PowerBook
User's Guide

Includes setup and important health-related information for PowerBook 200 Series computers

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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。

Speaker

Trackball

Brightness controls

Internal modem port
(if a modem is installed)

Power On button

Power adapter port

Printer/External modem port
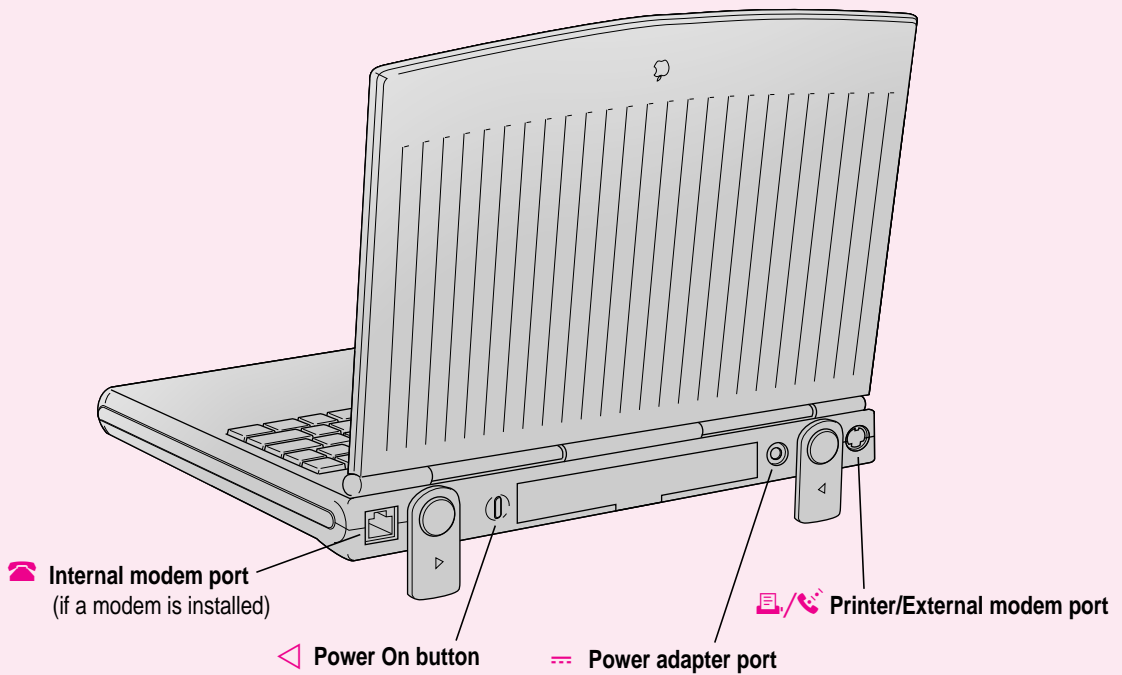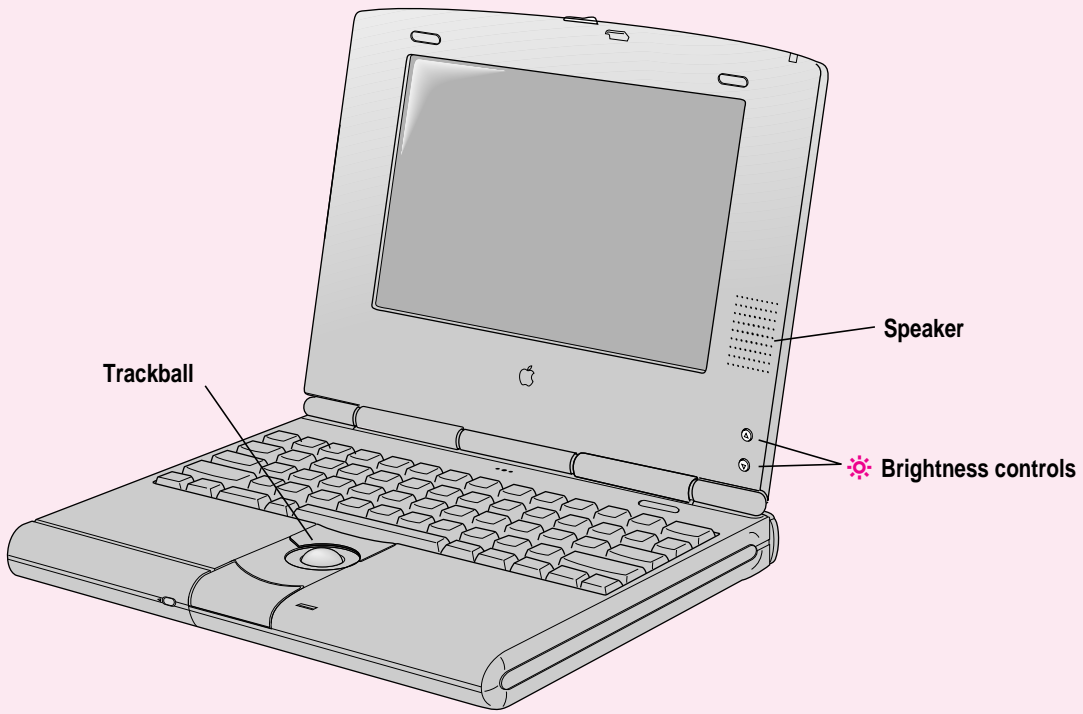
**Follow the instructions in this
chapter to set up your computer
and learn the basics.**

1 Getting Started

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The illustration on the facing page provides an overview of your PowerBook computer. To set up your PowerBook for the first time, you need the power adapter and the power cord that came with your computer.

When setting up your computer, place your computer on a sturdy, flat surface near a grounded electrical outlet. Before following the setup instructions in this chapter, you may want to read "Arranging Your Work Area and Equipment" in Appendix A for tips on adjusting your work furniture and computer so that you're comfortable when using the computer.

Plugging in the computer

Plugging in the power adapter recharges the computer's batteries. You should plug in the power adapter in case the battery has drained during shipping or storage.

> **WARNING** Use only the power adapter that came with your PowerBook. Adapters for other electronic devices (including other portable computers) may look similar, but they may damage your computer.

When you are ready to begin:

1 **Plug one end of the power cord into the power adapter and the other end into a three-hole grounded outlet or power strip.**

> **WARNING** This equipment is intended to be electrically grounded. Your PowerBook 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!

2 **Plug the power adapter cable into the power adapter port (marked with the icon ⎓) on the back panel of the computer.**

You can wind extra cable around the hooks that open out from the power adapter.

Power cord

Power adapter

Wrap cable around the hooks.
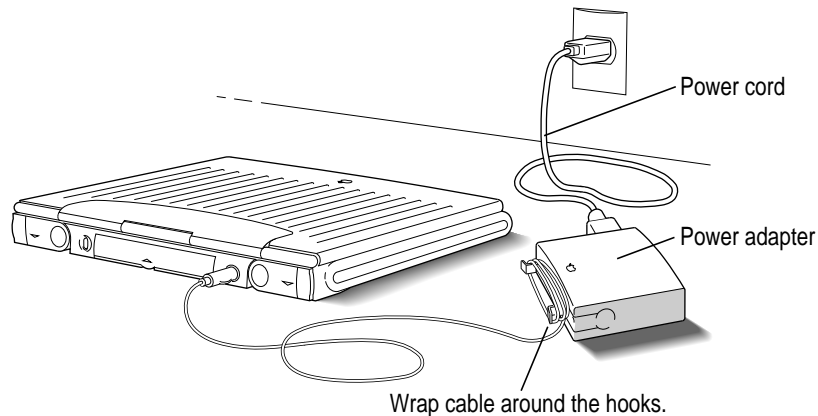
Depending on where you purchased your computer, you may also have received a wall mount plug. You can use this plug instead of the power cord to plug the power adapter directly into an electrical outlet.

Opening the display

1   Slide the latch to the right and lift up the display.
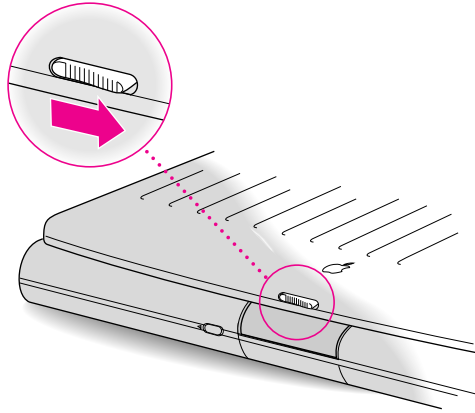
2   Position the display at a comfortable viewing angle.

You can adjust the angle of the display at any time by tilting it towards or away from you.
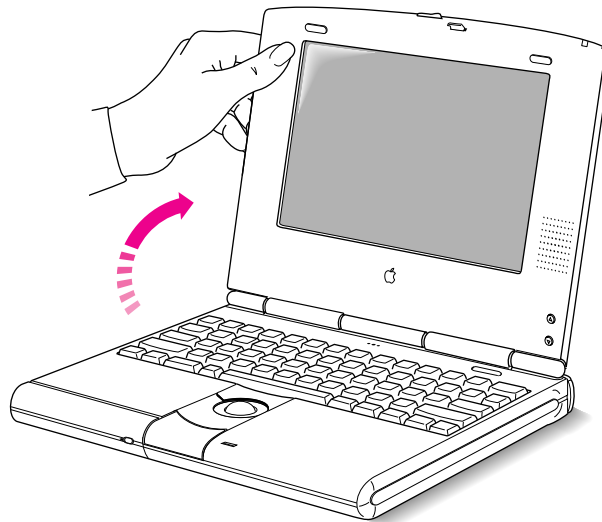
Turning on the computer

To turn on the computer for the first time:

■ **Press the Power On key above the keyboard.**

Power On key
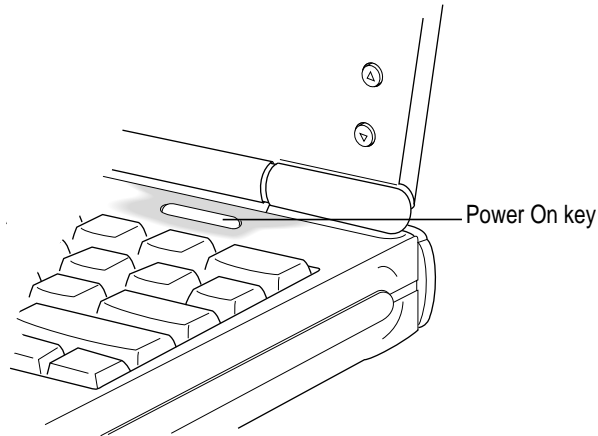
You should hear a tone when you turn on the computer. It takes the computer a moment to start up.

When you see something like this on your screen, the computer is ready to use:

Note: Your screen should look very similar to this picture but it might not look exactly the same.

Problems turning on your computer?

■ **The computer made a sound, but you can't see anything on the screen.**

Adjust the brightness control buttons until an image appears and the screen is easy to read.

Brightness
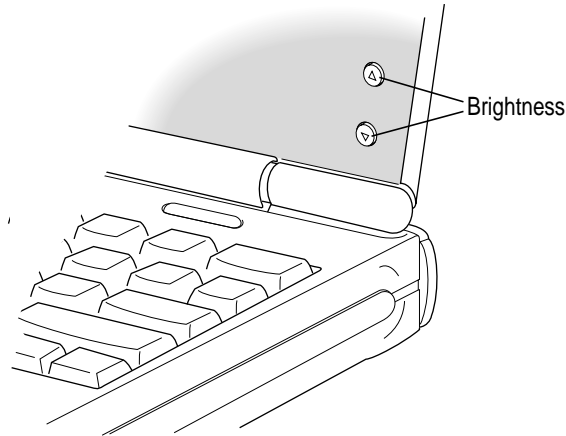
■ **Nothing happened when you pressed the Power On key.**

Make sure the power adapter is firmly connected to both the computer and a power source. If the power adapter is plugged into a power strip, make sure the power strip is plugged in and turned on. Then try pressing the Power On key again.

If you still get no results, press the power button on the back of the computer.
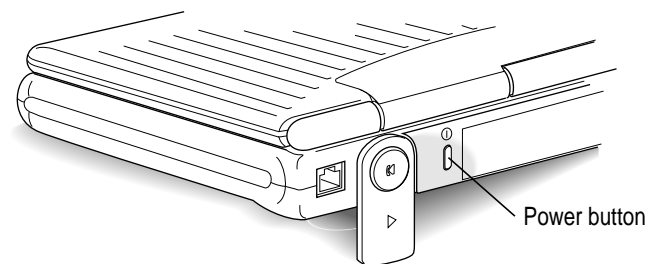
Power button

If neither the Power On key nor the power button turns the computer on, see the *PowerBook Troubleshooting Guide* you received with your computer for help.

■ **You see a picture of a disk with a blinking question mark on the screen.**

This picture means that you need to install system software on the computer's hard disk. System software includes the programs the computer uses to start itself up. You received a set of system software disks in the accessory kit that came with your computer. For instructions on installing system software, see the *PowerBook Troubleshooting Guide* you received with your computer.

What's next?

You've now finished setting up your PowerBook. 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 have additional equipment to connect to your computer, see Chapter 3, "Connecting Additional Equipment," for instructions. (If you are a new Macintosh user, you should complete "Learning the Basics" before connecting additional equipment.)

- If you have application programs that you want to install on your computer, see Chapter 4, "Installing and Using Application Programs," for instructions. (If you are a new Macintosh user, you should complete "Learning the Basics" before installing application programs.)

IMPORTANT If you need to turn off your computer at any point, read the instructions in "Turning the Computer Off" later in this chapter to learn the correct procedure for turning off your PowerBook.

Learning the basics

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

1   Roll the trackball to move the arrow pointer (▶) on the screen.

Place your index finger on the trackball and your thumb on the lower trackball button. Don't press either button yet.

Roll the trackball, watching the arrow on the screen. Notice that the arrow moves in the same direction as you roll the trackball.

You may need to roll the trackball around for a few seconds to "break in" the mechanism so it works smoothly.
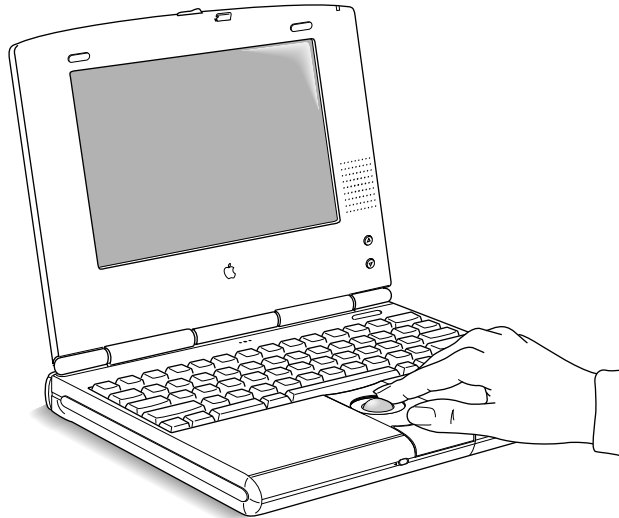
2 **Roll the trackball so that the tip of the arrow (▶) points to the question mark in the upper-right portion of the screen.**

3 **With the tip of the arrow (▶) on the question mark, press and hold down the trackball button.**

A list of choices (called a *menu*) appears. This is the Guide menu, which is the place to go when you have a question about how to use your computer.
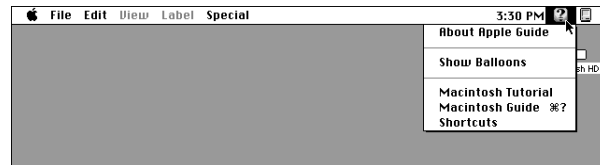
4 **While holding down the trackball button, move the arrow (▶) until the words "Macintosh Tutorial" are highlighted, then release the trackball button.**

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

The strip across the top of the screen is called the **menu bar.** The symbols and words in it represent menus of commands.

To move a window, drag it by the **title bar.**

To find an answer to a question, look in the **Guide (2) menu.**
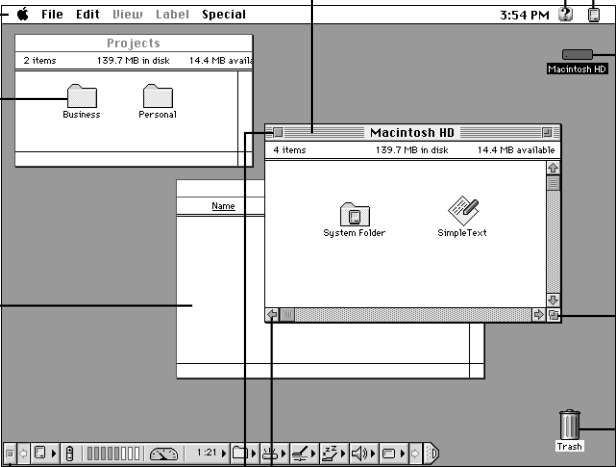
You can have several application programs open at once. To see which program is active or to switch from one program to another, use this menu (called the **Application menu**).

Icons are small pictures that represent disks, folders, programs, and documents. To open an icon, click the icon twice quickly.

Windows are boxes that display text, graphics, or icons. To bring a partially covered window to the front, click anywhere in the window.

This icon represents your computer's internal **hard disk.**

To change the size or shape of a window, drag the **size box.**

To throw away an item you no longer want, drag it to the **Trash** and choose Empty Trash from the Special menu.

To close a window, click the **close box.**

To bring hidden portions of a window's contents into view, click the **scroll arrows.**

The **Control Strip** gives you a quick and easy way to monitor and update your PowerBook's power management options. For instructions on using the Control Strip, see the "Batteries & Power" topic of Macintosh Guide, available in the Guide (2)menu.

Turning the computer off

To turn the computer off, you choose Shut Down from the Special menu. Detailed instructions follow.

1 If the computer is in sleep, press any key on the keyboard (except Caps Lock) to wake it.

For information on the sleep feature of your PowerBook, see "Putting the Computer to Sleep" on the next page.

2 Move the tip of the arrow to the word "Special" at the top center of the screen.
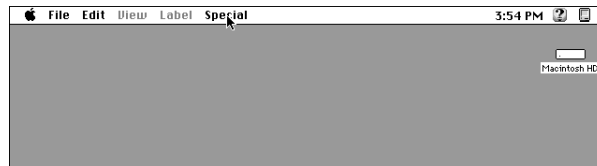
If the word "Special" does not appear at the top of the screen, you're working in the wrong program. Click anywhere on the desktop.

3 With the tip of the arrow on the word Special, press and hold down the trackball button.

4 While holding down the trackball button, move the arrow until the words "Shut Down" are highlighted, then release the button.

Trouble? If a problem with the computer prevents you from choosing Shut Down—for example, if the computer "freezes" so that the pointer does not respond to the trackball—you can turn off the computer by pressing the power button on the back of the computer. You will lose any unsaved work. Use this method only if you cannot choose Shut Down or Restart from the Special menu.

Putting the computer to sleep

Sleep is a power conservation feature of PowerBook computers, reducing the amount of power the computer draws when it's not being used. When the PowerBook is in sleep, it has a darkened screen and appears to be off. If you have a PowerBook Duo 280c, a green light flashes on the top of the display case when your computer is in sleep.

To put the computer to sleep:

■ **Choose the Sleep command from the Special menu. (The computer must be on in order for you to put it to sleep.)**

Special	
Clean Up Window	
Empty Trash…	
Eject Disk	⌘E
Erase Disk…	
Restart	
Shut Down	
Sleep	

For information on other ways of putting the computer to sleep, see the "Batteries & Power" topic of Macintosh Guide, available in the Guide (❷) menu. (You can learn about using Macintosh Guide in Chapter 2 of this manual.)

Automatic sleep

If you don't use the computer for several minutes, it goes to sleep automatically. This conserves battery power.

To wake the computer, press any key on the keyboard (except Caps Lock). The screen will reappear as it was before the computer went to sleep.

You can control the automatic sleep feature. For more information on sleep and automatic sleep, see the "Batteries & Power" topic of Macintosh Guide, available in the Guide (❷) menu. (You can learn about using Macintosh Guide in Chapter 2 of this manual.)

Restarting a computer that's already on

You need to restart your computer—turn it off and back on again—when you want to make certain changes to settings, use a newly installed system software file, or start up the computer using a different disk.

You also need to restart if you see a "system error" message on the screen (indicating a temporary software problem). In this case, use the trackball to click the Restart button that appears.

To restart your computer:

■ **Choose Restart from the Special menu.**

If the Special menu does not appear in the menu bar, you're working in the wrong program. Click anywhere on the desktop.

When you choose Restart, the computer prompts you to save your work, closes all open programs, and restarts itself.

Choosing Restart does not affect your RAM disk (if you created one) or its contents.

Trouble? If a problem with the computer prevents you from choosing Restart—for example, if the computer "freezes" so that the pointer does not respond to the trackball—you can restart the computer by holding down the Control, Command (⌘), and Power On (◁) keys at the same time. This turns the power off and on again, and you will lose any unsaved work. Use this method only if you cannot choose Restart or Shut Down from the Special menu.

Where to find answers

When you have questions about using your PowerBook, there are several places you can look for answers:
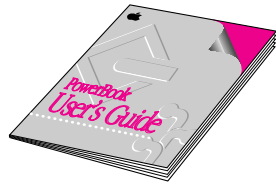
In this book

Use this book to set up and learn about your computer.

In the Guide menu

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

In the *PowerBook Troubleshooting Guide*

The *PowerBook Troubleshooting Guide* is a portable manual that provides useful tips and suggestions if you have problems while using your computer.
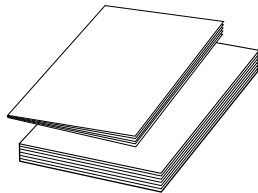
In other manuals

For answers to questions about other equipment or application programs you have purchased, see the manuals that came with them.
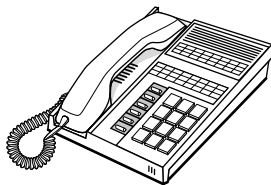
From Apple's customer support hotline

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 (②) 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.
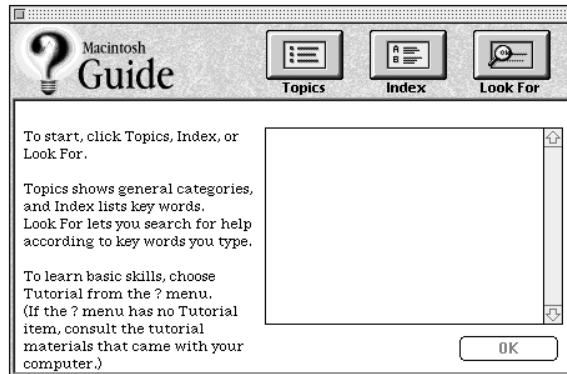
Whenever you use Macintosh Guide, its window remains in front of other windows. If the window gets in your way, you can move it by dragging its title bar (the gray bar across the top of the window).

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.)
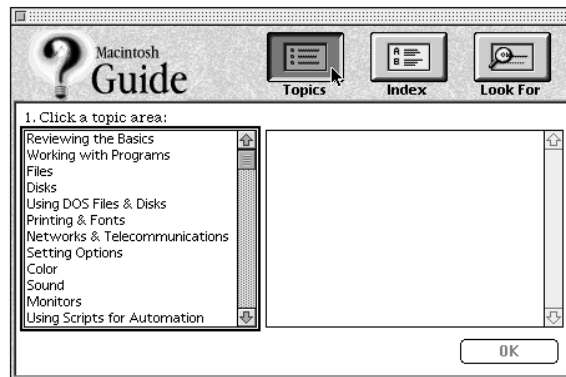
2 **Click "Setting Options" in the list of topics.**

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

To get instructions, click a question…
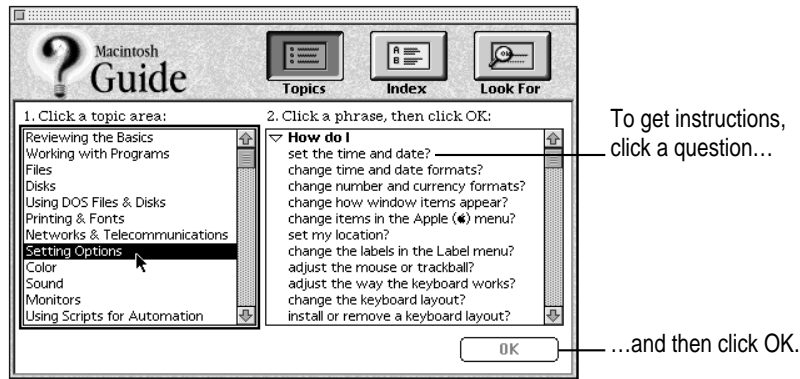
…and then click OK.

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.

If you want to return to the main Macintosh Guide window, click here.

Click here to see the next step (if there is one).
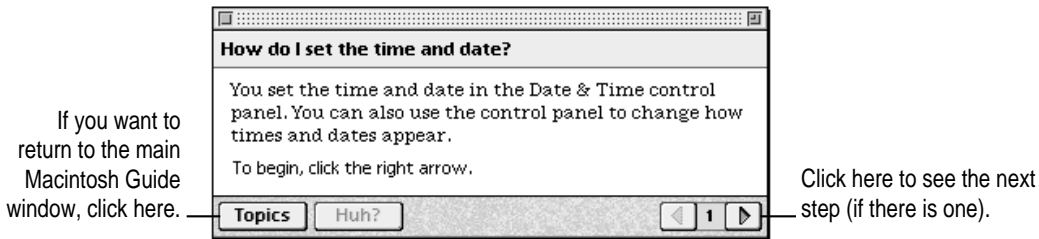
4 **Read and follow the instructions in this window.**

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.
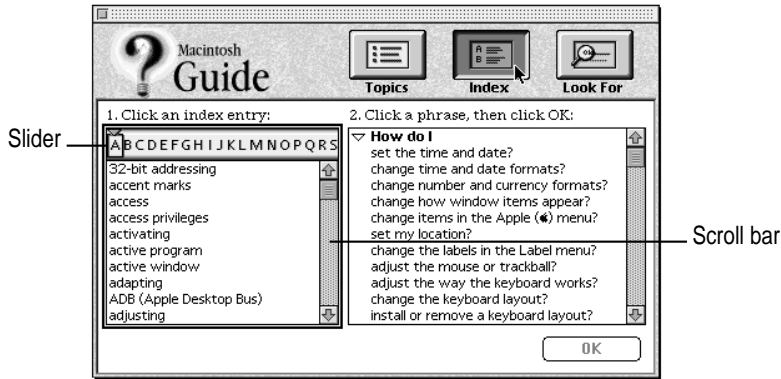
Slider —

Scroll bar

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.

To get instructions, click a question…
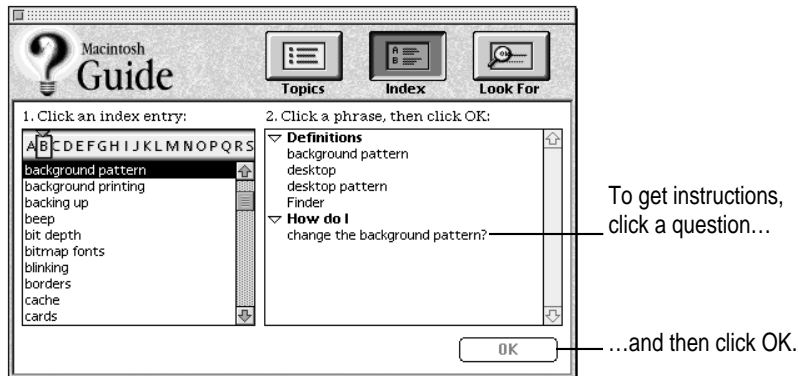
…and then click OK.

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.

If you want to return to the main Macintosh Guide window, click here.

> **How do I change the background pattern?**
>
> You use the Desktop Patterns control panel to choose or create a background pattern (called the desktop pattern).
>
> Which do you want to do? Click one:
>
> ⦿ Choose a pattern
> ○ Create my own pattern
>
> Make your choice, then click the right arrow.
>
> [Topics] [Huh?]   ◁ 1 ▷

Click here to see the next step (if there is one).
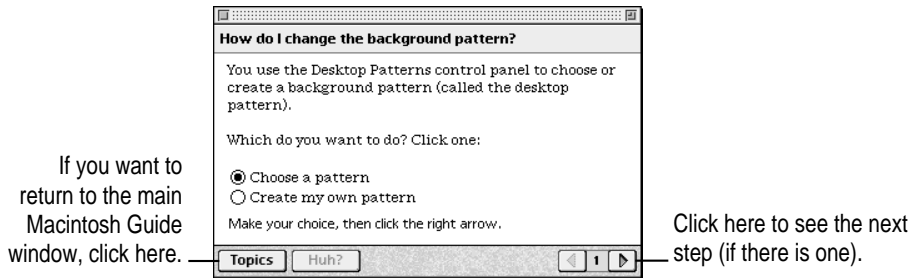
5 **Read and follow the instructions in the window.**

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 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.

To activate the text box, click here. ⎯⎯⎯

Type a word or phrase in the text box…
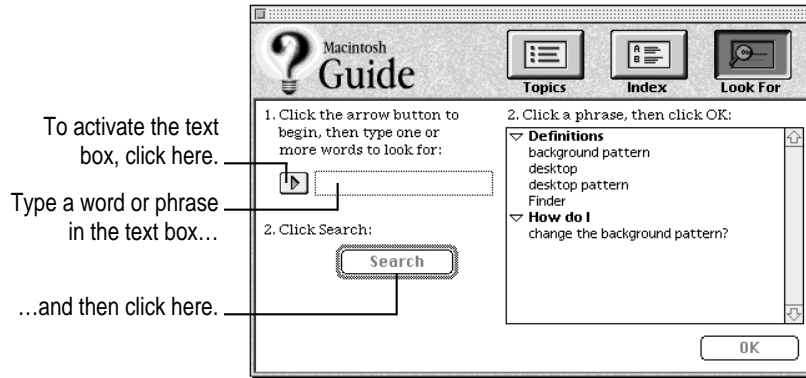
…and then click here. ⎯⎯⎯

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.

To get instructions, click a question…
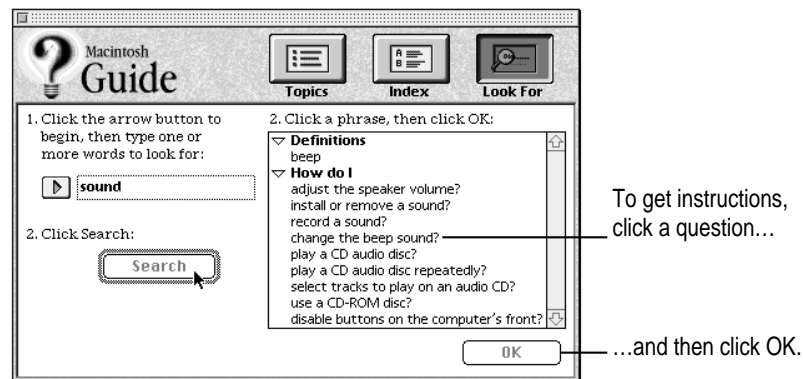
…and then click OK.

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.
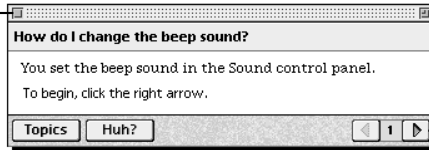
How do I change the beep sound?

You set the beep sound in the Sound control panel.
To begin, click the right arrow.

Topics   Huh?   ◁ 1 ▷

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 availa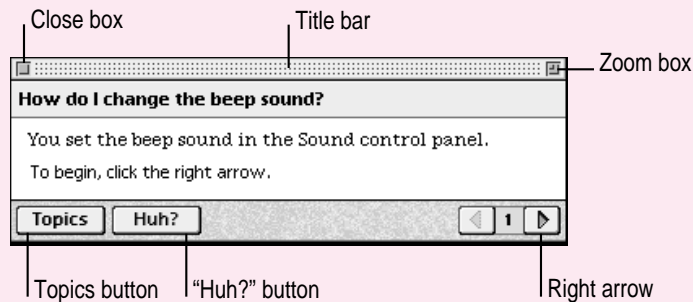ble in the Guide menu, however.) If you don't see Macintosh Guide in the Guide menu, pull down the Application menu (to the right of the Guide menu) and choose Finder.

- 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.

Close box   Title bar   Zoom box

How do I change the beep sound?

You set the beep sound in the Sound control panel.

To begin, click the right arrow.

Topics   Huh?   ◁ 1 ▷

Topics button   "Huh?" button   Right arrow

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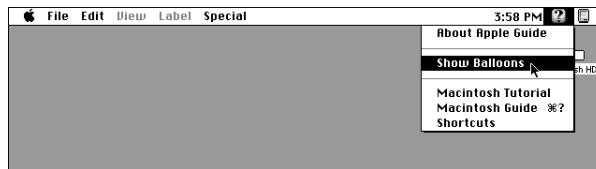
2 **Point to any object on the screen that you want to identify.**

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 ② icon) and choose Shortcuts.**

The main Macintosh Shortcuts window appears.
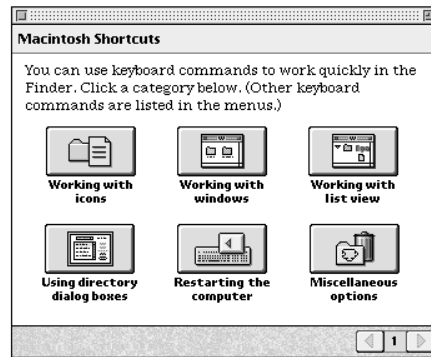
2   **Click one of the category buttons.**

Another window appears, describing shortcuts for that category.
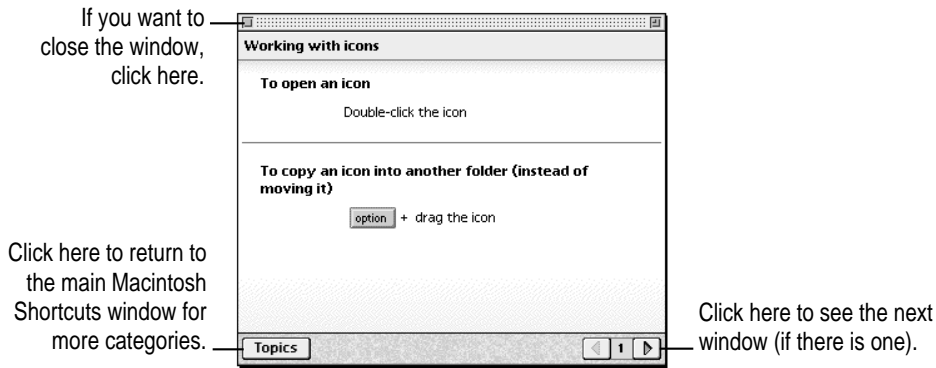
If you want to
close the window,
click here.

Working with icons

To open an icon

Double-click the icon

To copy an icon into another folder (instead of moving it)

option + drag the icon

Click here to return to
the main Macintosh
Shortcuts window for
more categories.

Topics   ◁ 1 ▷

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

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.**

3 Connecting Additional Equipment

The illustration below shows where equipment can be connected to your computer. Refer to the manuals that came with your equipment for instructions on connecting it.

☎ Internal modem port
  (if a modem is installed)

◁ Power On button

Docking connection

🖳/✆ Printer/External modem port

⎓ Power adapter port
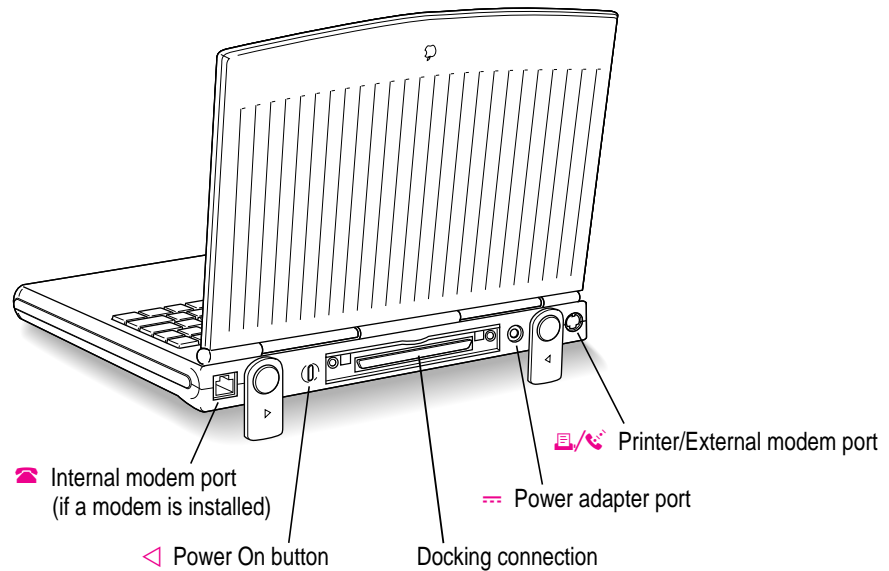
In addition to connecting certain equipment directly to your PowerBook, you can also expand your system with the following accessories:
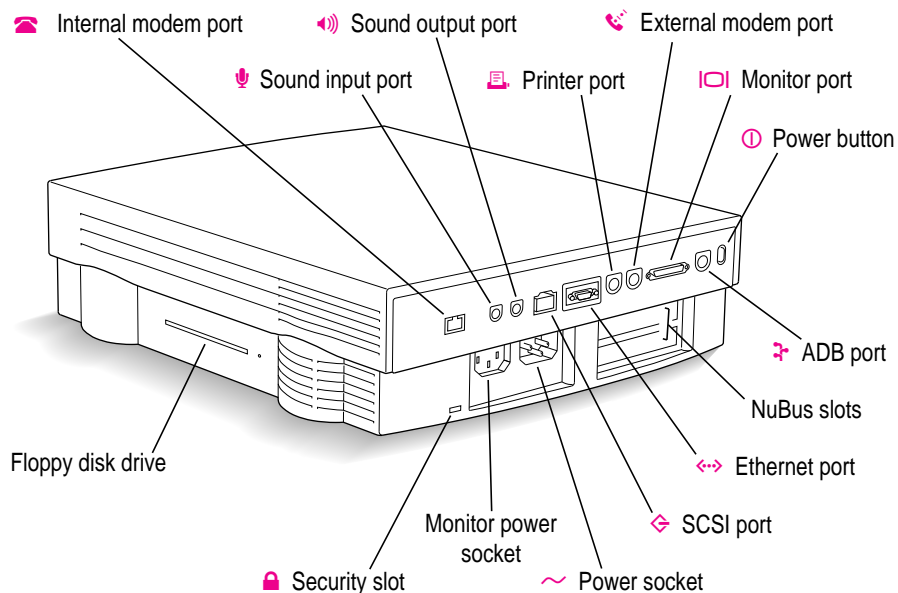
- the PowerBook Duo Dock and Duo Dock II
- the PowerBook Duo MiniDock
- the PowerBook Duo Floppy Adapter

A brief overview of these accessories is in this chapter. For more information, see the documentation that comes with them. You can purchase any of these products from an Apple-authorized dealer.

The PowerBook Duo Dock and Duo Dock II

The PowerBook Duo Dock and Duo Dock II are the most versatile expansion options for PowerBook 200 Series computers. A dock is itself not a computer—you need a PowerBook 200 Series computer to use it. When a PowerBook is "docked," you have the video, storage, and input/output capabilities available on most desktop Macintosh computers.

The drawing below shows where you can connect a variety of devices to a Duo Dock II.

☎ Internal modem port   ◁)) Sound output port   ☎ External modem port
🎤 Sound input port   🖶 Printer port |□| Monitor port
① Power button
⌁ ADB port
NuBus slots
⟷ Ethernet port
⇔ SCSI port
~ Power socket
🔒 Security slot
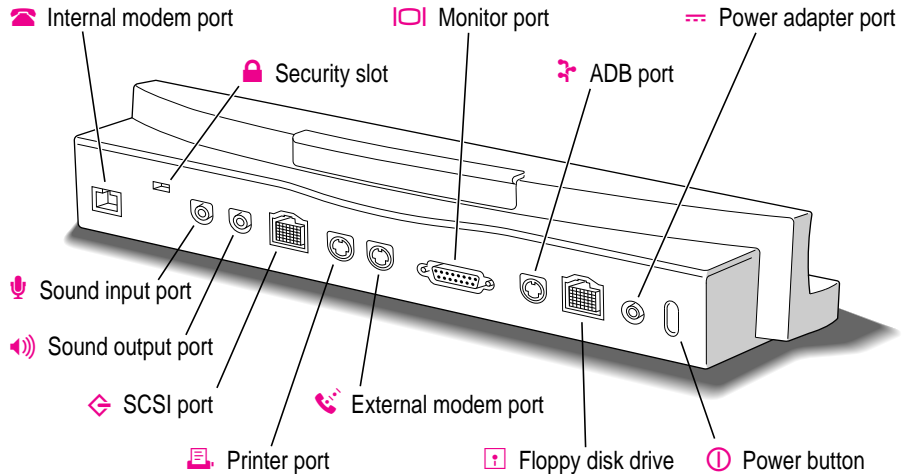Monitor power socket
Floppy disk drive

The Duo Dock and Duo Dock II come with many built-in features; several optional features are also available. These features include:

- an internal 1.4 MB floppy disk drive

- an optional internal SCSI hard disk drive (any available capacity that meets Apple's specifications; up to 1 inch high)

- standard ports including SCSI (with an HDI-30 connector), monitor, printer, modem, Apple Desktop Bus (ADB), sound input, and sound output. On the Duo Dock II or upgraded Duo Dock, an EtherTalk port is also provided.

- a separate mouse and keyboard

- slots for two NuBus cards for Ethernet, Token Ring, additional video, or other capabilities. (Note that if you use two NuBus cards in your Duo Dock or Duo Dock II, the bottom of your PowerBook may feel warm when you eject it from the dock. This is normal and will not harm your PowerBook.)

- built-in video support for a wide variety of monitors

- 1 MB VRAM for 16-bit color on color monitors 16" or less, 8-bit grayscale on the Apple 15" portrait monitor and the Macintosh Two-Page Display, and 8-bit color on color monitors 17" or greater. (The Duo Dock requires a 512K VRAM SIMM expansion card for 16-bit color.)

- an automatic insert/eject feature to ensure reliable docking

- a key-operated lock to prevent theft of the docked PowerBook

- a slot door that protects the interior of your Duo Dock II when your PowerBook is not docked

The PowerBook Duo MiniDock

The PowerBook Duo MiniDock allows you to connect a wide variety of devices to the PowerBook. Like the Duo Dock, the minidock with peripheral devices connected to it is not a computer—you need a PowerBook 200 Series computer to make the system work.

☎ Internal modem port |◻| Monitor port   ⎓ Power adapter port

🔒 Security slot   ⌘ ADB port

🎤 Sound input port

◀)) Sound output port

◆ SCSI port   ☏ External modem port

🖶 Printer port   ⬝ Floppy disk drive   ⏻ Power button

The minidock attaches to the back of the PowerBook and allows you to use the following types of equipment with your computer:

- a variety of Apple monitors

- up to three Apple Desktop Bus (ADB) input devices (such as a keyboard or mouse)

- an external 1.4 MB floppy disk drive

- up to six SCSI devices, including hard disk drives, CD-ROM drives, and scanners

- a printer

- an external modem

- LocalTalk cables

- external microphone, headphones, or speakers

The PowerBook Duo Floppy Adapter

The PowerBook Duo Floppy Adapter allows you to connect an external 1.4 MB floppy disk drive (HDI-20) and up to three Apple Desktop Bus (ADB) devices—such as a keyboard or mouse—to your computer.
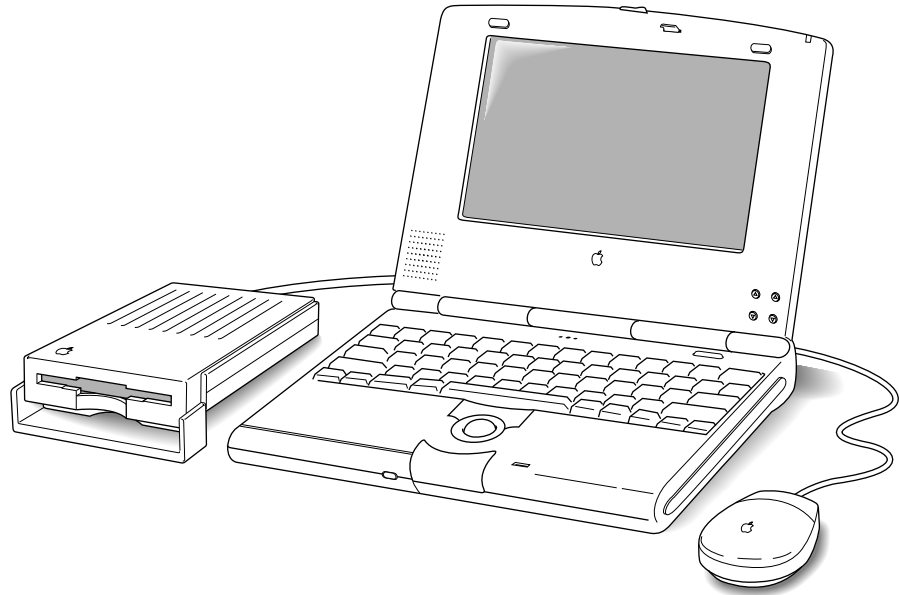
Connecting a printer

The printer/modem port (📠/☎) on your PowerBook can accept either a direct connection (to a printer such as a StyleWriter) or a network connection (to a printer such as a LaserWriter). If you are connecting a printer to the port, make sure that the modem selection in the Express Modem control panel is set to Use External Modem. See the next section, "Connecting a Modem," for details.

Connecting a modem

Apple offers optional, low-power, internal fax/data modems for your PowerBook. See the modem manual for information about your modem.

You can also connect an external modem to any of the following:

- the printer/modem port on the PowerBook
- the modem port on a Duo MiniDock
- the modem port on a Duo Dock

To connect an external modem, follow these steps.

1 **Make sure the computer is in sleep or shut down.**

2 **Connect the modem to a power source and to the phone line.**

See the documentation that came with the modem.

3 **Make sure the modem is turned off.**

4 **Connect the modem cable to the printer/modem port (PowerBook) or the modem port (Duo Dock or Duo MiniDock).**

 Printer/modem port icon

 Modem port icon
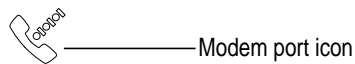
5 **Turn on the modem.**

6 **Wake or restart the computer.**

If your computer does not have an internal modem, the external modem is ready to use.

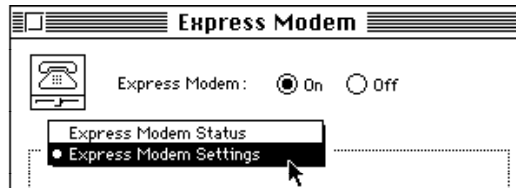If your computer does have an internal modem, continue with step 7.

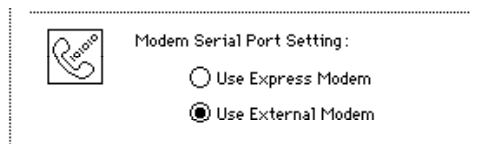**7** **Choose Control Panels from the Apple (🍎) menu and open the Express Modem control panel.**

Express Modem

8 **Choose Express Modem Settings from the pop-up menu.**

9 **Click Use External Modem to activate the external modem.**

Leave Use External Modem selected even when you use your internal modem.

10 **Close the control panel.**

The external modem is ready to use.

If you don't have the Express Modem control panel: The Express Modem control panel is part of version 1.5 of the Express Modem software. If you have an earlier version of Express Modem software, or if you have another kind of internal modem, you can activate an external modem by opening the PowerBook Setup control panel and clicking the Normal button.

Connecting SCSI devices

A SCSI device is any product—including hard disk drives, CD-ROM drives, scanners, and printers—that connects with your computer by means of a standard electronic interface called Small Computer System Interface (SCSI).
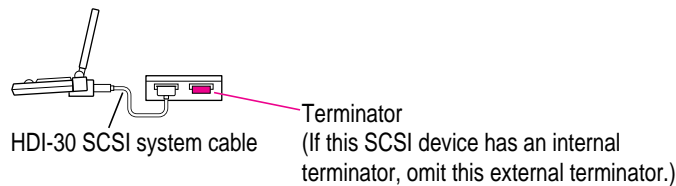
You can attach up to 6 SCSI devices to your computer by linking them together in a chain that starts at your dock's SCSI port. There is a SCSI port on the PowerBook Duo Dock and the PowerBook Duo MiniDock. (There is no SCSI port on PowerBook 200 Series computers.)

To connect a SCSI device to your PowerBook, you need an Apple HDI-30 SCSI System Cable or equivalent. This cable is light gray (the same color as desktop Macintosh computers), is about 19 inches long, and has 29 pins (one "missing pin").
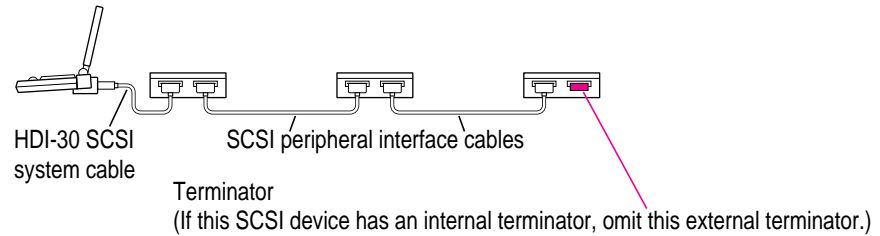
Refer to the manuals that came with your SCSI devices for instructions on installing any necessary software, setting SCSI ID numbers, and connecting SCSI cables and SCSI terminators. Refer to the illustrations below for the proper positioning of SCSI terminators.

WARNING When connecting SCSI equipment, *always* turn off power to all devices in the chain, including your computer. If you don't, you could lose information and damage your equipment.

Where to add cable terminators when connecting a single SCSI device:

HDI-30 SCSI system cable

Terminator
(If this SCSI device has an internal terminator, omit this external terminator.)

Where to add cable terminators when connecting two or more SCSI devices:

HDI-30 SCSI
system cable

SCSI peripheral interface cables

Terminator
(If this SCSI device has an internal terminator, omit this external terminator.)

Using your PowerBook as a SCSI disk

If you have a PowerBook Duo MiniDock, you can purchase a cable called the Apple HDI-30 SCSI Disk Adapter, which lets you connect your PowerBook to another computer as a hard disk. The PowerBook appears on the desktop of the other computer as a hard disk icon, and you can transfer information between the computers by dragging files. This feature is called SCSI disk mode.

The Apple HDI-30 SCSI Disk Adapter is dark gray (the same color as your PowerBook computer), is about 10 inches long, and has 30 pins.

The PowerBook Duo Dock and Duo Dock II do not support SCSI disk mode.

WARNING Follow the steps for connecting and disconnecting SCSI devices carefully to avoid loss of information and damage to your equipment.

Connecting your computer as a SCSI disk

Before making any connections, you need to assign a unique SCSI ID number to the PowerBook. (The unique ID number allows the computer to communicate with several connected devices.)

1   **Choose Control Panels from the Apple () menu of your PowerBook computer.**

2   **Open the PowerBook Setup control panel.**

PowerBook Setup

3   **In the SCSI Disk Mode section of the control panel, click the ID number you want to assign.**

If you are connecting the PowerBook to an existing SCSI chain, make sure to give it an ID number different from those of the other devices. (Many devices include an ID number indicator on the back panel.)

SCSI Disk Mode
ID: ○1 ○2 ◉3 ○4 ○5 ○6
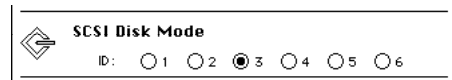
4   **Close the PowerBook Setup control panel.**

5   **Turn off the PowerBook by choosing Shut Down from the Special menu.**

6   **Shut down the computer you are connecting to, and turn off any other devices in the SCSI chain.**

7   **Connect the small connector on the Apple HDI-30 SCSI Disk Adapter cable to the SCSI port on your PowerBook Duo MiniDock.**

8   **If you are connecting the PowerBook directly to the other computer (rather than to an external device in the SCSI chain), attach a SCSI system cable to the other computer.**

9   **Connect the large connector on the Apple HDI-30 SCSI Disk Adapter cable to a SCSI cable attached to the SCSI port on the last device in the SCSI chain, or to the SCSI system cable on the other computer.**

Remove the terminator from the last device before connecting the PowerBook. (If the last device has an internal terminator, disconnect the device and connect the PowerBook to the end of the SCSI chain. An Apple-authorized service provider can remove the terminator.)

WARNING Always shut down the PowerBook before connecting or disconnecting the SCSI disk adapter cable. Connecting the adapter cable while the computer is turned on can damage the computer.

10 **Turn on the PowerBook by pressing the power button.**

After a few seconds a SCSI icon appears on the screen, showing the ID number you assigned in step 3.

WARNING If you do not see the SCSI icon, and the computer starts normally or displays an error message, choose Shut Down (if you can) and then immediately disconnect your computer from the SCSI chain. (If you can't choose Shut Down, try pressing the power button. If you cannot shut down your PowerBook, you should disconnect the cable anyway, or you may lose information.) Then go back and repeat steps 6 through 10, making sure to use the proper cables.

11 **Turn on the other SCSI devices in the chain, if any.**

12 **Turn on the other computer.**

The PowerBook appears as a hard disk icon on the desktop of the computer you connected it to. You can now transfer and use files as if the PowerBook were an external disk drive.

Simplifying the connection process

If you regularly plan to use your PowerBook as a SCSI disk with the same computer, you can leave the SCSI disk adapter cable attached to the other computer or its SCSI chain. When you want to use your PowerBook as a SCSI disk, simply shut down all devices and connect the adapter cable to the SCSI port on your PowerBook Duo MiniDock.

These cables can stay attached to your
other computer or its SCSI chain.
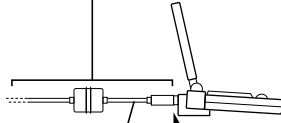
HDI-30 SCSI Disk Adapter   Connect and disconnect your computer here.

WARNING Always disconnect your PowerBook from the adapter cable when you are not using it as a SCSI disk. Your PowerBook will not work correctly if the adapter cable remains attached.

Drawing battery power in SCSI disk mode

Your PowerBook continues to draw battery power when you use it as a SCSI disk. Low battery power is indicated by a blinking low-power warning on the PowerBook's screen.
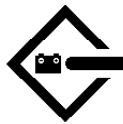
If you see this warning while using your computer as a SCSI disk, either plug in the power adapter or quit SCSI disk mode, as described in the next section, so you can remove the battery for recharging.

Quitting SCSI disk mode

1 **Shut down the computer your PowerBook is connected to.**

2 **Turn the PowerBook off by holding down the Command (⌘) key and the Power On (◁) key at the same time.**

3 **Turn off any other SCSI devices in the chain.**

4 **Disconnect the PowerBook from the adapter cable.**

If you regularly plan to connect your PowerBook to the same computer, you can leave the adapter cable attached to the SCSI chain or the other computer.

IMPORTANT Do not leave the adapter cable attached to the PowerBook. If you do, the computer will behave as though it is still in SCSI disk mode when you try to restart.

5 **If necessary, disconnect the adapter cable from the other computer or its SCSI chain.**

Your equipment is now ready for normal use. Make sure that the SCSI chain is properly terminated.

Connecting other devices

For instructions on connecting a device not discussed in this chapter—for example, an external input device or networking hardware—refer to the manuals that came with the device.

Adding memory to your computer

Your PowerBook computer comes with at least 4 MB of RAM. By adding memory upgrade cards, you can increase your computer's memory. You can find out how much memory your computer has by choosing About This Macintosh from the Apple (🍎) menu in the Finder.

You can purchase memory upgrades from Apple-authorized dealers.

> **WARNING** To avoid damage to your PowerBook, 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 additional information about this or any other warranty question.

Your PowerBook computer also supports virtual memory, a feature that makes use of hard disk space to provide additional RAM. (When the power adapter is not plugged in, using virtual memory will reduce your battery life, however.) For information on using virtual memory, see the "Memory" topic of Macintosh Guide, available in the Guide (②) menu.

Read this chapter for information on
installing and using application
programs on your computer.

4 Installing and Using Application Programs

Installing application programs

Your computer comes with several application programs already on the hard disk. You'll find these programs in either the Applications folder or the Apple Extras folder on your hard disk.

A program called Software Highlights gives you easy access to the programs in the Applications folder. To launch these programs and get tips on using them, double-click the Software Highlights icon.

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

In most cases, you install application programs onto your internal hard drive from floppy disks that you receive as part of an application program package. You need to connect an external floppy drive or dock your PowerBook in a Duo Dock before you can install software from a floppy disk. The following illustration shows how to insert a floppy disk in the floppy disk drive.

Insert metal end first, label side up.
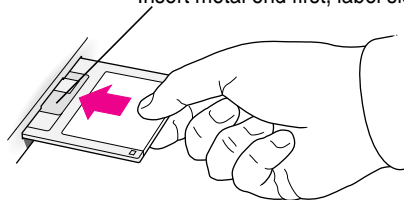
Working with several programs at a time

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.

The Finder icon

Commands to hide or display open windows

A checkmark indicates the active program
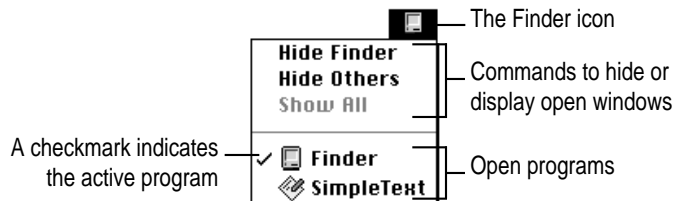
Open programs

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.

Backing up your files

Making backup copies of important files is good protection against possible damage to the originals.

- You can back up files stored on your hard disk by copying them onto floppy disks.

- You can back up an entire floppy disk by copying it to another floppy disk, or to a hard disk.

- You can use a commercial backup program to copy new and changed files from a hard disk to another hard disk, to a tape drive, or to a series of floppy disks.

- If your computer is on a network, you can back up files by copying them to a shared disk on the network.

- You can back up files by copying them from one computer to the other using SCSI disk mode. (See "Using Your PowerBook as a SCSI Disk" in Chapter 3 for more information on SCSI disk mode.)

5 Power Management

• • • • • •

Power sources

Your computer can draw its operating power from two different sources.

■ **Main battery** Your computer's main power source is a nickel-metal-hydride (NiMH) battery. The battery provides power for about 2–7 hours of work time (depending on the PowerBook model and type of battery you have and the battery conservation features you choose).

■ **AC power** You can run your computer from a grounded electrical outlet by plugging in the power adapter.

Your computer also has a backup battery that maintains the contents of RAM while you replace the main battery. The backup battery does not provide enough power to run the computer.

These power sources are described in more detail in the following sections.

Responding to low-power messages

When the batteries run low, the computer displays a series of low-power messages. The work time remaining after you see the first message varies depending on how you are using the computer. It's a good idea to act promptly.

What you should do

When you see a low-power message, you should do one of the following:

■ **Plug in the power adapter,** *or*

■ **Save your work and put the computer to sleep.**

What you should know

The first low-power message is a reminder that the battery will soon run out. When this message appears, the screen brightness dims automatically to save power.

If you continue to work without plugging in the power adapter or changing the batteries, the computer displays a second low-power message.

The second message is followed by a third and final message indicating that the computer is about to put itself to sleep. Within a few seconds, the computer goes to sleep automatically to protect the contents of RAM. All activities are interrupted. It's a good idea to save your work when you see the first two low-power messages to make sure you don't lose information.

If you continue working until the computer goes to sleep automatically, you can wake it again as soon as you plug in the power adapter or replace the battery with a fully charged battery.

If you can't plug in the power adapter, the contents of RAM are retained in sleep for about a day. If you recharge or change the battery within a day, you should be able to wake the computer and resume work where you left off.

IMPORTANT Recharge a depleted battery as soon as possible. Leaving a depleted battery in the computer for more than several months, or in a hot location (such as the trunk of a car) for longer than two weeks, may damage the battery so that it can't be recharged. If this happens, you need to replace the battery.

Recharging the battery

There are two ways to recharge a battery:

- Plug in the power adapter to recharge the battery without removing it from the computer.

- Remove the battery and recharge it in the (optional) recharger.

Recharge a battery shortly before you plan to use it. The battery does not retain its charge in long-term storage.

Recharging in the computer

Plug in the power adapter as shown.

WARNING Use only the power adapter that came with your computer. Adapters for other electronic devices (including other portable computers) may look similar, but they may damage your computer.
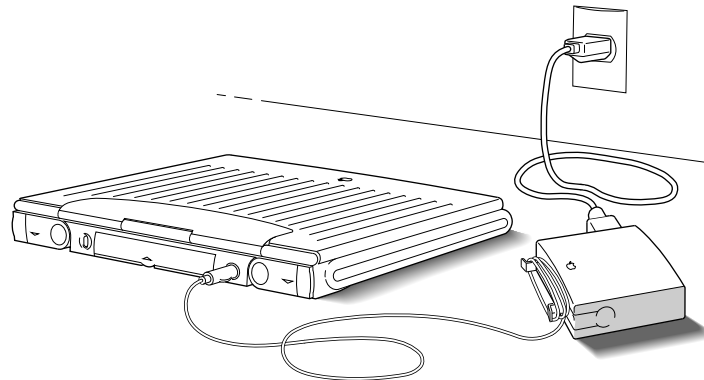
You can continue to use the computer while the battery is recharging. Using the computer does not affect the amount of time it takes the battery to recharge.

If you are recharging a fully depleted battery, it usually takes a little over 2 hours to bring the battery charge to 100 percent, but the time may vary depending on the model of PowerBook you have and the battery you are recharging.

Recharging in a recharger

You can purchase a battery recharger and additional batteries from your Apple-authorized dealer. If you have a recharger and an extra battery, you can charge one battery while you use another, so you always have a fully charged battery on hand.

The recharger can accommodate two batteries. It charges one battery at a time. You can put batteries in or take them out at different times.

The recharger must be plugged into an electrical outlet to charge a battery. You can plug it in using the power adapter that came with your computer, or you can purchase an additional (identical) power adapter from your Apple-authorized dealer.

WARNING Use only the power adapter that came with your computer with the recharger. Using other types of power adapters may damage the recharger, the power adapter, or both.

To recharge a battery, follow these steps:

1 **Place the recharger on a level surface.**

2 **Connect the recharger and the power adapter as shown in the illustration.**
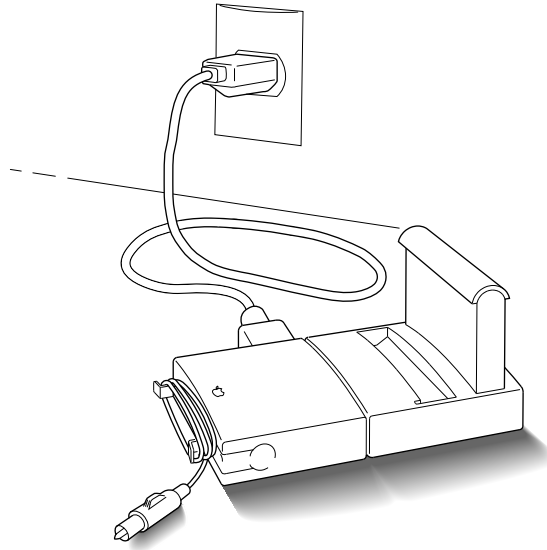
3 **Place the battery in the recharger as shown.**

Recharging begins immediately. You can remove a battery from the recharger at any time. Remember, if you are charging two batteries, they charge one at a time. It takes about two hours to charge each battery.

IMPORTANT To preserve a battery's charge, don't leave it in the recharger if the power adapter is not plugged into an electrical outlet.

The lights on the recharger indicate the following:

■ **No light** Either the recharger is not plugged in, the other battery is being charged (if you have two batteries in the recharger), or the battery is defective. (If the light goes off during recharging, there is a problem with the battery.)

■ **Yellow** The battery is charging.

■ **Green** The battery is fully charged.

■ **Red** The recharger does not recognize the type of battery you inserted. If you are charging a replacement battery, follow the instructions that came with it.

Recharging in both the computer and a recharger

You can use a single power adapter to run the PowerBook and the battery recharger at the same time.
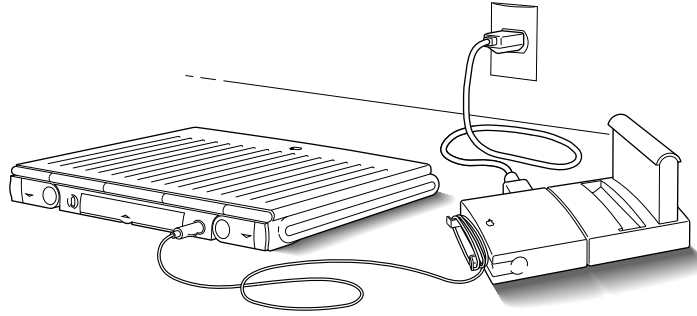
If the PowerBook is on and contains a battery that is not fully charged, the computer charges the internal battery first. The external battery does not begin charging until the internal battery is fully charged. It takes a little over 2 hours for a fully depleted battery to charge.

If the PowerBook is in sleep or is shut down, internal and external batteries charge simultaneously. If both batteries are fully depleted, it takes about 4½ hours to charge both. If the internal battery is fully charged or absent, the external battery takes a little over 2 hours to charge.

Removing or replacing the battery

- *If the power adapter is plugged in,* you can use the computer indefinitely without a battery.
- *If the power adapter is not plugged in,* the backup batteries in your computer protect open programs and documents for about 4 minutes, allowing you to remove the depleted battery and replace it with a charged one. (The backup batteries maintain other kinds of information, including control panel settings such as the clock time, for up to two weeks after the main battery is discharged or removed.)

To remove or replace the main battery, follow these steps:

1   Save your work, and then choose Sleep from the Special menu.

You can choose Shut Down instead of Sleep if you feel more comfortable working without the 4-minute time limit.

2   Close the display.

3   Open the battery door by pressing the small button and sliding the door in the direction indicated by the arrow.

The door is physically attached to the battery.
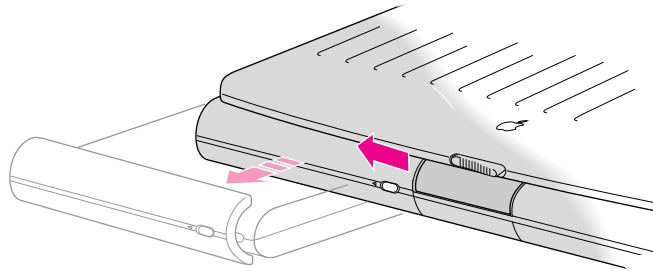
4   Carefully pull the battery out of its compartment.

5   If you are inserting another battery, slide it into the battery compartment.

Replacement batteries come with a door attached.

6   Close the battery door by pushing it back into place.

IMPORTANT Check to make sure the battery is properly inserted. The battery should be aligned with the computer and the battery door completely closed. The top and bottom seams where the battery and the PowerBook meet should be tight and even. If a battery is not inserted correctly, you may have performance problems.

7   If possible, plug in the power adapter in case the battery is not fully charged.

WARNING Damaged nickel-metal-hydride batteries may leak small amounts of sodium hydroxide. This substance can cause severe burns to the skin and eyes. If you touch a damaged battery, immediately rinse your hands and any other affected areas with water for at least five minutes. Do not use soap.

Disposing of dead batteries

IMPORTANT Nickel-metal-hydride batteries contain metals that can be reclaimed and reused. Instead of throwing away dead batteries, please dispose of them as described here.

In the United States: Return dead batteries to your Apple-authorized service provider, who will make sure they are included in Apple's battery recycling program.

Elsewhere: Many countries have government- or Apple-sponsored collection and/or recycling programs for dead batteries. Dispose of dead batteries in accordance with the mandatory or voluntary battery collection schemes in your country. Contact your Apple-authorized service provider for information about the recommended battery disposal procedures in your location. If there is no government- or Apple-sponsored return program, you can dispose of the batteries with your regular trash, taking care not to break them open or incinerate them.

Replacing the backup battery

In addition to its main battery, your computer has a small backup battery that maintains the contents of RAM while you replace the main battery.

The backup battery usually lasts for several years. You may need to have it replaced if you notice that some of your system settings changed after you removed or replaced the main battery. (You may notice, for example, that the clock time is different.) By replacing the backup battery you can preserve the contents of RAM the next time you change the main battery.

Your computer's backup battery must be replaced by an Apple-authorized service provider.

Reconditioning the battery

To maximize battery life, you should recondition the battery once every 30 days, using the Battery Reconditioning program, which is on the system software disk labeled *Disk Tools*. You may want to keep a copy of the Battery Reconditioning program on your hard disk so it is more convenient to use every 30 days.

IMPORTANT It takes 2 hours to run the Battery Reconditioning program and another 2 hours to fully charge your battery in your PowerBook. During the time you are reconditioning your battery (and recharging it, if you don't have a recharger), you cannot use your PowerBook. Plan to recondition your battery when you won't need your PowerBook for at least 4 hours.

To recondition a battery, follow these steps:

1 **Make sure your PowerBook is connected to a power source.**

If you have already copied the Battery Reconditioning program to your hard disk, skip step 2 and do step 3 next.

2 **Insert *Disk Tools* in the floppy disk drive and turn on your PowerBook.**

3 **Locate the Battery Reconditioning icon and open it.**

Battery Reconditioning

A message appears on the screen describing battery reconditioning. If you don't have your PowerBook plugged in, a message appears telling you to plug it in.

4 **Read the message on the screen and click OK.**

The following appears:

The type of battery in your computer appears here.

Battery Info

Some things you should know:

Battery Type
Type III NiMH

Serial Number
55678

Last Recondition
Sun, Oct 4, 1992

It has been less than 30 days since the last recondition.

- This will take about 2 hours and you will be unable to use the machine
- You must leave the unit plugged into the power adapter
- At most, you should do this once a month
- All open applications will be forced to quit
- Cmd-period will cancel reconditioning
- Allow the battery to fully charge when done

Quit   Recondition

The date you last reconditioned your battery appears here. A warning appears below the date if it has been less than 30 days since the last time you reconditioned the battery.

5 **Click Recondition if it has been more than 30 days since the last time you reconditioned the battery.**

If 30 days have not passed since the last time you reconditioned, the following appears on the screen:

Records indicate that this battery was reconditioned less than a month ago. You should recondition your battery no more than once a month.

Quit   Recondition

Click Quit to exit the Battery Reconditioning program.

If 30 days have passed since you last reconditioned, this message appears:

Are you sure you want to recondition your battery?

Cancel   OK

Remember that it takes 2 hours to recondition the battery and 2 hours to fully charge the battery. Make sure you do not need to use your PowerBook for 4 hours.

6 Click OK.

While the reconditioning cycle is taking place, the following icon appears on the screen:

```
┌─ ─ +┐
│      │
│      │
└──────┘
```

Command-Period to quit.

You can quit the Battery Reconditioning program at any time by pressing the period key and the ⌘ (Command) key at the same time. Also, if you unplug your PowerBook during reconditioning, the reconditioning program will quit. Your battery is not reconditioned if you quit in the middle of the reconditioning cycle.

When the reconditioning is complete, the following appears on the screen for one minute:

```
┌────────────────────────────────────┐
│      Your battery was sucessfully   │
│            Reconditioned!           │
│                          ┌────────┐ │
│                          │   OK   │ │
│                          └────────┘ │
└────────────────────────────────────┘
```
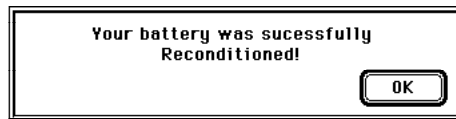
7 Click OK.

The battery is reconditioned. Allow time to recharge the battery by leaving the PowerBook plugged in for 2 hours. Follow these steps again in 30 days to maximize the life of the battery.

Maximizing work time

Your PowerBook's battery can provide 2 to 7 hours of work time before you need to recharge. The actual work time available depends on what equipment you're using with your computer and what steps you take to conserve power while you work.

For battery conservation tips, see the "Batteries & Power" topic of Macintosh Guide, available in the Guide (②) menu.

Refer to this appendix for important
health-related information
and safety tips.

Appendix A
Health, Safety, and Maintenance Tips

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 work area and equipment

The suggestions in this section can help you work more comfortably with your computer.

Chair

■ 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.

Keyboard and trackball

- When you use the keyboard and trackball, 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.

This   Not this

- 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.

- Use a light touch when typing or using the trackball and keep your hands and fingers relaxed. When using the trackball or keyboard, avoid rolling your thumbs under your palms.

This   Not this
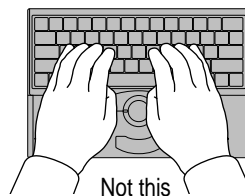
Some computer users may develop discomfort in their hands, wrists, or arms after intensive work without breaks. If you begin to develop chronic pain or discomfort in your hands, wrists, or arms, consult a qualified health specialist.

- Change hand positions often to avoid fatigue.

- If you prefer, you can adjust the angle of the keyboard by lowering the legs until they snap into position.
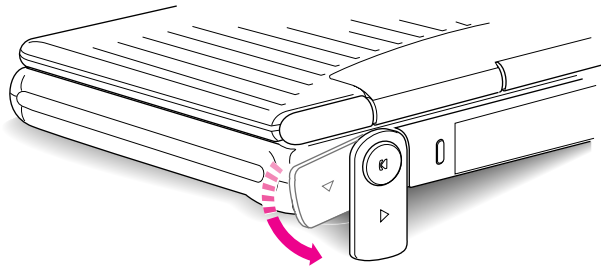
The back of the keyboard is slightly elevated when the legs are in use. Otherwise, the keyboard is level.

Mouse

- If you use a mouse, position the mouse at the same height as your keyboard. Allow adequate space to use the mouse comfortably.

Built-in display

- Adjust the angle of the display to minimize glare and reflections from overhead lights and windows.

- If your display screen has manual brightness and contrast controls, you may need to adjust the brightness and contrast of the screen when you take the computer from one work location to another, or if the lighting in your work area changes.

External monitor

If you use an external monitor, this suggestion may be helpful.

- If possible, 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).

Avoiding fatigue

- Change your seated position, stand up, or stretch whenever you start to feel tired. Frequent short breaks are helpful in reducing fatigue.

- Allow adequate work space so that you can work 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 its products.

Important care and safety instructions

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

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.

- Do not use the computer in or near water.

- Do not use cables that are frayed or otherwise damaged. Hold a cable by its connector (the plug, not the cord) when connecting or disconnecting it.

- Always handle batteries carefully.

- Do not drop, puncture, mutilate, or burn the computer or battery.

- Recharge batteries only as described in this manual and only in ventilated areas.

- Transport batteries either inside the computer or in the protective case provided with each battery. Do not transport unprotected batteries.

- Do not short-circuit the battery terminals (that is, do not allow a metal object such as a paper clip or key chain to touch the terminals). Doing so may cause an explosion or a fire.

Caution

- If you have a problem with your computer and nothing in the computer manuals solves the problem, take the computer to your Apple-authorized dealer or service provider. Attempting to repair the computer yourself may void the limited warranty.

- Do not move the computer when you can hear its hard disk spinning. When you put the computer to sleep, wait until the screen is blank before moving the computer.

- Use only the power adapter supplied with your computer, or an identical model. Adapters designed for other electronic devices may look similar, but they may not work with your computer and may damage it.

- Never force a connector into a port. Make sure that the connector matches the port and that it's right-side up. If the connector and port do not join easily, they do not match.

- Do not use the computer in wet or dusty environments.

- Keep dirt and liquids away from the ports on the back panel, the keyboard, and the trackball. If you spill any food or liquid onto the computer, shut it down immediately and unplug it before cleaning up the spill. Depending on what you spilled and how much got into the computer, you may have to bring the computer to an Apple-authorized service provider for cleaning.

- Do not touch the screen with any sharp or pointed objects.

- Use only the battery supplied with your computer. Batteries designed for other portable computers may look similar, but they may not work with your computer and may damage it.

- When recharging the battery, use only the power adapter supplied with your computer, or an identical model. Adapters designed for other electronic devices may not work with your equipment and may damage the computer or the recharger.

- Do not leave batteries in hot locations (such as the trunk of a car).

Important

- Use the computer only in environments where the temperature range> is between 50°F/10°C and 104°F/40°C.

- Do not expose the computer to very low (less than –13°F/–25°C) or very high (more than 140°F/60°C) temperatures.

- If the computer has been in a cold place for several hours, let it warm up to room temperature before you use it.

- Clean the computer's outside surfaces with a damp (not wet) cloth. Clean the screen with soft, lint-free paper or cloth and a mild glass cleaner. Do not spray the glass cleaner directly onto the screen.

Caring for batteries

- Always handle batteries carefully.

- Do not short-circuit the battery terminals (that is, do not touch both terminals with a metal object). Doing so may cause an explosion or a fire.

- Do not drop, puncture, disassemble, mutilate, or incinerate the battery.

- Recharge batteries only as described in this manual and only in ventilated areas.

- Do not leave batteries in hot locations (such as the trunk of a car).

- Do not leave a battery in your computer for longer than a week without plugging in the power adapter.

- Do not leave a battery in storage for longer than 6 months without recharging it.

- Take dead batteries to an Apple-authorized service provider for recycling or proper disposal. The batteries contain hazardous chemicals and should not be thrown out with household or office trash.

Handling floppy disks

Store disks at
temperatures
between 50° F
and 125° F.
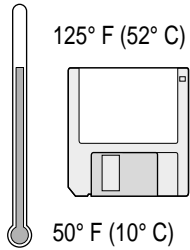
Do not use a
pencil or an
eraser on a disk
or disk label.

Keep disks dry.

125° F (52° C)

50° F (10° C)
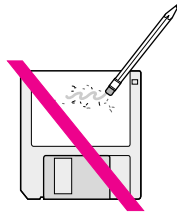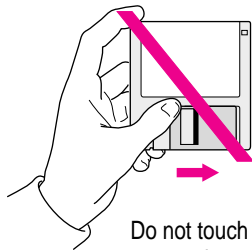
Do not touch the
exposed part of the
disk behind the
metal shutter.
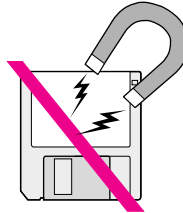
Keep disks away
from magnets.
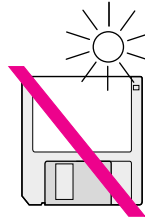
Avoid exposing
disks to extremely
hot temperatures.

Traveling with the PowerBook

The safety instructions earlier in this appendix also apply when you are traveling. In addition, note these precautions:

- Do not transport your PowerBook while it is turned on. Put your computer to sleep or shut it down before you move it.

- Transport batteries either inside the computer or in the protective case provided. Do not transport unprotected batteries.

- Do not check your computer as baggage. Carry it with you.

- Have security officials manually inspect your computer and disks if you do not want to pass them through X-ray machines.

- Be prepared to show security officials that your computer is working. Have a charged battery or a power adapter ready to use.

- Some airlines may restrict or prohibit the use of computers in flight. Check ahead to find out what restrictions, if any, apply.

- Take the necessary plug adapters if you're traveling overseas. (You may need to use them with the power adapter.) You do not need a voltage transformer. The power adapter can handle 90 volts to 260 volts AC (48 Hz to 62 Hz).

Check the diagrams below to determine which plug adapters you'll need, or ask your travel agent.

Outlet Type	Locations
	United States, Canada, parts of Latin America, Japan, Korea, the Philippines, Taiwan
	Former Soviet Union, most of Europe, parts of Latin America, the Middle East, parts of Africa, Hong Kong, India, most of South Asia
	Mexico, United Kingdom, Ireland, Malaysia, Singapore, parts of Africa
	China, Australia, New Zealand

Storing the PowerBook

1   **Save your work on a hard disk or floppy disks.**

2   **Choose Shut Down from the Special menu.**

3   **Close the display.**

4   **Recharge the battery.**

Be sure your battery is fully charged if you are taking the computer places where you cannot plug it in.

5   **Store the computer in a cool, dry place.**

Storage temperatures should remain between 10°C and 40°C (between 50°F and 104°F). Avoid leaving the computer where temperatures may be extreme or unpredictable—in the trunk of a car, for example.

Service and support

If your computer is malfunctioning but does not appear to be physically damaged, shut it down (and leave the power adapter plugged in, if possible) until you can get help.

If you know or suspect that your computer is physically damaged, disconnect the power adapter, remove the battery, and do not use the computer until it can be repaired.

See the service and support information that came with your computer for information about customer assistance.

Refer to this appendix for
information on using the
PowerBook 200 Series keyboard.

Appendix B
Using Your Keyboard

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The PowerBook 200 Series keyboard works in much the same was as the keyboards on other computers and on electric typewriters. However, there are a few special keys you should know about.

The illustration on the following page explains the function of all the special keys on the PowerBook 200 Series keyboard.

Delete key   Return key

Tab key

Caps lock key

Control key

Option key

⌘ (Command) key   Escape key   Enter key   Arrow keys   Shift key
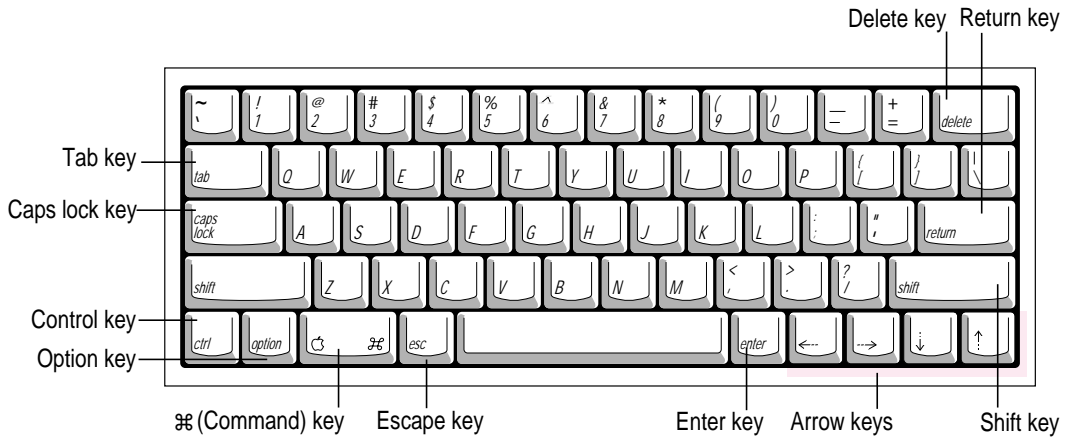
Arrow keys	Move the insertion point, as an alternative to using the pointing device. In some programs, the arrow keys have other functions.
Caps Lock key	A locking Shift key for letters only (numbers and symbols aren't affected).
⌘ (Command) key	Works in combination with other keys as an alternative to choosing a menu command.
Control key	In combination with other keys, provides shortcuts or modifies actions.
Delete key	Deletes selected material, or the character to the left of the insertion point.
Enter key	In a dialog box, pressing Enter is the same as clicking the outlined button. In some programs, confirms information you have provided.
Escape key	The function of this key depends on the program you're using.
Option key	In combination with other keys, produces special characters or modifies actions.
Return key	Moves the insertion point to the beginning of the next line. In a dialog box, pressing Return is the same as clicking the outlined button.
Shift key	Produces capital letters (or the upper character on the key).
Tab key	Moves the insertion point to the next stopping place (such as a tab stop or data field).

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