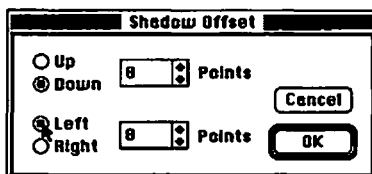
Let's set up our final diagram of the parts of a computer system.



- 1 Drag the five boxes into approximately the position shown in the illustration.
- 2 Shift-click to select the three horizontal boxes. From the *Arrange* menu, select *Align . . . Centers*.
- 3 Shift-click to select the three vertical boxes. From the *Arrange* menu, select *Align . . . Middles*.

Just to show off, let's adjust the shadows.

- 4 Select the rightmost box, and choose *Shadow Offset*. Click on the *Left* button. Click *OK*.
- 5 Click on the top box. In the *Shadow Offset* dialog box, change the *Right* offset to 0. Click *OK*.
- 6 Select the bottom box. Change its offset to *Up* 8 points and *Right* 0 points. Click *OK*.

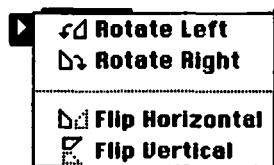


Scaling an Object

Let's make the center box bigger so it stands out.

- 1 With the center box still selected, choose *Scale* from the *Object* menu.
- 2 In the *Scale* dialog box, type 125 in the *Scale to* box. Click *OK*.

We could also *Rotate* and *Flip* objects using the *Object* menu. We will work with recoloring and cropping a picture later in this tutorial.



Placing Text in an Object

Here's a pretty impressive feature of PowerPoint—it can automatically center text in an object.

- 1 With the *Selection* tool, click to select the body text object and press *Delete*.
- 2 With the *Selection* tool, click once in the top box and type *Input*. Drag over the text to select it, and make the type size 36 point.



3 Choose *Fit Text* from the *Text* menu.

The *Fit Text* dialog box offers you several options. You need to choose either to change the size of the object to fit the text or to break the text into more than one line to fit within the current object size. We won't work with anchor points or margins right now.

3 Click on the *Adjust Object Size to Fit Text* button (whew! that has to be the longest name for a button!).

Notice the new size of the box. This tool works with any shape object.

4 Select the center box, and type *Central Processing Unit*.

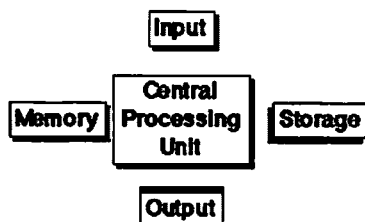
5 Drag over the text, and change the size to 36 point.

6 Choose *Fit Text* from the *Text* menu.

7 Click on the *Word Wrap Text in Object* button.

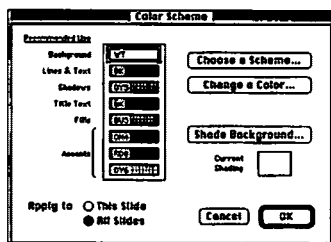
8 Finish the diagram as illustrated; don't bother to resize the other boxes.

9 Select the center box. From the *Object* menu, select *Shadow* and then *Embossed*. This command makes the object the same color as the background, with a shadow to offset it.



Working with Color

It was so much fun applying a fill to the previous diagram, let's apply color to the text and background also. You can apply this color scheme to all slides or to individual slides.



1 Go to Slide Master view.

2 Select *Color Scheme* from the *Slide* menu.

3 In the dialog box, click on the *Choose a Scheme* button.

4 Scroll through the *Background* color menu to find a color you want to use for the background. Blue is a pleasing and commonly used background color.

PowerPoint has a built-in color coordination system. As soon as you choose a background color, it suggests colors for the text and groups of six other coordinated colors to work in.

5 Select a text color. Be sure it will stand out against the background.

6 Click on one of the suggested groups of remaining colors. Click *OK*.

7 Click the *Shade Background* button.

8 Choose a shading direction and brightness as you did in filling the boxes a few minutes ago. Click *OK*.

9 Click on the *Apply to All Slides* button. Click *OK*.

Notice that the color scheme is applied. You can change the colors again if you wish.

10 Select *Color Scheme* from the *Slide* menu. In the dialog box, double-click on any item to change its color.

11 When you are satisfied with the color scheme, click *OK*.

Changing Colors on an Individual Slide

We want the title frame to differ from the other slides.

- 1 Go to slide view, and drag the slide changer bar up to get to slide 1.
- 2 Select *Color Scheme* from the *Slide* menu.
- 3 Double-click on the background color. Select a new color, and click *OK*.
- 4 Click on the *Apply to This Slide* button. Click *OK*. Only slide number 1's colors are changed.

You can also select individual text items or objects and use the *Text . . . Color* and *Object . . . Fill* commands to recolor those items. You may want to go back and change the title's color for better contrast.

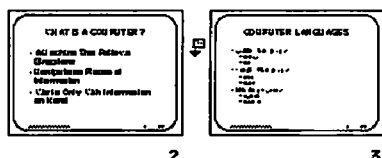
- 5 *Save* your work.

Using the Slide Sorter

You don't have to worry about creating all of your slides in exactly the right order. You can use the slide sorter to rearrange your show easily.

- 1 Click on the *Slide Sorter* button in the Tool Bar.

We want to make the last slide become the third slide in the presentation.



- 2 Scroll down to see the last slide. Press on it with the mouse, and drag it up until its icon is between the second and third slide.
- 3 When you release the mouse button, the slide is dropped into place.
- 4 Rearrange a few other slides.
- 5 Select *Slide Show* from the *File* menu to preview your presentation.
- 6 *Save* your work.

Rearranging Slides in Outline View

A less fun way to change the order of the slides is to do it while in outline view.

- 1 Switch to outline view.
- 2 Press the mouse on the slide icon next to the title of a slide (the cursor turns into a cross), and drag it up or down to its new position.

Working with Graphics

If you're less than confident in your drawing skills, you can easily import clip art into your PowerPoint show. There are many ways to do this. You are already familiar with pasting in objects via the Mac's Clipboard or Scrapbook. Here are two other methods:

- 1 Select *Open Clip Art* from the *File* menu.

This brings up a list of clip art files that are provided in the *Clip Art* folder which comes with the PowerPoint program. Each file has several

pieces of artwork in it. PowerPoint comes with over 500 pieces of clip art. Notice the small sample picture of the artwork in the Preview box. In fact, each clip art file is a PowerPoint presentation, from which you will copy the graphic into your own show.

2 Click on the *Business.ppt* file, and then click the *Open* button.

You now have two different files open. You will be in outline view of the clip art file.

3 Double-click on the seventh slide's number to view the graphic in slide view.

4 Click on the chip. Notice its boundaries.

5 Select *Copy* from the *Edit* menu.

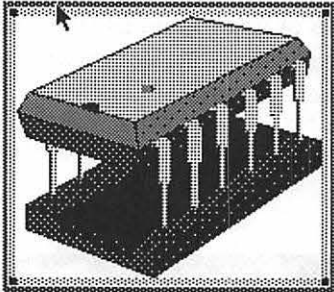
6 Close the file.

7 Switch back to your *Understanding Computers* file.

8 Go to slide view of the Third Generation of Computers slide.

9 Select *Edit . . . Paste*.

10 Resize the chip to make it larger by dragging a corner handle.



Recoloring a Graphic

When you bring in a graphic created in another program, you can use the *Recolor* command to change the colors in the imported graphic. In our case we want to have the computer chip be in colors that will contrast better against the background color.

1 Select the chip if it isn't already selected.

2 Select *Recolor Picture* from the *Object* menu.

The *Recolor* dialog box appears, showing you all of the colors found in the graphic.

3 In the *To* box of the top color, press down on the arrow and drag to a different color. Click on *Other Colors* and/or *More Colors* to get more choices.

4 Continue this process to change several other colors.

5 Click on the *Preview* button.

The *Change Fills* button is useful if you are working in black and white. It allows you to change one pattern into another.

6 Click the *OK* button to apply the new colors.

Some pictures such as scans and complex paint images cannot be recolored. If you had a graph on the screen you could use the *Recolor Graph* command.

Inserting a Picture

1 Click on the + to add a new slide.

2 Select *Insert . . . Picture* from the *Edit* menu.

- 3** Navigate to your floppy disk and *Powerin' Up* folder to find the *Univac* file. Select it.
- 4** Move to 100% view. This is a photo that was digitized using a flatbed scanner.
- 5** Drag the photo to the bottom center of the frame.

Copying Slides

Here's a quick way to merge slide shows. You simply open both shows and copy and paste entire slides.

- 1** Select *File* and *Open* to open the file called *Software Presentation*.
- 2** Switch to slide sorter view (the third view icon).
- 3** Hold down the *Shift* key, and select all three slides.
- 4** Select *Edit . . . Copy*.
- 5** Use the *Windows* menu to switch back to *Understanding Computers*.
- 6** Switch to slide sorter view.
- 7** Select *Edit . . . Paste*.

Cropping a Picture

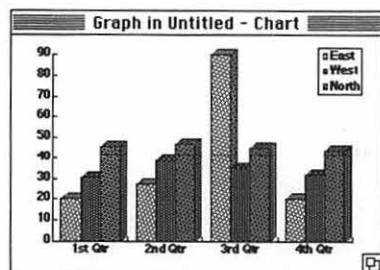
Unfortunately, there is more on the Univac scan than we want to use. Fortunately, in PowerPoint we can crop the picture, which hides part of the picture without actually deleting any part of it.

- 1** Double-click on the Univac slide. Go to 100% view.
We want to cut out the white borders of the picture.
- 2** Select *Crop Picture* from the *Object* menu. The cursor changes to the *Cropping* tool.
- 3** Center the cursor over one of the corner handles and drag inward, to crop off the unwanted portion of the picture.
- 4** Do the same with the other corner.
- 5** Save your work.

Creating Graphs and Charts

PowerPoint comes with a full-featured graphing program called Microsoft Graph. When you want to create a graph or chart, you are linked to this program. We'll just work with a few of the graphing features. You can also import graphs made in Microsoft Works or Excel. Let's create a bar chart to compare the sales of microcomputers with those of TVs and VCRs.

- 1** Add a new slide. Be in slide view, 50% view.
- 2** Select the *Graph* tool from the Tool Palette, and draw a box for the chart. Make it most of the size of the slide. It will take a minute for



the computer to link to Microsoft Graph. It may not work on your computer if the software was not installed correctly.

Two new windows will appear. One is the current graph, and the other is a small spreadsheet on which you enter your data.

- 3 Make the *Data Sheet* window active by selecting it from the *Window* menu.
- 4 Fill in the spreadsheet as illustrated in Figure 9.3. Use the Tab and arrow keys to move between cells. You may resize the window to make it easier to see.

	1984	1988	1990	1992
TYs	90	92	94	99
YCRs	11	34	40	68
Computers	2.3	28	30	44

Figure 9.3

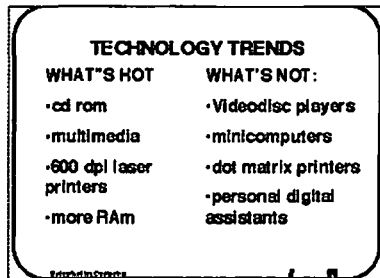
- 5 Switch to *Chart* from the *Window* menu.
- 6 From the *File* menu, select *Quit and Return to Understanding Computers*.
- 7 In the dialog box, click *Yes* to *Update Graph*.
- 8 You can move and resize the graph if desired.

You can always go back to the spreadsheet to change your data. There are also options to ungroup and reformat the chart. You can create many different types of charts.

Text Boxes and Columns

We want to create a slide with two columns of text. This involves creating text boxes.

- 1 Insert a new slide.
- 2 Select the *Text* tool.
- 3 Starting outside of any existing text box, press-and-drag the mouse diagonally to create a text box across the left half of the screen.
- 4 Type in these lines, hitting a *Return* after each line:
 WHAT'S HOT:
 CD-ROM
 Multimedia
 600 DPI Laser Printers
 More RAM
 Laptops
- 5 Now to create a second text box. Select the *Text* tool.



6 Starting outside of any existing text box, drag a text box across the **RIGHT** half of the screen.

7 Type in these lines:

WHAT'S NOT:

Dot Matrix Printers

Videodisk Players

Minicomputers

P.D.A.s

8 Click in the *Title* box, and type **TECHNOLOGY TRENDS**.

9 Use the *Selection* tool to resize and move the three text boxes into final position.

10 Save your work.

11 Select *Slide Show* from the *File* menu to run the slide show.

It's nice, but we could jazz it up with some dissolve effects as the slides change.

Running the Show

Transition Effects and Timing

PowerPoint has about forty different effects you can use to dissolve between slides in a show. These have utility only in giving on-screen slide shows or outputting to a videotaped presentation.

1 Move to slide 1 and be in slide view.

2 Choose *Transition* from the *Slide* menu.

The transition will be used when the show moves from slide 1 to slide 2.

3 Hold down on the effect box, and drag down to select an effect.

The effect will be exhibited in the box with the picture of the cow dog and key.

4 Click on a speed for the effect. Again notice the demo.

5 Click in the *Advance - Automatically after - seconds* box, and type in 5. Click **OK**.

6 Move to slide 2, and repeat the process using different options.

7 Move to slide 3, select *Transition* again, but this time use *Random Effects* as the effect.

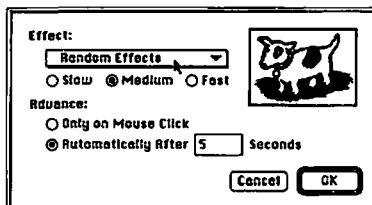
Random Effects causes a different effect to be used each time the show is run. Here's another way to add transition effects.

1 Move to slide sorter view.

2 Click once on the fourth slide.

3 Click the *Transition* button on the Tool Bar.

4 Choose some options from the now familiar dialog box.



From the slide sorter view you can just drag down on the *Transition Name* box to change effects. We've got a bunch of transitions to apply, and this is getting tedious, so let's use a power technique.

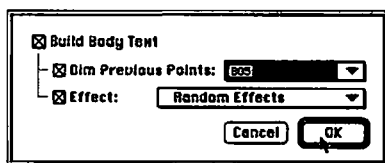
- 5 Still in slide sorter view, click once on the fifth slide to select it.
- 6 Hold down on the *Shift* key, and click on each of the remaining slides. Remember to scroll down to see all of the slides.
- 7 Click the *Transition* button in the Tool Bar.
- 8 Select some options for the effects. *Random Effects* might be good to use for 5 seconds.

Now the effects you choose will be applied to all of the selected slides.

- 1 Click once on slide 1.
- 2 Click the *Slide Show* button, kick back, and enjoy the show! Manual advances in slides 3 and 4 will require a mouse click.
- 3 Save your work.

Build Slides and Flying Text

Have you ever seen a presentation where the speaker used slides that added a line to the existing bullet chart? These are called build slides and are quite easy to create in PowerPoint.



- 1 Be in slide view of the What Is a Computer slide.
- 2 Select *Build* from the *Slide* menu.
- 3 In the dialog box, click on *Build Body Text*.
- 4 Click on *Dim Previous Point*.
- 5 Drag down to select a dark color.
- 6 Click on *Effect*.
- 7 Drag down to select *Random Effects*.
- 8 Click *OK*.
- 9 Without leaving this slide, click the *Slide Show* icon. Watch your text fly!
- 10 Repeat this process with another bullet slide if desired.

Rehearse and Run Your Presentation

Good public speakers know that they need to rehearse their presentation before giving it. In PowerPoint you can rehearse with the computer. In this section we will also explore some custom ways to run the slide show.

Rehearsing a Show

- 1 Select *Slide Show* from the *File* menu.

The *Slide Show* dialog box appears. Now you can set three options. Instead of rehearsing the whole show, let's just practice with a part of it.

- 2 In the *Slides:* line, click on the *From* button and type in 3 to 10 in the boxes.
- 3 Let's rehearse *Manual Advancing* of the slides (with a mouse click).
- 4 Click on the *Show* button. Move through the show.

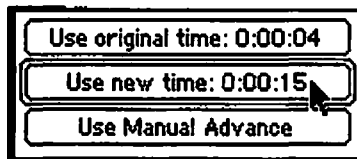
Adjusting Slide Timings

- 1 Select *Slide Show* again from the *File* menu.
- 2 Click the *Rehearse New Timings* button.

The *Loop Continuously Until Command-Period* box can be used to run a show in a continuous demo mode. Don't select it now.

- 3 Click on the *Show* button.

Now the set timings will be displayed, and you can adjust the timings.



- 4 To use new timings, just click on the *Use New Time* button when it displays the number of seconds you want to use.
- 5 Manual advances will have existing times grayed out. Click on the *Use New Time* button to change it to timed advance.
- 6 Click on the *Use Original Time* button to avoid making a change.
- 7 At the end of the rehearsal, select *Yes* to save the new slide timings.

Keyboard Controls

While running your show, you can use the computer's keyboard to override the normal way you click linearly through the presentation. Here is a list of what some keys on the keyboard will do when you press them during a slide show.

- 1 Select *Slide Show* from the *File* menu.
- 2 Click the *Help* button; a list of keyboard commands is displayed. Click *OK*.
- 3 Click the *Show* button. Try each of these keyboard controls while the show is running.
- 4 Use the Spacebar, *N* key, right arrow, or down arrow to move to the next slide.
- 5 Hold the *Command* key down while you click the mouse to return to the previous slide. Other ways to do this include hitting *P*, left arrow, or up arrow.
- 6 Type in a slide number followed by a *Return* to jump to that slide.
- 7 Type a *B* to black out the screen. Type another *B* to bring back the screen.
- 8 I bet you can guess what *W* does.
- 9 To show the pointer, type *A* (for Arrow). Another *A* hides it.
- 10 In a timed show, typing an *S* (for Stop) pauses the show and another *S* (for Start) restarts it.
- 11 Pressing *Esc* or *Command-period* ends the slide show.

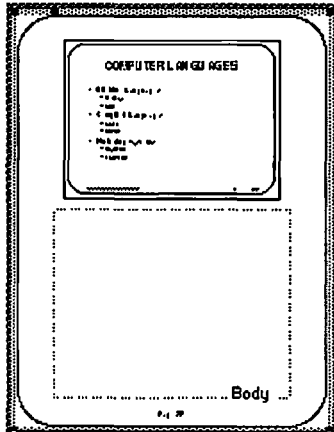
Cool Secret Number Seventy-Seven

You can draw directly on a slide while giving a show by using this little trick:

- 1 Click on the *Slide Show* button.
- 2 Type an *A* to get the pointer to show. Press-and-hold the mouse until the pointer turns into a dot.
- 3 Drag the dot as if it were a pencil tool. Pressing *Shift* before drawing constrains the drawing to a straight line. Your drawing will be erased when you advance to the next slide.

Creating Speaker's Notes and Handouts

Most public speakers would not dare make a presentation without using some notes. PowerPoint can make some of the fanciest notes you have ever seen, requiring very little time or effort. As in creating slides, you begin by creating a master page.

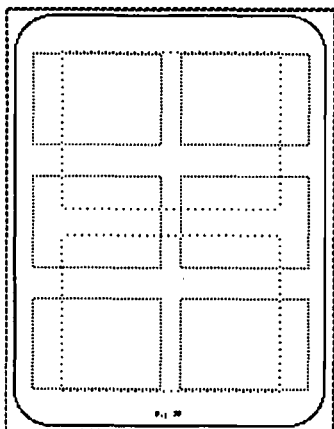


- 1 Choose *Notes Master* from the *View* menu.

One note page will print out for each slide in the show. Each page will have an image of the slide with a text body under it, including the notes you type in. In master view, you can set up the text formatting and any border, numbering, or header items.

- 2 Using the *Rounded Corner Box* tool, create a border for the entire page. Set the *Fill* to none, and select a line style.
- 3 Go to slide 1, and select *View Notes*.
- 4 Click the *Zoom In* button to get to 100% view in order to better see what you are about to type.
- 5 Click the *Text* tool.
- 6 Type in the text box: *Before running the presentation, remember to pass out handouts.*

As in outline view, you can use the arrow icons to indent levels. Not every slide need have notes added to it.



Creating Handouts

You can provide your audience printed handouts of your presentation by creating handouts easily. These pages can have either two, three, or six slides on each page. As with slides and notes, you can place master items on a handout master you create.

- 1 Choose *Handout Master* from the *View* menu.

You cannot preview the slides on your handout page; instead you will just see dotted lines where the slides will be placed. There are three sets of lines, for two, three, or six per page formats. Let's add the name of the presentation and your name to each page.

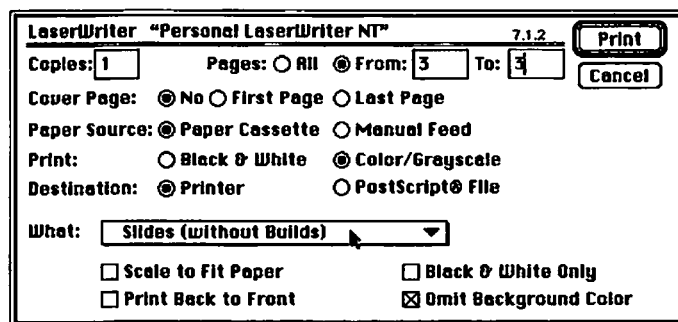
- 2 Select the *Text* tool. Move to 100% view. Scroll down to the bottom of the page, and click in the bottom left corner of the page. Type in the title of your show. Apply a font, size, and style.
- 3 Select the *Text* tool again, and click in the bottom right corner of your page. Type in your name.
- 4 Move and format the text if necessary.
- 5 Drop back to 50% view. Use the *Shape* tool to select a rounded corner rectangle, and draw a border for the entire page. Make the fill *None*, and apply a line style.
- 6 Save your work. We will not save any changes on the file past this point.

If desired, you could draw lines under each frame for students to take notes on. When you print, you will have the option of printing handout pages. In fact, let's do some printing now.

Printing

Printing in PowerPoint is pretty straightforward, but you have a few more output options than in other programs. One of the most pressing points is how to handle colorful images on a black and white printer.

- 1 Select *Print* from the *File* menu.
- 2 Hold down on the *What* box, and notice the different types of printouts. Let's just print out one slide.
- 3 Drag down and select *Slides (without builds)*, which prints all of the levels of a build slide as one frame.
- 4 In the *Pages* area, click in the *From* and *To* boxes and type in 3 to 3.
- 5 Select *Omit Background Color*. This drops out the colored fills and shading in the background. Colored objects will print out as a series of grays. Selecting *Black and White Only* would eliminate printing shades of gray also.
- 6 If it's not already marked, click on the *Scale to Fit Paper* button. This option scales slides to automatically fit the printer paper.
- 7 Click the *Print* button.



You could use this printout as a transparency master to produce traditional overheads or even put special transparency film directly in your laser printer. While we're waiting for that printout, let's print some other items.

- 1 Select *Print* from the *File* menu.
- 2 In the *Pages* area, have *All* selected.
- 3 In the *What* box, drag down to select *Handouts (6 slides per page)*.
- 4 Click on the *Omit Background Color* box.
- 5 Click the *Print* button.

It may take several minutes for your printouts to come out of the printer; you can continue to work in the meantime. If you have access to a color printer such as an inkjet printer, you can print out some very attractive transparencies. A service bureau can print out spectacular full-color slides, transparencies, or laser prints for you.

Revising the Presentation by Applying a Template

With all of the work you've just done, you probably won't believe it, but we are going to have you completely revise your presentation's format. Luckily this will only take a minute, and you still will have the original presentation saved on your disk.

- 1 Change into slide sorter view.
- 2 Click on slide 1.
- 3 Click on the *Apply Style* button (the eyedropper icon) or select *Edit-Pick Up Scheme*. This picks up the styles and colors of the first slide.
- 4 Click on the second slide. Select *Edit-Apply Scheme* (or use the second eyedropper icon). The copied formatting is applied to this slide.

This could be time-consuming for reformatting an entire presentation. Fear not, there is a faster way.

- 1 You can do this in any view, but slide sorter view is dramatic.
- 2 Choose *Apply Template* from the *File* menu.

PowerPoint comes with 160 templates (40 designs in four different output formats) which include background design, color scheme, and text formatting. Plus, you can make and save your own templates.

- 3 If it's not already open, select the *35mm slide* folder and open it.
- 4 Click once on several different templates, and notice that they are displayed in the preview area.
- 5 Find one you like, and double-click on it.

Your entire presentation will be reformatted. You could override some of this formatting by toggling it off using the *Follow Master* command in the *Slide* menu.

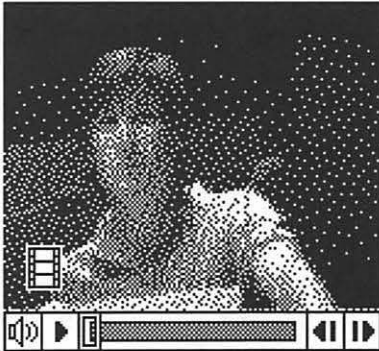
NOTE: You should normally apply a template when first beginning to create your presentation.

- 6 Switch to slide view, and move through your show to see the new formatting.

Advanced Features and Other Commands

QuickTime Movies

PowerPoint has one more secret up its electronic sleeve. This involves inserting video clips in your presentation. To do this you must have the **QuickTime** extension installed on your Macintosh. QuickTime is a little program that Apple includes with new Macs that allows the computer to play digital movie clips. The video can be brought into your computer from a VCR or videodisc, but beware, these clips are memory hogs. A 5-second movie takes up about 300 K of disk space. IF YOU CAN FIND A MOVIE ON YOUR COMPUTER SYSTEM, here's how you can import it into PowerPoint.



- 1 Add a slide at any point in your presentation.
- 2 Select **Insert** from the **File** menu, and then slide down and over to **Movie**.
- 3 Navigate to find a movie file, select it, and click the **Insert** button.
- 4 Double-click on the movie to play it.

You can move through a movie by dragging the slider bar below it. You can move the position of the movie on the screen by dragging it and resize its window by dragging a corner handle. This tool has tremendous potential in the future when it's a bit more refined.

Other Commands

We covered almost all of PowerPoint's powerful arsenal, but there are a few features and commands we have not explored. We don't have time to work with these, but let's look at a brief explanation of them.

The PowerPoint Viewer

Microsoft provides a really cool little utility as a part of the program called the PowerPoint Viewer. This viewer is what technoids call a **run-time version**. In other words, this program can run your PowerPoint presentations without having to have the full program installed. The best part is that Microsoft gives you permission to copy the Viewer. So as a student you could create your presentation using a school's full version of PowerPoint and use it on your own system with a copy of the Viewer. The Viewer can only be used to run a show, not to create or change a presentation.

Publish and Subscribe

Apple has provided a method in System 7 that allows users to link parts of a file to other files. For example, a graph created in Microsoft Works' spreadsheet could be linked to a graph in PowerPoint. When the data in one application are edited, the changes will also be applied in the other application. This process primarily involves identifying and naming links in dialog boxes.

Insert Object

We've used the *Insert* command in the *Edit* menu to place a picture, an outline, and even a movie into your presentation, but there is also an option to insert an object. An object can be a graph, chart, or equation created in another application. The exciting part of this tool is that by double-clicking on the object when it is in PowerPoint, you will be back in the application where it was created. After you make changes, you can select *Update* and you will jump back to PowerPoint, with the changes in effect.

Baseline (Text Menu)

The Baseline command adjusts the position of subscripts and superscripts.

Alignment (Text Menu)

As in a word processor, the Alignment command positions the text in a column to be flush with different sides of the text box.

Bullet (Text Menu)

When you select the Bullet command you can choose all types of symbols to serve as bullets. The choice is determined by which font you select. You can even change the size and color of these custom bullets.

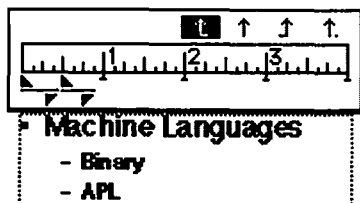
- 1 Have some text containing bullets selected.
- 2 Select the *Bullet* command from the *Text* menu to see what this dialog box looks like.
- 3 Click on various symbols. Try some other fonts and colors.
- 4 Select OK.

Line Spacing (Text Menu)

The Line Spacing option works like the Leading option in PageMaker. This allows you to alter how much space is between lines of type. One option in this dialog box allows you to place more space between paragraphs than between lines of body text.

Show Ruler (Text Menu)

The text ruler is very similar to the one found in Microsoft Works. In this ruler you can adjust indent markers and tabs. In the ruler you can change the indents for sublevels of an outline. Each text box has its own ruler.

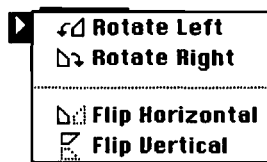


Replace Fonts (*Text Menu*)

The Replace Fonts command is used to replace one font with another throughout a presentation. This is useful when you change printers.

Recolor Graph (*Object Menu*)

You won't normally see the Recolor Graph command. When you place or create a graph, the Recolor Picture command changes into the Recolor Graph command. This works pretty much the same way as Recolor Picture does.



Rotate/Flip (*Object Menu*)

Just as in DeskDraw, you can spin and flip PowerPoint objects around. You cannot flip or rotate text or pictures, and you can only rotate objects in 90-degree increments.

Align (*Arrange Menu*)

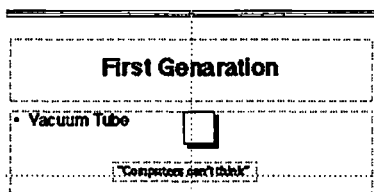
The Align command works the same way as in Deskdraw. You use the Shift key to make multiple selections, then choose an alignment option to line up the objects.

Bring Forward/Back (*Arrange Menu*)

As in any draw program, in PowerPoint objects are stacked on top of other options. You access the Bring Forward/Move Back commands to move an object on top of or behind other objects.

Group/Ungroup/Regroup (*Arrange Menu*)

After doing a multiple selection, you can assemble the objects using the Group command. If you later need to edit the individual pieces of it, you Ungroup the assembly. Regroup reassembles the last group of objects that you ungrouped.



Show Guides/Edges (*Arrange Menu*)

Show Guides creates a dotted cross on the screen. This serves as an alignment tool and does not print out. Show Edges displays a dotted outline around all objects.

Delete Slide (*Slide Menu*)

I bet you know what this command does. First select the slide in any view, and then axe it.

Reapply Master (*Slide Menu*)

If you've changed the formatting of an individual slide, you can use the Reapply Master command to restore it to the formatting of the Master Slide.

Add Title/Body (*Slide Menu*)

You can select some text and then use the Add Title/Body commands to identify the text as the title or body object.

Microsoft Graph

PowerPoint actually has a whole other program imbedded inside of it. When you select the Graph tool in the Tool Palette, you automatically go into Microsoft Graph. This works much like the charting features of Microsoft Works. The simple features of this application were covered in a previous section of this tutorial. If you want an in-depth explanation, you are invited to refer to the 90 pages in the PowerPoint manual.

Quitting

- 1 Simply choose *Quit* from the *File* menu.

You do not need to close your documents first; the Quit command closes all documents before quitting. The computer will ask you if you want to save changes.

- 2 Select *Don't Save* for all files.

Assignment

In this project you will first create an original PowerPoint presentation of six slides. After printing it out, you will add four more slides, rearrange and reformat the presentation, and then print it out again. The second half of the assignment is for you to put together a presentation of your Computer Assisted Research Project, which you have worked on in the other chapters of this book.

Part 1—Directed Presentation

Create an original file on any subject matter you wish. The file should have six slides in it.

1. Begin by applying a template from the *35mm slide* folder.
2. Add a title, date, and page number to the Slide Master.
3. Create the text for six slides in outline view.
4. Have at least one bullet chart, with two sublevels.
5. Insert two pieces of clip art.
6. Recolor one picture.
7. Resize and crop one picture.
8. Add the build effect to your bullet chart(s).
9. Create some original graphics, using all of the graphics tools.
10. Put some text inside an object, and use Fit Text to resize the object to fit the text.
11. Flip, rotate, shade, or shadow some objects.

12. Create at least one note page; include your name on it.
13. On the Handout Master, include your presentation's name, your name, and the date.
14. Use the spelling checker to correct any misspelled words.
15. Print out one slide. Print out one note page. Print out your outline. Print out a handout with all six slides on one page (without builds).

Now you will add four more slides and reformat them as follows:

16. Add a slide, and create a pie chart using the Graph module.
17. Change the color scheme for the first slide.
18. Open the *Understanding Computers* file, and copy two slides. Paste them into this presentation.
19. Add a slide with three columns of text in it.
20. Rearrange the order of the slides.
21. Add slide transitions and slide timings.
22. Run your presentation.
23. Print out a handout of the whole show, with six slides per page (without builds).

Part 2—C.A.R.P. Presentation

Create a PowerPoint presentation that summarizes the research you have compiled for your Computer Assisted Research Project. I hope you will have the opportunity to present it to a group. The presentation should include the following items:

- at least eight slides.
- a graph or chart.
- some original graphics.
- some imported graphics, perhaps a scan.
- a border and slide number on the Slide Master.
- an attractive background and color scheme.
- a printed handout and note pages.

Final Pep Talk

Well, we've reached the end of this book, and you've come a long way, but you have not finished learning. There are always new applications coming out, and they're getting more complicated, not less. However, with the fundamentals you have developed in this book, you will be able to pick up the conceptual nature of other programs. Now you are up to speed with the basics; in fact, with PageMaker and PowerPoint you have explored some highly powerful and professional programs. We've covered a lot in a small amount of time, and now to really absorb the knowledge you need to apply it. A perfect way to do this is to complete a Computer Assisted Research Project, using the applications you've learned in this book. Good luck and have fun!

APPENDIX AMenus for the Software
Used in This Book**System 7 Finder Menus****About This Macintosh...**

- Smart Labels Plus**
- Alarm Clock**
- Calculator**
- Chooser**
- Control Panels**
- Key Caps**
- Note Pad**
- Puzzle**
- Scrapbook**

File

- New Folder** ⌘N
- Open** ⌘O
- Print** ⌘P
- Close Window** ⌘W
-
- Get Info** ⌘I
- Sharing...**
- Duplicate** ⌘D
- Make Alias**
- Put Away** ⌘Y
-
- Find...** ⌘F
- Find Again** ⌘G
-
- Page Setup...**
- Print Window...**

Edit

- Undo** ⌘Z
-
- Cut** ⌘H
- Copy** ⌘C
- Paste** ⌘V
- Clear**
- Select All** ⌘A
-
- Show Clipboard**

Label**None**

- Essential**
- ✓ **Hot**
- In Progress**
- Cool**
- Personal**
- Project 1**
- Project 2**

View

- by Small Icon**
- ✓ **by Icon**
- by Name**
- by Size**
- by Kind**
- by Label**
- by Date**

Special

- Clean Up Desktop**
- Empty Trash...**
-
- Eject Disk** ⌘E
- Erase Disk...**
-
- Restart**
- Shut Down**

Microsoft Works 3.0 Word Processor Menus

MICROSOFT WORKS 3.0

WORD PROCESSOR MENUS

File	Edit	Document
New... %N	Undo %Z	Copy Ruler Settings %K
Open... %O		Paste Ruler Settings %Y
Close %W	Cut %H	Spelling... %L
Close All...	Copy %C	Thesaurus... %D
Save %S	Paste %V	Spelling Options...
Save As...	Clear	
Save Workspace...	Select All %A	Insert As Footnote %E
Page Setup...	Find... %F	Insert Current Date
Print... %P	Find Again %G	Insert Current Time
Print One	Replace... %H	Insert Page Break
Print Preview	Go To Page...	
Open Mail...	Preferences...	Merge Fields... %M
Send Mail...		Show Field Data
Quit %Q		Word Count...
Font	Style	Window
Aventura	✓ Plain	Help... %?
B UAG Rounded Bold	Bold %B	Draw On %J
Blast	Italic %I	Show Tools %T
CgMetropolis	Underline %U	Hide Ruler %R
Chicago	Outline	Show Clipboard
Chicago SLP	Shadow	
Cottonwood	Alignment ▶	Show Header
Courier	Spacing ▶	Show Footer
DomesticTyper	9	Show Footnotes
Extravaganza	10	Macro ▶
Freestyle Script	✓ 12	✓ Lesson Plan Letterhead (WP)
Geneva	14	
Helvetica	18	
Hobo	Increase Size %]	
Linotext	Decrease Size %[
Monaco	Format Character...	
Mystical		
New York		

DeskPaint Menus

DESKPAINT MENUS

File	Edit	Options	Effects
New... ⌘N	Undo ⌘Z	Auto Trace...	Lighten ⌘+
Open... ⌘O	Cut ⌘H	Brush...	Darken ⌘-
Browse...	Copy ⌘C	Charcoal...	Trace Edges ⌘L
Close ⌘W	Paste ⌘V	Draw Options...	Invert
Save ⌘S	Clear	Eraser...	Sharpen
Save As...	Select All ⌘A	Lasso...	Soften
Acquire...	Limited Undo	Marquee...	Smooth
Select Source...	Duplicate ⌘D	Smoothing...	Filter Options...
Print Preview... ⌘I	Preferences...	Spray Can...	Apply Filter ⌘F
Page Layout... ⌘Y		Patterns...	Fill Options...
Page Setup... ⌘J		Color Palettes...	Image Control...
Print... ⌘P		Convert Image to Orientation ▶	Special ▶
Quit ⌘Q			Special Options ▶
Window	Font	Size	Style
Show Ruler ⌘H	AnimalsP01	9 Point	✓Normal ⌘T
Snap to Grid ⌘K	Arial	10 Point	Bold ⌘B
Actual Size ⌘1	Arial Narrow	✓12 Point	Italic
Reduce ⌘R	Avant Garde	14 Point	Underline ⌘U
Enlarge ⌘E	B VAG Rounded Bold	18 Point	Outline
Help Display ▶	Book Antiqua	20 Point	Shadow
Untitled-1	Bookman	24 Point	Condensed
	Bookman Old Style	28 Point	Enlarged
	Brookfield	30 Point	✓Align Left
	Century Gothic	36 Point	Align Center
	Century Schoolbook	42 Point	Align Right
	CgBehemothSeCd	48 Point	✓Single Space
	CgBenguiatFrisky	54 Point	1 1/2 Space
	CgBernhardModernRoman	63 Point	Double Space
	CgBetonExtraBold	72 Point	
	CgDavisonAmericana	127 Point	
	CgEgizianoBl	Other...	
	CgEuropaBd		
	CgFuturaMaxiDe		
	CgFuturaMaxiLt		

Microsoft Works 3.0 Database Menus

MICROSOFT WORKS 3.0 DATABASE MENUS

File	
New...	⌘N
Open...	⌘O
Close	⌘W
Close All...	
Save	⌘S
Save As...	
Save Workspace...	
Page Setup...	
Print...	⌘P
Print One	
Print Preview	
Open Mail...	
Send Mail...	
Quit	⌘Q

Data	
Next Record	⌘=
Previous Record	⌘-
Insert Record	⌘I
Delete Record	
Sort...	
Match Records...	⌘M
New Filter...	
Define Filter...	⌘K
Delete Filter	
Duplicate Filter...	
Show All	
✓Untitled Filter 1	

Edit	
Undo	⌘Z
Cut	⌘H
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
Find...	⌘F
Duplicate Previous	⌘E
Fill Down	⌘D
Preferences...	

Window	
Help...	⌘?
Show Tools	⌘T
Show Clipboard	
Show Header	
Show Footer	
Macro	▶
✓Untitled1 (DB)	

Form	
Data View	
List View	⌘L
✓Design View	
Place Field...	
Format Field...	
Field Name...	
Delete Field	
Format Character...	
✓Show Field Border	
New Form...	
Set Up Form...	
Delete Form	
Duplicate Form...	
✓Untitled Form 1	

Report	
✓Report View	
New Report...	
Report Name...	
Delete Report	
Duplicate Report...	
✓Untitled Report 1	

Totals	
Field 1	
+## Sum this Field	
## Subtotal when Contents Change	
## Subtotal when 1st Char Changes	
## New Page after Subtotal	

Microsoft Works 3.0 Spreadsheet Menus

MICROSOFT WORKS 3.0

SPREADSHEET MENUS

File	
New...	⌘N
Open...	⌘O
Close	⌘W
Close All...	
Save	⌘S
Save As...	
Save Workspace...	
Page Setup...	
Print...	⌘P
Print One	
Print Preview	
Open Mail...	
Send Mail...	
Quit	⌘Q

Edit	
Undo	⌘Z
Cut	⌘H
Copy	⌘C
Paste	⌘V
Clear	
Paste Special...	
Move...	
Select	▶
Find...	⌘F
Paste Function...	
Insert	⌘I
Fill Right	⌘R
Fill Down	⌘D
Absolute Reference	⌘E
Preferences...	

Format
Format Cells... Column Width...
Protect Cell
Set Page Break Remove Page Break
Freeze Titles Horizontal Freeze Titles Vertical
Format Character...

Arrange	
Bring To Front	⌘F
Send To Back	⌘B
<hr/>	
Group	⌘G
Ungroup	⌘U
<hr/>	
Format Character...	
Alignment	▶
Hide Column Borders	
<hr/>	
Vertex Snap	
Snap To Grid	
Grid Settings...	
<hr/>	
Crop	
Spread Text	

Options	
<input checked="" type="checkbox"/>	Show Grid
<input checked="" type="checkbox"/>	Show Values
<input type="checkbox"/>	Show Formulas
<input checked="" type="checkbox"/>	Show Note Indicator
<input type="checkbox"/>	Open Cell Note...
<hr/>	
Manual Calculation	
<input type="checkbox"/>	Calculate Now Σ =
<hr/>	
Sort...	

Window	
Help...	⌘?
Draw On	⌘J
Hide Tools	⌘T
Show Clipboard	
Show Header	
Show Footer	
Macro	▶
✓Untitled2 (\$\$)	

Chart

New Chart...

Define Chart...

Touch Up

✓ **Chart 1**

Pagemaker 4 Menus

PAGEMAKER 4 MENUS

File

New...	⌘N
Open...	⌘O
Close	
Save	⌘S
Save as...	
Revert	
Export...	
Place...	⌘D
Links...	⌘=
Book...	
Page setup...	
Print...	⌘P
Quit	⌘Q

Edit

Undo edit	⌘Z
Cut	⌘H
Copy	⌘C
Paste	⌘V
Clear	
Select all	⌘A
Find...	⌘F
Find next	⌘,
Change...	⌘G
Spelling...	⌘L
Show clipboard	
Preferences...	
Edit layout	⌘E

Options

✓ Rulers	⌘R
Snap to rulers	⌘[
Zero lock	
✓ Guides	⌘J
Snap to guides	⌘U
Lock guides	
Column guides...	
Autoflow	
Index entry...	⌘;
Show index...	
Create index...	
Create TOC...	

Page

✓ Fit in window	⌘W
25% size	⌘0
50% size	⌘5
75% size	⌘7
Actual size	⌘1
200% size	⌘2
400% size	⌘4
Go to page...	⌘G
Insert pages...	
Remove pages...	
✓ Display master items	
Copy master guides	

Type

Font	▶
Size	▶
Leading	▶
Set width	▶
Track	▶
Type style	▶
Type specs...	⌘T
Paragraph...	⌘M
Indents/tabs...	⌘I
Hyphenation...	⌘H
Alignment	▶
Style	▶
Define styles...	⌘3

Element

Line	▶
Fill	▶
Bring to front	⌘F
Send to back	⌘B
Text rotation...	
Text wrap...	
Image control...	
Rounded corners...	
Define colors...	
Link info...	
Link options...	

Windows

Help...	
✓ Toolbox	⌘6
✓ Scroll bars	
Style palette	⌘Y
Color palette	⌘K
menus in pm	

Powerpoint 3 Menus**File**

New... ⌘N
 Open... ⌘O
 Open Clip Art...
 Close ⌘W
 Save ⌘S
 Save As...
 Apply Template...

Slide Setup...
 Page Setup...
 Print... ⌘P

Slide Show...

Quit ⌘Q

Window

Untitled

Text

Font ▶
 Size ▶
 Style ▶
 Color ▶
 Base Line...

Alignment ▶
 Bullet...
 Line Spacing...

Show Ruler ⌘R
 Fit Text...

Find/Replace... ⌘F
 Spelling...
 Replace Fonts...
 ✓ Smart Quotes

Edit

Undo ⌘Z
 Cut ⌘H
 Copy ⌘C
 Paste ⌘V
 Paste Special...
 Clear

Select All ⌘A
 Duplicate ⌘D
 Edit Text ⌘E

Insert ▶
 Create Publisher...
 Subscribe to...
 Subscriber Options...

Pick Up Style
 Apply Style

View

25%
 33%
 ✓ 50%
 66%
 Actual Size
 200%
 400%

✓ Slides
 Notes
 Slide Sorter
 Outline

Slide Master
 Notes Master
 Handout Master
 Outline Master

Object

Fill ▶
 Line ▶
 Line Style ▶
 Arrowheads ▶
 Shadow ▶
 Shadow Offset...

Recolor Picture...
 Crop Picture

Change Shape ▶
 Scale...
 Rotate/Flip ▶

Slide

New Slide ⌘L
 Delete Slide

Color Scheme...
 Transition...
 Build...
 Reapply Master
 Follow Master ▶

Add Title
 Add Body

Arrange

Align ▶

Bring to Front
 Send to Back
 Bring Forward ⌘=
 Send Backward ⌘-

Group ⌘G
 Ungroup ⌘H
 Regroup ⌘J

✓ Snap to Grid
 Show Guides ⌘Y
 Show Edges

Booming Sand Dunes

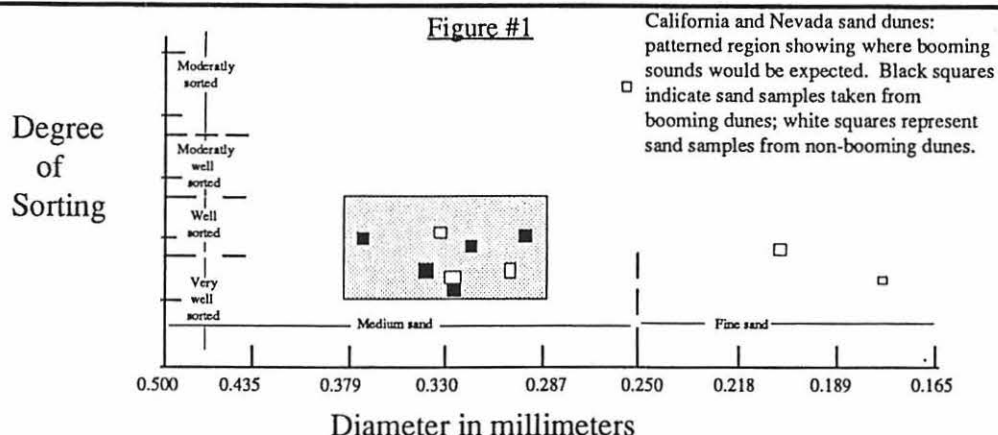
Despite most people's concept of a desert, few desert areas are composed of vast, undulating seas of sand. Out of those areas that are made up of sand dunes, only a few of these dunes exhibit the "booming" phenomenon (Trexler, 1986). This paper will describe this effect and list some of the theories attempting to explain it.

Dunes form where there is a sufficient quantity of tiny rock particles, a consistent wind pattern and velocity, aridity, and little or no vegetation. The wind creates a winnowing process that carries away the finest particles, and separates the tiny rock grains from the larger rock bits, by lifting the grains high enough to cause them to bounce along in what is called a saltating motion.

Where the wind is blocked, the grains drop and become shock absorbing surfaces that slow down other saltating grains. Eventually the particles build up a dune which will have an angle of repose

on the downwind side of about 34° from the horizontal. Dunes travel by piling up enough grains at the crest so that the angle of repose becomes over-steep, creating small avalanches on the leeward, or slip-face, side (Bagnold, 1954).

With certain dunes, under special conditions, these small dune avalanches are accompanied by a low-pitched tone that increases in volume, till the sound can be compared to a propeller plane flying at a low altitude. This booming tone can last up to a minute (Lewis, 1936). Only about thirty dunes worldwide have been identified as "booming dunes," and of these, five are located in the deserts of Nevada and California (Criswell, 1975 and Trexler, 1986). Researchers have looked carefully at these regions. They have closely examined the dunes as to the rock type, size and shape of the grains, and the moisture content of the sand. The sand source, distance travelled, wind speed and direction have all been taken



Teaching Children How To Ski



The key points to teaching children are:

- Make it fun and enjoyable.
- Know about different stages of learning.
- Know about Perceptual - Motor skill development for children.
- Understand how a child thinks.

5/28/91,1

Teaching Children How To Ski



When you first approach a child in a ski lesson:

- Meet them at their level. (That means getting on your hands and knees to say, 'Hi'.)
- Make them feel comfortable and let them know what they're going to be doing.
- Talk to the parents to see if there are any special concerns.

Note: This is a time to ask the parents if their child has sunscreen, sunglasses, has gone to the bathroom, etc.

5/28/91,2

Teaching Children How To Ski



After greeting the child you want to introduce them to their equipment.

- Show them their skis, binding, poles, and boots.
- Explain briefly to the child the different parts of the ski.
- Show them how to get in and out of their binding.

5/28/91,3

Teaching Children How To Ski



After the introduction to their equipment have the child:

- Walk around in their ski boots. (This simple exercise can tell you a lot about the physical capabilities of the child.)
- Play games such as Follow the Leader and Simon Says.
- Have the child step into their skis and do some balancing exercises.

5/28/91,4

Teaching Children How To Ski



Next, you want to introduce the child to a 'straight run.'

- Push the child several feet up the hill. Turn them around, holding the child at all times. (This will give them a sense of security.)
- Explain to the child that all they are going to do is slide down the hill.
- Reassure the child, step away and walk backward as the child slides to you.
- Give them a big of hug and let them know that they just skied.

5/28/91,5

Teaching Children How To Ski

Do the straight run several times. This will help give the child the needed confidence they must have to move on.

- You can vary the straight run by having the child 'hop like a rabbit' or pick up one ski and then the other as they slide down the hill.

5/28/91,6

Teaching Children How To Ski

APPENDIX C

Using On-Line Information and CD-ROM Databases

A great way to do research, find useful information, or just have fun is to go **on-line**. There are many different names for this process: going on-line, **telecommunications**, electronic information retrieval, telecomputing. Whatever you call it, it means connecting to another computer at a remote site. In contrast, a **local area network (LAN)** refers to other computers within a building. When you connect several Macs to one laser printer, you are using a LAN. Another use of a LAN is as a **file server**, where you share files and applications.

With telecommunications you can tap into vast banks of information. Sometimes this information is free to access and other times quite costly. But time is money and with on-line information retrieval you can find in minutes what might take you days in a library, if you are able to find it at all. Your library might not have the *Nova Scotia Journal of Educational Technology*, but on-line you have access to a wider universe. In fact, most libraries are now on-line and you can search their collections from your computer or link via their computers to even more libraries. The Information Age is truly here. Here's how to get started on the information highway.

Buying a Modem

To go on-line you'll need four things: a **modem**, telecommunications software, an access account, and any microcomputer. The word modem stands for modulator-demodulator. This is a device that converts a computer's digital data to an audible analog signal (telephone signal). On the other end of the line, another modem translates the sound back into digital data. Modems cost between \$50 and \$300; many also have the ability to send and receive faxes. The speed of a modem is called its **baud rate** (pronounced bod). This refers to the number of **bits per second (bps)** which can be transmitted. Generally speaking, the faster the better. The minimum standard today is 2400 bps. 9600 baud modems are faster, but they may be prone to errors if the phone line is noisy. For teachers, the greatest obstacle in going on-line may be in the expense of having a phone line in the classroom. When you are traveling, you can plug your modem into any modular phone connection.

Some modems are on a circuit board inside of a computer. These internal modems are often built into laptop computers. External modems are

small boxes which sit next to or on top of your computer. In the near future you will probably be able to go on-line via your television cable system at extremely high baud rates.

You will need software to let your computer emulate (act like) the computer you are communicating with. These programs are often included when you buy a modem. Microsoft Works has a communications module to use with a modem. Communications software also lets you capture or save the incoming information and automate sign-on procedures.

Setting Up a Modem

In the Mac world, your external modem plugs into a serial port on the back of the computer via a cable. You'll also need to plug your modem into an electrical outlet. The phone line goes from the wall into your modem and then another cable goes out of the modem to your phone (just as with an answering machine). You can use the phone for voice communication when you are not on-line. Most telecommunication services offer a local number to call, to save users long distance expenses.

Getting Connected

To get access to an information service you will need an account and a password. These are often free or part of a starter kit available at computer or book shops. CompuServe sells a starter kit for around \$35 which includes a password, several hours of on-line time, communications software, and a printed guide. Most services bill only by credit card account or electronic transfer of bank funds.

Information services assign you an account number, which is your public address, and a password, which is your secret handshake to get into the service. You should periodically change your password so nonauthorized persons (hackers) don't tap into your account. My CompuServe address is 70337,2501. My Internet address is Abrams@max.soscoshe.edu. My America online address is AAAAbrams. I won't tell you my password. Feel free to drop me a line.

Advantages and Limitations

The biggest drawback to going on-line is the monthly access charges. Some services offer a flat monthly rate for basic services (\$7-\$20 per month), but most have hourly charges for premium services (\$3-\$12 per hour). A 10-minute call would be billed for only one-sixth of an hour. Some also charge a few cents for each journal citation you access.

The other limitation is speed. To retrieve (**download**) a 100K file at 2400 baud takes about thirty minutes. For this reason, most files are **compressed** before being sent over a modem. On-line interactive games and procedures do not work well because of the slow speed of transmission.

Once you go on-line I think you'll find the advantages outweigh the limitations. A whole new world opens to you. You literally have the world at your fingertips. You can send and receive electronic mail. You can make electronic penpals. You can join forums where people who share interests leave messages, you can shop in an electronic mall, you can download free software or updates, you can get product support or information.

Information Services versus Databases

An information service is run by a company. It contains many different databases within it. For example, the Bibliographic Retrieval Service (BRS) has over one hundred databases within it, including ERIC, Books in Print, Sociological Abstracts, and Census Data.

Full Text Retrieval versus Abstracts

If you plan to do on-line information retrieval, you should understand the difference between full text retrieval and abstracts. Full text retrieval means you are able to download (receive) the entire article. Few databases yet offer this. Most databases, such as the ERIC database, offer only abstracts of the publication. If you want the entire article you will need to find it in a library (usually on a microfilm or microfiche), order it via an interlibrary loan, or perhaps order a reprint via conventional mail.

Information Service

On-line services can be roughly grouped into two classifications: consumer services and professional services. The consumer services, such as Compu-Serve, offer general interest information: news, weather, shopping, hobby forums, and more. These are less expensive and easier to use than the professional services. Professional services, such as BRS, offer high-level information in fields such as medicine, law, and education. These are often more costly and difficult to use than the consumer services. In fact, if you're going to get into on-line searching, you should attend a class to learn the syntax of the service you will be using.

Types of Information Available

The uses of a modem are almost as varied as the uses of a computer. Here are a few of the most common applications:

- Accessing databases: journals, government records, or specialized collections such as genealogy records.
- Electronic mail (E-mail): sending messages to individuals or groups. Faster and often less costly than traditional mail.

- Forums: discussion groups with people with similar interests, for example, travel forums, disabilities forums, Mac user forums.
- Bulletin boards: places to post messages, perhaps to sell or publicize something.
- Downloads: obtaining new software or updates, for example clip art or utilities.
- File sharing: accessing a remote computer to use its programs, files, or processing power.
- Translating files: text files sent over a modem can be converted from one computer platform to another.
- Shopping: ordering items or getting information about them. There are hundreds of vendors available.

Strategies for Saving Time and Money

Before you embark on the Information Highway, let me give you a few tips for the road. When you are using on-line services the meter is running. you want to be as efficient as possible. First of all, "capture then read." Set your communications software to automatically save the incoming information. Peruse it after you disconnect. The second strategy is to "plan before connecting." Know where you plan to go, write down your search strategy. Write your E-mail off-line before you send it. In short, keep browsing to a minimum and set up a game plan in advance.

Consumer Services

The consumer services are more similar than different. Most offer the standard services, such as news, weather, forums, games, on-line discussion groups, and downloads. They differ primarily in price structure, number of subscribers, and user interfaces.

CompuServe—About 1.5 million subscribers. Largest array of forums and databases of the commercial services. Custom software gives a **graphical user interface**. Fees are a bit higher than other services.

America Online—Excellent user interface. Easy to navigate. About 600,000 users. A bit more limited in services than the others, but its \$10 per month fee for five hours of unrestricted use is attractive. Look for free starter kits.

Prodigy—Has the most subscribers of the consumer services: two million. Second only to CompuServe in variety of services. Its interface is decidedly awkward on the Mac. Screens include advertising.

GEnie—Known for its variety of multiplayer on-line games. About 400,000 users.

ZiffNet—Offers information dealing with computers only. Find the latest-breaking news from the publishers of the popular computer magazines. Download all types of software. About 150,000 subscribers.

Professional Services

Professional services tend to be expensive and specialized. You'll need to contact the companies for subscription information.

BRS—Offers many databases. Fees range from \$8 to \$50 per hour. Features BRS AfterDark at reduced rates for home use at night. Some databases offer full-text retrieval.

NEA Bulletin Board—The National Education Association offers an electronic bulletin board for its members. Keep posted on current legislation and movements in education. Free to members of NEA.

Bulletin Boards—There are more than 45,000 bulletin boards, covering all types of topics. Most of these are free to use. The Computer Shopper magazine (800-274-6384) publishes monthly listings, or check with local user groups.

Gateways

A gateway is an electronic bridge from one service to another. For example, CompuServe offers a gateway to the Internet (see the next section). Eventually all of these services will be capable of being interconnected; this hints at the future of an information super highway.

The Internet

The Internet is a worldwide web of more than 14,000 computer networks. Unfortunately, there is no central structure or standardization to "the Net," so it can be difficult to learn to use. College students can often get a free account through their school. If your institution is not connected, a number of companies allow you to connect up for a fee.

What's on the Net?

- E-mail-Internet users can send electronic mail around the world without charge.
- FTP (File Transfer Protocol)- Net talk for downloading software. The Internet has millions of documents available.
- Telnet- A gateway for a remote computer to access publicly available files. Often used for examining university library card catalogs.

Internet Books

With the vastness and complexity of the Internet, it's a good idea to get a book on the subject. Two of the most popular are:

- *The Mac Internet Tour Guide*, Michael Fraase, Ventana Press
- *The Whole Internet User's Guide*, Ed Krol, O'Reilly and Associates

Internet Software

The Internet's decidedly non-Mac-like interface may confuse or bore you; fortunately there are some free software programs to add a graphical user interface to the Net. These include Eudora, Fetch, and TurboGopher.

Searching CD-ROM Databases

CD-ROMs are the hottest thing in computing today. There is virtually an explosion in the number of programs available on CD-ROM, and the cost of the drives has dropped dramatically in the past few years. Many libraries have banks of computers with CD-ROM databases. The advantage of searching for information on CD-ROM as opposed to on-line services is that there is no connect time fee. The disadvantage is that to update the information, a new CD-ROM disk must be produced and distributed. Subscribers to databases such as ERIC are sent updated disks quarterly or semiannually. You use the same types of search software and descriptors with CD-ROM databases as you do with on-line databases.

Buying a CD-ROM drive- (See also Chapter 2)

A couple of years ago we thought of CD-ROMs primarily as depositories of enormous textual databases, but the latest trend is multimedia disks. These may contain digitized voice, music, graphics, photographs, or even small amounts of video. Thus the demands placed on the drives are greater. CD-ROMs are at least ten times slower than hard drives in accessing data, so you'll want to buy a CD-ROM that is relatively fast. Access speed is measured in milliseconds. Look for a CD-ROM drive with an access time no greater than 200 milliseconds. Faster drives are called double-speed or even triple-speed. Some programs require you to copy part of the CD-ROM to your hard drive in order for it to run efficiently.

Many computers now come with built in CD-ROM drives. An external drive is in a box under or next to your computer. Look for a drive that is PhotoCD compatible. This is a new standard created by Kodak, which allows photo labs to put your pictures (prints or slides) onto a CD-ROM, so you can import them into a computer graphics or presentation programs. All CD-ROM drives can play standard music CDs, but no regular CD players can access CD-ROMs. In the near future, recordable CD-ROM drives will become available and affordable.

CD-ROM Databases

CD-ROM programs used to cost hundreds of dollars, but as their popularity has gone up, their prices have come down. Most vendors bundle in disks when you purchase a drive. A multimedia encyclopedia is a good disk to start your collection with. Professional, academic, or specialized

databases are still usually obtained by subscription. Some of these include ERIC, Sociological Abstracts, and Computer Select. Because you are paying for the information and not the disks, these subscriptions are usually in the hundreds or thousands of dollars, so you might want to use the disks at the reference desk at your library. CD-ROM is rapidly replacing microfilm and microfiche for storing data. A recent trend is for computer stores and even video stores to rent out CD-ROMs. Besides reference disks, there is a profusion of educational programs, games, clip art collections, and electronic books available on CD-ROM.

APPENDIX D

Transferring MS-DOS and Macintosh Files between Disks

The Apple Macintosh has less than fifteen percent of the computer market. Thus it is logical that Apple would provide a way to transfer MS-DOS files to and from a Macintosh. When you buy a Mac, the System Software disks contain a little utility program called the *Apple File Exchange*. This program must be copied to the hard disk for use and is often stored in the *Utilities* folder. The program is used to convert previously created data files to a format readable by another type of computer. Besides the MS-DOS format conversion, Apple File Exchange can also convert ProDOS files created on an Apple II. The program can also be used to initialize (format) floppy disks in MS-DOS or ProDOS format.

The Difference Between File Transfer and File Translation

Apple File Exchange technically does file transfer, not file translation. File transfer is a simple format conversion, which changes the information in a file so it can be opened by software on another type of computer. For example, you could take a file created in Microsoft Works on the Mac and transfer it to an MS-DOS text file. It will not open directly on the IBM. But if you open it from within an IBM word processor, such as WordPerfect, that program will import it and translate it into WordPerfect format. Let's run the example the other way. A friend creates a document in WordPerfect on her IBM. You could place her MS-DOS disk in your Mac and use Apple File Exchange to make a copy of her file in Mac format. If you want to use it in Microsoft Works, you open Works, then open the file. Works has a translator to convert the transferred file into Microsoft Works format. When you save the file, it will make a copy of the file in this Works format. Mac users are fortunate that Mac word processors have many translators. A file created in one format can usually be translated into another format. WordPerfect for the Mac really excels at this; it can open data files created in almost any format.

A more powerful kind of file exchange program does file translation. The most popular program is MacLinkPlus (DataViz software), which has over one thousand translators. This program can translate files directly from one particular software format to another, for example, from Microsoft Word for the Mac to WordPerfect for Windows. This program

comes with hundreds of specific translators. In contrast, Apple File Exchange has only one translator: MacWrite to/from DCA-RFT. This DCA-RFT format is used by many MS-DOS word processors and contains typestyle and font information.

A Few Basic Concepts

- **File Conversion Is More of an Art than a Science**—Unfortunately, translating files does not always work perfectly. You will need to experiment. But once you figure out the right options and procedures, the results should be consistent.
- **You Are Making a Copy, Not Actually Converting the Original File**—Whenever you convert a file, the original file will be unchanged, and a new converted file will be created on another disk.
- **You Convert Documents, Not Applications**—Transferring text-based documents such as word processing, database, or spreadsheet files is relatively easy. Converting programs is not really possible. This would involve creating new programming code for the program. Graphics and some sound files might be converted using a binary translation, but it's dodgy at best.
- **Generic Text Format versus Specific Program Formats**—When a file is saved in text or ASCII format, this means it contains the letters, but no information about fonts, typestyles, or sizes. These generic text files are easy to convert and can be opened by virtually any word processor and then formatted.
- **Using Save As Instead of File Exchange**—Instead of using file translation, you can sometimes get the same results from within an application using the *Save As* command from the *File* menu. For example, in the word processing module of Microsoft Works, you can choose to save your document in WordPerfect for DOS, text, Microsoft Word, or any of several other formats (listed in the *File Format* box of the *Save As* dialog box).
- **Transferring via Modem or Cable**—A simple way to move text from one platform to another is to send the data over a modem or a serial cable connected between the two machines. This only works with generic text files.
- **Using AccessPC**—AccessPC is a little utility program from Insignia software which allows MS-DOS disks to show up directly on the Desktop. You can copy files to and from these disks just as if they were Mac disks.
- **Don't Transfer Text If You're Using PageMaker**—PageMaker and other desktop publishing programs have filters which allow you to place many types of word processing files into your publication. For example, you can place IBM WordPerfect files directly into PageMaker documents. Again, you may need to reformat or "tweak" the text.

The Natural Superiority of Mac SuperDrives

All Macintosh floppy drives manufactured in the past five years are what Apple calls SuperDrives. This means they have the ability to read and format MS-DOS disks. However, IBM-compatible drives cannot read Macintosh floppies. So you'll need a workaround to bring your Mac files to an IBM-compatible computer. Simply use the Apple File Exchange program to transfer your Mac files onto an MS-DOS disk and then use that disk in your IBM.

Even with the SuperDrive's flexibility, you cannot save directly to an IBM floppy from within an application. You should save in MS-DOS format to your hard drive and then drag the file to your IBM disk from the Desktop.

Nobody's Perfect, Especially File Transfer Programs

Before you get too excited about file transfer, you should know about some of its limitations. Fonts and text formatting from one computer platform may change when translated. You may get seemingly random stray characters. These are usually control codes that the other platform does not recognize. It's usually easy to delete these characters or to type in missing characters.

Doing a File Transfer from MS-DOS to Mac

- 1** Open the hard disk window, find the *Apple File Exchange* folder, and open it.
- 2** Double-click on the *Apple File Exchange* icon to launch the program.
- 3** Insert the floppy disk that contains the files you want to transfer.
- 4** Navigate using the *Open*, *Drive*, and *Eject* buttons to display the files you want translated (the left half of the screen) and the disk and folder you want to copy the translated files to (the right half of the screen).
- 5** Single-click on the names of the files or folders you wish to translate. To select multiple items, use the *Shift-click* technique. You may need to scroll down to see the names of some of the files or folders.

When you make a selection, the corresponding menus will appear in the menu bar. Notice that one menu converts files from Mac format to MS-DOS and the other goes from MS-DOS to Mac.

- 6** Pull down the appropriate menu, and select the desired translator. The default translator will have a diamond next to it. As a rule, try the default method before trying other translators.
- 7** Click the *Translate* button.

You may be presented with dialog boxes asking you to select a translator, rename a file, or make other choices.

8 Select *Quit* from the *File* menu.

To format MS-DOS disks on your Mac, simply insert an unformatted disk into the SuperDrive when Apple File Exchange is running and select the appropriate dialog box options.

To access your translated files, you will need to launch an application and then use the *File-Open* command to import your file. It's not unusual to get stray characters; simply select and delete them.

APPENDIX E

Twenty Top-Rated Programs for Fun, Learning, and Productivity

As that purple dinosaur Barney says, "Our fun and learning never ends." With computers there's always some new piece of software that you "just gotta have." Here's a list of a few of my favorite programs. I've concentrated on "little" programs—inexpensive programs that just do one or two tricks. Some of these are freeware shareware or even included with your Mac when you buy it. For a free catalog of software, call one of the toll-free numbers at the end of this appendix. These companies would *love* to add you to their mailing list.

Utilities

These are programs that customize the way your computer works. Many of these work in the background while you are working in the other applications.

Apple File Exchange— Utilities Disk Free with Mac
Allows Macs with SuperDrives to read MS-DOS and Apple IIgs disks. Transfers but does not translate files (use MacLinkPlus to translate). See Appendix D for a detailed description.

Disk First Aid— Utilities Disk Free with Mac
When your Mac disks become unreadable, this program can often fix them. Restores a disk's directory; does not repair physical damages. Use Norton Utilities for bigger jobs.

After Dark— Berkeley \$30
A screen saver. Automatically blanks out the computer's screen to prevent an image from "burning in" to the monitor. Several free screen savers are available. After Dark goes farther by offering you over thirty different displays for screen saving, including flying toasters and an electronic aquarium.

Disinfectant— Northwestern Univ. Freeware
Virus detection and removal. Cleans up most viruses including NVir and WDEF. Update via on-line services or user groups. Includes good background information on viruses.

S.A.M.— Symantic \$66
Checks for viruses before they attach to your computer. If it finds an infected floppy disk, it will not allow the disk to load. Good for schools and businesses as a safeguard for their computers.

Disk Doubler— Salient Software \$45

A file compression program “scrunches” files down to about half their original size. Automatically decompresses files when they are launched. Valuable to use for archiving files or sending them over a modem. Many freeware programs, such as StuffIt, can also compress files.

Screen Shot— Baseline \$30

This is a screen capture utility. Screen Shot can capture a menu, window, selected area, or the entire Mac screen. The files can be saved in a variety of formats and imported into Mac applications for touch-up. Most of the illustrations for this book were captured using Screen Shot. Even without a screen capture program, you can take a shot of your entire Mac screen by pressing *Command-Shift 3*.

Personal Productivity

These are programs that handle your finances, scheduling, or other situations where computers can make your life a bit easier (and more complex). Microsoft Works can also be applied to personal productivity, such as using the spreadsheet module to keep your bank balance. I’ve also included a couple of my favorite graphics programs.

First Things First— Visionary \$30

A “to do” list generator. Just double-click on the clock on your screen and your list of appointments and tasks pops up. Saving these as a file is a good way to keep a diary of your activities. Can also be printed out like Day-keeper books.

Quicken— Intuit \$45

Accounting for the rest of us. Simple but useful program for keeping accounts balanced. Can print checks and track tax deductions.

Mac Label Pro— Avery \$49

Sophisticated package for making all types of labels, including labels for disks, file folders, cassettes, and envelopes. Correlated to Avery label stock. Can number the labels sequentially.

Smart Label Printer— Seiko \$145

A hardware device that connects to a Mac serial port to print mailing labels one at a time. Without it you have to put a whole sheet of labels in your laser printer. Comes with software to customize the type formatting.

Bannermania— Broderbund \$37

Lots of fun. Creates banners and headlines with spectacular effects. Prints in color on a color printer. Very easy to use.

TypeStyler— Broderbund \$119

Fancy effects with type. More sophisticated and difficult to use than Bannermania. Import into PageMaker to create great-looking logos.

Clip Art and Fonts— various

Buy some handsome clip art or fancy fonts. Check public domain disks and inexpensive CD-ROM collections. Be sure to specify format (Paint, PICT, EPS, TrueType, Postscript, or bit-mapped).

Computer Assisted Instruction- "Edutainment"

These programs can be used in the classroom or home to foster learning. Computers are a great motivational device for getting children to regard learning as fun. My three-year-old loves to "play puters."

Where in the World Is Carmen San Diego? Broderbund \$29
Very popular series of educational games. Uses reference and geography skills to solve a crime. Great graphics and sound. Comes with a printed almanac. Many versions available, including *Where in the U.S.A.*, *Europe*, *Time*, *America's History*, or *Space Is Carmen San Diego*.

Stickybear's Reading Room— Optimum Resources \$35
Early learning games have made us rethink what young children are capable of learning. The Stickybear series of programs features multilingual digitized speech and great animation.

KidPix— Broderbund \$35
A graphics program designed for children, but fun for all. Every tool makes a sound, and the letters and numbers have digitized speech. Menus and speech can be used in English or Spanish. Some really wild effects such as the dripping blood tool.

Oregon Trail— MECC \$29
This program is a real classic, tracing its origins back to the earliest Apple II days. Travel along the trail making life-or-death decisions along the way. Many excellent simulation programs are available for the Mac. A great use of the computer.

Songworks— Ars Nova \$70
The Mac's a good machine for creating and playing music. Many programs exist for creating sheet music, drilling on music fundamentals, or just having a jam session. Hook up to a real keyboard via a MIDI device.

PGA Tour Golf— Electronic Arts \$39
Realistic golf simulation with digitized sound effects. Use actual courses or design your own. Check out other Mac sports and action and adventure games.

These prices are approximate, discounted prices from the MacWarehouse September 1994 catalog.

For a MacWarehouse catalog, call 800-843-9497.

For a Mac Connection catalog, call 800-800-2222.

For a catalog of CD-ROMs and public domain programs, call EduCorp at 800-877-9497.

For a catalog of CAI and educational programs, call Learning Services at 800-877-9378.

APPENDIX F

Twenty-Five Classroom Microsoft Works Tips

The classroom tips listed below have been compiled by the staff of the Teachers' Idea & Information Exchange (TI&IE). This organization has been helping classroom teachers use application software since 1986. They sell an extensive collection of teacher created and teacher tested Microsoft Works files for both instruction and management. These disks contain Works tips and techniques, teaching suggestions, and creative ideas to actively involve students. Many of the files are stationery documents (templates) which students or teachers can fill in or modify. Some disks contain completed databases on states, inventions, notable women, and other collections which would be valuable to use in the classroom.

The ideas listed below are aimed at sparking creative energies. Many are generic enough that they could be done with programs other than Microsoft Works. These are the kinds of ideas and lessons that are developed and included on disks from TI&IE by calling (402) 483-6987.

1. Don't feel that all computer work has to be done "at the computer." Collecting data with paper and pencil can be a vital first step. Create forms so that the information collected is consistent. This will greatly simplify data entry at the computer.
2. Research projects take on a whole new dimension when students tackle them with the assistance of Works. Try a group research project in which all students can take part. Select a subject that lends itself to data collection by different groups or individuals (animals, authors, inventions, the events of specific years). Let students determine what pieces of information they want to collect (names, birth dates, sizes, locations). Create a database to hold the information and turn your students loose! (*Vol.2, Issues 1&4*)
3. Introduce students to the spreadsheet by letting them collect information about themselves. All kinds of statistics can be collected. Try a few of these: number of eyeblinks in a minute, pulse rate (resting and after exercise), how many teeth they have, how they sleep/are awake, ages, birth dates, number of people in their immediate family, etc. Avoid sensitive areas (weight, height, etc.) Students can easily create spreadsheets to compute totals, differences, averages, percents. Compare information across grade levels and genders. How do statistics for teachers compare to those of students? (*Census Works*)

4. Television! It's not going to go away, so why not tap into the wasted hours? Let students use Works to create a classroom *TV Guide*. Construct a database to hold program name, time/day of broadcast, content, length of broadcast, advertisers, appropriate viewing age group. (Vol. 2, Issue 1 & Vol. 3, Issue 1)
5. Heighten your students' awareness for what they are actually seeing on television. Have students collect statistics for various programs. How many acts of violence do they see, how often is sexist or racist language used, how often do they see self-destructive behaviors (smoking, drinking, drug use), when are problems solved creatively without aggressive or violent behavior, etc. Use the Works spreadsheet to compare program statistics. Sort your program list. Create a "top ten" list of best programs or a "dirty dozen" to be avoided. (Vol. 2, Issue 1 & Vol. 3, Issue 1)
6. Create a database file for specific years. Collect information for those years. Possible fields could be headlines, prices, popular movies, noted births, deaths, sporting events, etc. Let students create a word processor document called "The Year You Were Born." Merge information from the database with this document. Students could use this method to prepare "year pages" for themselves, their parents, grandparents, siblings, and others. (Vol. 1, Issue 1)
7. Ask students to bring in empty cereal boxes. Create spreadsheets to analyze them. Students can use the spreadsheets to compare weights, compute servings per box, analyze nutritional information (how much sugar do they contain?), compare prices (what box sizes are most common, offer the best buy, etc.) How do cereal manufacturers use their boxes to attract consumers? What about graphics? Let students design their own cereal boxes. (Vol. 3, Issue 1)
8. Collect statistics on the world's population (i.e., nationalities, income, religions, production, consumption, etc.). Use the spreadsheet to "shrink" that world to a community of 1,000 people. What will the community look like? How many are Americans? Men? Women? Children? (Vol. 1, Issue 2)
9. If you haven't coupled math activities with your students' interest in sports, this may be the time to try it. There are all kinds of sports statistics students can collect. Students could be challenged to create spreadsheets for computing statistics in any number of sports. Some possibilities are spreadsheets for batting averages, points per minute in basketball, or football pass completion percentages. (Vol. 2, Issues 2&3)
10. Use Works to analyze student reaction times. Hold a meter stick vertically just above a student's hand. Tell her you will drop it and she should be prepared to grab it as soon as she realizes it is falling. Release the stick. Reaction time is measured by recording the number (on the meter stick) just above where the student grabs. Record the results. Do your students improve with practice? Are girls better at this than boys? What differences do distractions make? Graph the results. (Vol. 3, Issue 1)
11. If you are using Works as a desktop publishing tool, don't confine your activities to producing newsletters. Consider having students create bookmarks, certificates, letterheads, business cards, tickets, maps, dot-to-dot puzzles, mazes, birthday cards, posters, postcards, an-

nouncements, advertisements, rebus stories, calendars, and invitations. Encourage students to "spice up" their writing projects with different fonts, styles, font sizes, and graphics. (*All Vol. 2*)

12. Provide your students with editing practice by creating a file of "mixed-up" phrases or idioms. "A bird in the **band** is worth two in the bush." "Look before you **sleep**." "Here come the **gride** and **broom**." Let students create their own editing challenges and exchange them with each other. (*Vol. 3, Issue 1*)
13. Have your class develop a "bank" of book reviews. Short reviews can be created for use with the database. Store the database on the same disk. Students can search the database for a particular book. If they wish, they can refer to the longer word processor file review or write a review for a book that hasn't been reviewed (or add to an existing review). Expand this idea by creating similar files for movies, albums, games, etc. (*Vol. 1, Issue 3 and Vol. 2, Issues 1&2*)
14. Let students collect words of wisdom. These can be stored in the database. The database should include fields for source, date, etc. They might also create a "keyword" field. The keyword field can help them quickly locate all the quotes related to a specific topic (e.g., justice, women, education, etc.). (*Vol. 3, Issue 1*)
15. Spark creative writing activities by having students create a database of story ideas. The database could contain characters (names, physical descriptions, personality traits, quotes), settings, problems, first lines, etc. Students can add to the database, and over time they will have a wealth of material to draw from when they are faced with the age-old question of "What do I write about?" You can assign students to write about specific elements in the database (combine specific characters, how would different characters react to the same problem, etc.). (*Vol. 1, Issue 4*)
16. Provide your students with a short paragraph (write one about yourself, your school, describe an event, almost anything will suffice). Challenge your students to use the Works thesaurus to improve upon the writing. Extend this activity by having students create lists of "over-used" words and their possible substitutes (start by having them look up such common words as run, sad, old, laugh). (*Vol. 3, Issue 1*)
17. Let students use the spreadsheet to create their own personal grade-books. Students can record their scores and watch their grade point average. This can be a powerful motivation for some students. (*Vol. 3, Issue 1*)
18. Everyone loves a good riddle. Let your students create a database of riddles. The database should contain a field for the riddle and a field for the answer. Layouts can be created to show only the riddle, only the answers, and both. Riddle sheets can then be printed. This database will grow quickly and should provide students with hours of practice at data entry, sorting, and record retrieval. Add fields for keywords or subject and students can group riddles (sports, animals, easy, hard, math, nature, etc.). Expand upon this idea with files for jokes, figures of speech, idioms, etc. (*Vol. 1, Issue 3 & Vol. 3, Issue 1*)
19. Pulse rates can provide students with some interesting data to analyze. How do the pulse rates of males and females compare? How does age

affect pulse rate? Do kindergartners' pulse rates differ significantly from those of older students? How do the pulse rates of teachers compare to students' pulse rates? Athletes' hearts are more efficient than those who don't exercise regularly. How do the pulse rates of the athletes in your school compare to those of more sedentary students? How does body size relate to pulse rate? How about heredity? Do students with higher pulse rates have parents, brothers, or sisters with higher rates? (*Vol. 1, Issue 1*)

20. Let your students create a school telephone directory. You can combine the database with the word processor for this. Students might also like to create their own personal directories.
21. Graphs provide new ways of looking at data. Let your students create graphs for all kinds of data. Possible graphs might cover: numbers of students at each grade level; boys/girls at a grade level; kinds of pets; family sizes; favorites (food, movies, colors, radio station, etc.); birthdays; common names in the school (Smith, Brown, Johnson, etc.); number of words in a sentence, paragraph, on a page; car colors in the school parking lot; weather data. (*Vol. 3, Issue 1, Weather Works*)
22. Following the stock market can be fun (even if you don't own any shares!). Let your students pick a company from the paper. Create a spreadsheet to track students' "investments." Students enter the name of a company, its stock symbol, the per-share price they are paying for a stock, and the number of stocks they are buying. Once each week students enter the current price of their stock. The spreadsheet provides the price change (from the previous week), the current value of the student's stock in a company, and the net gain or loss for the stock. (*Vol. 2, Issue 3*)
23. Students can get to know each other by creating a schoolwide "favorites database." Create a database for students to record their name, grade, and any other biographical information you wish to include. Create fields to hold the "favorite" data such as: pet, car, author, book, athlete (male and female), subject, movie, actor, food, toothpaste, pizza topping, game, etc. Students can search the database for those who have the same favorites. (*Vol. 1, Issue 1*)
24. Let your students use the word processor to create "hundred lists." These are lists of one hundred items. For example: 100 things I want to do in my lifetime, 100 things I'm good at, 100 things I believe in, 100 places I'd like to visit, 100 things I want for my birthday, 100 memories, 100 people I'd like to meet, 100 things I hate, 100 things I'd do if I had time. Your students will think of many more possible lists. Post these lists around the room. (*Vol. 3, Issue 1*)
25. Let students use Works to plan a trip. Each student pretends to have \$1,000. They may choose any mode of travel they wish. However, they must return within two weeks. They can use the spreadsheet to compute distances between cities, total distances traveled, costs for meals and lodging. Students may wish to write to state tourist agencies or contact local travel agencies for information. Encourage them to investigate the costs of driving, flying, or taking the train or bus. How far could they get if they walked? Where would they go if they had more money or time? (*Vol. 1, Issue 1 and Vol. 2, Issue 3*)

APPENDIX G

List of Programs and Producers

Aldus—*PageMaker*

411 First Ave. South, Seattle WA 98104 (800) 333-2538

Apple Computer, Inc.

20525 Mariani Ave., Cupertino CA 95014 (800) 892-4649 (800) 776-2333

Brøderbund Software—*Bannermania, TypeStyler, Where in the World, KidPix*

P.O. Box 6121, Novato CA 94948 (800) 521-6263

Microsoft Corp—*Microsoft Works, PowerPoint*

1 Microsoft Way, Redmond WA 98052 (800) 426-9400

Teacher's Information and Idea Exchange—*Works Classroom Tips Disks*

Dept. TP, P.O. Box 6229, Lincoln NE 68506 (402) 483-6987

Zedcor—*DeskDraw, DeskPaint*

4500 E. Speedway Suite 22, Tucson AZ 85712 (602) 881-8101

Glossary

Here's enough technospeak to make your propeller whirl. Please note that these definitions are in relation to their meaning in the Macintosh world (MacSpeak); some are true for all types of computers but certainly not all. Terms in *italics* have their own glossary entries.

Access time the amount of time it takes a *CD-ROM* or other type of drive to read data on it.

Active when something is selected it is said to be active. This means the next command will take effect on it. For example, when you select the *icon* of the *hard disk*, using *Open* command will *open* its window. See *select*.

Active window the *window* that is selected. The active window will have stripes in its *title bar*. You make a window active by clicking in it or selecting it from the *Application menu*.

Alert box a *dialog box* that issues a warning. It usually just tells you something won't work, and you simply click the *OK* button to continue.

Alias a *copy* of a *file* that serves to open the real file from a different location. Although aliases can be put anywhere, they are often stored as *Apple menu* items, enabling you to open the program from under the Apple menu. Not available in *System 6*.

Apple menu the menu at the extreme left of the menu bar that is available from within almost all Mac programs. This menu contains items that you can open up while another program is running (*Desk Accessories*). In *System 7*, any file placed in the Apple menu items folder will appear under the Apple menu. The top command of the Apple menu always gives you information about the active program.

AppleShare a *Chooser* extension of the *System software* that lets you share files over a network.

AppleTalk the networking software that comes with the Mac. It allows computers to share one printer or to exchange files.

Application a Macintosh program, although some people consider only major programs such as word processors to be applications.

Application menu the menu at the far right of the *menu bar*. From this menu you can switch between programs. The *active* program's icon appears in the menu bar. Not available in *System 6*.

ASCII a type of *file* consisting of plain text and no formatting. Also called a *text file*. ASCII files can be easily exchanged between different types of computers.

Backspace erase the normal way the Mac erases. The user positions the cursor just past the unwanted character and then hits the Delete key.

Backup a duplicate of a *file* or program which you can use if the original becomes damaged. To back up a file is to make a copy.

Balloon help help cartoon *windows* which you can turn on from the Help menu (by selecting the ?). With balloon help on, you simply point the mouse at a command and a help balloon pops up. Not available in *System 6*.

Bit a binary digit. The smallest unit of information the computer translates instructions into. Either power is on or off, that is, flowing through a circuit (represented by a 1) or not (represented by a 0).

Bit-mapped fonts low-resolution *fonts* designed to be printed on a *dot-matrix printer*.

Bit-mapped graphics pictures defined as a series of dots. All scans and most *paint* program files are bit-mapped. Harder to scale and less sharp than *object-oriented* graphics.

Bps (bits per second) a measure of how fast *data* is transmitted, usually over a *modem* or a *network*. Baud rates (or modem speeds) are expressed in bps, such as 2400 bps.

Bug a mistake in a piece of software or hardware. It's very rare to find a program that is totally bug free. A bug will often cause the computer to *crash*.

Byte in general, each stroke of the keyboard is a byte. A combination of eight *bits* makes up a byte.

Cancel a button that occurs in most *dialog boxes*, used to back out of the procedure you just began.

CD-ROM stands for compact disk read-only-memory. A kind of storage device that holds enormous amounts of *data*. For the most part, CD-ROMs are nonrecordable.

Cell one block in a *spreadsheet* representing the intersection of a column and a row. Each cell has a label, such as A1.

Central processing unit (CPU) the "brain" of a computer where the *data* is actually manipulated. In the Mac world, the CPUs have been in the Motorola 68000 family of microships.

Charting the ability of a program, such as a spreadsheet, to create charts or graphs from the *data* contained in the *file*.

Chooser an extension under the *Apple menu* where you specify which printer or *network* your Mac is connected to.

Clip art artwork that includes permission to reproduce it. There are numerous clip art collections available.

Clipboard a part of the Mac's memory. When you cut or copy data it is placed in the Clipboard. The Clipboard can only hold once piece of data at a time.

Close to collapse a *window*. When you finish with a file or window, you choose the *Close* command or click the *close box*.

Close box the box at the upper left corner of any window. Clicking this box causes the window to disappear.

Color separations commercial artists need to prepare color separations to take to the printer to do full-color printing. Some high-end graphics or *desktop publishing* programs such as PageMaker can do these.

Command any action you tell a Mac to do. Each of the words under the menus is called a command.

Command key the key on the keyboard that has a cloverleaf on it. Used in conjunction with another key to *execute* a command. Erroneously called the butterfly key, the flower key, and even the propeller key.

Compression files can be shrunk or compressed by a file compression program to save room on a disk or to make them faster to send over a *modem*.

Constrain a graphics term used to describe proportional drawing or scaling. The Shift key is used along with a drawing tool as the constrain key. Using constrain with the Oval tool will draw perfect circles.

Control panels small system utilities that let you adjust how your Mac works (such as speaker volume). In *System 7* these are stored in the *Control panels* folder.

Copy when used as a verb, to duplicate something; when used as a noun, a backup. The *Copy* command from the *Edit* menu makes a duplicate of the item without cutting it first.

Count in Microsoft Works' spreadsheet module, count is a function that identifies the number of numbers that meet a criteria.

Crash when your computer freezes up and stops working. Usually requires you to restart the machine (often via turning the computer off and back on again). Used as both a verb ("this bleepin' computer just crashed") and as a noun ("I've had three bleepin' crashes today").

Cursor a person who swears (sorry, poor joke). The indicator on the screen of the current position of the pointer or *insertion point*. In other words, the point where you are currently working on the Mac screen. On a Mac the cursor may take several forms (a watch, an arrow, a cross, etc.).

Cut to remove something from a document by selecting it and choosing the Cut command from the Edit menu. Data that you cut is placed in the *Clipboard*.

DA see *Desk Accessory*.

Data information in any form.

Database a collection of information.

Database management system (DBMS) a fancy way of saying a *database* program.

Default the normal (or standard) settings of a Mac program. You can usually change the defaults by accessing the *Preferences* command.

Deselected after you have made something *active* (selected it), you can cancel it out by clicking it off (deselecting it).

Desk Accessory (DA) small programs under the *Apple menu*. Designed to be used while other programs are open. Calculator and Key Caps are two DAs that come with your Mac; other ones are available.

Desktop the "home base" of your Mac. When you are in the *Finder*, the Desktop is the gray area of the screen and the *menu bar*. You need to return to the Desktop to *copy* or move files.

Desktop presentation program a type of software used to create on-screen or other types of slide shows. PowerPoint and Persuasion are two popular desktop presentation programs.

Desktop publishing using the computer for laying out printed pages or other documents in preparation for printing them. May involve merging text from several sources, copying graphics, and manipulation text styles.

Dialog box a box that appears on the screen asking you to provide information or make further decisions.

Digital the form of all information in a computer. Represented as either a one (power on) or a zero (power off). The opposite of analog, which is information represented as waves.

Directory a listing of the files that are on a disk.

Document a *file* created with an *application*. For example, a letter, a picture, or a newsletter. Documents need to be opened from within a program or *application*.

Dot-matrix printer a printer that creates letters by striking a ribbon with tiny wires. Apple's ImageWriters are examples of these. Dot-matrix printers are generally the poorest type of printers in terms of resolutions and speed, but they can print multiple-part forms. An endangered species.

Double density disk a type of floppy disk that can store 800 K of data. Has one hole on the top of it. The other type of floppy is *high density*.

Double-click one of the four mouse movements. To quickly press the mouse button twice without moving the mouse. Used to open a *file* or to select one word.

Download receiving a file over a *modem* or *network*. The opposite of *upload*.

Dpi (dots per inch) a measure of screen resolution. The higher the dpi, the less jagged the image will be. The number of dots in a line one inch long. The Mac screen is 75 dpi, and laser printers are 300 or 600 dpi.

Drag one of four mouse movements. You drag by placing the pointer on a point on the screen, holding the mouse button down, and sliding the mouse. You release the mouse button when you are finished dragging.

Drag-and-drop an easy way to move or *copy* things on the Mac. Drag an object with the mouse from one *window* to another, let the button go, and it drops into the other window.

Draw program a type of graphics program that creates whole objects as opposed to bit maps. These objects can be precisely changed.

Ellipsis three dots after any command. This indicates a *dialog box* will come up, prompting the user with further information.

E-mail (electronic mail) messages sent from one computer to others over a *modem* or *network*.

Entry a piece of *data* entered into a *database* or spreadsheet.

Entry bar in Microsoft Works' *spreadsheet* module, the area near the top of the screen where you type in the *data* for an *entry*.

EPS a format of graphic file. Stands for Encapsulated PostScript, also just called *PostScript*. Consists of code instructing the printer how to print the image.

ERIC database the largest public *database* of educational publications. Stands for Educational Resources and Information Clearinghouse. Contains publications both in journals and on microfiche. About one million citations. Accessible via CD-ROM and *on-line* services.

Execute technospeak for doing a command.

Extension a *file* that loads automatically when you start your Mac. Called an *init* in *System 6*.

Field in a *database*, one entry portion of a *record*. For example, first name, last name, and phone number are each one field.

File a collection of related *data* saved together and called by a name.

File server a computer that other computers on a *network* can access and share files from.

Filter in a *database*, a selection criteria to narrow a search. For example, a filter might select only those records that contain "Spanish" in the language field.

Finder the "home base" program on the Mac that contains the *Desktop* screen. Contains the Mac's basic operating system.

Folder a grouping of files and/or other folders. The basic way files are organized on the Mac.

Font a computer typeface in all its sizes and styles. Popular fonts include Times, Geneva, and Helvetica. Many vendors sell different styles (bold, light, italic) of a font as separate fonts.

Footer a line of text which is printed at the bottom of each page of a document. The footer often contains the page numbering or document title.

Form as used in Microsoft Works' database module, a form is a customized layout for each record of the database. It can contain specified *fields*, borders or other graphics. There can be up to 16 different forms per database.

Format the form a *file* is saved in. For example, *ASCII*, *PICT*, Microsoft Works. Most applications can save a file in several different formats.

Formatted a new floppy disk must be *initialized* or formatted as a Macintosh disk. Formatting will erase anything that was previously recorded onto the disk.

Formula in a *spreadsheet*, a mathematical calculation. Some spreadsheet *cells* contain just numbers, others contain text, and a third type contains a formula. For example, a formula could sum all of the cells in a column.

Gigabyte 1024 *megabytes* of computer memory (over a billion bytes). CD-ROMs can hold almost a gigabyte of information.

Grammar checker also called a style checker. A program used to alert the user to errors in grammar use in a word processing file. Grammar checkers work by comparing the text to a set of grammatical rules. Generally thought of as having limited utility. Can also provide statistics on the text, such as readability level.

Graphical user interface (GUI) a method of using a computer that works via *icons* and menus rather than by typing in commands.

Graphics tools in Microsoft Works, the *icons* used to draw objects with. When you execute the *Draw On* command, the graphics tools appear in the *Tool Palette*.

Grayed out when a command is not currently available, it is dimmed or grayed out in the menu.

Gray-scale graphics or monitors that display shades of gray in addition to black and white. Photographs are often digitized as gray-scale.

Greeking in PageMaker type smaller than a specified size is displayed in rough form or "greeked." This speeds up the computer's drawing of the screen.

Grid in Microsoft Works you can show or hide gridlines, which are like graph paper lines. These gridlines only print out in the *database* module.

Group in a draw program, multiple objects can be merged or grouped together into one object.

Handles in a draw program, when an object is selected it will display small squares or handles around it. Dragging one of these handles *resizes* the object.

Hard disk (Hard drive) a nonremovable memory storage device. Hard drives hold much more data than do floppy disks. A magnetic head moves across hard platters to read *data*.

Header a line of text which is printed at the top of each page of a document. The header often includes the document's title and date.

Hierarchical filing system the filing system that the Mac uses for organizing *files*. The basic concept is that files and/or folders are nested inside of folders, which can be nested inside of still other folders.

High density disk floppy disks that can hold 1.44 *megabytes* of *data*. *Double density* disks have only one hole in them, while high density disks have two holes.

HyperCard an easy-to-learn programming language used on Macs for instructional or informational programs. The HyperCard program used to come with the Mac but is now sold separately.

I-beam the shape the Mac's *cursor* takes when working with text.

Icon a small pictorial symbol representing a file, folder, disk, or tool.

Import the process of bringing data into a program from a different program.

InfoTrack an *on-line database* of popular magazine abstracts. Found in many public libraries.

Initialize see *format*.

Inkjet Printer a printer that squirts tiny jets of ink to form characters. Some inkjet printers can print in full color.

Insert mode when working with text the Mac is normally in insert mode, where new text pushes existing text over rather than writing over it.

Insertion point when working with text, the current position of the *cursor* is represented by a blinking vertical line. The next character will be entered at this insertion point.

Installed programs are copied or installed onto your *hard disk*.

Integrated software programs such as Microsoft Works which have several *applications* within them and can share data between those applications. For example, a user could copy text from the *database* module into a word processor document within the same integrated program.

Intuitive you can probably guess it. It's a compliment to say a program is intuitive, which means you can figure out how to use it without reading the manual. The commands and operations are logical.

Kilobyte (K) a measurement of memory. A kilobyte is 1024 *bytes*.

Landscape printing a document horizontally as opposed to vertically (*portrait* orientation). Most *spreadsheets* are printed in landscape format.

Laser printer a printer that prints by drawing images on a metal drum with a laser. Creates the image with toner much the way a photocopy machine does. Faster and sharper than ink jet printers.

LCD panel a flat glass panel that sits on top of an overhead projector, which when connected to the output of a computer projects the computer's image onto a large screen. These liquid crystal displays may be monochrome or color.

Link in Microsoft PowerPoint, you can create links which cause changes made in a file in one application to automatically cause changes in another linked file. Uses Apple's *publish and subscribe* capability.

Local area network (LAN) computers connected in a network within one building or one site. As opposed to *telecommunications*, which is a wide area network.

Macro an automated sequence to perform other *commands* or actions. Microsoft Works lets you create macros to automate repetitive tasks.

Master in *desktop publishing* or presentations, items that will appear on each page or frame of the *document*. There will be a separate page or frame to create these master items on.

Megabyte a measurement of computer memory or storage space. A megabyte is 1024 *kilobytes*. Abbreviated as MB.

Menu bar the horizontal area at the top of the screen that contains the names of the menus available.

Microsoft Windows an operating system for IBM PCs and compatibles that uses *icons* and *pull-down menus* in a *graphical user interface*. Although similar in appearance to the Mac's operating system, it is not compatible with it.

Modem a device for sending and receiving information over phone lines. Stands for modulator-demodulator, which indicates it converts data from digital to analog form.

Mouse input device that controls the movement of the *cursor* on the screen.

MS-DOS the original operating system used on IBM PCs and compatible computers. Stands for Microsoft Disk Operating System. Rapidly being replaced by *Microsoft Windows*.

Multimedia the merging of more than one audiovisual formats via a desktop computer. May include video, digitized sound, and graphics.

Network connecting computers or other devices together. Also called a *local area network*.

Object-oriented draw programs are considered object-oriented since they create pictures composed of polygons which are separate objects. In contrast, paint programs represent drawings as a series of bits.

On-line connected to a computer network, usually at a remote site.

Open to load a *file* into memory. One might say, for example, "Open the gradebook file".

Option key a key on the keyboard used to create special characters or do alternative functions.

Outline fonts *PostScript* fonts that can be scaled to any size. Compare to *bit-mapped* or *TrueType* fonts.

Paint a graphics file format for bit-mapped images. Compare to *PICT*, *EPS*, and *TIFF* files.

Paint program a graphics program that creates *bit-mapped graphics* by turning dots on or off on the screen.

Palette in Microsoft Works, a small movable window containing graphics or other types of tools.

Pane-splitting in Microsoft Works' *spreadsheet* module, the act of splitting the screen to see different portions of the spreadsheet.

Paste when you select Paste from the Edit menu, the Macintosh inserts the data that was previously *Cut* or *Copied* into the *Clipboard*.

Pasteboard in PageMaker the nonprinting area surrounding the publication where objects can be "parked".

PICT a graphics file format, used by many *draw programs*. DeskDraw, DeskPaint, and Microsoft Works pictures can be saved as PICT files. Compare with *Paint*, *EPS*, and *TIFF*.

Pixel one dot on the computer's screen.

Plastic environment an advantage of working on a computer is that it creates a flexible or plastic environment where changes can be easily tried out and made.

Pointer the thing on the screen that moves when you move the *mouse*. It usually takes the form of an arrow or an I beam.

Pop-up menu menus that drop down from shaded boxes inside *dialog boxes* as opposed to the pull-down menus in the *menu bar*.

Portrait printing on paper in a vertical format as opposed to horizontal (*landscape*) format.

PostScript a programming language that generates code to draw text and graphics. Only some *laser printers* contain PostScript capabilities.

Precedence in Microsoft Works' *database* module, precedence refers to the order in which searches are conducted.

Press one of the basic mouse movements. To point at something on the screen and press the mouse button down.

Press-and-drag a mouse movement in which you press the mouse button down and then drag the mouse while still holding the mouse button down. Menu *commands* are selected by pressing and dragging down to them.

Print Preview to view what the printout of the document will look like on the screen before actually printing it on paper.

Pro-DOS an operating system used on Apple II computers in software such as AppleWorks. The Apple File Exchange program can transfer Pro-DOS files to the Mac.

Programming Language a language for writing instructions to the computer. A group of instructions is called a program. Programming languages include HyperCard, Pascal, and BASIC.

Publish and subscribe the capability of *System 7* to link files so that if you make changes in one file, those changes will automatically take effect in the other file.

Pull-down menu when you press on the words in the *menu bar*, pull-down menus will appear where you can drag down to select a *command*.

QuickTime an *extension* that comes with the Mac for playing digitized video sequences. PowerPoint has the ability to include QuickTime movies in its presentations.

Random Access Memory (RAM) temporary computer memory; it is cleared when the computer is turned off. When you input data into the computer via the keyboard or from a disk, the data is temporarily held in this part of memory. The more RAM you have, the more data you can work with at one time.

Record in a *database*, all of the fields for one item. For example, in an employee database, one record would be all of the fields on one employee.

Removable cartridge drive a type of storage device that stores large amounts of data on removable tapes or optical disks. In contrast to *hard drives*, which are not removable.

Report As used in Microsoft Works' database module, a report is a printed table showing selected information. There can be up to 16 different reports per database.

Reshape in DeskDraw, the command to edit the shape of an object.

Resize to change the size of a graphic object or selected area.

ROM read-only memory. The part of a computer's memory that is unchangeable. This may be thought of as the computer's built-in software features.

Rule in Microsoft Works' database modules a rule is a logical argument that is tested to determine whether a *record* is selected during a search.

Run-time version a play-only version of a program, where you can view files created in it but not create or modify them. PowerPoint includes PowerPoint Viewer, a run-time version of the program which can be freely distributed.

Scrapbook a *Desk Accessory* where you can save a series of frequently used pictures or text passages. You can easily copy items from the Scrapbook into an *active* application.

Screen saver a program to draw a moving image on your monitor after a specified period of inactivity, to prevent an image from burning into the screen.

Scroll arrows the arrows at either end of a scroll bar, which when pressed cause the view of the window to move up, down, left, or right.

Scroll box the small box inside a scroll bar indicating which part of the window you are looking at. Dragging the scroll box causes the window's view to change.

Select to make something *active*. Remember the first rule of the Mac: "Select then affect." To select something you click on it or drag over it.

Selected you can tell something is selected (*active*) on the Mac because it will be darkened. See *Select*.

Selection marquee you can select a portion of the screen or all of the items within it by drawing a box or marquee around it.

Selection tool the arrow-shaped pointer (*cursor*) used to select text or other objects on the screen.

Serial port the Macintosh has two plugs on the back (identified by *icons* of a phone and a printer) which are serial ports. You can hook up a *modem*, a printer, or other devices to these ports.

Shift-clicking when you hold down the Shift key while clicking on multiple objects. This allows multiple objects to be selected at once.

Single-click one of the four mouse movements. Positioning the pointer on something on the screen and then pressing and immediately releasing the mouse button. A single-click *selects* an object without doing anything else to it.

Slide in PowerPoint, one frame (or screen) of the presentation. Uses the analogy of a slide in a slide show.

Slider bar in PowerPoint and Works' database, dragging the slider bar with the mouse moves you between slides or records.

Spreadsheet a computer *application* that works as an electronic ledger or balance sheet. Can automatically calculate *formulas* within it.

Stationery as used in Microsoft Works, a *document* saved in stationery format will serve as a *template* or a blank form. When you open a stationery document, an untitled copy opens for you to work with.

SuperDrive all Macs built since 1991 have a floppy drive called a SuperDrive which can read and format double density, high density, or MS-DOS disks. Older Mac drives can only read double density disks.

System Error when your Macintosh freezes and stops working. Also called a crash. You can get your Mac working again by turning it off and back on again, but you may lose the data you were working on when the system error occurred. System errors are often caused by errors in the software.

System 6 the older version of the Macintosh operating *system software*. Still used on many older Macs.

System 7 Apple's current operating *system software*. Included with all Macs shipped since 1991.

System Folder a special folder on all Macs that contains the *System* file, the *Finder*, fonts, and other basic operational files.

System software the basic operating programs that run your computer. Contained within the *System Folder*.

Tab in Microsoft Works, you can specify four different types of tabs (left, center, right, and decimal). The left tab aligns text on its left edge.

Tear-off menu a menu that you can remove from the *menu bar* and drag around the screen. Tear-off menus remain fully visible once they are detached.

Technospeak jargon like the terms found in this glossary that computer users find themselves using all too often.

Telecommunications transferring information among multiple computers over telephone lines using a *modem*.

Template a document that you use as a blank form. When you open a template, a blank copy of it is opened and you save the modified version of it under another name. In Microsoft Works templates are called *stationery* files.

Text block in PageMaker, a connected series of words. The program automatically ties these text blocks together in order.

Text file see *ASCII*.

TIFF A graphics file format for high-resolution *bit-mapped graphics*. Stands for Tagged Image File Format. Photographs saved in this format retain their gray or color scale. Compare to *PICT*, *Paint*, and *EPS* formats.

Title bar the horizontal strip at the top of a *window* containing the name of that window. When the window is *active*, the title bar has stripes in it.

Toggle commands that turn on and off each time you access them. These commands often have a check mark next to them to indicate they are toggled on. Other commands will change their wording (e.g., Hide Tools becomes Show Tools).

Tool bar as used in this book, the tool bar is a strip near the left or top of the screen where tools are located.

Tool box as used in this book, the tool box is a small rectangle on the screen which contains various types of tools.

Trash an icon in the *Finder* where you drag files to delete them or drag disks to eject them.

TrueType a type of *font* which is scalable (that is printed at any point size). An alternative to *PostScript* fonts, which unlike *TrueType* fonts take separate files for both the screen image and the printer.

Undo a *command* available in many Mac programs to undo the previous action taken. The programs in this book have only one level of undo, so only the last action taken can be undone or redone.

Ungroup a graphics *command* to break apart the parts of an object that have previously been grouped together.

Unlink in Microsoft Works' *spreadsheet* module, the ability to break up a chart into separate objects. Once a chart has been unlinked, the numbers are treated as objects rather than data.

Upload to send a *file* to another computer over a *modem* or *network*. The opposite of *download*.

User the person operating a computer, as opposed to those persons who program or design them.

User friendly easy to use.

User group a club made up of people who share computing interests. They are typically local, not-for-profit, and independent of commercial interests. They are a great source of assistance and resources. Some of the

biggest Mac user groups are the Boston Computer Society and the Berkeley Macintosh Users Group.

Virus an unwanted program that attaches itself to other programs. Some viruses seem to do no damage, but others may destroy *data* or cause your computer to *crash*. Eradicated with disinfectant software.

Window an enclosed box on the Mac's screen that contains a *title bar*. Disks and folders open into windows, which then show their contents. Most windows are resizable and movable, as opposed to *dialog boxes*.

Window-shade handles in PageMaker, the beginning and end of *text boxes* are indicated by lines with small pentagons in them. If a window-shade has a plus in it, that indicates the text continues in another text box.

Word Processor a software program used for creating and editing text.

Wrap around also called word wrap. When working with text, if a word won't fit at the end of one line it will automatically be placed at the beginning of the line below it.

Wristwatch when the computer is busy and you need to wait to do something, the *cursor* will usually take the form of a small watch. You'll soon grow weary of watching the wristwatch.

Zoom to make a *window* large or small by clicking in the *zoom box*.

Zoom box the small box in the upper right corner of most *windows* which when clicked toggles the size of the window between full screen and a custom size.

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 DP = DeskPaint
 DB = Database
 SS = Spreadsheet
 PM = PageMaker
 PP = PowerPoint

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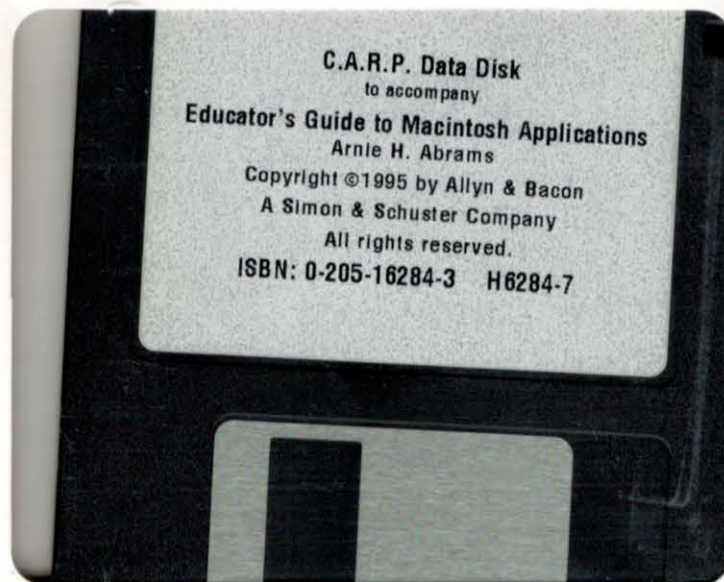
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QUICK BACKUP INSTRUCTIONS

At the end of Chapter 3 there are detailed instructions on how to make a backup copy of the enclosed data disk. Because the disk is nearly full, the instructions explain how to divide the original disk into two backups; affording space to save the exercises in the book's tutorials. However, if you have some previous Mac experience and/or would like to make a quick copy of the disk, just for safe keeping before you begin the book, you can follow these steps:

1. Insert the CARP data disk into the disk drive.
2. Drag the CARP icon to the hard disk.
3. Drag your CARP disk to the Trash icon (to eject it).
4. Insert a blank disk. Follow the on screen directions to format it if necessary.
5. Drag the CARP folder from your hard disk to the icon of your floppy disk.
6. Drag your floppy disk to the Trash to eject it. Store the backup in a safe place.

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Arnie H. Abrams is currently Associate Professor of Educational Technology at Southern Oregon State College and has taught college level computer courses for the past twelve years. He has also worked for the San Diego city public school system as a media specialist for several years, taught teacher trainees and inservice classes. Dr. Abrams is active in educational, computer and technology associations both in this country and internationally, and he has had articles published in service journals, including the *Computing Teacher* and *T.H.E. Journal*. Dr. Abrams too, has been frustrated by the complexity and longwindedness of computer manuals and has strived to create a guide that is concise, clear and easy to use.



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