



Macintosh Performa  
User's Guide



*Includes setup, troubleshooting, and important health-related information for Macintosh Performa 500 series computers*

 Apple Computer, Inc.

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## **The Apple Publishing System**

This Apple manual was written, edited, and produced on a desktop publishing system using Apple Macintosh computers and QuarkXPress. Technical illustrations were drawn in Adobe™ Illustrator; screen shots were created and modified with system software, ExposurePro, Aldus SuperPaint, and Adobe Photoshop. Proof pages were created on Apple LaserWriter printers and on QMS and Tektronix color printers. Final pages were output directly to separated film on a PostScript™-driven imagesetter.

Text type is Times®, display type is Helvetica® Narrow, and cover type is Apple Garamond, Apple's corporate font. Ornaments are custom symbols designed for Apple Computer.

PostScript, the LaserWriter page-description language, was developed by Adobe Systems Incorporated.



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## Communications regulation information

### FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

### Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple’s instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

- Turn the television or radio antenna until the interference stops.
- Move the computer to one side or the other of the television or radio.
- Move the computer farther away from the television or radio.
- Plug the computer into an outlet that is on a different circuit from the television or radio. (That is, make certain the computer and the television or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions. You may find the following booklet helpful: *Interference Handbook* (stock number 004-000-00493-1). This booklet, prepared by the Federal Communications Commission, is available from the U.S. Government Printing Office, Washington, DC 20402.

**IMPORTANT** Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

### DOC statement

*DOC Class B Compliance* This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled “Digital Apparatus,” ICES-003 of the Department of Communications.

*Observation des normes—Classe B* Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur : “Appareils Numériques”, NMB-003 édictée par le ministre des Communications.

### VCCI statement

#### 情報処理装置等電波障害自主規制について

この装置は、第二種情報装置（住宅地域又はその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをしてください。

### CD-ROM drive

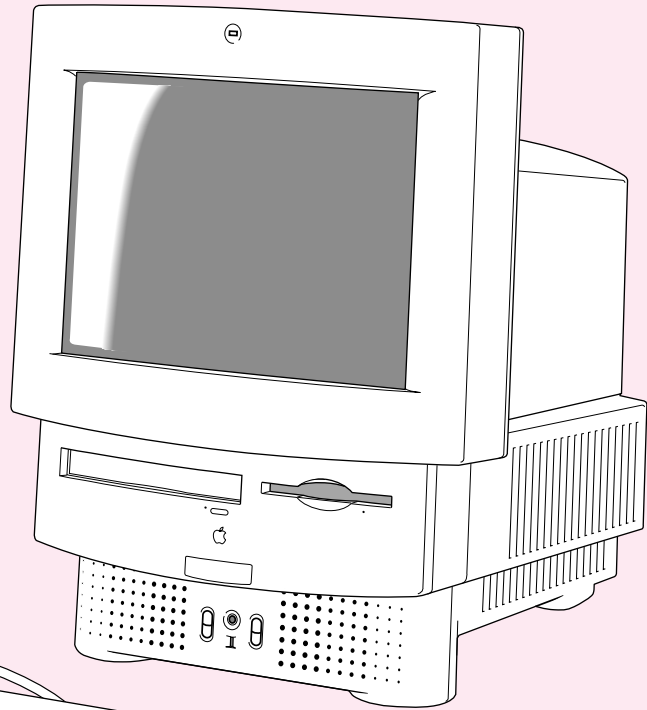
**WARNING** Making adjustments or performing procedures other than those specified in your equipment’s manual may result in hazardous exposure.

**WARNING** Do not attempt to disassemble the cabinet containing the laser. The laser beam used in this product is harmful to the eyes. The use of optical instruments, such as magnifying lenses, with this product increases the potential hazard to your eyes. For your safety, have this equipment serviced only by an Apple-authorized service provider.

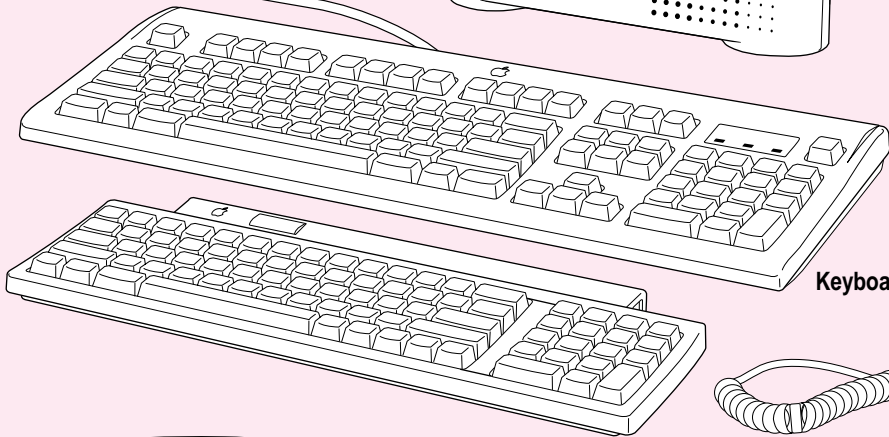
If you have an internal Apple CD-ROM drive in your computer, your computer is a Class 1 laser product. The Class 1 label, located on the computer, indicates that the drive meets minimum safety requirements. A service warning label is on the CD-ROM drive inside the computer.



**Macintosh Performa computer**



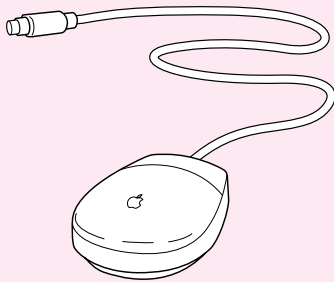
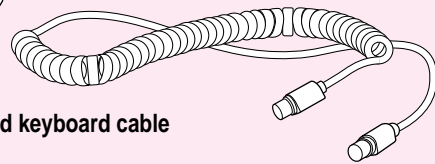
**Keyboard cable**  
(built into the keyboard)



**Keyboard**

Your computer may come with either of these keyboards, depending on which Performa model you have.

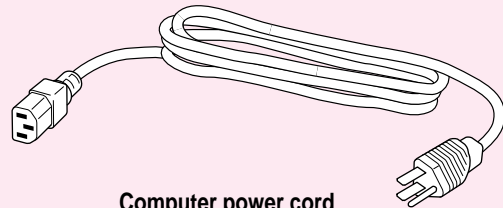
**Keyboard and keyboard cable**



**Mouse**



**Optional security screws**



**Computer power cord**



Follow the instructions in this chapter to set up your computer and learn the basics.

# 1

## Getting Started



The illustration on the facing page shows all the equipment you will need to set up your computer and begin using it. Place your equipment on a sturdy, flat surface near a grounded wall outlet. Before following the setup instructions in this chapter, you may want to read “Arranging Your Office” in Appendix A (in the section on health-related information) for tips on adjusting your work furniture so that you’re comfortable when using the computer.

### Plugging in the computer

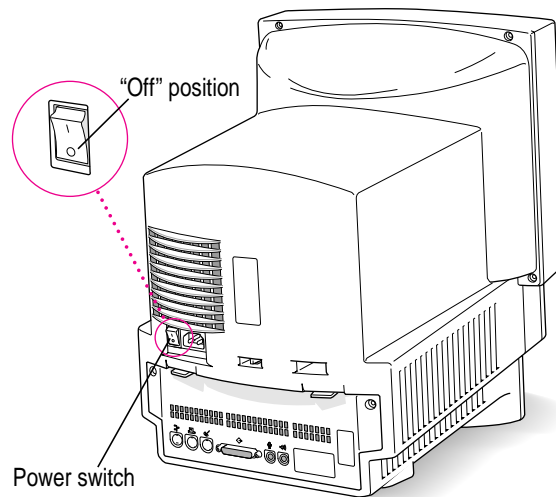
Before you plug your Macintosh into a wall socket (and before you connect anything else to your Macintosh), carefully read all the setup instructions in this chapter. Then, begin by plugging in the computer according to the instructions that follow. The plug grounds the computer and protects it from electrical damage while you are setting up.

When you are ready to begin, follow these steps:

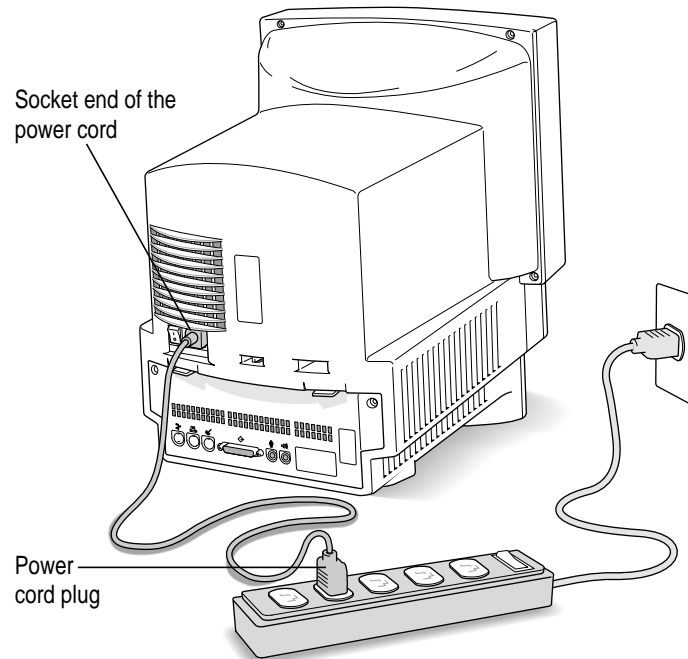
- 1 **Plug the socket end of the power cord into the recessed power plug (marked with the symbol ~) on the back of the computer.**

Make sure at least one end of the power cord is within easy reach so that you can unplug the computer when you need to.

**IMPORTANT** To protect both yourself and the computer from electrical hazards, the computer should remain turned off until you are finished connecting its parts. Check the power switch at the back of the computer. Make sure that the bottom of the switch (marked with the  $\circ$  symbol) is pressed in.



- 2 Plug the other end of the power cord into a three-hole grounded outlet or power strip.



**WARNING** This equipment is intended to be electrically grounded. Your Macintosh is equipped with a three-wire grounding plug—a plug that has a third (grounding) pin. This plug will fit only a grounded AC outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug!

## Installing an expansion card


If you purchased an expansion card separately from your Macintosh, install it now. (See Appendix B, “Installing an Expansion Card,” for instructions.) If you don’t have an expansion card, continue with the next section, “Connecting the Mouse and Keyboard.”


## Connecting the mouse and keyboard

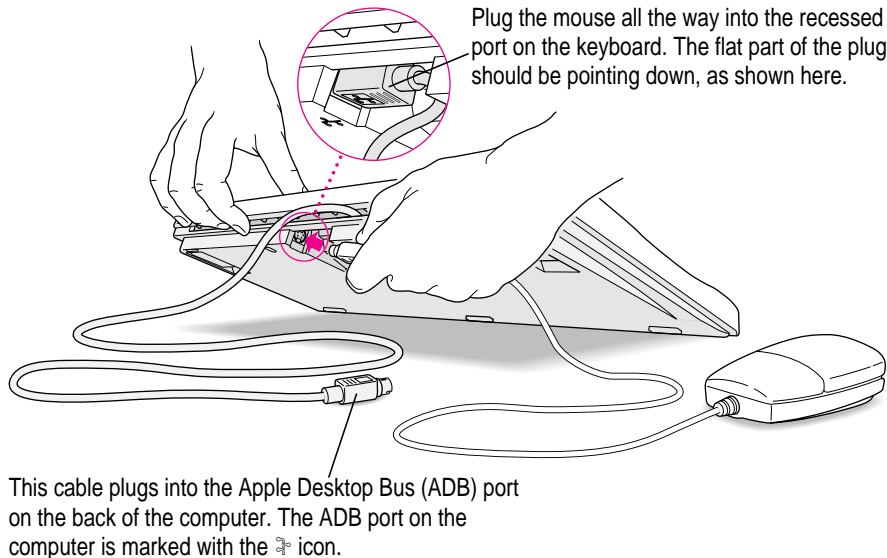
You have a choice of several keyboards for your Macintosh. The way you connect the mouse and keyboard depends on whether the keyboard has a separate cable or a built-in cable.


### Connecting a keyboard with a built-in cable

- 1 Plug the mouse cable into the recessed port on the back of the keyboard.**

The plug and the port are marked with the  icon (symbol). The positions of the port and icon on your keyboard may be different from those pictured.

*By the way:* A port marked with the  icon is called an Apple Desktop Bus (ADB) port.




- 2 Plug the keyboard cable into the port marked with the  icon on the back of the computer.**


Some monitors have a port to which you can connect the keyboard or mouse. See the information that came with your monitor.

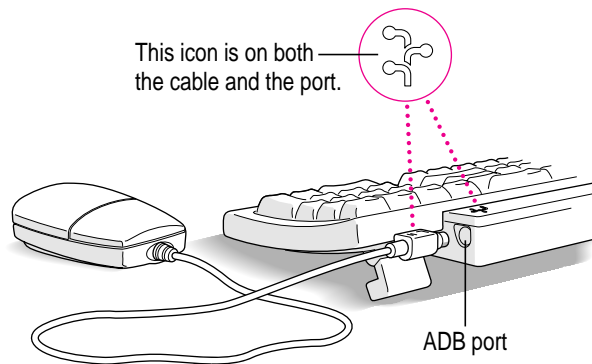
## Connecting a keyboard with a separate cable

- 1 **Plug the mouse cable into the port on either side of the keyboard.**

Most right-handed people prefer to use the mouse with their right hand; most left-handed people prefer to use their left hand. Plug the mouse into the port on the side you prefer.

The plug and the port are marked with the  icon (symbol). Align the symbols before you insert the plug. (The positions of the port and icon on your keyboard may be different from those pictured here.)

*By the way:* A port marked with the  icon is called an Apple Desktop Bus (ADB) port.



- 2 **Plug the keyboard cable (both ends are the same) into the other port on the keyboard.**

If you plugged the mouse cable in on the right, for example, plug the keyboard cable in on the left.

- 3 **Plug the keyboard cable into the port marked with the  icon on the back of the computer.**

Some monitors have a port to which you can connect the keyboard or mouse. See the information that came with your monitor.

## Connecting other equipment

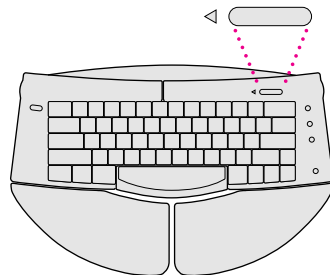
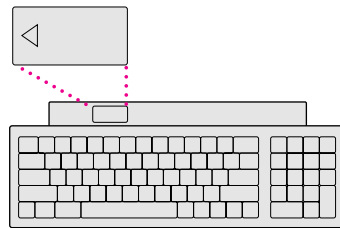
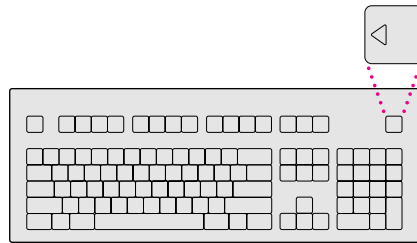
If you are new to the Macintosh, it's a good idea to get some experience using your computer before you connect other equipment, such as a printer or scanner. To learn basic Macintosh skills, continue with the instructions in this chapter.

When you're ready to connect other equipment to your Macintosh, see the instructions in Chapter 3.

## Turning the computer on for the first time

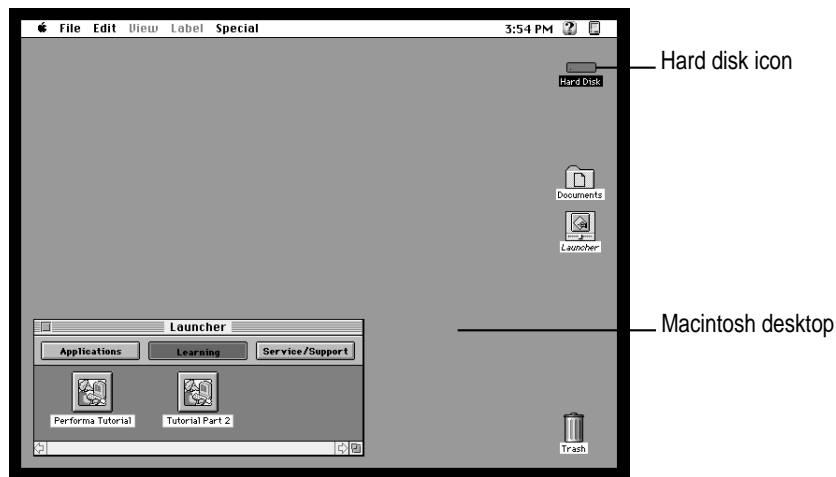
To turn the computer on for the first time, follow these steps:

- 1** Press the top of the power switch at the back of the computer. The top of the switch is marked with the symbol I.
- 2** Press the Power key (marked with a triangle) on your keyboard.



**3 Check to see what's on your screen.**

- If you see the Macintosh desktop, as in the illustration below, your system software has already been installed, and your computer is ready to use. Skip now to the section “What's Next?” later in this chapter.



- If you see a blinking question mark, you need to install system software on your computer's hard disk. (System software is the set of programs your computer uses to start itself up.) See “Installing or Reinstalling System Software” in Chapter 5 for information on how to install system software.
- If you see anything else on your screen, or nothing at all, see the next section, “Problems Turning Your Computer On?”



## Problems turning your computer on?

If the screen is dark, check these items to see if you can identify the problem:

- Is the computer turned on? The power-on light on the front of the computer should be on. Make sure the top of the power switch on the back of the computer is pressed in.
- Is the power cord connected to the computer, and is the cord plugged into a power source?
- If the computer is plugged into a power strip, is the power strip turned on?
- Are the keyboard and mouse cables connected correctly? (Don't disconnect the keyboard or mouse cable while the computer is on. You could damage your equipment.)
- Is the brightness control on the monitor (marked with the ☼ icon) turned down?
- If you have an external hard disk attached to your computer, is that hard disk turned on? Was it turned on before you turned on the computer? If you're not sure, turn everything off. Then turn on the external hard disk before you turn on your computer.

If you see a blinking question mark on the screen, you probably need to install system software. See “Installing or Reinstalling System Software” in Chapter 5.

## What's next?

Congratulations! You've finished setting up your computer. Now continue with one of the following steps:

- If you are new to the Macintosh, turn to the next section, “Learning the Basics.”
- If you are an experienced Macintosh user, turn to Chapter 2, “Getting Help,” to learn about Macintosh Guide, your main source of information when you're working with the Macintosh.
- If you want to connect other equipment, such as a printer, to your computer, see Chapter 3, “Expanding Your Computer and Using Special Features.”

Before you begin working with your computer, be sure to read the important health and safety information in Appendix A.

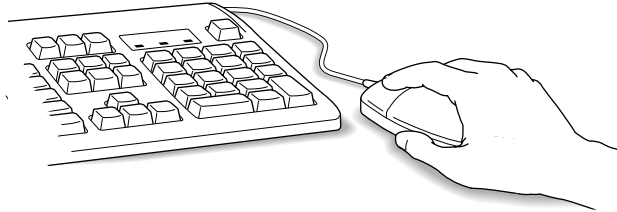
**IMPORTANT** If you need to turn off your computer at any point, please see “Turning the Computer Off” later in this chapter. It is very important to use the correct procedure for shutting down your Macintosh before turning it off.

## Learning the basics

If you are new to the Macintosh, you should begin by looking at the easy-to-use program called the Performa Tutorial. The two-part tutorial teaches you the basic skills you'll need to use your computer. To start the tutorial, follow these steps:

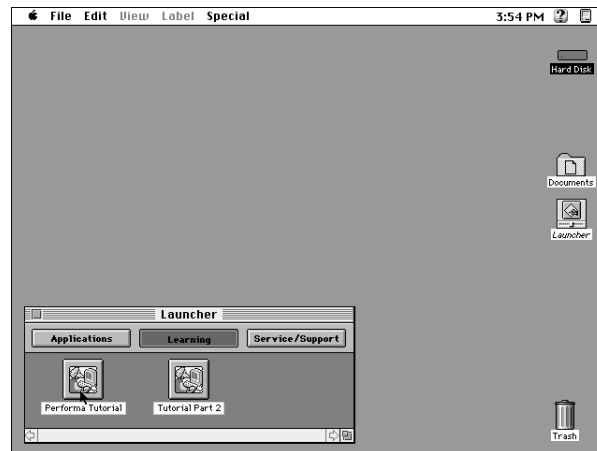
**1 Slide your mouse along your mouse pad or desk.**

Hold the mouse as shown, with the cable pointing away from you. Don't press the mouse button (under your index finger). Notice that the arrow (↔) on the screen moves in the same direction that you move the mouse.



If the arrow doesn't move, make sure that the cables connecting the mouse and keyboard are secure and that your mouse is positioned as shown in the illustration.

**2 Move the mouse so that the arrow is over the button labeled "Performa Tutorial."**



If you don't see the picture for the Performa Tutorial on your screen, put the arrow on the word "Learning" and click (press and release) the mouse button.

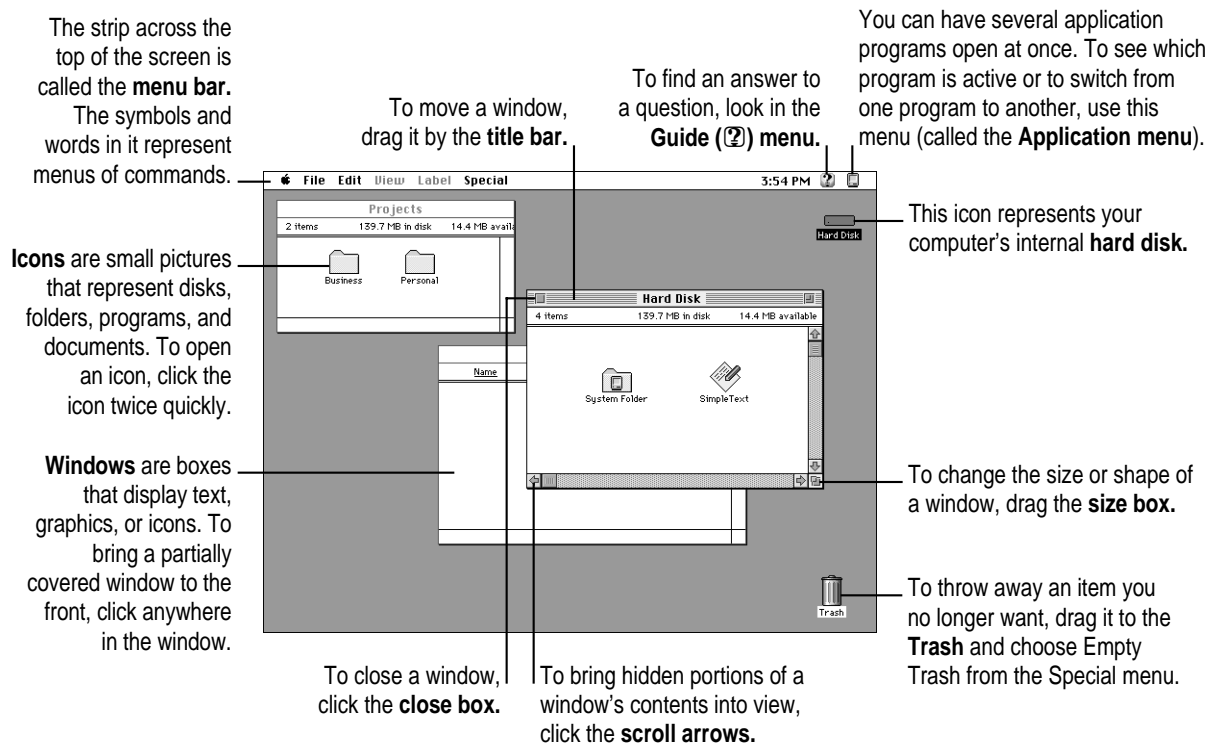
If you run out of room on your mouse pad or desk while moving the mouse, pick up the mouse and place it where there's more room. (The arrow on the screen moves only when the mouse is in contact with the mouse pad or desk.)

**3 Without moving the mouse, click the mouse button.**

A window appears welcoming you to the tutorial. You can set this book aside for now and follow the instructions on the screen. When you have completed both parts of the tutorial, return to this book.

## Reviewing the basics

The following illustration summarizes many of the basic skills and terms you learned from the tutorial.



## Turning the computer off

To turn the computer off, you choose Shut Down from the Apple () menu. Detailed instructions follow. (*Note:* The Shut Down command is also available in the Special menu.)

- 1 Move the tip of the arrow to the Apple () menu at the top left of the screen.
- 2 With the tip of the arrow on the apple, press and hold down the mouse button.
- 3 While holding down the mouse button, move the arrow down the list of choices until the words “Shut Down” are highlighted, then release the mouse button.



You can also shut down your computer from the keyboard.

- 1 Press the Power key (marked with a triangle) on the keyboard.

You will see a message asking whether you want to shut down or continue working.

- 2 Click Shut Down.

To turn the computer on, simply press the Power key again.

## Turning the computer on

To turn on the computer after you've shut it down with either the menu command or the keyboard:

- Press the Power key (marked with a triangle) on the keyboard.

Leave the power switch on the back of your computer in the “on” position (with the top part of the switch, marked with the symbol I, pressed in).

## Where to find answers

When you have questions about using your Macintosh, there are several places you can look for answers.




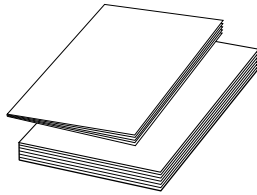
### In this book

Use this book to help you set up your computer and learn about it, or to find solutions to problems.



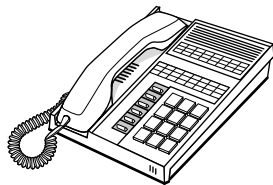
### In the Guide menu

The Guide menu (marked with the  icon) is your main source of information about the Macintosh. To learn how to get different kinds of help from the Guide menu, see Chapter 2 in this book.



### In other manuals

For answers to questions about other equipment or about application programs you have purchased, see the manuals that came with the equipment or programs.



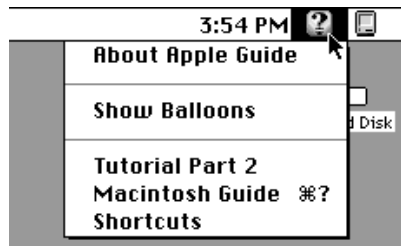
### From Apple's customer support hotline

If you can't find an answer in any of the materials provided, call the customer support hotline. (The phone number for the hotline is in the service and support information that came with your computer.)

Use the instructions in this chapter to learn about the help available to you in the Guide menu.

## 2 Getting Help

The Guide menu is your main source of information when you're working with your computer. The menu is identified by a question mark (🔍) in the upper-right corner of the screen.



## Getting answers to your questions

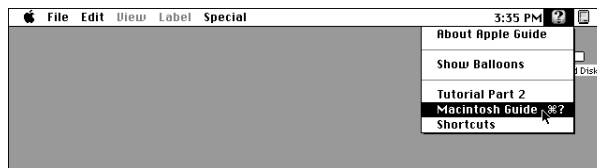
When you have a question while working with your computer, you can get the answer by choosing Macintosh Guide from the Guide menu.

- 1 Pull down the Application menu (in the upper-right corner of the screen) and choose Finder to make it the active application program.

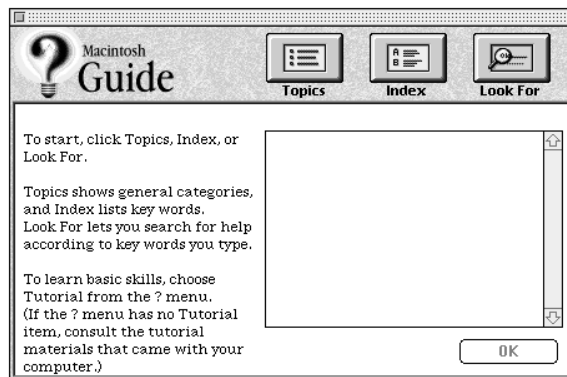


A checkmark in the menu indicates that the Finder is the active program.

- 2 Pull down the Guide menu (marked with the ? icon) and choose Macintosh Guide.



The Macintosh Guide window appears.



Whenever you use Macintosh Guide, its window remains in front of other windows. If the window gets in your way, you can move it by dragging its title bar (the gray bar across the top of the window).



- 3 Notice the three buttons at the top of the window: Topics, Index, and Look For.



Macintosh Guide gives you three ways of finding information:

- **Topics** lets you choose from a list of general subjects; it is like the table of contents in a book.
- **Index** lets you choose from an alphabetical list of more specific subjects; it is like the index in a book.
- **Look For** lets you search for information related to a specific word or phrase that you type.

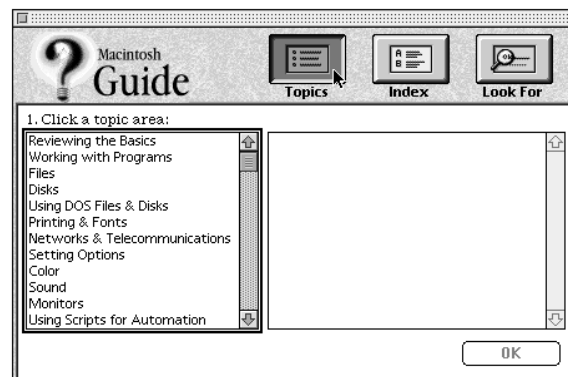
In the following sections you will practice using each method.

If you have problems while using Macintosh Guide, see “Tips for Using Macintosh Guide” later in this chapter.

### Getting answers with the Topics button

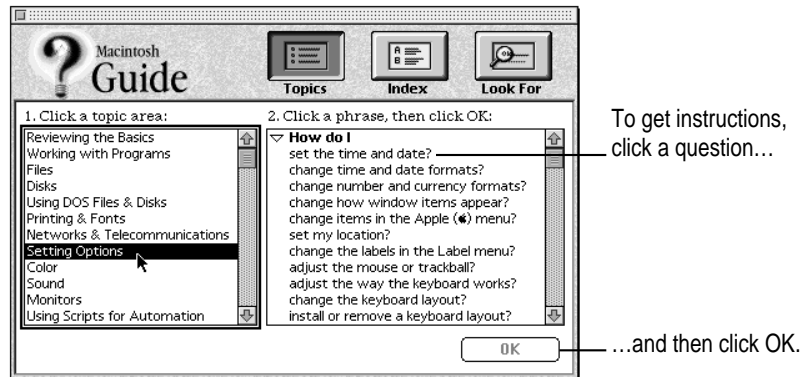
- 1 In the Macintosh Guide window, click the Topics button.

A list of general topics appears on the left side of the Macintosh Guide window. (Depending on the hardware and software you have, the list of topics may look different.)



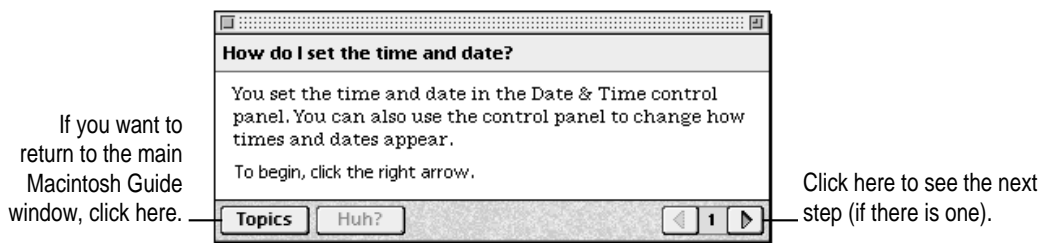
**2 Click “Setting Options” in the list of topics.**

When you click any topic area, a list of related questions appears on the right side of the Macintosh Guide window.



**3 Click the question “How do I set the time and date?” and then click OK. Or double-click the question.**

A small window appears with instructions for you to follow.



**4 Read and follow the instructions in this window.**

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to see the next step.

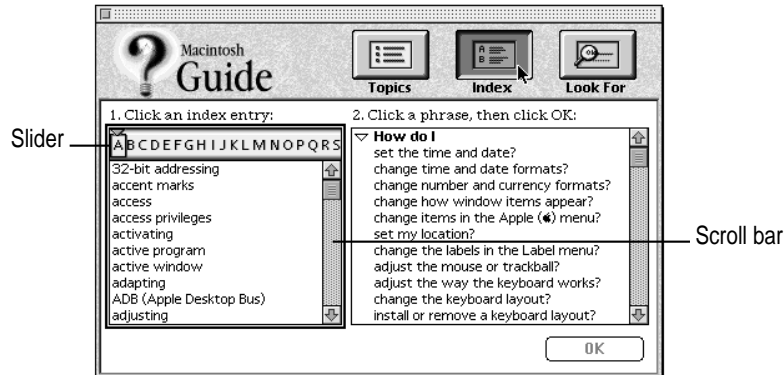
**5 When you have completed all the steps, click the Topics button in the lower-left corner to return to the main Macintosh Guide window.**

Now continue with the next section.

## Getting answers with the Index button

- 1 In the Macintosh Guide window, click the Index button.

An alphabetical list of subjects appears on the left side of the window.

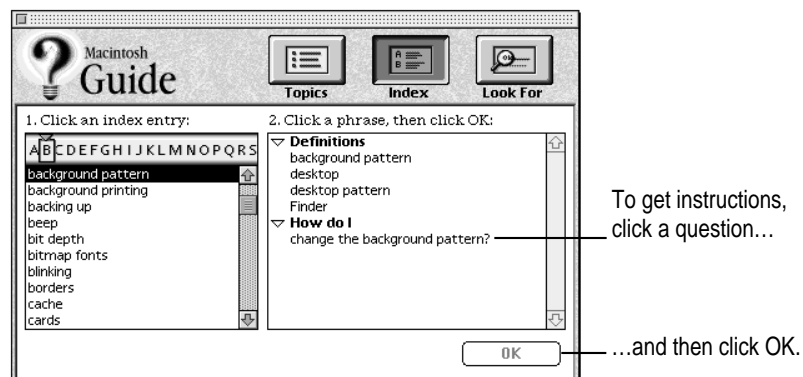


- 2 Scroll through the alphabetical list until the phrase “background pattern” is visible.

You can scroll through the list either by dragging the slider to the letter *B* or by using the scroll bar at the right of the list.

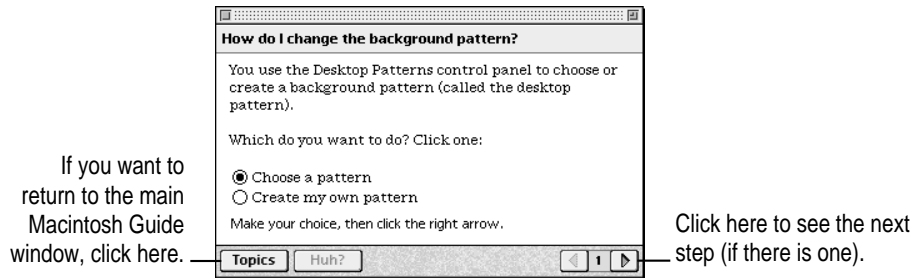
- 3 Click the phrase “background pattern” in the alphabetical list.

When you click any index entry, a list of related questions appears on the right side of the Macintosh Guide window.



- 4 Click the question “How do I change the background pattern?” and then click OK. Or double-click the question.

A small window appears with instructions for you to follow.



- 5 Read and follow the instructions in the window.

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to see the next step.

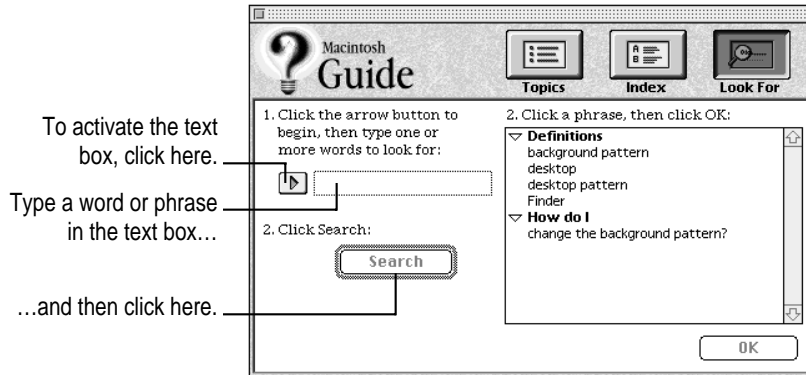
- 6 When you have completed all the steps, click the Topics button in the lower-left corner to return to the main Macintosh Guide window.

Now continue with the next section.

## Getting answers with the Look For button

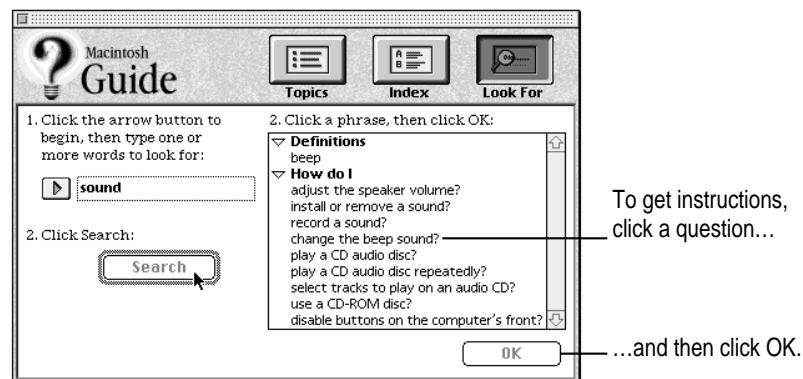
- 1 In the Macintosh Guide window, click the Look For button.

A small box appears on the left side of the window, where you can type text.



- 2 Click the arrow button to activate the text box.
- 3 Type "sound" in the text box and then click Search.

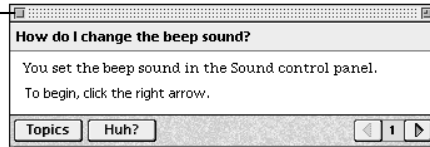
When you click Search, a list of questions related to the word or phrase you typed appears on the right side of the Macintosh Guide window.



- 4 Click the question “How do I change the beep sound?” and then click OK. Or double-click the question.

A small window appears with instructions for you to follow.

If you want to close  
Macintosh Guide,  
click here.



Click here to see the next  
step (if there is one).

- 5 Read and follow the instructions in the window.

Macintosh Guide provides step-by-step instructions to answer the question you selected. When you have completed each step, click the right arrow in the lower-right corner to display the next step.

- 6 When you have completed all the steps, click the close box in the upper-left corner to close Macintosh Guide.

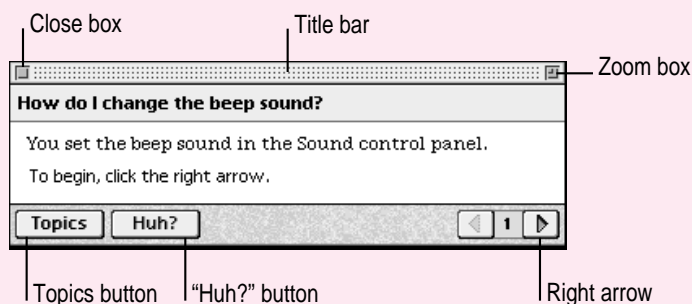
## Tips for using Macintosh Guide

Here are a few tips for using Macintosh Guide effectively:

- Macintosh Guide is available only when you are in the Finder—the desktop area where you can see the icons of disks, folders, and files. (Other programs may also have help available in the Guide menu, however.) If you don't see Macintosh Guide in the Guide menu, pull down the Application menu (to the right of the Guide menu) and choose Finder.
- Follow the steps when you're instructed to; don't skip ahead or read ahead. That way the computer can check to make sure you've done a step correctly.
- Unlike most windows, the Macintosh Guide window stays in front of other windows on the screen so that your instructions are never covered. If you need to move the Guide window out of the way, drag it by the title bar at the top of the window.

You can also move the window out of the way by clicking the zoom box. Click the box once to shrink the window; click it a second time to expand the window to its original size.

- If you need more information about an instruction or a term, click the button labeled “Huh?” to get further explanation. (The “Huh?” button is dimmed when no additional information is available.)
- If you want to return to the main Macintosh Guide window, click the Topics button in the lower-left corner of the Guide window.
- When you're finished using Macintosh Guide, click the close box in the upper-left corner of the window.



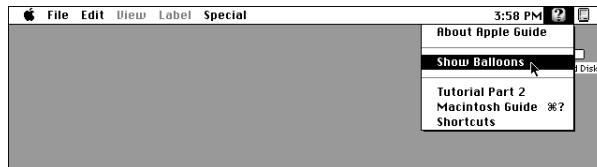
## Identifying objects on the screen

Sometimes you'll see an unfamiliar item on the screen and ask yourself, "What's that?" You can get an answer by using a Macintosh feature known as Balloon Help.

Balloon Help explains the function of icons, menus, commands, and other items on the Macintosh screen in balloons like those you see in comic strips.

Follow these steps to use Balloon Help:

- 1 Pull down the Guide menu (marked with the  icon) and choose Show Balloons.**



- 2 Point to any object on the screen that you want to identify.**

A balloon appears next to the object. In the following illustration, for example, pointing to the Trash displays a balloon that explains how to use the Trash to throw items away.



Although balloons appear next to items when you point to them, the way you work does not change; you can still select icons, choose commands, and so on.

- 3 When you're finished using Balloon Help, choose Hide Balloons from the Guide menu.**



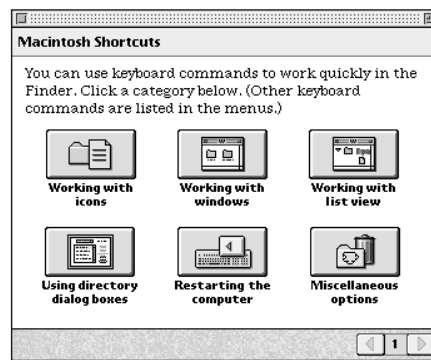
## Learning useful shortcuts

You can perform many tasks in the Finder more quickly if you use keyboard or mouse shortcuts. For example, instead of clicking an icon and choosing Open from the File menu, you can simply double-click the icon to open it.

Follow these steps to learn keyboard and mouse shortcuts:

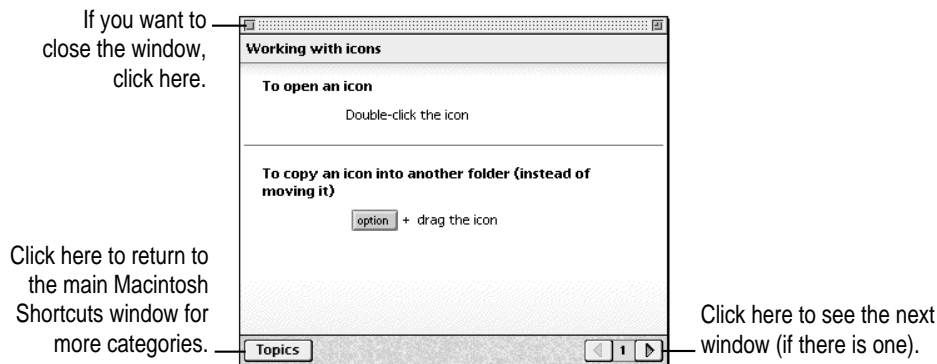
- 1 Pull down the Guide menu (marked with the  icon) and choose Shortcuts.

The main Macintosh Shortcuts window appears.



- 2 Click one of the category buttons.

Another window appears, describing shortcuts for that category.



- 3 Read about the shortcuts available for the category you selected.**

Click the right arrow in the lower-right corner of the window to display the next window (if there is one).

- 4 When you finish reading about the shortcuts for your category, click the Topics button in the lower-left corner to return to the main Macintosh Shortcuts window. Or click the close box in the upper-left corner to close the window.**



Read this chapter for information on expanding your computer system with additional hardware and using special features of your computer.

# 3

## Expanding Your Computer and Using Special Features

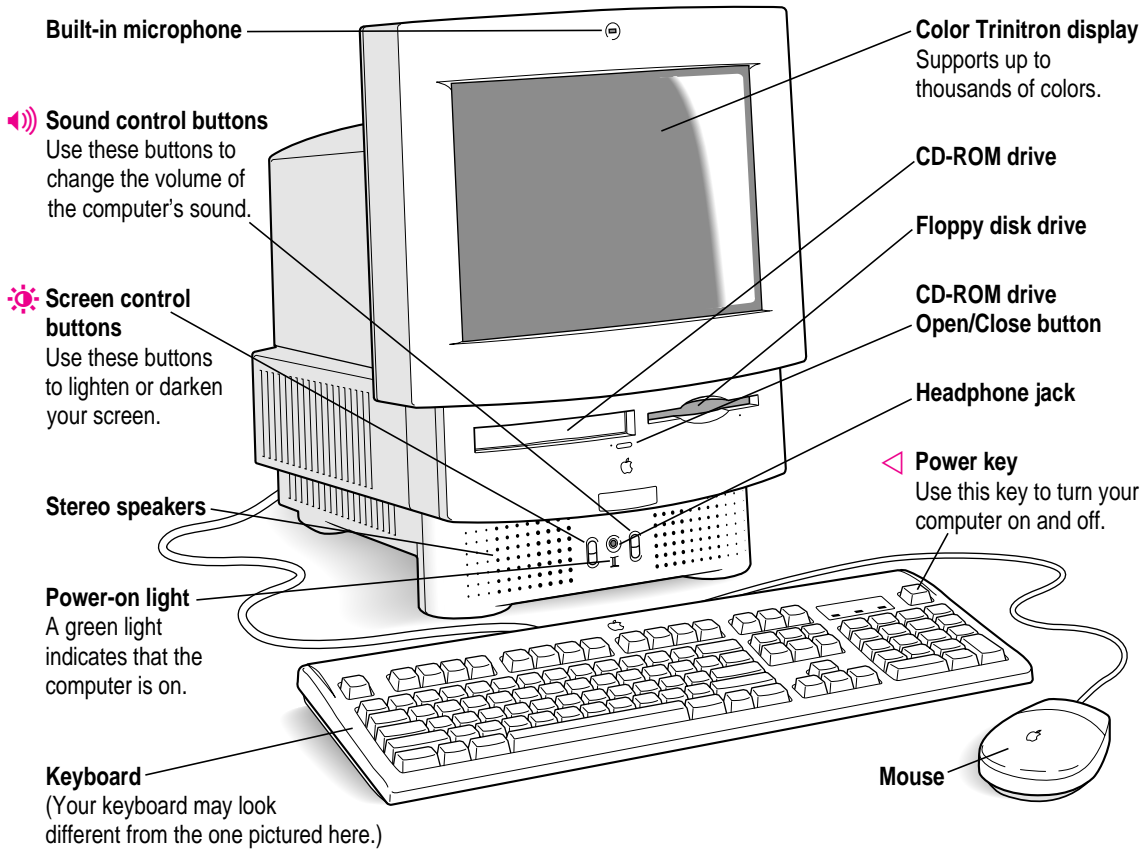


Read this chapter to learn how to connect additional equipment to your Macintosh. Also read this chapter to learn about some of the special features of your Macintosh:

- using the sound control buttons
- using the screen control buttons
- using the built-in microphone
- connecting to a network

## Your computer at a glance

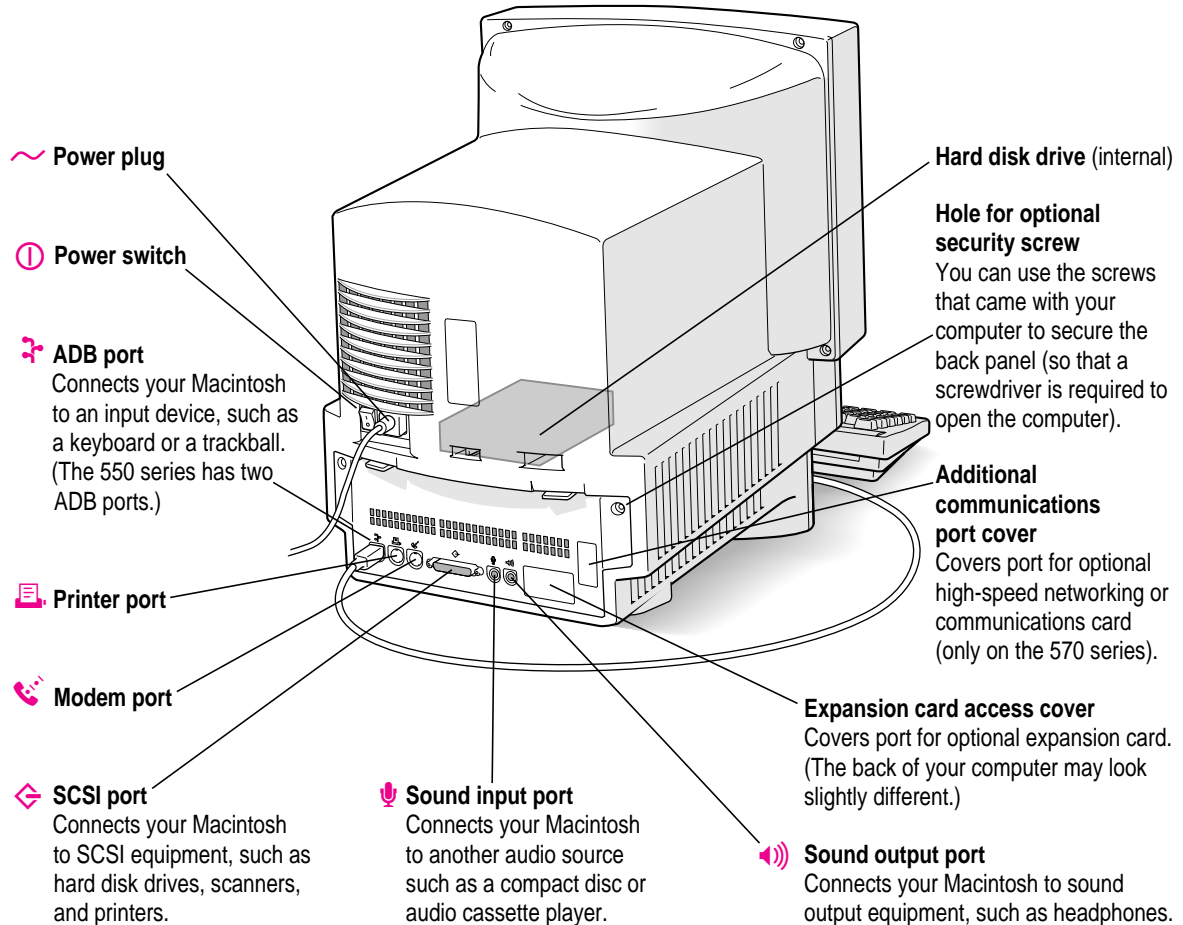
This illustration shows a basic Macintosh Performa 500 series system. You can expand your computer system by connecting additional hardware (such as a printer, modem, or scanner).




## Where to connect additional equipment

The illustration on this page shows where equipment should be connected to your computer.

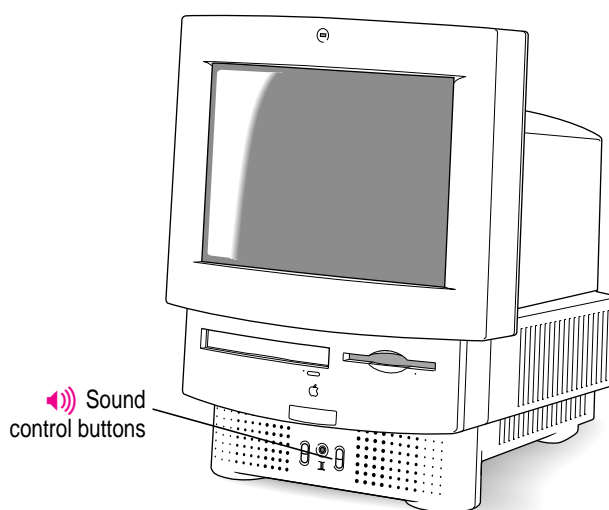
For instructions on connecting equipment such as a printer or scanner, see the manual that came with the equipment.




## Using the sound control buttons on your computer


There are two sets of buttons on the front of your Macintosh. The set on the right (marked with the ) is for sound control. You can use these buttons to increase or decrease the volume of the sound your Macintosh plays:

- Press the button at the top to make the sound louder.
- Press the button on the bottom to make the sound softer.

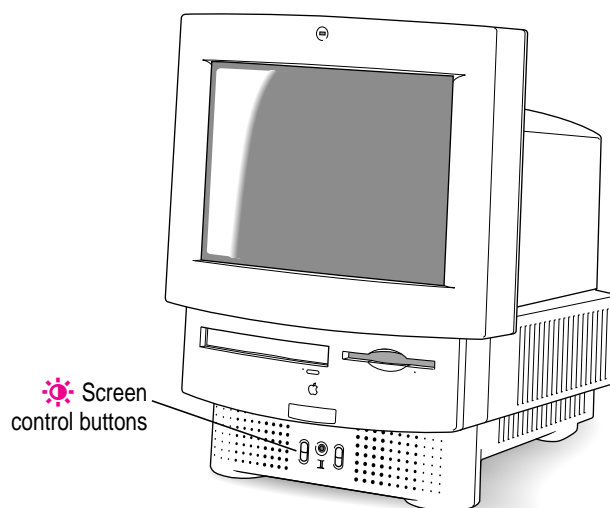


You can also adjust the sound by using the Sound control panel. For more information about adjusting sound, see the “Sound” topic of Macintosh Guide, available in the Guide () menu.

## Using the screen control buttons on your computer

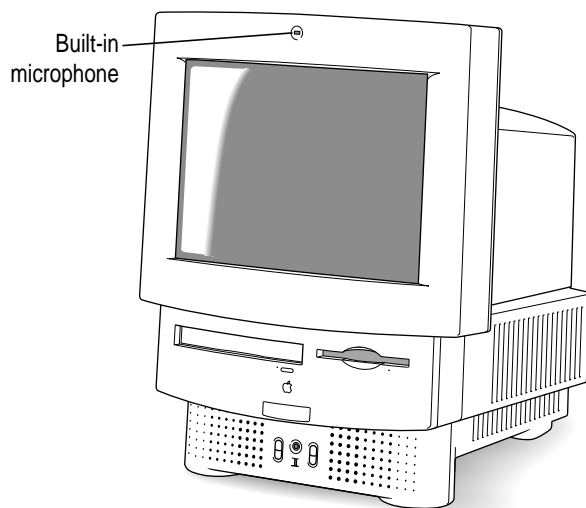
You can adjust the level of light and dark on the screen of your built-in monitor by using the screen control buttons on your computer (marked with the  icon).

- Press the button at the top to lighten your screen.
- Press the button at the bottom to darken your screen.



## Using the built-in microphone

Your Macintosh comes with a built-in microphone for recording live sounds. The microphone is highly sensitive. Once you've turned it on (which you do with a sound-recording application program), it can pick up sounds within a range of several feet. For information on recording sound, see the "Sound" topic of Macintosh Guide, available in the Guide (📖) menu.



**WARNING** Do not stick any small objects into the built-in microphone. Doing so may damage your equipment.



## Connecting to a network

If your computer has an optional Ethernet card, you can connect your Macintosh to any standard high-speed Ethernet network. You can connect your Macintosh to an existing Ethernet network that uses thin coaxial cables, 10BASE-T twisted pair cables, thick coaxial cables, or other standard cables.

You may need to purchase an appropriate Apple Ethernet media adapter or other compatible media adapter to connect your Macintosh to a network. (Consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for more information on Apple Ethernet media adapters.)

To use Ethernet, you need to change the network connection in the Network control panel. (For instructions on how to select a network connection and other information about using your Macintosh on a network, see the “Networks & Telecommunications” topic of Macintosh Guide, available in the Guide [?] menu.)

**IMPORTANT** Your Macintosh supports EtherTalk Phase 2 (AppleTalk Phase 2 protocols for Ethernet networks) and TCP/IP (via MacTCP software). Non-Apple products that you can use to communicate over Ethernet using protocols are also available. Your Macintosh does not support EtherTalk Phase 1 (AppleTalk Phase 1 protocols for Ethernet networks).

**CAUTION** The use of an Ethernet card will make your Macintosh a Class A computing device, according to FCC regulations.

## Expanding memory

The random-access memory (RAM) in your computer can be expanded. Installing additional RAM adds more memory chips to your computer and expands its capabilities. The *Technical Information* booklet that came with your computer describes how much additional memory can be installed in your Macintosh.

Memory for your computer is provided in packages called Single Inline Memory Modules (SIMMs). The SIMMs must be the correct type for your computer and should be installed in pairs of the same size into paired slots. It is very important that the SIMMs be correctly installed in your Macintosh. Incorrect installation can result in errors, unpredictable results, and damage to your equipment and data.

**WARNING** To avoid damage to your computer, Apple recommends that only an Apple-certified technician install additional RAM. Consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for service. If you attempt to install additional RAM yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer. See an Apple-authorized dealer or service provider for information about this or any other warranty question.

## Installing internal drives

Your Macintosh can hold up to three internal storage devices, including a floppy disk drive, a CD-ROM (compact disc read-only memory) drive, and a hard disk drive (several capacities are available). These drives may already be installed. If you want to add or replace an internal drive, see your Apple-authorized dealer.

Read this chapter to learn how to work with application programs and protect the information on your disks.

# 4

## Using Programs and Backing Up Disks



Your computer came installed with several ready-to-use application programs. You can open these programs by clicking their buttons in the Launcher.

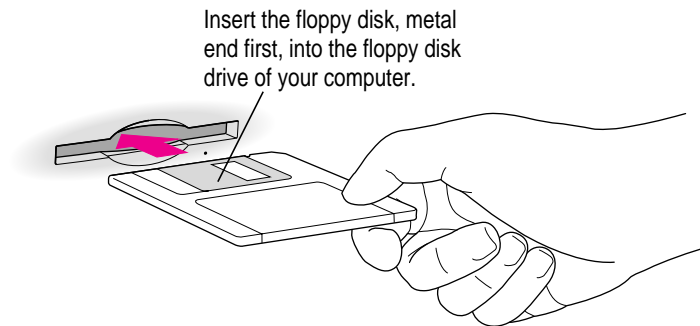
The Apple Extras folder on your hard disk (or the *Macintosh Performa CD*) contains other programs (some of which must be installed before they will work), including the following:

- *AppleScript*. Macintosh Guide requires that AppleScript be on your hard disk. With AppleScript you can automate tasks in the Finder and other scriptable programs (programs that support AppleScript). Instructions for using AppleScript are included in the AppleScript folder.
- *QuickDraw GX* gives your computer more powerful printing and font capabilities. You'll want to install QuickDraw GX if you purchased another program that requires it. If your computer has at least 8 megabytes of random-access memory (RAM), you can install QuickDraw GX by opening the QuickDraw GX folder and double-clicking the Installer icon.
- *PowerTalk* provides an open collaboration environment with a universal mailbox and other electronic mail services. You'll want to install PowerTalk if you purchased another program that requires it. If your computer has at least 8 megabytes of RAM, you can install PowerTalk by opening the PowerTalk folder and double-clicking the Installer icon.

## Installing application programs

You'll probably want to buy and install additional application programs. See the manuals you receive with your programs for instructions on installing and using them.

In most cases, you'll install an application program on your internal hard disk from floppy disks that contain the program. The following illustration shows how to insert a floppy disk in your computer's floppy disk drive.



For instructions on how to eject floppy disks, see the “Disks” topic of Macintosh Guide, available in the Guide (🔍) menu.

To use your programs most effectively, follow these guidelines:

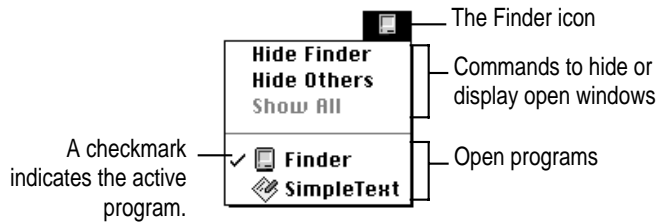
- Put only one copy of each program on your hard disk. Having more than one copy can cause errors.
- Whenever you copy a program disk to your hard disk, be careful not to copy a System Folder. Always check to see what you've copied, and drag any extra System Folders to the Trash.
- If you have problems using a program, read the manuals you received with the program.
- If a program malfunctions consistently, try installing a fresh copy. If that doesn't help, find out from the software manufacturer whether your version of the program is compatible with the system software you're using.

For instructions on how to put a program into the Launcher, see the “Launcher” index topic of Macintosh Guide, available in the Guide (🔍) menu.

## Working with several programs at a time

You can open as many application programs and desk accessories as your computer's memory allows.

All open programs are listed in the Application menu at the right end of the menu bar. The name of the active program (the one you're using right now) has a checkmark next to it, and its icon appears in the menu bar.



## Finding out which programs are open

If you have several programs and windows open, you can find out which program is active and which other programs are open by pulling down the Application menu.

## Switching programs

You can switch to another open program or desk accessory by choosing its name from the Application menu.

If a program's icon is dimmed in the menu, that means its windows are hidden. Choosing the program from the Application menu displays its windows.

You can also switch to another program by clicking in a window that belongs to an open program, or by double-clicking a program icon (or the icon of a document that was created with the program).

## Hiding and showing windows on the desktop

You can hide all windows except those of the active program by choosing Hide Others from the Application menu.

The other programs remain open even though their windows are hidden. When you switch to another program, its windows become visible again.

If you want to see all the open windows, choose Show All from the Application menu.

## Protecting the information on a disk

Your computer's hard disk comes with a lot of valuable information already stored on it, including system software and some application programs. If you had a valuable document like a birth certificate, you'd probably make an extra copy of it for safekeeping. Similarly, you should make a copy of the information on your hard disk for safekeeping. (The extra copy is called a *backup*, and the process of making the copy is called *backing up*.)

Once you have a backup, you're protected from accidentally losing the information on your hard disk. In the unlikely event that something happens to your hard disk, you can easily get the information back.

## Backing up your files

You can back up the work you store on a hard disk by copying individual files to another disk in the usual way (dragging the files' icons to the icon of the other disk). You can back up the contents of an entire floppy disk by dragging its icon to another floppy disk or hard disk icon.

If your computer has a CD-ROM drive, you also received the *Macintosh Performa CD*, which contains a backup copy of all the software that came with your computer. You should make backup copies of the documents you create. If you alter the contents of your System Folder, you may also want to use Apple Backup and Apple Restore to preserve the contents of your hard disk. (See the following sections for instructions on using Apple Backup and Apple Restore.)

If your computer does not have a CD-ROM drive, use the application program Apple Backup to copy the entire contents of your Macintosh hard disk to floppy disks. Keeping this backup copy up-to-date will protect you in case information on your hard disk is accidentally lost or damaged. You should update your backup copy at least once a month, and in between full backups you should store copies of important documents on floppy disks.

If something happens to the information on your hard disk, you can use the backup copy you made to put the information back to your hard disk. To do this, you use the Apple Restore program that came with your Macintosh. (See the following sections for instructions on using Apple Backup and Apple Restore.)

It's a good idea to keep two sets of backup copies, and to alternate between them (using one set one month, and the other the next) when updating your backup copy. This protects you from losing files in the unlikely event that a problem damages the files on both your internal hard disk and your backup set of floppy disks.

You can also purchase a backup program with additional features that make copying faster. (For example, some programs have a feature that lets you copy only the new and changed information on your hard disk.)

## Using Apple Backup for the first time

**WARNING** Do not attempt to back up your Macintosh with disks that have been preformatted for an IBM-compatible personal computer.

To use Apple Backup for the first time, follow these steps:

- 1 **Click the Applications grouping button in the Launcher.**

The buttons for applications available in the Launcher are grouped under the Applications button.

- 2 **Click the Apple Backup button in the Launcher window.**



Apple Backup

The Apple Backup program opens.



- 3 **Click the Continue button.**

A message appears, showing you how to identify the high-density floppy disks you need.



**4 Make sure your floppy disks are high-density. Then click the Continue button.**

A message appears, telling you how many disks you need to make the copy and approximately how long it will take. Make sure you have enough time and disks to complete the copying. If you stop the copying before it's finished, you'll have to start over again from the beginning.

**5 Click the appropriate button, as follows:**

- If you have enough disks to copy everything, then click the Copy All Files button.
- If you have only enough disks to copy the System information, then click the Copy System Folder button. As soon as you buy more disks, follow the instructions in this chapter to back up everything.
- If you don't have enough disks for either choice, click the Quit button.

**6 Insert a high-density floppy disk into the disk drive.**

A message tells you when it's time to insert another floppy disk.

**7 Lock each disk as you remove it from the computer, and label it so that you can find it again later.**

To lock a disk, turn it label-side down and use a pen or your fingernail to slide the tab in the lower-right corner of the disk so that the square hole is open. (The disk has two square holes, but only one of them has a moveable tab.)

**8 When a message appears telling you that you've finished, store the labeled and locked floppy disks in a safe, cool place.**

## Using Apple Backup to update your backup copy

Keeping your backup copy up-to-date will protect you in case information on your hard disk is accidentally lost or damaged. To make an updated backup copy, you can use the floppy disks that contain your original backup copy, or you can preserve your original backup copy and use another set of floppy disks. If you are using a fresh set of floppy disks, follow the instructions in the previous section, “Using Apple Backup for the First Time.”

To use Apple Backup to update your backup copy, follow these steps:

- 1 Get the floppy disks that you used to make a previous backup copy.**

Have some extra high-density disks on hand in case there is more information on your hard disk than there was the last time you made a copy.

- 2 Turn on your Macintosh, if it's not already on.**

- 3 Click the Applications grouping button in the Launcher.**

The buttons for applications available in the Launcher are grouped under the Applications button.

- 4 Click the Apple Backup button in the Launcher window.**



Apple Backup

The Apple Backup program opens.



**5 Click the Continue button.**

A message appears, showing you how to identify the high-density floppy disks you need.

**6 Make sure your floppy disks are high-density. Then click the Continue button.**

A message appears, telling you how many disks you will need to copy all files on your hard disk, or to copy just the System Folder. It also tells you approximately how long it will take to make the copy.

*Copy all files or just the System Folder?* Because all the information on your hard disk is important, it's recommended that you make a copy of all the files on the hard disk. But if you don't have enough disks or time right now to make a copy of everything, you can choose to make a copy of just the System Folder.

If you want to be doubly protected, you can make a copy of all files and then start Apple Backup again and make an extra copy of the System Folder. That way, if something goes wrong with your System Folder, you can replace it quickly without having to copy everything back onto your hard disk.

**7 Click the button that corresponds to your choice.**

Make sure you have enough time and disks to complete the copying. If you stop the copying before it's done, you'll have to start over from the beginning.

**8 Unlock your first backup floppy disk.**

To unlock the disk, turn the disk label-side down and use a pen or your fingernail to slide the tab in the lower-right corner of the disk so that it covers the square hole. (The disk has two square holes, but only one of them has a moveable tab.)

**9 Insert the disk into the floppy disk drive.**

If you did not unlock the disk correctly, it is ejected and a message appears. Unlock the disk, making sure that the tab snaps into place, and try again.

A message appears, telling you that the disk contains information.

**10 Click the Continue button.**

If there is a problem with the disk, a message appears. Otherwise, copying takes place automatically. A sound alerts you when it's time to insert another disk.

**11 When the disk is ejected, lock and label it.**

To lock a disk, turn it label-side down and use a pen or your fingernail to slide the tab in the lower-right corner of the disk so that the square hole is open.

**12 Repeat steps 7 through 11 for each disk in your stack of backup disks.**

Apple Backup lets you know when you've finished.

**13 Store the disks in a safe, cool place.**

## Restoring the information on your hard disk

If information on your hard disk becomes damaged or lost, you can restore it if you have a backup copy of the information. If your computer has a CD-ROM drive, the *Macintosh Performa CD* contains copies of all the system software and application programs that came with your computer. See the *Macintosh Performa CD* booklet for instructions on using the *Macintosh Performa CD*.

If your computer doesn't have a CD-ROM drive and you have used Apple Backup to copy the information on your hard disk to floppy disks, you can use the Apple Restore program to put that information back on your hard disk. You can also use Apple Backup and Apple Restore to replace only the System Folder (the folder that contains the software the Macintosh uses to operate). See the following section, "Using Apple Restore," for instructions.

If your computer doesn't have a CD-ROM drive and you have not used Apple Backup to back up the contents of your hard disk, call the customer support hotline. (The phone number for the hotline is in the service and support information that came with your computer.)

## Using Apple Restore

To restore information from the backup floppy disks you made with Apple Backup, follow these steps:

- 1 Get the *Utilities* floppy disk that came with your computer and the floppy disks that you made when you used Apple Backup.
- 2 Make sure your Macintosh is turned off.
- 3 Insert the *Utilities* floppy disk into the floppy disk drive, then turn on your Macintosh.

It takes several moments for your computer to start up from the *Utilities* disk.

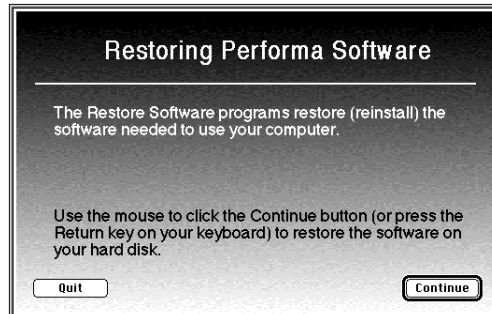
- 4 Locate the Apple Restore icon.



Apple Restore

- 5 Open the Apple Restore icon by double-clicking it.

In a moment you'll see this screen:



- 6 Read the information on the screen and click the Continue button.

**7 Insert your first backup floppy disk.**

Restoring proceeds automatically. If there is a problem with the disk, you see a message describing the problem.

**IMPORTANT** If at any time during the restore process you see a message reporting that the hard disk is damaged or unreadable, see “Repairing a Damaged Disk” in Chapter 5, “Troubleshooting.”

**8 Respond to any messages you see on the screen.**

If Apple Restore finds an item on your hard disk that is newer than an item with the same name on the floppy disk, it asks whether you want the older version of the item to replace the newer version. Use the following guidelines to decide whether or not to replace the item:

- If the item is system software, click Replace Newer Version.
- If the item is one of your own files, click Keep Newer Version.
- If, after the restore procedure, you still have problems with the disk, repeat the restore procedure and, this time, replace all newer items with the older items.

A sound alerts you when it’s time to insert another disk.

**9 When the disk is ejected, lock and label it.**

**10 Repeat steps 7 through 9 for each disk in your stack of backup disks.**

Apple Restore lets you know when you have finished.

**11 Store your backup disks in a safe, cool place.**

**12 Restart your Macintosh and make sure that everything is back on your hard disk.**

If the Macintosh does not start up or is not working properly, see “Repairing a Damaged Disk” in Chapter 5, “Troubleshooting.” If you are able to repair the disk, then try again to restore the information on your hard disk.

If repairing the disk doesn’t help, you may need to reinstall system software. See “Installing or Reinstalling System Software” in Chapter 5, “Troubleshooting.”

Consult this chapter if you experience problems using your computer.

# 5

## Troubleshooting



### When you have questions

If you want to know how to do a particular task with your computer, refer to Macintosh Guide in the Guide (🔗) menu. For instructions on using Macintosh Guide, see Chapter 2 of this manual.

### When you run into trouble

While you're using your computer, you may occasionally see a bomb icon or an error message, or you may have a problem such as the pointer (⏏) “freezing” on the screen. If you have trouble with your computer, take a few minutes to read the information in this chapter. If your problem is related to a particular procedure, you should also look for information on that procedure in Macintosh Guide, available in the Guide (🔗) menu. For additional troubleshooting information and a list of common questions relating to your system software, see the “Troubleshooting” topic of Macintosh Guide.

If you are unable to access Macintosh Guide (for example, if your screen is “frozen”), refer to this chapter to see if you can resolve the problem.

## Take your time

When you see an error message, you don't have to take action immediately. The message stays on the screen until you click the OK button or turn off the Macintosh.

To help diagnose and correct the problem, gather as much information on the situation as you can before starting over.

- Make a note of exactly what you were doing when the problem occurred. Write down the message on the screen and its ID number (if any). Also list the programs you were using and the names of any items you know have been added to the System Folder since the system software was installed. This information will help a service person diagnose the problem. (It is helpful to keep a printed copy of the items in your System Folder. For instructions on printing the contents of a folder, see the “Printing & Fonts” topic of Macintosh Guide, available in the Guide [?] menu.)
- Check the screen for any clues. Is a menu selected? What programs and document icons are open? Note anything else that seems relevant.
- If you were typing text and were not able to save it before the problem occurred, you can write down the parts of the text still visible on the screen so that some of your work will be easy to replace.
- Ask other Macintosh users about the problem you're having; they may have a solution for it.

If you need repair service, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.



## Start over

Often you can eliminate a problem simply by clearing the computer's memory and starting over.

If you can, save any open documents before restarting the Macintosh. If your system is frozen and does not respond to anything you do, or if you have a “bomb” message on the screen, saving may not be possible. You can try pressing ⌘-Option-Esc to quit the program in use when the problem occurred; if this works, you can then save the documents open in other programs before restarting.

To restart your Macintosh, try the following steps:

- 1 If you can, choose Restart from the Special menu or from the dialog box that's on screen.**

Dialog boxes contain messages from the computer. If something goes wrong, a message may appear on the screen, asking you to restart the computer.

- 2 If you can't choose Restart, hold down the ⌘ and Control keys while you press the Power key (marked with a triangle).**

This key combination restarts the computer. (Use this key combination only when you can't choose Restart from the Special menu.)

- 3 If nothing happens, turn off your computer with the power switch, wait at least 10 seconds, and then turn it on again.**

- 4 If the power switch doesn't turn off the computer, unplug your Macintosh.**

If you suspect that the problem is with other equipment, such as a printer or an external hard disk that's attached to your computer, turn that equipment off for 10 seconds or longer, then turn it on again and restart the Macintosh.

## Rebuild your desktop regularly

A process known as “rebuilding the desktop” helps your Macintosh keep track of data on your startup disks. Although you usually use the hard disk in your computer as a startup disk, you can also start up from any other disk that has system software installed. It’s a good idea to rebuild the desktop of your startup disks once a month or so.

To rebuild the desktop of a startup disk, follow these steps:

- 1 Hold down the Option and ⌘ keys while you start up your computer.**

Do not release the keys until you see a message asking whether you want to rebuild the desktop.

- 2 Click OK.**

## Solutions to common problems

### The computer is turned on but the screen is dark.

One of the following is probably the cause:

- You have a screen saver program that darkens the screen when the computer has not been used for a certain period.

Press a key or move the mouse to turn off the screen saver.

- The monitor's brightness control (☼) is not adjusted properly.

Check the monitor's brightness control and turn it up if necessary.

- The Macintosh or the monitor is not getting power.

If you have a separate monitor, check that the monitor is plugged in and turned on, and that the monitor cable is firmly connected to both the computer and the monitor.

Check that the computer's power cord is firmly connected to the computer and plugged into a grounded electrical outlet, and that the outlet has power.

If you have more than one monitor and only one is dark, check that it is set up correctly in the Monitors control panel. For information on using more than one monitor, see the "Monitors" topic of Macintosh Guide, available in the Guide (📖) menu.

If you are displaying video from your computer on a television screen, it is normal for your computer monitor to be dark.

### The computer's clock keeps time inaccurately.

Your computer has a clock that runs continuously. When the computer is turned off, a battery keeps the clock running. If your clock begins to keep time inaccurately, have your Apple-authorized service provider replace the battery.

When you start up, a disk icon with a blinking question mark appears in the middle of the screen.



This icon indicates that your Macintosh cannot find the system software it needs to start up. One of the following is probably the cause:

- Your computer may be having a problem recognizing external equipment that uses the Small Computer System Interface (SCSI).

Turn off all external SCSI equipment and disconnect the first SCSI device in the chain from your computer's SCSI port. Then restart the computer. If the computer starts up after you disconnect your SCSI equipment, refer to the manuals that came with the equipment for information on the proper way to connect SCSI equipment and assign SCSI ID numbers.

If you have a printer connected to your computer's SCSI port, make sure your printer is not supposed to be connected to the printer port instead. Check the manuals that came with your printer for information on how to connect it properly.

- System software is not installed on the startup hard disk, the system software is damaged, or the hard disk is not working properly.

Start up your computer using the *Utilities* floppy disk or, if you have a built-in CD-ROM drive, with the *Macintosh Performa CD*. (For instructions on how to start up your computer from the CD-ROM disc, see "Starting Up From a CD-ROM Disc" in the section "Repairing a Damaged Disk" later in this chapter.) Then follow the rest of the instructions on repairing a disk to test your startup hard disk and repair any damage.

If repairing the disk doesn't help, follow the instructions in "Installing or Reinstalling System Software" later in this chapter to reinstall system software on your startup hard disk.

**When you try to start up from a floppy disk, a disk icon with an X appears in the middle of the screen and the floppy disk is ejected.**



This icon indicates that the floppy disk you tried to start up from is not a startup disk.

Wait a few seconds. The computer should start up from its internal hard disk. Make sure you insert floppy disks only after the computer has begun starting up.

**A “sad Macintosh” icon appears and the computer won’t start up.**



This icon indicates that your Macintosh cannot start up because of a problem with the system software or the computer hardware.

Eject any floppy disks by turning off the computer and then holding down the mouse button while you turn the computer on again. Try starting up with the *Utilities* floppy disk or, if you have a built-in CD-ROM drive, with the *Macintosh Performa CD*. (For instructions on how to start up your computer from the CD-ROM disc, see “Starting Up From a CD-ROM Disc” in the section “Repairing a Damaged Disk” later in this chapter.) If the “sad Macintosh” icon appears again, consult the service and support information that came with your computer for information on contacting an Apple-authorized service provider or Apple for assistance.

**The hard disk icon does not appear on the desktop.**

If you don't see a hard disk icon on the desktop, try the following:

- If the hard disk is internal, shut down your computer, wait at least 10 seconds, and then turn it on again.
- If the hard disk is external, make sure that it is turned on and that its cable is connected firmly; then restart the Macintosh.
- Check the ID numbers of all SCSI equipment connected to your computer. See the manuals that came with your SCSI equipment for information on setting SCSI ID numbers.
- If the hard disk is your startup disk, start your computer using the *Utilities* floppy disk or, if you have a built-in CD-ROM drive, with the *Macintosh Performa CD*. (For instructions on how to start up your computer from the CD-ROM disc, see “Starting Up From a CD-ROM Disc” in the section “Repairing a Damaged Disk” later in this chapter.) Then follow the rest of the instructions on repairing a disk to test your startup hard disk and repair any damage.

If repairing the disk doesn't help, follow the instructions in “Installing or Reinstalling System Software” later in this chapter to reinstall system software on your startup hard disk.

**Icons do not appear correctly on your screen.**

You need to rebuild the desktop—a process that helps your Macintosh keep track of files and folders on your hard disks. For instructions, see “Rebuild Your Desktop Regularly” in the section “When You Run Into Trouble” earlier in this chapter.

If icons do not appear correctly after you rebuild the desktop, restart your computer while pressing the Shift key to temporarily turn off system extensions. When you see the “Welcome to Macintosh—extensions off” message, release the Shift key and press the Option and ⌘ keys until you see a message asking if you want to rebuild the desktop.



**Your Macintosh can't read a floppy disk.**

If you see a message that a floppy disk is unreadable, try one of the following:

- If the disk has never been used, you may simply need to initialize it. For instructions, see the “Disks” topic of Macintosh Guide, available in the Guide (🔍) menu.
- The disk may be damaged. See “Repairing a Damaged Disk” later in this chapter for information on testing and repairing disks.

If you are trying to use a DOS disk, consider the following:

- The disk may have been formatted incorrectly on a DOS computer. On DOS computers it's possible to format a standard double-sided disk in a high-density (1440K) format, and vice versa. Disks formatted in this way cannot be read by a Macintosh computer.

When formatting disks on a DOS computer, always format standard double-sided disks in the 720K format. Always format high-density disks in the 1440K format.

If a disk has been formatted incorrectly, use a DOS computer to copy its contents onto another disk that has been properly formatted.

### **A dialog box with a bomb appears.**

Your system has a software problem.

- Write down what you were doing when the message appeared, the text of the message, and the message number, if there is one.
- Restart your Macintosh. (See “Start Over” in the section “When You Run Into Trouble” earlier in this chapter for instructions.) Most software problems are temporary, and restarting usually corrects the problem.
- Check the startup disk and application program you were using when the dialog box appeared. Make sure that all programs, desk accessories, and system extensions you’re using are compatible with the system software. Reinstalling the system software may correct the problem.
- Sometimes incompatible system extensions or control panels can cause system software problems. Restart while holding down the Shift key; this temporarily turns off all system extensions. If your computer works normally after you do this, remove all extensions from the Extensions folder (inside the System Folder) and put them back into the Extensions folder one at a time. Restart after you add each extension. This procedure should identify any incompatible extensions.

You can also use the Extensions Manager control panel to turn off individual extensions. For information on using this control panel to manage system extensions, see the “Setting Options” topic of Macintosh Guide, available in the Guide (Ⓜ) menu.

- If the problem recurs, you may need to reinstall system software. See “Installing or Reinstalling System Software” later in this chapter for instructions.

### **The pointer (⏏) doesn’t move when you move the mouse.**

One of the following situations is probably the cause.

- Your system has a software problem. Try one or more of the following:  
Press ⌘-Option-Esc to quit the application program in use when the problem occurred. If this works, you can save the documents open in other programs before restarting.

Restart your Macintosh. See “Start Over” in the section “When You Run Into Trouble” earlier in this chapter for instructions.



Check the startup disk and program you were using when the problem occurred. Make sure that all programs, desk accessories, and system extensions you're using are compatible with the system software. Try starting up the computer with the *Utilities* floppy disk or, if you have a built-in CD-ROM drive, with the *Macintosh Performa CD*. (For instructions on how to start up your computer from the CD-ROM disc, see “Starting Up From a CD-ROM Disc” in the section “Repairing a Damaged Disk” later in this chapter.) If your computer starts up normally, there may be an extension conflict.

Sometimes incompatible system extensions or control panels can cause system software problems. Restart while holding down the Shift key; this temporarily turns off all system extensions. If your computer works normally after you do this, remove all extensions from the Extensions folder (inside the System Folder) and put them back into the Extensions folder one at a time. Restart after you add each extension. This procedure should identify any incompatible extensions.

You can also use the Extensions Manager control panel to turn off individual extensions. For information on using this control panel to manage system extensions, see the “Setting Options” topic of Macintosh Guide, available in the Guide (⌘) menu.

If the problem recurs, you may need to reinstall system software. See “Installing or Reinstalling System Software” later in this chapter for instructions.

- The mouse is not connected properly.

Turn the computer off using the power switch, check that the mouse and keyboard cables are connected properly, and then restart the computer.

- Signals from the mouse are not reaching the computer, either because the mouse needs cleaning or because there is something wrong with the mouse.

Clean the mouse according to the instructions in Appendix A of this book.

If you have another mouse or pointing device, try connecting and using it. (Turn off the computer before connecting it.) If the new device works, there is probably something wrong with the mouse you replaced.

If none of these procedures solves the problem, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

**Typing on the keyboard produces nothing on the screen.**

One of the following is probably the cause:

- Your system has a software problem.

Restart your Macintosh. For instructions, see “Start Over” in the section “When You Run Into Trouble” earlier in this chapter.

Check the startup disk and application program you were using when the problem occurred. Make sure that all programs, desk accessories, and system extensions you’re using are compatible with the system software.

If the problem recurs, you may need to reinstall system software. See “Installing or Reinstalling System Software” later in this chapter for instructions.

- You haven’t selected any text or set the insertion point (I).

Make sure the program you want to type in is the active program. Then place the pointer (␣) in the active window and click to set an insertion point (I) or drag to select text (if you want to replace the text with your typing).

- The keyboard is not connected properly.

Turn off the computer using the power switch, then check that the keyboard cable is connected properly at both ends.

If you have a keyboard with an ADB port (marked with the ⌘ icon) on each end, turn off the Macintosh using the power switch and plug the keyboard cable into the other ADB port on the keyboard. (You may have to unplug the mouse to do this.) Then restart the computer.

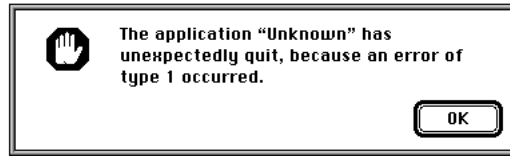
Many Macintosh computers have two ADB ports on the back panel. Also, some monitors have one or two ADB ports. Turn off the Macintosh using the power switch and connect your keyboard cable to a different ADB port on the computer or monitor. Then restart the computer.

- The keyboard is damaged.

If you have access to another keyboard, try using it instead. (Turn the computer off before connecting it.) If the new keyboard works, there is probably something wrong with the one you replaced.

If none of these procedures solves the problem, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance.

You can't start an application program or it quits unexpectedly. Or, when you try to open a program, you see a message that not enough memory is available.



One of the following is probably the cause:

- The Macintosh ran out of memory.

Quit the programs that you have open and then open the program you want to use, or restart your Macintosh.

Use the Memory control panel to turn on virtual memory. For more information on virtual memory, see the "Memory" topic of Macintosh Guide, available in the Guide (🔍) menu.

- The program needs more memory.

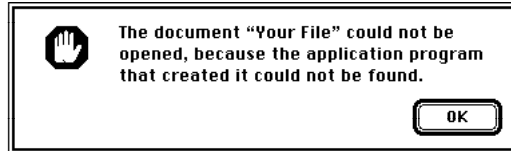
Use the program's Info window to give it more memory. For more information on increasing a program's memory, see the "Memory" topic of Macintosh Guide, available in the Guide (🔍) menu.

- The program requires special hardware, such as a floating-point unit (FPU), and your computer doesn't have the hardware installed.

Check the documentation that came with the program to find out if the program requires a Macintosh with special hardware, such as an FPU. Then check the *Technical Information* booklet that came with your Macintosh to find out if your computer is equipped with such special hardware, or if the hardware can be installed. Consult your Apple-authorized service provider for information on installing special hardware in your computer.

**You see a message that an application program can't be found.**

The following dialog box appears if you try to open a document that was created with software that is not on your hard disk.



Normally, you see this message if you try to open a document that came from another Macintosh with software that is different from yours.

- Some documents can be opened by more than one application program. Try starting a program that you think might be able to open the document, then choose Open from the program's File menu to try to open the document.
- Purchase and install the correct software to use the document, or find out if the creator of the document can convert it to a form that one of your programs can use.
- Don't try to open the files in your System Folder. Most of the files in your System Folder are used by your computer for internal purposes and are not intended to be opened.
- Rebuild your desktop by holding down the Option and ⌘ keys while starting up your computer. Keep holding down the keys until you see a message asking whether you want to rebuild the desktop. Click OK.
- If the document is from a DOS computer, use the PC Exchange control panel to specify which Macintosh program will open the document. For information about working with DOS documents on your Macintosh, see the "Using DOS Files & Disks" topic of Macintosh Guide, available in the Guide (⌘) menu.

**You experience problems using a document from a DOS computer.**

If you can't open a DOS document using a Macintosh program, try the following:

- Open the document from within the program by choosing Open in the program's File menu.
- Use the PC Exchange control panel to change the document's type to one that can be opened by the program.

If a DOS document is displayed incorrectly, or you see strange codes or characters in the document, try one of the following:

- Your application program may have special procedures for opening and saving documents with different file formats. See the information that came with your program.
- Try opening the document in another program.

*Note:* Some characters that can be displayed on the Macintosh are not accurately displayed on DOS computers.

For more information about working with DOS documents on your Macintosh, see the "Using DOS Files & Disks" topic of Macintosh Guide, available in the Guide (⌘) menu.

## Repairing a damaged disk

If you see a message reporting that a disk is damaged or unreadable, you may need to repair the disk.

### Try these suggestions first

If you can't start up from a hard disk or you don't see the hard disk icon on the desktop, try the following:

- If the hard disk is internal, shut down your Macintosh, wait at least 10 seconds, and then turn it on again.
- If the hard disk is external, make sure that it is turned on and that its cable is connected firmly; then restart the Macintosh.
- If the hard disk is your startup disk, start up with a different startup disk. (See the following sections, “Starting Up From a CD-ROM Disc” and “Starting Up From a Floppy Disk.”)

If, after you start up from a different disk, your hard disk's icon appears on your desktop, reinstall system software on the hard disk (see “Installing or Reinstalling System Software” later in this chapter).

If your hard disk's icon does not appear on your desktop, you may need to initialize the disk (see “Initializing a Hard Disk” later in this chapter).

- Check the ID numbers of all SCSI equipment connected to your computer. Each device must have a unique ID number. The computer itself has the ID number 7, the internal hard disk has the ID number 0, and the internal CD-ROM drive has the ID number 3. The ID numbers 1, 2, 4, 5, and 6 are available for additional SCSI devices.

Also check that the chain of devices is terminated properly. For information on setting SCSI ID numbers and terminating a SCSI chain, see the manuals that came with your SCSI equipment.

- If none of these suggestions solves the problem, test the disk by following the instructions given later in this section.

## Starting up from a CD-ROM disc

To test, repair, or initialize a hard disk, or to install system software on a hard disk, you need to start up your computer from another disk. If your computer has a CD-ROM drive, you can start up your computer using the *Macintosh Performa CD* that came with your computer.

The procedure for starting up from the CD varies depending on the condition of the system software on your hard disk. To find out which procedure to use, you must turn on your Macintosh.

The steps that follow tell how to start up from a CD-ROM disc, depending on what you see on your screen.

### If you see a blinking question mark on your screen

The blinking question mark means that your Macintosh is unable to find usable system software on your hard disk.



- 1 Press the Open/Close button of your CD-ROM drive to open the CD-ROM tray.**
- 2 Place the *Macintosh Performa CD* disc in the tray with the disc label facing up.**  
Make sure the disc is lying flat in the tray.
- 3 Push the tray in, or press the Open/Close button, to close the tray.**

Your Macintosh recognizes the CD as a startup disk, and in a few seconds the Macintosh desktop with a Launcher appears.

### If you see the Macintosh desktop

- 1 Press the Open/Close button of your CD-ROM drive to open the CD-ROM tray.**
- 2 Place the *Macintosh Performa CD* disc in the tray with the disc label facing up.**  
Make sure the disc is lying flat in the tray.
- 3 Push the tray in, or press the Open/Close button, to close the tray.**

If the Macintosh Performa CD icon does not appear on your screen, follow the steps in the next section, “Problems Starting Up From the CD?”

If the Macintosh Performa CD icon appears on the right side of your screen, continue with these steps.

- 4 Choose Control Panels from the Apple () menu.**
- 5 Double-click the Startup Disk icon.**

The Startup Disk control panel window appears.

- 6 Click the CD icon to select it as your startup disk.**
- 7 Choose Restart from the Special menu.**

Your computer recognizes the CD as its startup disk, and in a few seconds the Macintosh desktop with a Launcher appears.





### Problems starting up from the CD?

If you've followed the steps in the previous sections and the Macintosh Performa CD icon does not appear on your screen, follow these steps:

- 1 **Insert the CD into the tray.**
- 2 **Choose Restart from the Special menu.**
- 3 **Immediately press and hold down the Command (⌘), Shift, Option, and Delete keys.**

The Macintosh Performa CD icon appears on the desktop.

- 4 **Choose Control Panels from the Apple () menu.**
- 5 **Double-click the Startup Disk icon.**

The Startup Disk control panel window appears.

- 6 **Click the CD icon to select it as your startup disk.**
- 7 **Close the Startup Disk control panel window.**
- 8 **Press and hold down the Control, Command (⌘), and Power keys.**

### Starting up from a floppy disk

To test, repair, or initialize a hard disk, or to install system software on a hard disk, you need to start up your computer from another disk. If you don't have a built-in CD-ROM drive, you can start up the computer using the *Utilities* floppy disk that came with your computer.

To start up your computer using the *Utilities* floppy disk, follow these steps:

- 1 **Shut down your computer.**
- 2 **Insert the *Utilities* disk into the disk drive.**
- 3 **Turn the computer on.**

It takes several moments for your computer to start up from the *Utilities* disk.

## How to test a hard disk

You can test an Apple SCSI hard disk with the Apple HD SC Setup program, which is on the *Utilities* floppy disk that came with your computer. If your computer has a built-in CD-ROM drive, and you didn't receive floppy disks, you can find the Apple HD SC Setup program on the *Macintosh Performa CD*.

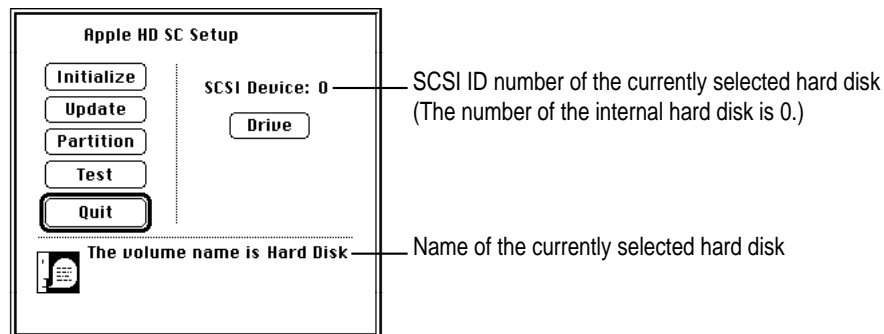
- 1 Start up your computer from the *Utilities* disk or the *Macintosh Performa CD*.

See “Starting Up From a CD-ROM Disc” or “Starting Up From a Floppy Disk” earlier in this section.

- 2 Open the Apple HD SC Setup icon.



- 3 Click Drive until the disk you want appears.



- 4 Click Test.
- 5 When a message tells you that testing is complete, click Quit.

If the test reveals a problem, you may be able to correct it by using Disk First Aid or another disk repair program (see the instructions in the next section), or you may need to reinitialize the disk (see “Initializing a Hard Disk” later in this chapter). Consult an Apple-authorized service provider for assistance if necessary.

## How to repair a hard disk or floppy disk

You can repair some types of disk damage by using the Disk First Aid program, which is included either on the *Utilities* floppy disk or on the *Macintosh Performa CD* that came with your computer.

- 1 Start up your computer from the *Utilities* disk or the *Macintosh Performa CD*.

See “Starting Up From a CD-ROM Disc” or “Starting Up From a Floppy Disk” earlier in this section.

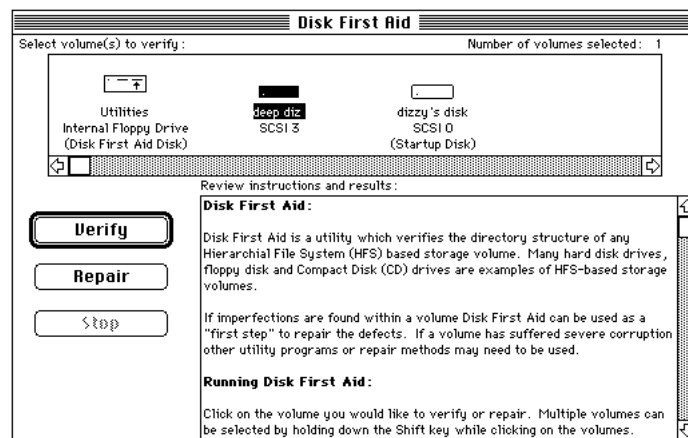
- 2 Open the Disk First Aid icon.



Disk First Aid

- 3 Click the icon of the disk you want to test.

Disk icons appear in a box at the top of the Disk First Aid window.



**4 Click Repair to begin testing and repairing the disk.**

You can't repair the startup disk or the disk that contains the Disk First Aid program, but you can test these disks by clicking Verify. If the program reveals a problem with either of these disks, start up the computer from another disk so that you can repair the damaged disk.

If you want to test and repair another disk, click its icon and then click Repair.

**5 When testing and repair are done, choose Quit from the File menu.**

**If Disk First Aid cannot correct the problem**

- Try repairing the disk again. Sometimes repeating the process corrects the problem.
- Use another disk repair or recovery program. Some disk repair programs let you recover information from a damaged disk.
- Consult a computer repair specialist for help.
- Once you have recovered all the information you can and backed it up, erase (reinitialize) the disk. For instructions on reinitializing a floppy disk, see the “Disks” topic of Macintosh Guide, available in the Guide (🔍) menu. For instructions on reinitializing a hard disk, see the next section, “Initializing a Hard Disk.”

If initialization doesn't work, discard the damaged disk (if it's a floppy disk), or take it to your Apple-authorized service provider for repair (if it's a hard disk). If you received a copy of the *Macintosh Performa CD* (whether or not your computer has a CD-ROM drive), bring this disc with you to the service provider.



## Initializing a hard disk

Before you can use a new disk, the disk must be prepared so that the computer knows where to store information on the disk. This preparation is called *initializing* (or *formatting*) the disk.

### When do you need to initialize a hard disk?

The hard disk inside your computer was initialized at the factory, so you shouldn't need to initialize it. You need to initialize a hard disk only if

- you purchase a hard disk that has not been initialized at the factory
- your hard disk is damaged

If a hard disk needs to be initialized, the disk's icon may not appear on the desktop when you start up the computer using another disk.

**WARNING** Initializing a disk erases any information that may be on it. Before you initialize a damaged disk, try to repair it as described in “Repairing a Damaged Disk” earlier in this chapter.

## How to initialize a hard disk

You initialize an Apple SCSI hard disk by using a program called Apple HD SC Setup, which is on the *Utilities* floppy disk that came with your computer. If your computer came with a CD-ROM drive and you didn't receive floppy disks, you can find Apple HD SC Setup on the *Macintosh Performa CD*.

- 1 **Start up your computer from the *Utilities* disk or the *Macintosh Performa CD*.**

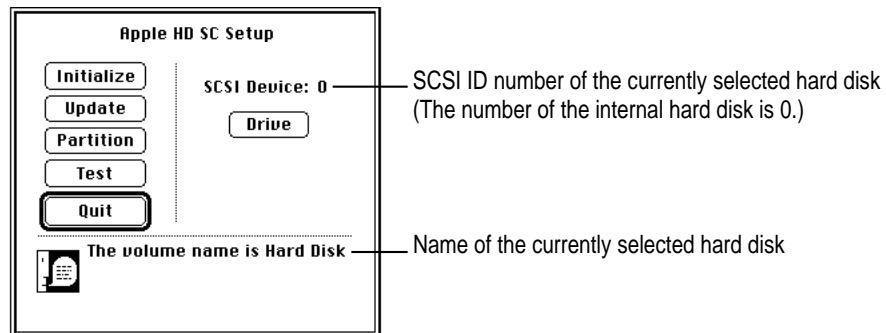
See “Starting Up From a CD-ROM Disc” or “Starting Up From a Floppy Disk” in the section “Repairing a Damaged Disk,” earlier in this chapter.

- 2 **Open the Apple HD SC Setup icon.**



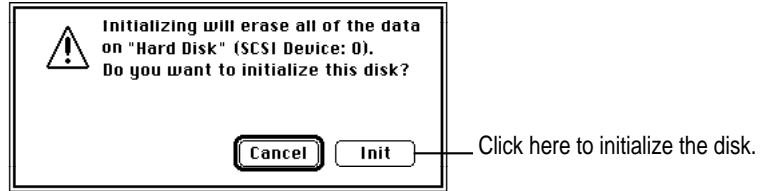
- 3 **Click Drive until the disk you want to initialize appears.**

You cannot initialize the disk that you used to start up your computer or the disk that contains the Apple HD SC Setup program.



- 4 **Click Initialize.**

- 5 Click Init to initialize the hard disk.



- 6 If a message appears asking you to name the disk, type a name and then click OK.

- 7 Click Quit when you see a message reporting that initialization was successful.

If a message reports that initialization failed, try again. If initialization fails a second time, take the disk to your Apple-authorized service provider for repair.

## Installing or reinstalling system software

System software is the set of programs and other files that your computer uses to start itself up, keep track of your files, and run the application programs you use. System software is kept in the System Folder. When you turn on your computer, it looks for a startup disk, which is a disk that contains the system software. The startup disk is usually the hard disk that's inside your computer, though another hard disk or a floppy disk can also be a startup disk.

### When should you install or reinstall system software?

Your Macintosh came with all the necessary system software installed on its internal hard disk, so you don't need to install system software on that disk unless you encounter software problems.

If you have a new hard disk or a newly initialized hard disk that doesn't contain system software, or if you want to upgrade to a more recent version of system software on a hard disk, you'll need to install system software. See the next section, "How to Install or Reinstall System Software."

If your hard disk already has system software installed on it but there is a problem with the disk or the software, you may see this icon in the middle of the screen:



If this icon appears, first try testing your startup hard disk and repairing any damage. To do this, follow the instructions in "Repairing a Damaged Disk" earlier in this chapter. If repairing the disk doesn't help, you may need to reinstall system software.



## How to install or reinstall system software

If your computer has a CD-ROM drive, you can install or reinstall system software by following the instructions in the *Macintosh Performa CD* booklet that came with your computer.

If your computer doesn't have a CD-ROM drive and you've used Apple Backup to back up the contents of your hard disk, you can use Apple Restore to reinstall system software. For instructions, see "Restoring the Information on Your Hard Disk" in Chapter 4.

If your computer doesn't have a CD-ROM drive and you have not used Apple Backup to back up the contents of your disk, try one of the following:

- If you received the *Macintosh Performa CD* with your computer, contact an Apple-authorized service provider, a Macintosh user group, or another Macintosh user for access to a CD-ROM drive. Reinstall system software on your hard disk by following the instructions in the *Macintosh Performa CD* booklet that came with your computer.
- If you did not receive the *Macintosh Performa CD* with your computer, or if you cannot get access to a CD-ROM drive, call the customer support hotline. (The phone number for the hotline is in the service and support information that came with your computer.)



Read this appendix for important health and safety instructions, as well as tips on keeping your computer in good working order.



## Appendix A Health, Safety, and Maintenance Tips



For your own safety and that of your equipment, follow all the instructions in this chapter. Keep these instructions available for reference by you and others.

### Health-related information about computer use

Muscle soreness, eye fatigue, and other discomforts and injuries sometimes associated with using computers can occur from performing any number of activities. In fact, misuse of the same muscles during multiple activities can create a problem that might not otherwise exist. For example, if you engage in nonwork activities that involve repetitive stress on the wrist—such as bicycling—and also use your computer’s keyboard improperly, you may increase your likelihood of developing wrist problems. Some individuals are at greater risk of developing these problems because of their health, physiology, lifestyle, and general exposure to stress. Work organization and conditions, such as workstation setup and lighting, also play a part in your overall health and comfort. Preventing health problems is a multifaceted task that requires careful attention to the way you use your body every hour of every day.

The most common health effects associated with using a computer are musculoskeletal discomfort and eye fatigue. We’ll discuss each area of concern below.

## Musculoskeletal discomfort

As with any activity that involves sitting for long periods of time, using a computer can make your muscles sore and stiff. To minimize these effects, set up your work environment carefully, using the guidelines that follow, and take frequent breaks to rest tired muscles. To make working with your computer more comfortable, allow enough space in your work area so that you can change position frequently and maintain a relaxed posture.

Another type of musculoskeletal concern is repetitive stress injuries (RSIs), also known as cumulative trauma disorders (CTDs). These problems can occur when a certain muscle or tendon is repeatedly overused and forced into an unnatural position. The exact causes of RSIs are not totally understood, but in addition to awkward posture, such factors as the amount of repetition, the force used in the activity, the individual's physiology, workplace stress level, and lifestyle may affect the likelihood of experiencing an RSI.

RSIs did not suddenly arise when computers were invented; tennis elbow and writer's cramp, for example, are two RSIs that have been with us for a long time. Although less common than other RSIs, one serious RSI discussed more often today is a wrist problem called carpal tunnel syndrome, which may be aggravated by improper use of computer keyboards. This nerve disorder results from excessive pressure on the median nerve as it passes through the wrist to the hand.

This section offers advice on setting up your work area to enhance your comfort while you use your computer. Since the effects of repetitive movements associated with using a computer can be compounded by those of other work and leisure activities to produce or aggravate physical problems, proper use of your computer system must be considered as just one element of a healthy lifestyle.

No one, of course, can guarantee that you won't have problems even when you follow the most expert advice on using computer equipment. You should always check with a qualified health specialist if muscle, joint, or eye problems occur.

## Eye fatigue

Eye fatigue can occur whenever the eyes are focused on a nearby object for a long time. This problem occurs because the eye muscles must work harder to view an object that's closer than about 20 feet (6 meters). Improper lighting can hasten the development of eye fatigue. Although eye fatigue is annoying, there's no evidence that it leads to permanent damage.

Whenever you're engaged in an activity that involves close-up work—such as reading a magazine, doing craft work, or using a computer—be sure to have sufficient glare-free lighting and give your eyes frequent rest breaks by looking up and focusing on distant objects. Remember to have your eyes examined regularly.

To prevent discomfort and eye fatigue:

- Arrange your work space so that the furniture is properly adjusted for you and doesn't contribute to an awkward working posture.
- Take frequent short breaks to give your muscles and eyes a chance to rest.

## Arranging your office

Here are some guidelines for adjusting the furniture in your office to accommodate your physical size and shape.

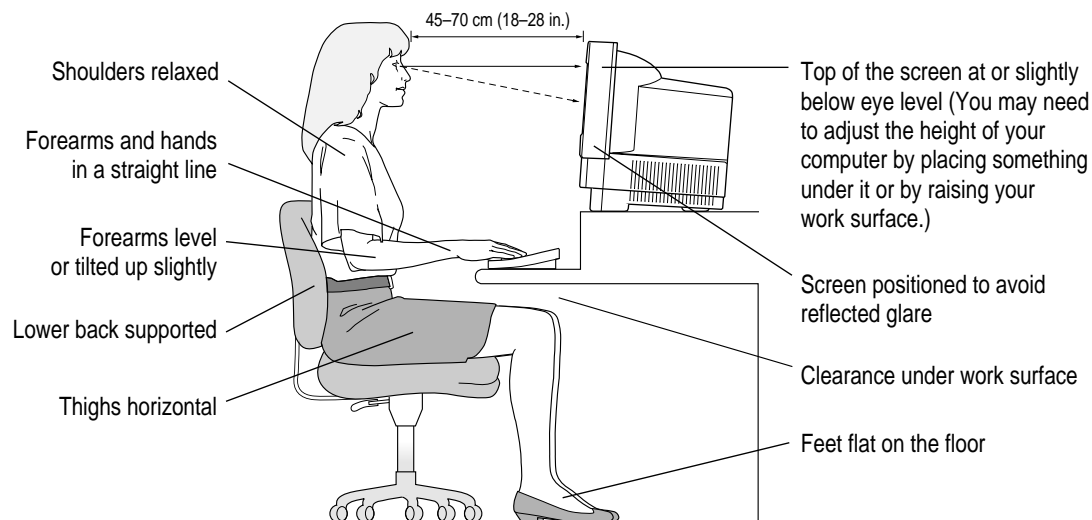
- An adjustable chair that provides firm, comfortable support is best. Adjust the height of the chair so your thighs are horizontal and your feet flat on the floor.

The back of the chair should support your lower back (lumbar region). Follow the manufacturer's instructions for adjusting the backrest to fit your body properly.

- When you use the computer keyboard, your shoulders should be relaxed. Your upper arm and forearm should form an approximate right angle, with your wrist and hand in roughly a straight line.

You may have to raise your chair so your forearms and hands are at the proper angle to the keyboard. If this makes it impossible to rest your feet flat on the floor, you can use a footrest with adjustable height and tilt to make up for any gap between the floor and your feet. Or you may lower the desktop to eliminate the need for a footrest. Another option is to use a desk with a keyboard tray that's lower than the regular work surface.

- Position the mouse at the same height as your keyboard. Allow adequate space to use the mouse comfortably.
- Arrange the monitor so the top of the screen is slightly below your eye level when you're sitting at the keyboard. The best distance from your eyes to the screen is up to you, although most people seem to prefer 18 to 28 inches (45 to 70 cm).
- Position the computer to minimize glare and reflections on the screen from overhead lights and windows.



## Avoiding fatigue

- Change your seated position, stand up, or stretch whenever you start to feel tired. Frequent short breaks are helpful in reducing fatigue.
- Use a light touch when typing or using a mouse and keep your hands and fingers relaxed.
- Some computer users may develop discomfort in their hands, wrists, or arms after intensive work without breaks. If you begin to develop chronic pain or discomfort in your hands, wrists, or arms, consult a qualified health specialist.
- Allow adequate work space so that you can use your keyboard and mouse comfortably. Place papers or other items so you can view them easily while using your computer. A document stand may make reading papers more comfortable.
- Eye muscles must work harder to focus on nearby objects. Occasionally focus your eyes on a distant object, and blink often while you work.
- Clean your screen regularly. Keeping the screen clean helps reduce unwanted reflections.

## What about electromagnetic emissions?

There has been recent public discussion of the possible health effects of prolonged exposure to extremely low frequency (ELF) and very low frequency (VLF) electromagnetic fields. Such fields are associated with electromagnetic sources such as television sets, electrical wiring, and some household appliances—as well as computer monitors.

Apple has reviewed scientific reports and sought the counsel of government regulatory agencies and respected health organizations. Based on the prevailing evidence and opinions, Apple believes that the electric and magnetic fields produced by computer monitors do not pose a health risk.

In response to those customers who wish to reduce their exposure to electromagnetic fields, Apple has lowered the emission levels of our products. We are also actively encouraging further scientific research so we can continue to promote the health and safety of our customers and employees.

## Safety instructions

For your own safety and that of your equipment, always take the following precautions.

Turn off the computer completely and disconnect the power plug (by pulling the plug, not the cord) if any of the following conditions exists:

- the power cord or plug becomes frayed or otherwise damaged
- you spill something into the case
- your Macintosh is exposed to rain or any other excess moisture
- your Macintosh has been dropped or the case has been otherwise damaged
- you suspect that your Macintosh needs service or repair
- you want to clean the case (use only the recommended procedure described later in this chapter)

Be sure that you always do the following:

- Keep your Macintosh away from sources of liquids, such as wash basins, bathtubs, shower stalls, and so on.
- Protect your Macintosh from dampness or wet weather, such as rain, snow, and so on.
- Read all the installation instructions carefully before you plug your Macintosh into a wall socket.
- Keep these instructions handy for reference by you and others.
- Follow all instructions and warnings dealing with your system.

**WARNING** Electrical equipment may be hazardous if misused. Operation of this product, or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.



## Handling your computer equipment

Follow these guidelines for handling your computer and its components:

- When setting up your computer, place components on a sturdy, flat surface, and carefully follow all setup instructions.
- When connecting or disconnecting a cable, always hold the cable by its connector (the plug, not the cord).
- Turn off your computer and all its components before connecting or disconnecting any cables to add or remove any component. Failure to do so could seriously damage your equipment.
- Never force a connector into a port. If the connector and port do not join with reasonable ease, they probably don't match. Make sure that the connector matches the port and that you have positioned the connector correctly in relation to the port.
- Take care not to spill any food or liquid on the computer, keyboard, mouse, or other components. If you do, turn your computer off immediately and unplug it before cleaning up the spill. Depending on what you spilled and how much of it got into your equipment, you may have to bring your equipment to an Apple-authorized service provider.
- Protect the computer and its components from direct sunlight and rain or other moisture.
- Keep all ventilation openings clear and unobstructed. Without proper air circulation, components can overheat, causing damage or unreliable operation.

**WARNING** This equipment is intended to be electrically grounded. Your Macintosh is equipped with a three-wire grounding plug—a plug that has a third (grounding) pin. This plug will fit only a grounded AC outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug!

## Handling the built-in monitor

Follow these procedures for handling the built-in monitor:

- Turn down the screen brightness control if you leave the computer turned on for extended periods. If the brightness is not turned down, the image on the screen could “burn in” and damage the screen.

You can also use a “screen saver” program, which dims or varies the image on the screen when the computer has been idle for a specified period of time. These programs are available from independent suppliers and user groups.

- If there is interference on the monitor’s screen or on a television or radio near your computer, move the affected equipment farther away.

## Handling the keyboard

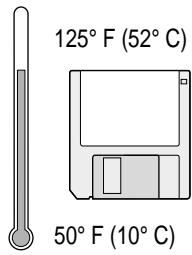
Take care not to spill any liquid on the keyboard. If you do, turn off your computer immediately.

- If you spill liquid that is thin and clear, unplug the keyboard, turn it upside down to let the liquid drain out, and let it dry for 24 hours at room temperature. If, after you take these steps, the keyboard doesn’t work, take it to your Apple-authorized service provider for repair.
- If you spill liquid that is greasy, sweet, or sticky, unplug the keyboard and take it to your Apple-authorized service provider for repair.

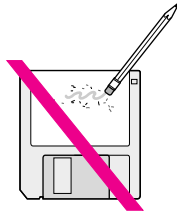


## Handling floppy disks

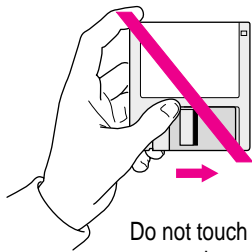
Store disks at temperatures between 50° F and 125° F.



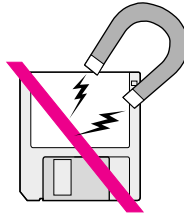
Do not use a pencil or an eraser on a disk or disk label.



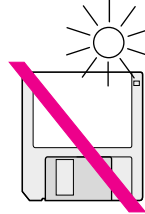
Keep disks dry.



Do not touch the exposed part of the disk behind the metal shutter.



Keep disks away from magnets.



Avoid exposing disks to extremely hot temperatures.

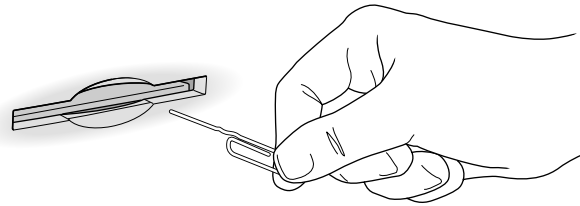
## Ejecting a disk

For instructions on ejecting a floppy disk, a CD-ROM disc, or a removable media disk, see the “Disks” topic of Macintosh Guide, available in the Guide (🔍) menu.

## If you can't eject a floppy disk

If you can't eject a floppy disk in the usual way, try the following in order:

- Hold down the ⌘ and Shift keys and press the number 1 key on your keyboard to eject a disk in the internal disk drive.
- Turn off the computer. If the disk isn't ejected, then hold down the button on your mouse or other pointing device while you turn the computer on again.
- Locate the small hole near the disk drive's opening, and carefully insert the end of a large straightened paper clip into it. Push gently until the disk is ejected. Do not use excessive force.



If nothing works, take the computer or disk drive to your Apple-authorized service provider to have the disk removed.

## Power supply

The power supply in your computer is a high-voltage component and should not be opened for any reason, even when the computer is off. If the power supply needs service, contact your Apple-authorized dealer or service provider.

## Cleaning your equipment

Follow these general rules when cleaning the outside of your computer and its components:

- Use a damp, soft, lint-free cloth to clean the computer's exterior. Avoid getting moisture in any openings.
- Don't use aerosol sprays, solvents, or abrasives.

### Cleaning the computer case

To clean the case, do the following:

- 1** Turn off the computer completely and then disconnect the power plug. (Pull the plug, not the cord.)
- 2** Wipe the surfaces lightly with a clean, soft cloth dampened with water.

### Cleaning the monitor

To clean the screen, put household glass cleaner on a soft cloth and wipe the screen. Don't spray the cleaner directly on the screen, because the liquid might drip into the monitor or computer.

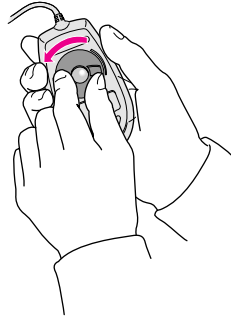
### Cleaning the mouse

The mouse contains a small ball that must roll smoothly for the mouse to work properly. You can keep this ball free of dirt and grease by using the mouse on a clean, lint-free surface and cleaning it occasionally.

You need a few cotton swabs and a clean, soft, lint-free cloth.

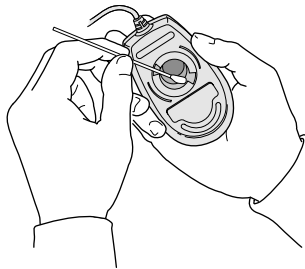
- 1** Turn off your computer.

- 2 Turn the mouse upside-down and turn the plastic ring on the bottom counterclockwise to disengage it.**



If you have an older mouse, you may need to press the plastic ring (rather than turn it) to disengage it.

- 3 Turn the mouse right-side up with one hand and catch the ring and the ball with your other hand.**
- 4 Clean the three small rollers inside the mouse with a cotton swab moistened with water. Rotate the rollers to clean all around them.**



- 5 Wipe the mouse ball with a clean, soft, dry, and lint-free cloth.**
- 6 If necessary, wash the mouse ball with warm soapy water (use a mild soap such as a dishwashing liquid) and then dry the mouse ball thoroughly.**
- 7 Gently blow into the mouse case to remove any dust that has collected there.**
- 8 Put the ball and the ring back in place.**

Your mouse should roll smoothly across your mouse pad or desk. If it doesn't, repeat these instructions carefully.

Read this appendix for instructions on installing an expansion card in your computer.



## Appendix B Installing an Expansion Card

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Expansion cards are printed circuit boards that can be installed in your computer to give it special capabilities, such as enhanced video capabilities, networking and communications, and additional processing power. Your Macintosh has a processor-direct slot (PDS) for most cards, including the Apple IIe Card. If you have a Macintosh Performa 570 series computer, it also has a communications slot for an internal modem or Ethernet card.

You can install expansion cards by following the instructions that came with the card, or by following the instructions in this appendix.

**WARNING** To avoid damaging your computer and expansion card, do not attempt to install any expansion card without first checking the documentation for that card. If the documentation specifies that an Apple-certified technician must install the card (usually because the installation requires special training or tools), consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for service. If you attempt to install the card yourself, any damage you cause to your computer will not be covered by the limited warranty on your computer. If the card is not an Apple-labeled product, check with an Apple-authorized dealer or service provider to see if you can install it yourself.

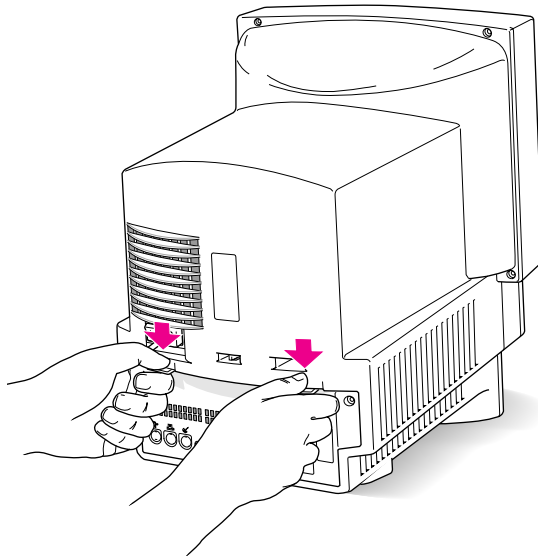
Installing both types of expansion cards involves three steps:

- opening the computer
- inserting the card into a specific slot
- closing the computer

**IMPORTANT** To use the Apple IIe Card with your Macintosh, you will need version 2.2 or later of the Apple IIe Card software. If you're using an earlier version, consult the service and support information that came with your computer for information on how to obtain an upgrade.

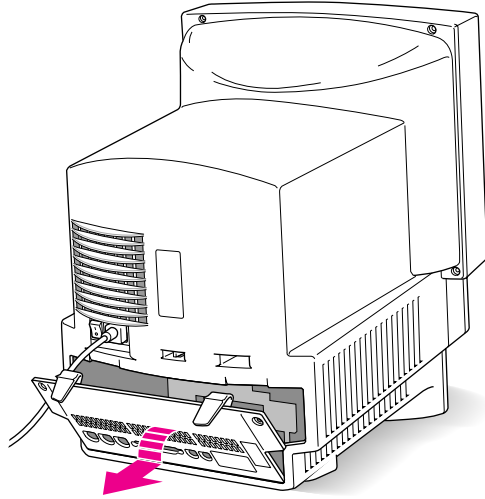
## Opening the computer

- 1 Choose Shut Down from the Apple () menu or the Special menu, or press the Power key on the keyboard.
- 2 Turn the computer completely off by pressing the power switch at the back of the computer.
- 3 Unplug the cable that connects your keyboard to the computer.
- 4 If there are security screws on either side of the computer's back panel, remove them with a Phillips screwdriver.
- 5 Place your thumbs on the two plastic tabs on the back panel of the computer.





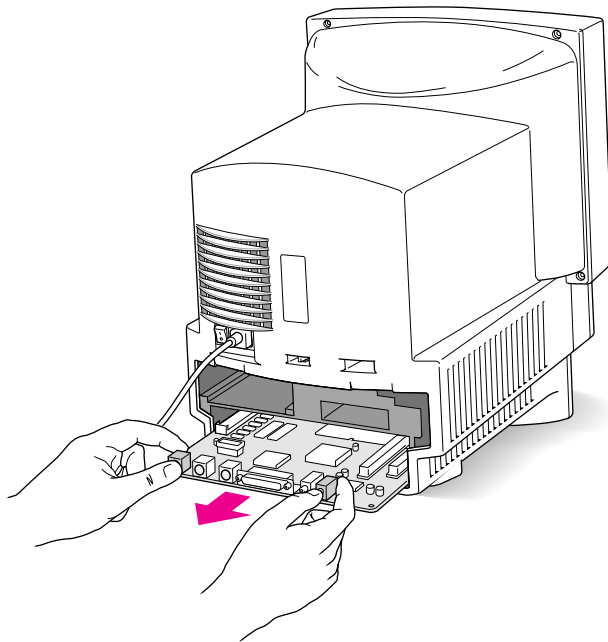
- 6 Press down on the tabs and pull gently until the back panel opens.
- 7 Take the back panel off and set it aside.



- 8 Slide the logic board (the board that holds the components that make your computer work) partway out until you have complete access to the slots at the right side of the board.

**WARNING** Don't pull the board all the way out; this can damage your Macintosh.

You'll need to hook your fingers around the little metal boxes to pull the logic board.



## Installing the card

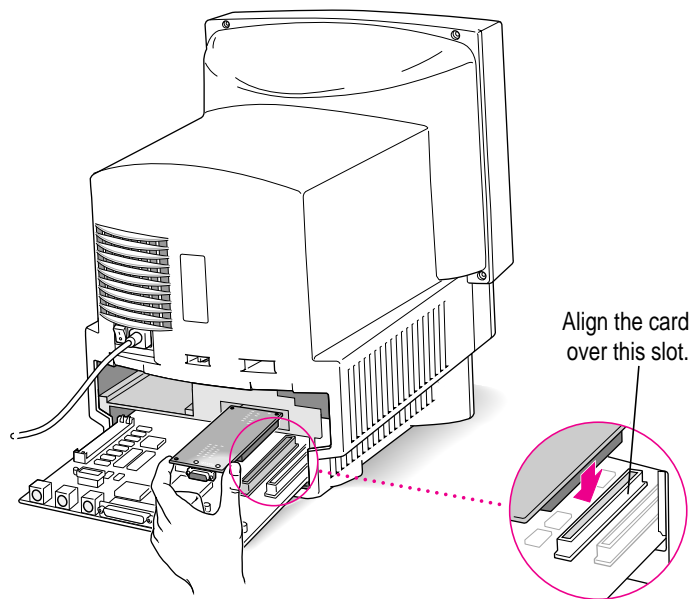
You can install a processor-direct slot (PDS) card in your computer. If you have a computer in the Macintosh Performa 570 series, you can also install a communications card.

### Installing a processor-direct slot (PDS) card

- 1 Remove the processor-direct slot (PDS) expansion card from its static-proof bag.**

Hold the card by its top edge to avoid touching the connector on the bottom of the card.

- 2 Align the card over the processor-direct slot.**



Your computer may look slightly different from the one shown.

- 3 Press down on the card until the connector is solidly in place.**

Don't force the card. If you meet resistance, pull the card out and try again.

To see if the card is properly connected, lift it gently. If it resists and stays in place, it's connected.

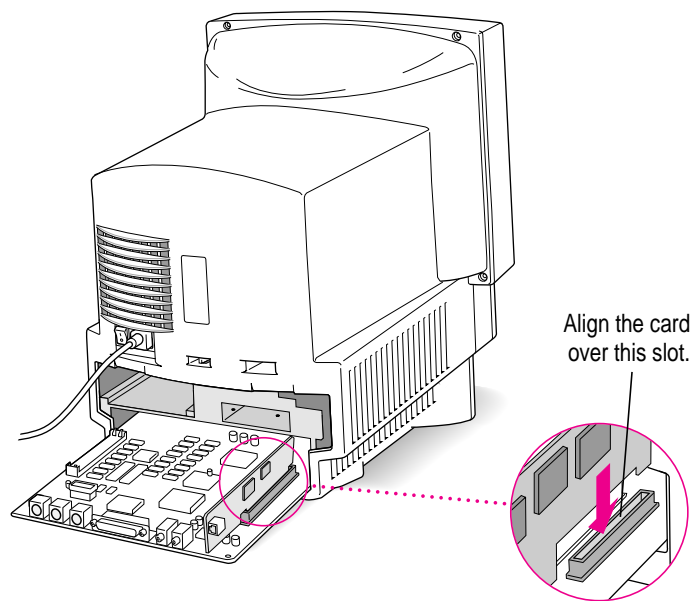
## Installing a communications card (Macintosh Performa 570 series only)

- 1 Remove the communications card from its static-proof bag.**

Hold the card by its top edge to avoid touching the connector on the bottom of the card.

- 2 Align the card over the communications slot.**

The communications slot is the rightmost slot on the logic board.



- 3 Press down on the card until the connector is solidly in place.**

Don't force the card. If you meet resistance, pull the card out and try again.

To see if the card is properly connected, lift it gently. If it resists and stays in place, it's connected.

## Closing the computer

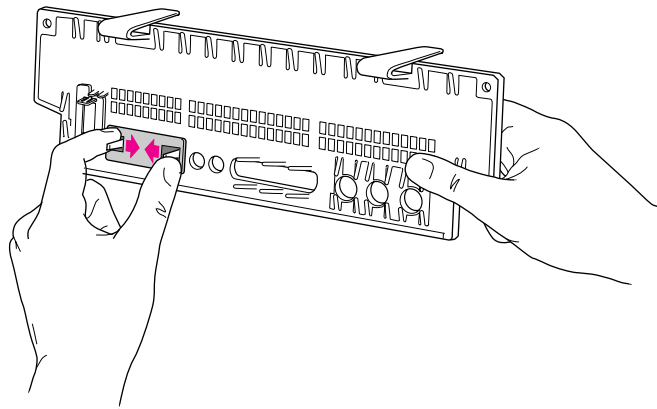
- 1 Slide the logic board back in.

Push on the back edge of the logic board until it is firmly in place.

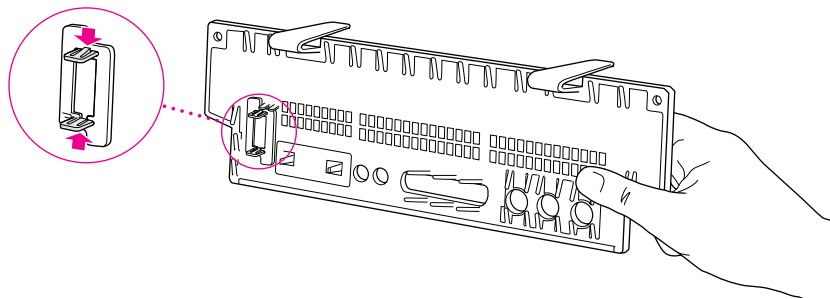
- 2 If there is a connector on the card that you just installed (for example, if you are installing an Apple IIe Card), remove the access cover on the back panel you removed earlier.

Pinch together the plastic tabs on the access cover to remove it and pop it out. With the access cover off, you can use the port on the card you just installed.

If you installed a processor-direct slot (PDS) card, remove this access cover:

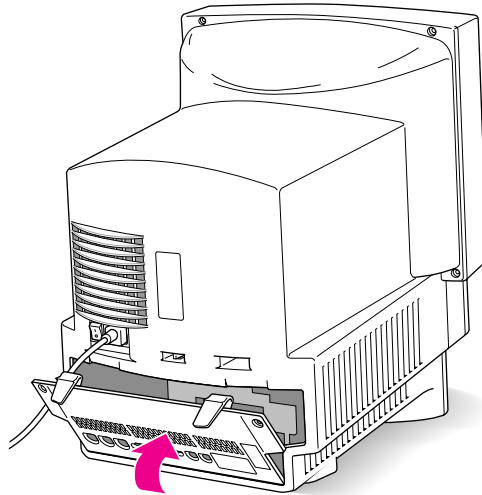


If you installed a communications card (Macintosh Performa 570 series only), remove this access cover:



**3** Replace the back panel of the computer.

Slip the back panel over the prongs at the bottom edge of the back of the computer, then push it up and forward until it snaps into place. If your back panel was held on by security screws, replace them.



**WARNING** Never turn on your computer unless all of its internal and external parts are in place. Operating the computer when it is open or missing parts can be dangerous, and can damage your computer.

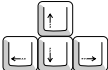



Read this appendix to learn how to use the special keys on your keyboard.

## Appendix C Special Keys on Your Keyboard

Your computer keyboard contains certain special keys that typewriter keyboards don't have. Many of these keys allow you to give commands to the computer without using the mouse. For example, in many application programs, pressing the ⌘ (Command) key at the same time as the Q key is often an alternative method of quitting a program.







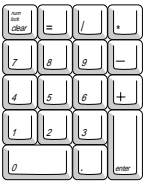





The following table describes what you can do with the special keys on your keyboard. The number of special keys on your keyboard may vary from this list; it depends on the model of keyboard you have.

### Special keys on Apple keyboards

<b>Arrow keys</b>		Use to move the insertion point, as an alternative to using the pointer. In some programs, the arrow keys have other functions.
<b>Caps Lock key</b>		Use to capitalize a series of letters (numbers and symbols aren't affected).
<b>Clear key</b>		Use to delete the current selection (or use the Delete key). In some programs, Clear has other functions.
<b>⌘ (Command) key</b>		Use in combination with other keys as an alternative to choosing a menu command.

*continued* ►

## Special keys on Apple keyboards *(continued)*

<b>Control key</b>		In combination with other keys, this key provides shortcuts or modifies other actions.
<b>Delete key</b>		Use to delete selected material, or the character to the left of the insertion point.
<b>Enter key</b>		In a dialog box, pressing Enter is the same as clicking the outlined button. In some programs, pressing this key confirms information you have provided.
<b>Escape key</b>		The function of this key depends on the program you're using.
<b>Function keys</b>		Some programs allow you to use the 12 function keys to give commands. You can assign commands or action sequences to function keys with special utility programs.
<b>Option key</b>		Use in combination with other keys to produce special characters or modify actions.
<b>Numeric keys</b>		Use to produce numbers and mathematical symbols; some programs use these keys as function keys to initiate actions.
<b>Power key</b>		On some models, press to turn on the computer. Also press to shut down the computer on certain models.
<b>Return key</b>		Use to move the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button.
<b>Shift key</b>		Use to produce capital letters (or the upper character on the key).
<b>Other special keys</b>		The function of these keys depends on the operating system and program you're using.
<b>Tab key</b>		Use to move the insertion point to the next stopping place (such as a tab stop or field in a dialog box or program).



If you can't find what you're looking for in this index, look in *Macintosh Guide*—available in the **Guide (?)** menu on your computer.



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