

Tech Toolkit

A–Z

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A

Absolute Versus Relative Cell Address

Formulas created in a spreadsheet can be copied from one cell to another to save time. If you enter a formula in Cell C15, for example, you can copy that formula to another cell, where the formula's cell addresses or references will adjust to fit the new cell. Example:

In Cell C15, enter the formula $=C13+C14$

Copy that formula to Cell E10, and the result is $=E8+E9$

The cell references adjust automatically. This is called **relative reference**.

Absolute reference is when you want to copy an exact formula to another cell.

To make the formula from the example into an absolute reference:

In Cell C15, enter $=\$C\$13+\$C\14

Copy Cell C15 to Cell E10.

You will see that the formulas in Cells C15 and E10 are identical. This is called **absolute reference**.

B

Bits and Bytes

Computers operate through switches. The switches are either on or off. These switches are called binary digits. *Bit* is the acronym for *binary digit*. Bits are labeled either 1 or 0. All computer data are stored in bits, including the words you enter in a document, the graphics you use in a presentation, and the numbers you use in a spreadsheet.

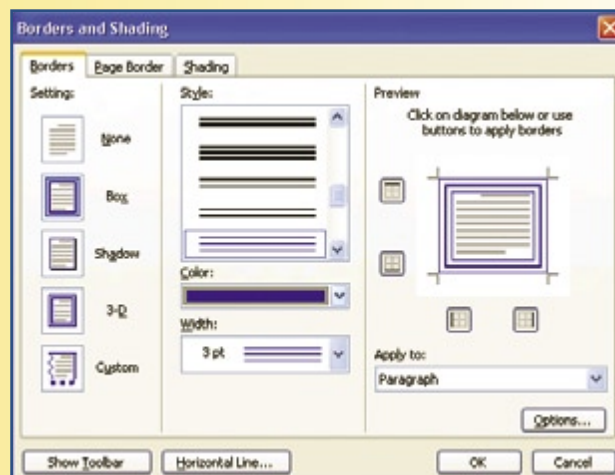
Bytes are the common measurement used for calculating computer memory. There are eight bits in a byte. You may be familiar with the terms below:

Measurement	Bytes (Example File Size)
Kilobyte – KB Kilo = thousand	1,024 bytes or 8,192 bits
Megabyte – MB Mega = million	1,048,576 bytes
Gigabyte – GB Giga = billion	1,073,741,824 bytes
Terabyte Tera = trillion	1,099,511,627,776 bytes

Borders and Shading

A **border** or **shading** can be applied to paragraphs to highlight sections of text for emphasis. For example:

- 1 Start Word. Open the E-Waste document. Ask your teacher for the E-Waste data file.
- 2 Select the second paragraph in the document.
- 3 Click the **Format** menu and choose **Borders and Shading**.
- 4 The Borders and Shading box will open.
- 5 To change the border, select **Box**. Then go to the **Style** choices, scroll down, and choose a border style you like.
- 6 In the **Color** box, choose a color.
- 7 In the **Width** box, choose a slightly larger point size.
- 8 Click **OK**.
- 9 To change the shading, select the same paragraph.
- 10 Click **Format**, choose **Borders and Shading**.
- 11 The Borders and Shading box will open.
- 12 Click the **Shading** tab.
- 13 Click a color to use. Consider the color you chose for the border.
- 14 Click **OK**.



Breaks, Page and Section

When you key to the end of a page in a document and continue keying, the text will automatically flow to the next page. As you edit your document, either adding or deleting text, the text automatically adjusts to fit the pages of your document.

Page Break If you want a particular section of text to begin on a new page, you can insert a page break before that text. If you are keying a cover page for a report, for example, you will

want the cover to remain separate from the rest of the report. In this case, after entering the text for the cover, you can insert a page break and begin keying the rest of the report on a new page.

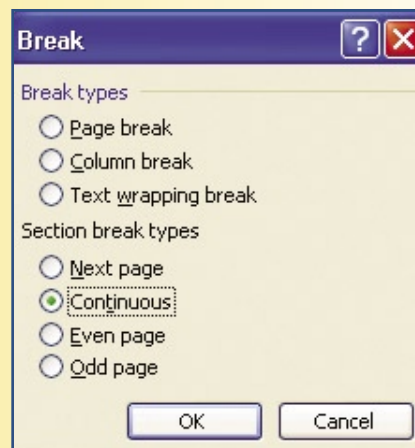
Section Break When you format a document with headers, footers, margins, page orientation, or columns, the formatting will apply to the entire document, unless you insert a section break.

A section break allows you to apply formatting features to a particular section of text. For example, in a report of multiple pages you may want to have one-inch margins on all pages except for page 5, where you want the margins to be two inches. Creating a section break at the beginning and end of page 5 will allow

you to change the formatting of just this page. Changing the margins to 2 inches will then apply only to page 5.

Section breaks show only in Normal View. To see the differences between sections without viewing the section break formatting, click the **Print Preview** button.

- 1 Start Word. Open a new document. Enter the text: This text has been keyed in Section 1, which has 1.25" margins. Press **ENTER** twice.
- 2 Click **Insert**, choose **Break**. A box will open that allows you to choose which type of break you want.
- 3 The four types of section breaks are:
 - **Next page**—Works like a page break.
 - **Continuous**—The section break continues on the same page.
 - **Even page**—The section break is also a page break; however, if the next page is an odd number, an extra page is inserted (when printing) so that the new section will start at the top of the next even page.
 - **Odd page**—Same as **Even page**, except that an extra page is inserted if the next page is even so that the new section begins on an odd page.
- 4 In this activity, choose **Continuous**. Click **OK**.
- 5 Make sure the insertion point is in the new section.
- 6 Click **File**, choose **Page Setup**.
- 7 Change the left and right margins to 2".
- 8 Click **OK**. Enter the text: This text has been keyed in Section 2, which has a 2" margin. Press **ENTER** two times.
- 9 Click **Insert**, choose **Break**. Choose **Continuous**. Click **OK**.
- 10 Click **File**, choose **Page Setup**.
- 11 Change the left and right margins to 1.25".
- 12 Make sure the insertion point is in the next section, and enter the text: This section margin has been reset to 1.25". Press **ENTER** two times.



- 13 Click **File**, choose **Print Preview**.
- 14 Close Print Preview and return to Normal View.
- 15 To delete a section break, click and place the insertion point on the line of the section break. For this activity, place the insertion point on the line of the last section break.
- 16 Press **DELETE** to delete this section break.
- 17 Next, practice inserting a page break. Make sure the insertion point is on the blank line above the last sentence in this document.
- 18 Click **Insert**, choose **Break**.
- 19 Choose **Page Break**. Click **OK**.
- 20 Notice the difference between the two types of lines in your document.
- 21 View the document in Print Preview mode.

Bridge

(See Telecommunications Terminology.)

Broadband

(See Telecommunications Terminology.)

Browser

(See Internet Terminology.)

Bytes

(See Bits and Bytes.)

C

Cache

(See Internet Terminology.)

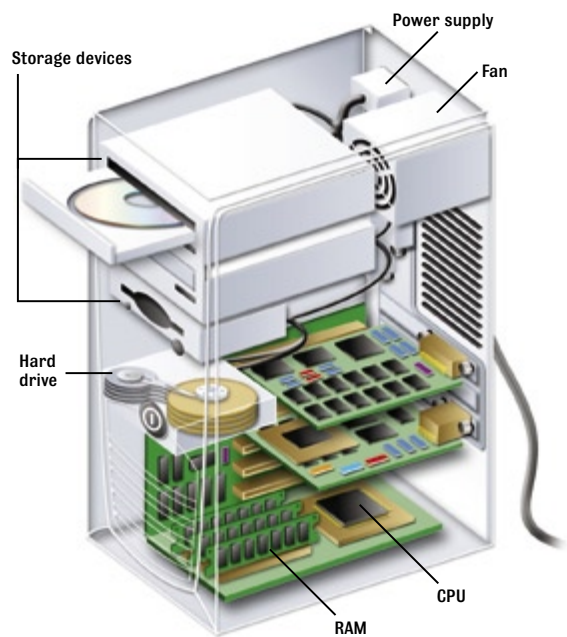
Central Processing Unit

The central processing unit, or CPU, is the “brain” and most important part of the computer. On desktop models, the CPU is the processing chip, or microprocessor, and is plugged into the motherboard within the tower, or base,

of a computer. The motherboard is the main circuit board in a computer on which other chips, including memory chips, are installed.

Basically, the CPU does three things: it calculates (adds, subtracts, multiplies, and divides)

numbers, it moves data through the computer's memory, and it receives and sends instructions to the other parts of the machine. What makes a CPU so special is the fact that it can perform billions of calculations every second. The CPU receives instructions from the operating system or application programs. After receiving these instructions, the CPU may instruct the computer to produce a printed copy of data.



Client

(See Telecommunications Terminology.)

Cold Boot

(See Computer, Cold Boot.)

Comments

Word allows you to add comments while working in a document. Comments are very useful when sharing a document because they allow a person to make notes or pose questions about items within the document to another reviewer.

Comments can be seen easily on a document screen or on a printed copy of a document, though they need not appear in the document's final printed version.

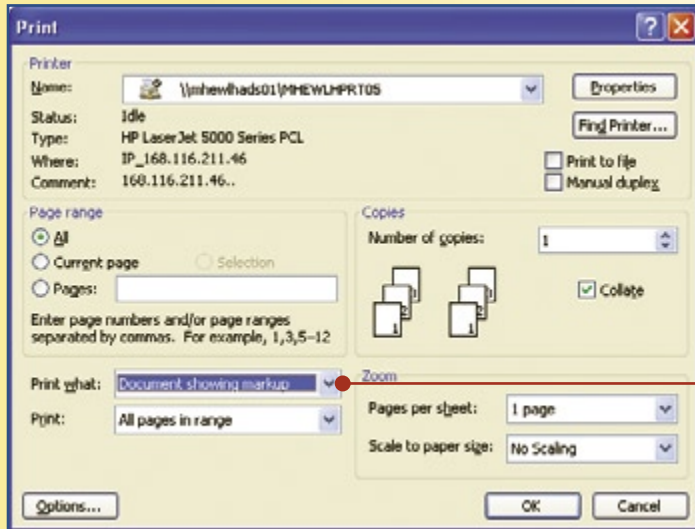
- 1 Start Word. Open the **E-Waste** document. Ask your teacher for the **E-Waste** data file.
- 2 Place the insertion point at the beginning of the second sentence, in front of the word *Both*.
- 3 Click **Insert**. Then choose **Comment**. The word *Both* will be highlighted and a line will be drawn to the right margin, where another box will appear with the insertion point in it.
- 4 Enter the text: What about other states?

mental issue that some states have

Both houses of the California

Comment [k1]: What about other states?

- 5 To hide comments, click **View**, then **Markup**. The comments should be hidden. Click **Markup** again to once again show the comments.
- 6 As noted, a document that contains comments can be printed with or without them. To print without comments, click **File**, then **Print**. In the **Print What** box, choose **Document** (rather than **Document showing markup**).



Document showing markup

Computer, Cold Boot

When you turn on your computer, it starts, or boots. This is known as a *cold boot*. ROM (read-only memory) is permanent memory that stores instructions for making everything on your computer function correctly.

BIOS The Basic Input/Output System (BIOS) runs a test during the boot process. The keyboard, mouse, and drives on your computer are checked to make sure they can communicate with the operating system. *Windows 98*[®], *Windows 2000*[®], *Windows XP*[®], and *Mac OS*[®] are some of the different operating systems.

The BIOS loads the operating system software into random-access memory (RAM).

RAM (Random-Access Memory) RAM (random-access memory) chips are connected to the CPU. While electricity is supplied to the computer, the RAM is active and holds all of the information that is entered from different applications, such as Word, Excel, PowerPoint, or others. When you save a document, its

information is copied from RAM to the storage device you choose, such as the hard drive, a floppy disk, or the CD-RW drive.

If you have multiple programs open, they are all using memory from RAM. If you do not have enough RAM storage space, you will not be able to run multiple programs efficiently, and this could cause all computer activity to freeze. Once a file is saved to a storage device, it is removed from RAM. RAM is measured in megabytes (MB).

RAM is only active when there is power to the computer. When the power to the computer is turned off, all information stored in RAM is lost unless it has been saved to a storage device. Storage devices such as floppy disks, USB flash drives, CD-ROMs, and the computer's hard drive are permanent storage devices. Users should save all work displayed on the computer monitor to one of these devices if they need to access it at a later date.

Computers, Early History

Learn about the history of computers at the Online Learning Center at digicom.glencoe.com. Choose Student Activities, then Tech Toolkit.

Computers, Interacting with Centralized Systems

At many companies, minicomputers are connected to a mainframe system as a means of saving money and centralizing computer usage. Minicomputers have a smaller processing and storage system, however, they are able to access information on the mainframe or network where application programs and files are stored.

Laptop computers and handheld devices are able to connect to this mainframe or network

structure in a company or at home via wireless access cards which can be installed in the devices. Many of these computers are now equipped with the wireless technology automatically without the need of an upgrade to include the wireless card. This wireless technology can also provide access to the Internet.

Computers, Mainframe

A mainframe is a large and powerful centralized computer. Mainframe computers are used by companies such as financial institutions, or banks, to centralize information about customers and accounts. Desktop computers located at branch locations are able to keep customer account information current by connecting to the mainframe computer via a local area network (LAN) system. Government agencies such as the Social Security Administration and the Department of Motor Vehicles, and private industries such as hospitals also make use of mainframe computer systems as a means of storing and processing data.

Mainframe computers require specialized engineers to keep them working correctly. These engineers are sometimes called system programmers. Large companies with enormous amounts of data to store and process use mainframe computers. Large retailers use mainframe

computers to store data about customers, to keep inventory, to maintain information about employees, and to manage the day-to-day functions of operating a business. The mainframe computer is not only capable of handling these huge amounts of data but it can keep the computers networked together over the vast geographic locations where they are found. By centralizing this data better records are kept by the company.

Smaller companies who do not manipulate such large quantities of data do not need a mainframe system, however, they do use a network in order to share data with each other. It may still take special computer engineers to maintain these smaller systems but the amount of data they handle is much less. Usually the number of users tied together through the computer network is smaller as well.

Computers, Protect and Maintain

Computer hardware has certain common problems associated with it. Some of these include the possibility of a failed or crashed hard drive or floppy disk drive, a malfunctioning monitor, and inoperable hardware devices. For example, newly installed hardware may not work.

There are important steps you can take to protect and maintain your computer and all of its devices.

Computers are vulnerable to power irregularities (spikes) and power outages and, whether networked or not, should always be plugged into a surge protector rather than directly into a wall socket. Power surges can occur anywhere and may damage a hard drive or screen. When lightning strikes a building, it can travel through the wires to a specific computer or screen, damaging it. As their name indicates, surge protectors are designed to protect against electrical surges. They help to level the fluctuation of the electrical current. In the event of a lightning strike, the surge protector will shut off or otherwise protect the equipment connected to it.

A power outage may result in the loss of data or damage to files left open during the outage. Make sure that all electric wires are protected so that they do not get disconnected accidentally. In the event of a power outage, using an uninterrupted power supply (UPS) will give a user the additional time needed to exit applications and save data before having to shut down the computer, therefore preventing loss or damage to files.

Hard Drive Failure If damaged by a power surge, a hard drive may fail to work properly. This failure of the hard drive is usually referred to as “crashing.” Hard drives may crash at any time because of a fault or wear and tear. When a hard drive crashes, it usually cannot be restored, and all of the information stored on it can be lost. Therefore, it is important to back up, create a second copy of, the data on your

hard drive frequently. With the likelihood that a network server could crash, most networks are designed to back up the hard drive on a regular basis.

Hard Drive Performance When the hard disk becomes too full or contains poorly organized files, a slowdown in the performance of the system may occur when accessing files. Therefore, files should be examined regularly and, if no longer needed, deleted from the hard drive. Emptying the recycle bin and deleting temporary files is also a good practice. Additionally, cleaning and defragmenting the hard drive helps to improve its performance by reorganizing files and freeing up space.

Hardware Maintenance Printers, keyboards, mice, and other devices attached to computers should be kept clean. When these devices are poorly maintained, they may not work properly. Keyboards and mice that are not cleaned frequently may become sticky or inoperable. They should be dusted regularly to provide better performance. Pressurized air in a can is helpful in cleaning keyboards. Printers may smear or develop paper jams. Alcohol on a cotton swab can be used to wipe the copper connectors on a printer where the ink cartridges connect. Covering devices when not in use can help to keep them clean and thus prevent maintenance problems. Cables that are damaged or poorly maintained can also prevent peripherals from communicating with the computer properly.

If you are unfamiliar with how to repair or maintain a particular device, consult the device’s manual or seek help from a professional who works on computers. Maintenance that should be performed only by professionals includes replacing malfunctioning hardware components, upgrading internal hardware components, and working with any electrical components. For your own safety and the protection of your equipment, do not attempt to make such repairs on your own.

The table below contains routine maintenance tips for protecting your computer, its software, and its peripheral devices. Maintenance and

care of these parts will assure better performance and longer usage.

Ways to Protect Computer Hardware and Software from Damage and Theft
• Make a list of your original software installation disks or CDs and store them in a locking, fireproof cabinet.
• Place cover on keyboard when not in use for long periods of time.
• Wipe work area often with a clean cloth to prevent accumulation of dust in keyboard and mouse.
• Do not eat or drink near your computer.
• Keep laptops, Tablet PCs, and handhelds locked in a cabinet or drawer when not in use.
• To secure equipment, lock your office when leaving.
• If you are unable to lock your office, purchase security bolts to lock computers to desks or walls.
• Clean printer cartridges according to the computer operations manual.
• Use compressed air (sold in cans) to clean dust and lint from keyboards.
• Make sure the furniture used to hold printers and computers is strong enough to support the weight of the equipment.
• Use properly designed cases to transport Tablet PCs, laptops, cameras, and projectors from one location to another.
• Keep magnetic fields away from computer equipment.
• Do not store equipment or software disks in a hot or humid environment.
• Be sure computer cables are not crimped or tangled.
• Do not store diskettes of any type in sunlight.
• Check operations manual for clearing paper jams from printers, so as to not damage the printer.

Computers, Related Problems

Sometimes computer problems cannot be explained. However, there is a logical series of steps you can take to solve many computer-related problems. Check with your school or office for their troubleshooting procedures and be sure to follow them.

General guidelines for identifying, or troubleshooting, computer problems:

1. Make a note of any error messages on the screen.
2. Check cables to be sure they are secure.

3. Check the power supply to ensure power strips are on.
4. Review the troubleshooting section of the operations manual.
5. Re-boot the computer. Try **CTRL** + **ALT** + **DELETE**.
6. If **CTRL** + **ALT** + **DELETE** does not work, turn off power to the computer, screen, and printer. Then turn the power back on.
7. Check the Internet for solutions from the manufacturer.
8. Call the manufacturer for technical support.
9. Provide the technical support representative with as much information as possible, including any error messages you might have received.

Computers, Use in Work, School, and Home

Computers are used in many of the tasks we perform on a daily basis. Although we may not use the computer personally, the actions we initiate every day involve a computer somewhere. If you use the Internet, companies are collecting information about you as you search their site. Companies store this information about your surfing habits and add your name to their mailing list for future advertising. You may fill out a job application online. The company will collect information about you and store it in their database.

You may receive a survey through e-mail from a company asking you questions about purchases you make. This information is collected and sorted to target customers and learn about their likes and dislikes of products. The companies may ask you to evaluate a product of theirs that you have used.

Through e-mail or chat rooms you may discuss homework or collaborate on a project at work with colleagues. These options allow you to print a hard copy of the discussions you are engaging in. When workers use the Internet to communicate, it speeds up communication and adds to productivity. You do not have to wait several days for mail to travel between locations. When a document is being evaluated or created the document can be transmitted via e-mail to other parties working on the document so they can electronically edit the document and return it. When sending a package for overnight delivery you can access the Web site for Federal Express or UPS and arrange to have the package picked up. Then you can track the package and find out when it was shipped and delivered.

Computers at Work Almost all businesses today have computers. Computers perform financial calculations and tracking for accounting purposes which used to take hours and hours of manual work by individuals. The speed of keeping track of information on a computer helps a company to be more efficient in their daily activities.

Computers are also used at work to track inventory and keep personnel records stored electronically for quick and easy access. In the health care industry, computers maintain large databases of information about patients which can be transmitted electronically to other health care facilities in a matter of minutes.

Employees in the fast food restaurant chains use computers. The computers keep track of what customers order and automatically feed this information to the restaurant inventory. In some instances, inventory items are automatically re-ordered based on the orders entered.

The music industry has taken advantage of computers and online connectivity. Many companies sell music online that can be downloaded and stored to a computer or an MP3 player.

Computers are used to provide customer support and direct phone calls from customers through a voice-response system. This type of support helps direct customers to the correct department when they have a question. Some companies use voice-response computer applications to take orders from customers as well.

Robotics has become an increasingly popular method of assembly for many manufacturing plants. Computer-controlled robots perform routine tasks on a manufacturer's assembly line. This technology reduces the number of injuries workers once received, especially in performing dangerous tasks. Robotics has also been known to be efficient in assisting individuals with handicaps.

Computers have especially improved the performance of the cars we drive. Computers use GPS (global positioning service) tracking systems to provide directions to drivers.

E-Commerce Computers also influence computer usage at home. Many businesses maintain an Internet presence for customers. This presence may range in anything from providing online technical support for a product to ordering products online. Activities like this are known as e-commerce and have opened the doors to an entirely new concept in business. E-commerce may be profitable for companies who would otherwise not be able to service customers due to their geographic location. Through search engines users are able to locate companies who sell products that are not available in their own area.

Companies who conduct business, in particular sales over the Internet, have found they need to provide a safe and secure method for their customers to pay for products or services. Internet banking is another industry that has developed from the growth and demand for online services.

Point of Sale Companies doing business over the Internet accept online payments which may be in the form of a credit or debit card. Debit cards withdraw money directly from a checking account. Purchases made with debit cards are referred to as a "point of sale" or POS because it is a direct deduction to your checking account balance. These transactions take place "behind the scenes."

A plastic card that resembles a credit card is used for a POS. Debit cards can be used at any

location that accepts Visa or Mastercard. Users have a PIN (personal identification number) number which is entered into keypad at the time of purchase to approve the sale. When debit cards are used in an Internet sale, the PIN does not have to be entered. Debit cards can also be used in ATMs (Automated Teller Machines).

Automatic Teller Machines (ATMs) An ATM is a computer networked with your bank or credit card company. The ATM is supplied with money from a local bank that is also responsible for balancing the account. When a charge card or debit card is put into the ATM the user must enter a PIN to identify themselves. Once this is done, the user may withdraw cash from the ATM. Through the network of computers connecting to the ATM, the machine automatically knows how much cash is available on your account. You cannot withdraw cash if it is not available in your account. An ATM at a bank location will allow users to deposit money or checks as well as withdraw money from their account.

Computers at School Students use computers to do research at school or home. The Internet provides quick access to millions of Web sites. Students are not limited by the books on the shelf in the media center when a computer is available.

After collecting research information, students can put together their report by using a word processor. They can add graphics and enhance the text. If necessary, an electronic presentation can be created where graphics and sound files can be added.

Teachers utilize electronic grade books, which makes grading more accurate. The programs calculate student grades as they are entered so it is easy to tell students how they are performing.

Many schools create and maintain their own Web page, which may contain messages from teachers about what is going on in their classroom.

Computers at Home Computers at home have lead to users being able to communicate with

more individuals through the use of e-mail, chat rooms, and online discussion groups. People use computers to shop online, do their banking online, and protect their homes through online monitoring systems.

People with small in-home businesses are using computers to help them manage their daily activities and track their business for better accounting purposes. Many people share common interests and hobbies through online connections. Genealogy clubs are popular among many users. Users track their heritage and communicate with other members through e-mail and listservs.

E-Learning Computers at home not only serve as a tool to keep a person's financial affairs in order or as a window to the rest of the world through the Internet, but they may also function as a tool for providing education to users. Since the inception of the Internet, online education has attracted many individuals who would otherwise be unable to attend classes and earn certification or a college degree.

Some government agencies utilize online learning (e-learning) to keep citizens informed about many different services they have available. Many companies provide online tutorials for customers as support for various products and software programs. Secondary education and higher education institutions use e-learning as a way to educate students and provide them with an opportunity to receive credit for classes without actually attending a class on campus. People who want to receive an education but do not live close to a higher education institution can now receive credits for online courses. For many of these individuals, additional education would have otherwise been an impossibility.

Companies use the Internet to provide cost-effective training for employees. The training is cost-effective because the company does not need to hire trainers to travel to various locations to do the training in a F2F (face-to-face) environment.

Convert Text to Table

(See Table, Convert to Text.)

Cookie

(See Internet Terminology.)

CPU

(See Central Processing Unit.)

D

Drawing Toolbar

(See Objects, Group.)

E

E-Commerce Hazards

Engaging in e-commerce has risks, such as identity theft, fraud, and other crimes. Therefore, it is very important that you use sites that protect your personal and financial data. The following are important guidelines for making financial transactions online.

- When ordering goods or services online with debit or charge cards, first verify that the merchant Web site is secure and that appropriate encryption standards are being used.
- Be sure you are ordering from a company with a good reputation.
- Check the legitimacy of any online offers before trying to take advantage of them.
- If the company does not provide their contact information, including an address or telephone number—beware!
- Do not send your credit card number to anyone in an e-mail.
- Do not share your login information with anyone associated with the company.

Editing Commands, Go To

The Go To command makes it easy to move around in a document, spreadsheet, or slide show without using the Page Up or Page Down

keys or the scrollbar. Go To can also be used to take you to a particular line, footnote, endnote, graphic, or table within a document.

- 1 Start Word. Open the E-Waste document. Ask your teacher for the E-Waste data file.
- 2 Click **Edit**. Then choose **Go To**. The Find and Replace window will open to the Go To tab.
- 3 You will see that **Page** is currently selected. Enter 2 in the **Enter page number** box, on the right.
- 4 The Go To button is highlighted. Click **Go To**.
- 5 The insertion point will move to the beginning of page 2. The Go To window will stay open.
- 6 Click **Line** in the Go to what box on the left. The box on the right now says **Enter line number**.
- 7 Enter 15 in the box and click **Go To**. The insertion point will move to line 15 of your document.
- 8 Click **Close** to close the window.



E-Mail, Spam

Junk e-mail, or unsolicited e-mail, that you receive is known as spam. Companies or individuals who want to advertise their products send spam. Users who register for various products or giveaways on the Internet are sharing their e-mail address which in turn may be passed along to advertisers.

Avoiding Spam Here are some commonly used ways to avoid spam:

- Do not register your e-mail address with online companies. If you already have, remove your e-mail address from their profile about you.
- If you receive spam messages, (or e-mails from someone you do not know) do not open them. Delete them without reading them.
- Use more than one e-mail address. Set up a special e-mail address to use only when you register or purchase something online. This way you can keep the spam out of your regular e-mail account.
- Install a spam filtering program that will help eliminate unsolicited e-mails.

Encryption

(See **Internet Terminology**.)

Endnotes

(See **Footnotes and Endnotes**.)

F

Fiber Optics

(See **Telecommunications Terminology**.)

File Maintenance

Moving files from the hard drive to other storage areas will improve computer performance. Follow the suggestions below for freeing up hard drive space.

- Empty the wastebasket or recycle bin regularly.
- Delete temporary Internet files stored on the hard drive.
- Delete saved Web pages or other files with graphics that you no longer need. Graphics take up a lot of space on the hard drive.

Files, Working with

When you save a file to a floppy disk, flash drive, or CD-ROM and then take the storage device to a different computer to open, you may have difficulty opening the file. The most

common reason for this problem arises from the fact that the second computer does not have the same program installed as the computer where the file was created.

If both computers have the same program installed and a file still cannot be opened from the File Manager, or Explorer, it is possible that the file is corrupted. In this case, you should go back to the original location of the file and try to save it again. Sometimes a floppy disk will have a bad sector where a file is placed during the save process. If this occurs, you will not be able to open the file on the original computer either.

Another example of not being able to open a file may occur if the computer that created the file has a newer version of the software program than the computer trying to open the file. For example, if you create a file in a program that is version 6.2 of a software and then try to open the file on a computer that only has

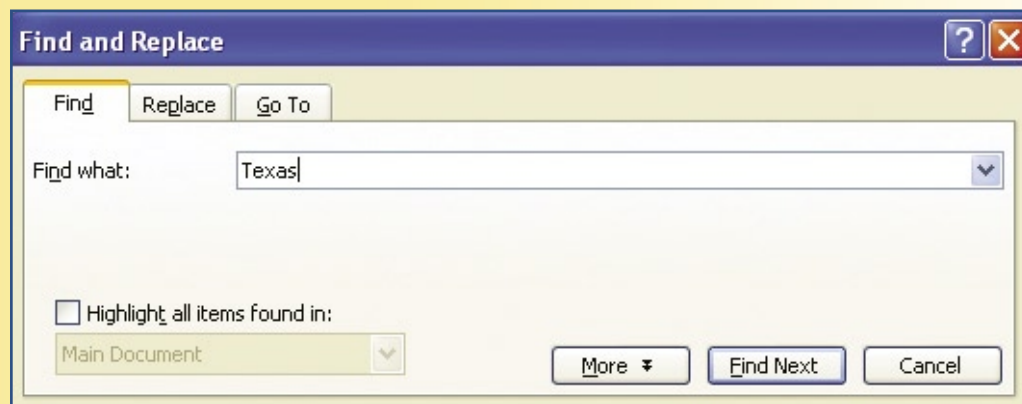
version 4.0 of that software, the file may not open. The reason is that the computer with version 4.0 does not recognize all of the features of the 6.2 version and therefore cannot read the file.

Most files created on a PC cannot be opened on a Macintosh computer. These two computers use a different operating system, and the two systems do not recognize each other. It is like people speaking two different languages. If you try to open a file from a floppy disk or one that has been attached to an email you may receive a message about the file being unsupported or incompatible. Another reason you could receive either of these messages is because your computer does not have the correct program installed to recognize the file format.

Find

In Microsoft Office, the command **Find** is used to locate specific text, such as a word or group of words, within a file.

- 1 Start Word. Open the E-Waste document. Ask your teacher for the E-Waste data file.
- 2 Click **Edit**, then choose **Find**.
- 3 Enter *Texas*. Click **Find Next**.
- 4 The insertion point will move to the first occurrence of the word *Texas* in the document.
- 5 Click **Find Next**. The next occurrence of *Texas* will be highlighted.



Firewall

(See Telecommunications Terminology.)

Footnotes and Endnotes

An important section of a research paper is its footnotes or endnotes. Though similar in their appearance, they serve different purposes. Footnotes are typically placed at the bottom of a page to explain or comment on some-

thing within the page. Endnotes are found at the end of a document on a separate page and are placed numerically in order of reference. Endnotes are commonly used to cite sources.

Insert a Footnote

- 1 Start Word. Open a new document. Enter the following for the title: What Is Copyright?
- 2 Key the following paragraph:

Copyright is a form of protection provided by the laws of the United States (Title 17, U.S. Code) to the authors of "original works of authorship," including literary, dramatic, musical, artistic, and certain other intellectual works.

- 3 Keep the insertion point at the end of the sentence.
- 4 Click **Insert**. Then choose **Reference**, then **Footnote**.
- 5 Keep the default settings for the window, which are **Footnote**, **Bottom of Page**.
- 6 Click **Insert**.
- 7 The space for the first footnote will appear at the bottom of your screen.

Footnote and Endnote

Location

Footnotes: Bottom of page

Endnotes: End of document

Convert...

Format

Number format: 1, 2, 3, ...

Custom mark: Symbol...

Start at: 1

Numbering: Continuous

Apply changes

Apply changes to: Whole document

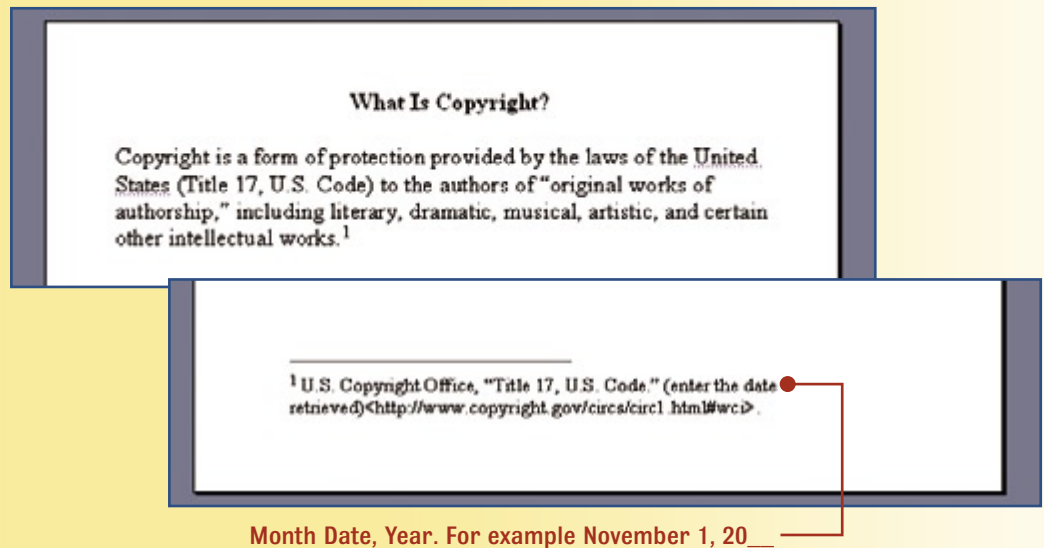
Insert Cancel Apply

1 |

- 8 Enter the text for the footnote:

U.S. Copyright Office, Retrieved from the Internet on (enter the current date)
<http://www.copyright.gov/circs/circ1.html#wci>.

- 9 Your screen should be similar to those below. The first screen shows the reference and the second screen shows the footer.



Insert an Endnote

- 1 Open a new document.
- 2 Enter the same text as in Step 2 above.
- 3 Click **Insert**. Then choose **Reference**, then **Endnote**.
- 4 Click **Insert**.
- 5 The endnote marker will appear at the end of your document. Enter the text in Step 8 above.

Change Footnotes to Endnotes If you enter footnotes and later decide you need them as endnotes, you can convert them without retying them.

- 1 Be sure you are in Normal View. Look at the view buttons in the lower left corner of your screen. Select Normal View if needed.
- 2 Go to **View** on the menu bar. Click **Footnotes**.
- 3 Click **View footnote area** or **View endnote area**. Click **OK**.
- 4 A note pane will appear. Click **All Footnotes** or **All Endnotes**.
- 5 Select the notes you want to convert. Right-click the mouse.
- 6 Click **Convert to Footnote** or **Convert to Endnote**.

Modify Footnotes or Endnotes You can change the number format on footnotes or endnotes.

- 1 Click the mouse in the document that contains footnotes or endnotes you want to change.
- 2 Click **Insert** on the menu bar. Click **Reference**. Click **Footnote**.
- 3 Click **Footnotes or Endnotes**.
- 4 Go to the **Number Format** box and click the option you want.
- 5 Click **Apply**.

FTP

(See **Internet Terminology**.)

G

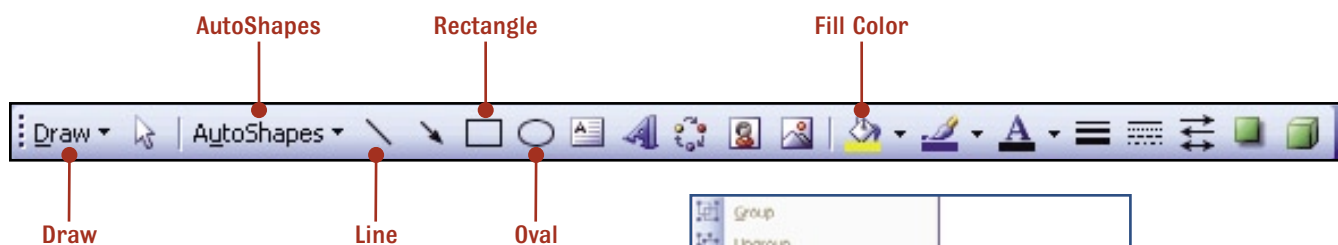
Gigahertz (GHz)

(See **Speed, microprocessor**.)

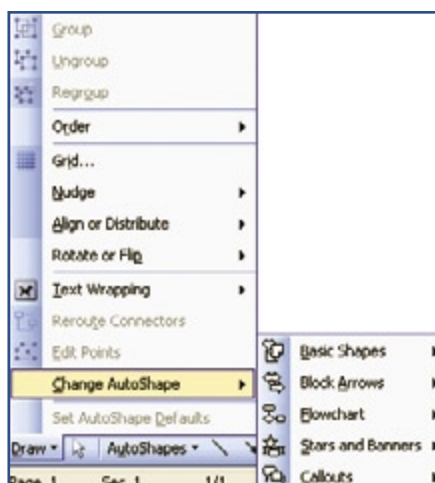
Graphic Program Tools

Many graphics programs have certain basic tools in common, such as tools for drawing lines, ovals, and other shapes. Tools that fill

shapes with color or texture are also common. See the figures below to locate these tools on the Drawing toolbar.



You can click on **Draw** and then **Change AutoShape** to select more shapes.



Graphical User Interface (GUI)

Operating systems exist in two formats: character based and Graphical User Interface, or GUI (pronounced goo-ey). Originally, all operating systems were character based. On these computers, the user interacted with the operating system by keying commands. In recent years, however, GUI has become the standard on most operating systems. Graphical operating systems are easier to use and create consistency among applications.

- Windows and Mac operating systems are GUI.
 - Icons (pictures) are used to display options.
 - A mouse or other pointing device is used to select options.

- MS-DOS and PC-DOS are character based operating systems.
 - No graphics are used.
 - You must know text commands to navigate within the system.
- Benefits of GUI systems:
 - Navigate with pointing device instead of on keyboard.
 - Icons help you determine what you want to add or do.
 - Easier to understand.
 - No memorization of text commands necessary.
 - Initiated what is known as “user-friendly” environment.

GUI

(See **Graphical User Interface (GUI)**.)

H

Hardware Components, Computer

Computer hardware components include:

Mouse—A small device that rolls on a desk and connects to a computer which provides an on-screen pointing device that allows you to make selections on the computer screen.

Keyboard—A device with keys like a typewriter that allow a user to input data into a computer.

Microphone—A device that connects to the computer and allows the user to give voice commands to the computer to perform various functions or to record sound and save it as sound files.

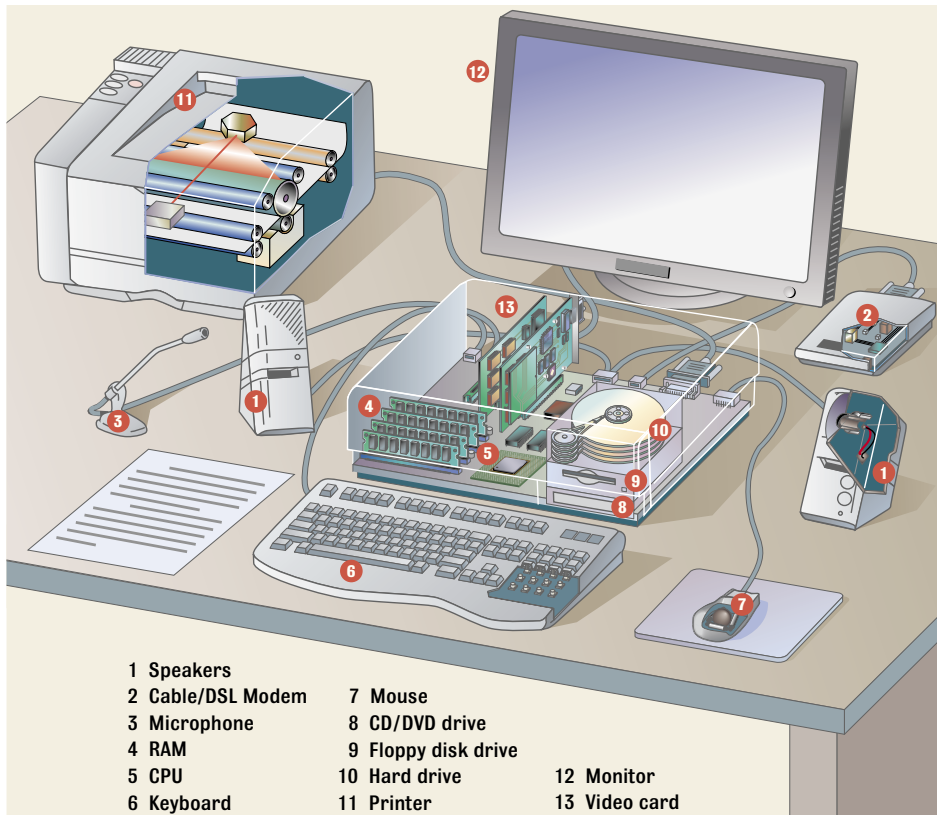
Screen—The display part of the monitor, which works like a television screen to display information.

Printer—A device that connects to a computer to provide a paper copy, or hard copy, of information that is displayed on a computer screen.

Speakers—Hardware that can be attached to a computer to play sound files or CDs. Some speakers are placed internally in a computer. Tablet PCs and laptops have internal speakers.

Floppy diskette drive—A device on a computer that reads and displays data which is stored on a floppy disk. This device is usually internal.

CD drive—A device that can read and display data stored on a compact disk, or CD.



Internal computer components include:

Microprocessor The microprocessor is a silicon chip that controls digital devices. The Central Processing Unit (CPU) is located in the microprocessor. The CPU is where calculations take place. The microprocessor is located on the motherboard of the computer. The motherboard is located inside the computer case. There are three basic features of the microprocessor:

- **The instruction set** which is a set of instructions executed by the microprocessor.
- **Bandwidth** which determines how many bits of information are processed in a single instruction.
- **Clock speed** which determines how quickly the processor can execute instructions in a given second. The clock speed is measured in megahertz (MHz).

Hard Drive The hard drive or hard disk is a permanent storage space for files and programs

that can be run on a computer. It is a hard metal disk sealed in a metal case which is located on the motherboard (inside the case of the computer) and cannot be seen unless the computer cover is removed. Hard drive memory is measured in gigahertz (GHz). Computers today often have hard drive storage capacity of 40, 60, or 80 GHz.

Video Card The video card is a board that plugs into the motherboard on the computer. The video card controls the display you see on your monitor. Video cards contain memory so that when an image is displayed on your monitor the image is temporarily stored in the memory of the video card.

System Clock The system clock controls the speed at which instructions are executed in the microprocessor. It also synchronizes the various computer parts. The number of instructions the CPU executes is determined by the speed of the clock. The speed is measured in megahertz (MHz) and gigahertz (GHz).

Hardware, Installation

Hardware devices are installed on a computer system in one of two ways: 1) a computer is configured with software that allows the computer to automatically access new devices (plug-and-play), or 2) the user installs the correct software drivers to allow a computer to access a new device. Both methods require connecting the hardware properly using the correct cable or other connection device and connecting to the proper port.

Help Resources

Knowing where to go to get help with your computer-related problems can save you a great deal of time and energy.

Software All software programs have a Help menu and guidelines as part of the application. On the Menu bar, Help is always the menu item at the far right. Help screens can be searched and printed for your convenience. When you do not know how to perform a particular task, you should always look at the Help menu first.

Software companies often have a tech support phone line you can call. Their telephone number is often listed under the Help menu list. If the telephone help is unavailable, you should check the company's Web site. You will often find an online support manual that can be printed or searched for assistance.

Hardware Follow similar guidelines when you need help with a new piece of hardware or one you are unfamiliar with. A manual is usually provided with hardware when you purchase it. The manual usually contains a contact number

Plug-and-Play Computers that are running Windows XP are equipped with plug-and-play capabilities. Plug-and-play means that any hardware device can be connected to the computer and the Windows XP operating system will recognize the device and install it automatically.

Drivers Computers not running Windows XP as the operating system will need to install special driver files (usually included on a CD-ROM or floppy disk) along with the hardware device.

for tech support of the product. Online help is also a good resource to look at when you have questions.

Online resources from a third party may also provide good information when you have a question. Many individuals create tutorials for various software and hardware products and then create a Web page that teaches other users how to use the product. Also, there often exist product user-group Web sites you can go to for help and information. It may be worthwhile to do a search from a search engine for a particular software or hardware product.

For the greatest productivity and independence, use the following guide to prioritize your help resources:

1. Online help within software.
2. Printed documentation.
3. Online help available via the Internet.
4. Your organization's help desk.
5. The product manufacturer's help desk.

Home Page

(See **Internet Terminology**.)

HTML

(See **Internet Terminology**.)

HTTP

(See Internet Terminology.)

Hub

(See Telecommunications Terminology.)

I

Input Devices, Specialized

Other than the keyboard, mouse, stylus, digital pen, and speech recognition, there are specialized input devices, such as:

Joystick—A device with a lever that is attached to a computer and controlled by a user moving it in any direction to execute the action of the mouse which is displayed on the screen. Used for playing many games on the computer so the user can manipulate the movement of an object in a game.

Digital camera—A camera that records pictures and stores them digitally on a memory stick or floppy disk, instead of on film.

Digital video camera—A camera that stores video images in a digital format;

Scanner (for pictures or optical character recognition (OCR))—A device that can be connected to a computer so it will read digital or text information and place it on the computer screen.

Digitizing tablet—An electronic input device that allows you to input data or draw with a special digital pen and save the file.

Bar code reader—A scanning device that can read and interpret the UPC bar code on products.

Thumb mouse—This is a small device that plugs into a USB port and acts like a floppy disk so you can store files created on your computer. Also called a thumb drive or flash drive.


Touch screen—A screen that responds to commands when a user touches various options on the screen

Environmental/scientific probes and sensors—Electronic devices that can be attached to a computer to interpret various types of information from the environment, for example water temperature.

Remote controls—Allow a user to control various devices from a wireless handheld device, for example to turn a device off or on.


Specialized keyboards and other devices for people with physical disabilities—Keyboards, mice, and other devices are specially designed to accommodate users with various types of handicaps.

Insert and Overtyping

The Insert key on your keyboard, or  is a toggle key. The opposite mode of *insert* is *overtyping*. *Insert* will add characters and spaces between characters that are already typed. *Overtyping* enters the new characters in place of characters already on the screen.

You can tell which mode your computer is in by looking at the status bar at the bottom of your screen. In the insert mode, the letters OVR are gray. In overtype mode, the letters OVR are bold.


Sec 1 3/7 At 8.8" Ln 34 Col 1 REC TRK EXT OVR 

Sec 1 3/7 At 9.5" Ln 37 Col 1 REC TRK EXT OVR 

Insert mode

Overtyping mode

Example:

- 1 Start Word. Open a new document.
- 2 Enter the following:
My school is starting a campaign to recycle materials.
- 3 Click the mouse after the word *campaign*.
- 4 Make sure you are in insert mode. Enter the words *this year*. The words *this year* should be inserted between *campaign* and *to*.
- 5 Click  to activate overtype.
- 6 Place the insertion point at the beginning of the word *this*.
- 7 Look at the Status bar to be sure overtype is on.
- 8 Enter the word next.
- 9 *Next* should replace *this*.

Internet

The Internet is a giant network built of millions of pieces of hardware that are all interconnected. The individual pieces of hardware form small networks that are then joined together into larger networks and finally into the largest network—the Internet.

Standardized Internet guidelines and procedures allow computers of all types to connect to this WAN and access the information it contains.

The Internet works much like a telephone network. Some computers connect directly to the Internet, while others connect through a LAN or WAN. In this way a computer gets on to the super highway of the Internet via an onramp of a smaller network. Home computers connect through an Internet Service Provider (ISP), such as a cable, DSL, or other private company providing Internet service.

Internet, Connections

Many devices have connectivity capabilities to the Internet. These devices require special software for Internet connection. For example:

- PC and Macintosh computers
- Handheld devices (PDA or other)
- Mobile cell phones

Devices used to provide connection to the Internet are:

- Modems
- Wireless access points
- Ethernet connector and cables

Software that allows client devices and telecommunication devices (such as modems) to communicate with a network are:

- Telecommunication software
- Network operating system software

Internet Connection Types There are different types of Internet connections as shown in the figure below. Bandwidth is the amount of data that can be transferred per second over a medium. High bandwidth gives faster transmission.

There are three main factors to consider when choosing a connection device:

- Cost
- Speed and number of users
- Anticipated growth of the providing company

Internet Service

Dial-Up Service Users have a choice of connecting to the Internet in several methods. The most common connection everyone is familiar with is dial-up service. Your Internet Service Provider (ISP) gives you instructions on how to set up your computer so it will dial a phone number to connect to the ISP's Internet connection. While dial-up is still used by many people it is an older method of connecting. Dial-up is also slow compared to other options. Your computer must have a modem installed before you can dial-up to the Internet. Dial-up connects through your regular telephone service.

DSL (Direct Subscriber Line) is available from many phone companies. A voice line is used to connect but it operates at a different frequency from your regular telephone connection and therefore provides a much faster connection. With a DSL connection you can still use your regular telephone service while you are on the Internet. A special DSL connector is needed that connects to the phone line in your wall to provide service. Then you can connect to the DSL service with a telephone line that runs from your computer to the wall connection. In most places DSL is not a lot more expensive than dial-up although it may cost several dollars more a month. However, it is a very reliable connection and provides quick access to the Internet.

Cable Cable is another very reliable and fast connection for Internet service. Cable is provided through various cable television centers. Each company usually names its cable Internet service by a unique name for the company.

Dial-up modems typically connect at about 56K BPS (bits per second) while cable and DSL modems can be twenty times that speed.

When many users are accessing the Internet at the same time like you find in large offices and education facilities a T1 or T3 line is often used. These connections provide high data transfer speeds. Computers have to have a special card installed so the T1 or T3 cable can be connected. This connection usually runs through a network at the location where the computers are.

Types of Internet Connection

Connection Device	Advantages	Disadvantages
Telephone modem (low bandwidth)	<ul style="list-style-type: none"> • Easy to install • Inexpensive • Available wherever telephone service is available 	<ul style="list-style-type: none"> • Slow connection speed • May have to share line with telephone
Cable modem (high bandwidth)	<ul style="list-style-type: none"> • May already have cable TV, so connection is easy • Fast data transmission • Several channels that can each carry 10 mbps 	<ul style="list-style-type: none"> • Need special modem installed • More expensive than dial-up • Not available in all geographical areas

DSL (high bandwidth)	<ul style="list-style-type: none"> • Easy to install • Add-on to your telephone service 	<ul style="list-style-type: none"> • Not available in all areas • May be expensive
ISDN (high bandwidth)	<ul style="list-style-type: none"> • Transmit data at speeds of 64 to 128 kbps 	<ul style="list-style-type: none"> • Must have special modem • Fees are higher than regular phone lines • Not available everywhere
Wireless (high bandwidth)	<ul style="list-style-type: none"> • Convenient to use – no wires to connect • Works off high-frequency radio signals 	<ul style="list-style-type: none"> • May require special skills to install • Must have a line of sight to computer locations • Cannot go through hills or mountains
Fiber Optic (high bandwidth)	<ul style="list-style-type: none"> • Very fast transmission—up to 1 trillion bps • High data volumes can be sent • Very little interference • Greater security • Long cable life 	<ul style="list-style-type: none"> • Expensive • May be difficult to work with
T1	<ul style="list-style-type: none"> • Allow for voice and data transmission • Very good speed rate – 1544 mbps • Often used by businesses to connect to the Internet 	<ul style="list-style-type: none"> • Lines are leased • May be expensive

Internet Service Provider (ISP)

Internet Service Provider (ISP) roles and responsibilities:

- Provides an onramp to the Internet
- Maintains and supports the ISP's network for continuous access to subscribers
- Provides customer service and support
- Protects the network from viruses and hackers

Internet Terminology

Living online requires being familiar with terminology related to the Internet. Following are some key terms you need to know.

- **Browser**—The Internet access software program installed on a computer.
- **Cache**—An area where data is temporarily stored on your computer.
- **Cookie**—A small program that organizations attach to your computer's hard drive when you visit the company's Web site. If they are not blocked, the cookies remember passwords and user IDs.
- **Encryption**—A process that converts readable data into an unreadable format as it is transmitted.
- **FTP**—File Transfer Protocol—A transmission standard that enables a user to send and receive large files across the Internet.
- **Home page**—The main page of any Web site.
- **HTML**—Hypertext Markup Language—A set of codes used to create Web pages so it can be recognized by the Internet.
- **HTTP**—Hypertext Transfer Protocol—The communication standard (common) process that is used on the World Wide Web to transfer documents.
- **Plug-in**—A software program that can be downloaded from the Internet to display additional effects.

- **URL**—Uniform Resource Locator—The Internet address of a Web site.
- **Web page**—An electronic document that is stored on the World Wide Web. The document may contain both text and graphics.

- **Web site**—A series of Web pages that are connected and belong to an individual or organization.
- **World Wide Web**—A global system of computers linked together through Web pages.

ISP

(See **Internet Service Provider (ISP)**.)

K

Keyboard Shortcuts

Although almost everyone uses the mouse to move around the computer screen there are still keyboard shortcuts available. These shortcuts are used by combining two or three different keys on your keyboard. The three keys that are

usually used are **CTRL**, **ALT**, and **SHIFT** in combination with the alpha or numeric keys or the Function Keys located across the very top of your keyboard.

To find out which key combination can execute various commands or features on your computer you can look at the drop-down menus on your toolbar.

- 1 Click **File** and let the menu expand. See that the keyboard command to print is **CTRL+P**. You will see this key combination next to the word **Print**.
- 2 What is the keyboard shortcut to save? The keyboard command to track changes is **CTRL+Shift+E** which can be seen from the **Tools** drop-down menu.

Other keyboard shortcuts include:

CTRL+B	Bold
CTRL+C	Copy
CTRL+V	Paste
CTRL+X	Cut
CTRL+A	Select All
Shift+F1	Reveal Formatting

M

Megahertz (MHz)

(See **Speed, Microprocessor**.)

Modem

(See Telecommunications Terminology.)

N

Network, Connection Risks

There are some disadvantages and risks associated with networked computing, as follows:

- Networked computers are not stand-alone systems, therefore users will experience a loss of autonomy.
- Individuals using a network do not have total privacy of their files.
- Network maintenance is complex and, therefore, requires the expertise of network technicians. Their service, along with equipment, software, and other upgrades, is costly.
- If the network fails, user file access and data could be lost.
- If a virus infects one computer in a network, it can spread to all computers in the network.
- Hackers who gain access to the network have access to all user files saved on the network. They can steal valuable, often irreplaceable, information or cause other serious damage to a system.

Network Data Transmission, Units of Measure

Data transmission rates over the Internet are measured in bits per second (bps) and kilobytes per second (kbps).

1 kbps (1 kilobyte per second) = 1 thousand bits per second

1 mbps (1 megabit per second) = 1 million bits per second

All data on a computer is in digital form, that is in zeros and ones. These are known as bits. The greater the speed of the transmission, the greater the bits per second. Dial-up modems usually transfer data at the speed of 56K BPS (bits per second), a maximum of 56,000 bits every second. Cable and DSP modems transfer data much faster. Their speeds can be as much as twenty times the speed of dial-up service.

Network Functions

Networks are made up of servers and clients. Servers are the main hardware component of a network. They store all user information on the network and manage the flow of information.

Clients, that is, individual computers such as PCs, Macintosh computers, handheld devices, and so on, connect to the server when users activate power. Usually, a username and password must be entered on user computers to

connect, or log on, to the server. A physical connection such as the Ethernet allows clients to connect to, and share information with, others in the network.

- When individuals log in to a network they can save files on the server instead of saving files on their hard drives.
- The data on a server can be backed up daily for storage.

- Security features, such as a firewall, can be installed on a server to block corrupt data and make usage more secure.

Mainframes, minicomputers, and powerful UNIX®, PC, or Macintosh hardware are often

Network Security

The risks of networks are managed through careful procedures for allowing access to the network. This is the job of the network administrator and other security personnel.

The network administrator:

1. Sets up user groups.

- User groups receive user rights, where they are given various levels of access to files on the network.
- Not all users are given access to every directory or application file. User rights are determined by user function (job responsibilities) within an organization.

used for servers. If the security on a network is not too strict, clients can connect to the server via a modem or through a wireless or infrared network.

- Some employees may not be given access to a computer hard drive, if access is not needed for the employee to perform his or her job.
 - The administrator assigns all users a username and password. The logon and password entered by a user when accessing the network is authenticated against a list of known users.
2. Installs firewalls and anti-virus software on the network to protect users and data saved on the network.
 3. Monitors the activity on a network to protect against unauthorized access or other security violations.

Networks

Networks allow computers to connect to one another and share information, including software programs and other data.

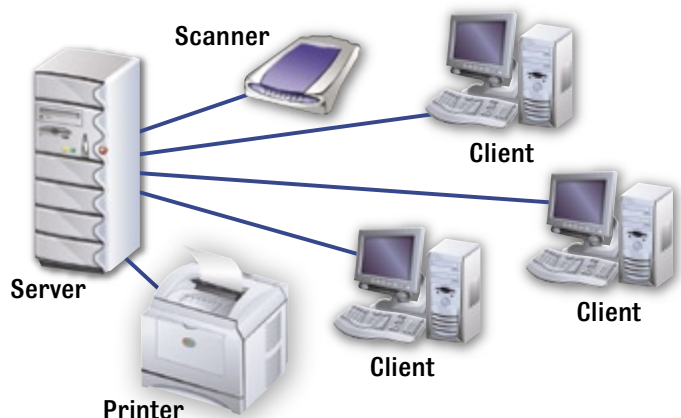
Following are descriptions of different types of networks:

LAN, Local Area Network—A smaller computer network, usually consisting of equipment, software, and information owned by a single business or other organization.

WAN, Wide Area Network—A network designed to span over large geographical areas. A city may use a WAN configuration to connect its departmental computers located throughout the city. School districts use WANs to connect all the schools within their district.

Internet—Also known as the World Wide Web, this is actually a type of WAN network that connects computers and users with other networks and users around the world.

Intranet—This private network functions much like a LAN, but is not connected to other networks outside an organization. An Intranet is typically protected by a firewall.



Networks, Benefits

Networks offer users several benefits over standalone systems in terms of both efficiency and cost.

- Increased communication between users
- Ability to share files and other resources easily
- Cost savings
 - Share software programs
 - Share printers and modems
 - Share storage devices
- Can create workgroups, allowing for greater collaboration among users
- Centralized control of computers and user access

Networks, Sharing data

Networks make sharing data among users easy. Organizations that use a network, such as businesses, schools, colleges, government offices, and so on, usually set up their network at a chosen location. The network uses a computer called a server to store software programs, user files, anti-virus programs, and many other utility files. All the network's users connect to the network either

through cable wires that have been installed or via wireless cards inside their computers, which connect to access points installed at various locations throughout the building(s). The computers all connect to the server and therefore have access to programs installed and stored on the server. To access the computers, users usually have a login identity, or ID, and a password.

Node

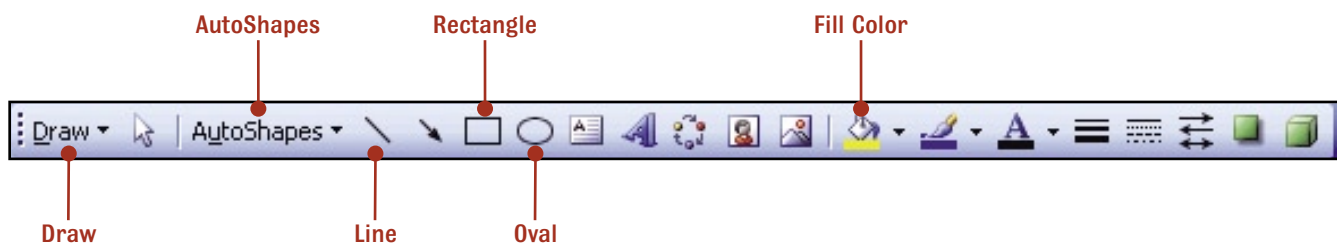
(See Telecommunications Terminology.)

O

Objects, Group

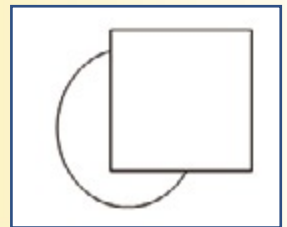
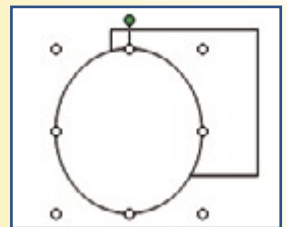
The Drawing toolbar offers many options for creating unique objects that can be used in Word, Excel, or PowerPoint. The objects can be layered

by placing one on top of the other. The Drawing toolbar is located at the bottom of the window and has buttons for creating different objects.



- 1 Start Word. Open a new document.
- 2 Click the **square** on the toolbar.
- 3 A box will appear.

- 4 Click the mouse outside of the box and a smaller box will appear. The dots on the box are there to use for resizing the square. The first box will disappear.
- 5 Click the box and drag it to the center of your document. Make sure the square is selected. When it is selected you will see dots on the lines.
- 6 Click the **oval** button on the **Drawing** toolbar.
- 7 On your screen you will see the cursor in the shape of an addition symbol.
- 8 Click and hold the left mouse button and drag the addition symbol in a diagonal direction on your screen to form a circle. When the circle is about one inch in diameter, release the mouse button.
- 9 Click the circle one time and drag the circle until it covers half of the square.
- 10 The circle is on top of the square. Right-click the circle.
- 11 Click **Format AutoShape**.
- 12 Click **Layout**, then choose **Behind text** as the wrapping style. The circle now appears behind the square.
- 13 The square and circle are not connected, so you can move them separately. They can also be grouped together to move as one object.
- 14 Click the **square** to select it. Hold down the **Ctrl** key on your keyboard and click the circle so it is also selected.
- 15 Click **Draw** on the Drawing toolbar.
- 16 Click **Group**. Now try to move the square. The circle moves with it.
- 17 To separate the objects, click **Draw**, then **Ungroup**.

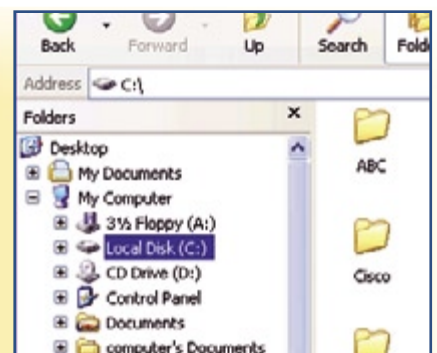


Open Files, Explore

There is more than one way to open a file. Most of the time, you will open a file after you have

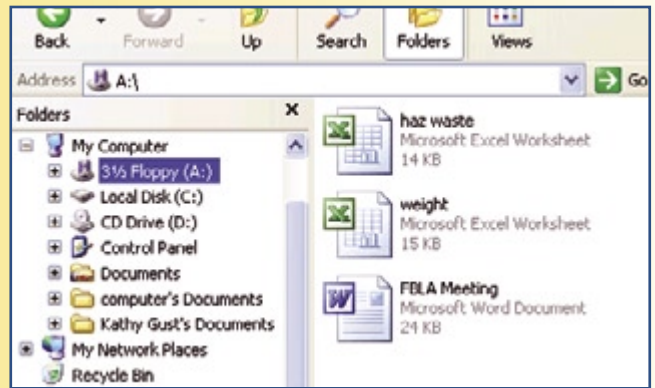
started a program. However, you can also open files from Explorer in the Windows File Manager.

- 1 Turn on your computer. Your screen will indicate that Windows is loading.
- 2 Right-click the mouse on **Start**. Then, click **Explore**.
- 3 A list of folders will appear on the left of the screen. All folders and files on the hard drive are listed. The 3½" Floppy, CD, and other drives will also show.



4 Insert a floppy disk and click the (A:) disk drive to select it. The files on the floppy disk will be displayed in the window to the right.

5 Word files are displayed with the blue W. Excel files are identified with the green X. Other programs use



different icons to identify files. Files may also be displayed with their extensions. The extension for a Word file is *.doc*. The extension for an Excel file is *.xls*.

6 To open a file from this list, double-click the file's icon.

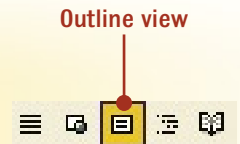
Outline Structure

Outlines help to organize ideas and information for longer research reports, articles, or presentations. To make sure they cover their main points, speakers often refer to an outline

during a presentation. Using the outline feature in Word, you too can organize your main points and supporting material for a presentation or research paper by creating an outline.

1 Start Word. Open a new document.

2 To view the document in outline format, click the **Outline View** icon in the lower left corner of your screen.



3 Add the Outline toolbar. Click **View**, then choose **Toolbars, Outlining**.



4 Enter the information shown below. Press **TAB** at the beginning of each line. You will need to press **TAB** two or three times for the indented lines, depending on their level of indentation.

```
Tips for Writing a Good Research Paper
  Use a variety of sources for information
    Internet
    Magazines
    Newspapers
    Books
```

(continued)

Take thorough notes
Record important dates
Record names
Record events
Place of event
Date of event

An outline is a condensed format of data. It can act as a guide for reviewing data or taking notes in class. The Outline feature in Microsoft Word automatically numbers each level of the outline. Outlining is a good technique to use when taking notes on a chapter in a book. It is also commonly used to organize notes for a speech or research paper. Outlining separates information into levels of importance. Data is usually organized in a hierarchical manner. An outline highlights the important parts of a document, book, or Web site. It provides a condensed version of the information.

Output Devices, Specialized

Some output devices, such as projectors and plotters, are used for specialized purposes. The descriptions below explain the uses for these two devices.

- Projector—Used to display information that appears on a computer screen to a larger

screen, so that many people may view it at the same time.

- Plotter—Used to print banners and architectural drawings, which are much larger than what an ordinary printer can produce.

P

Page Break

(See Breaks, Page and Section.)

Plug-and-Play

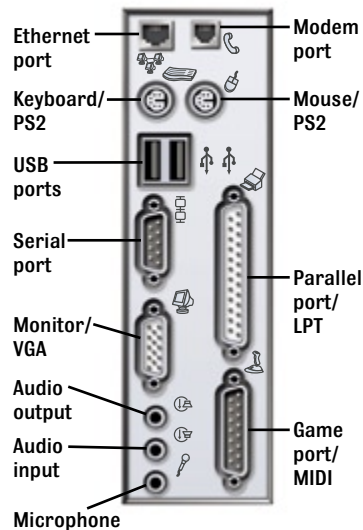
(See Hardware, Installation.)

Plug-In

(See Internet Terminology.)

Ports

Ports for Input and Output Devices



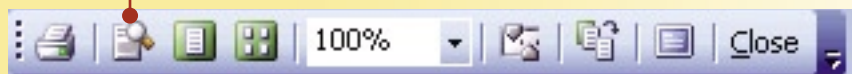
Print Preview

Print Preview shows how the document will look on a printed page. It shows how many pages are in the document. You can preview

one page at a time, or preview multiple pages together. You can use Print Preview to review page break and other page layout problems.

- 1 When your document is open, access Print Preview by clicking **File, Print Preview**. Or:
- 2 On the Toolbar, click the **Print Preview** button.
- 3 Adjust any page and section breaks to make the document appear as you want it to print.

Print Preview



Print Problems

If a document does not print when you give the print command, there are several items you can check.

- 1 Make sure the printer is online. Some printers, especially laser printers, have online and offline functions. If the printer goes offline, check the online/offline button to make sure the printer is online.
- 2 Check the printer and power cords to be sure they are plugged in correctly and are not loose.

- 3 Be sure you have selected the correct printer if your computer is linked to more than one printer.
- 4 Be sure the correct print driver has been installed for your printer.
 - a. Drivers are files the computer needs to communicate with to make the printer work.
 - b. You may need to reinstall the drivers from the original printer driver installation disk.

Print Queues

When you give the print command, the print job is sent to a print queue, or waiting line. The print queue holds the document until printing begins. You can view print jobs in the print queue.

- 1 Click **Start, Printers and Faxes**.
- 2 The printers that have been installed on your computer will be listed in the window or displayed as icons.
- 3 Double-click **Printer** to view print jobs that have been sent to the printer.
- 4 Print jobs can be cancelled from the print queue. Click **Document**, then click **Cancel**. If you accidentally send a job to print more than once, cancel one of the print jobs to conserve blank paper and ink.

Privacy and Security Online

You need to be aware to protect your privacy and security online. Web sites can track your Internet usage by cookies and other “behind-the-scenes” systems.

- Do not share passwords or log-in information with anyone.
- When giving out personal information, especially social security, account, or telephone numbers, make sure the Web site to which you are posting the information is secure.
- Do not answer an e-mail from a stranger that asks for your personal information, even if it seems to be a bank or financial institution.
- Avoid sharing personal contact information in chat rooms, through instant messaging, or in discussion forums. Use an alias, or code name, instead of your real name.
- Install adware or spyware software on your computer to help prevent Web developers from tracking your personal surfing habits.

Purchase a Desktop Computer or Laptop

Many individuals purchase laptops today because laptops are capable of performing the same tasks as a desktop computer and are portable. Laptops are easily transported between school and home or work and home. Whether

purchasing a laptop or desktop model you should consider what you need the computer to do. For example, consider the operating system, or platform, if you plan to use different software. Do you need to use word processing,

spreadsheets, and databases or do you need to use special programs such as AutoCAD, or multimedia production programs?

Hardware Options Hardware options to consider when purchasing a computer:

- Hard drive space.
- RAM memory (the more you can afford the better).
- Screen size.
- CD-ROM with read/write capabilities.
- Wireless card.
- USB ports.
- Multi-media capabilities (video, sound, and so on).

Software Options Computers come with the operating system installed; usually Windows XP or a current version. Additional software may be added. Some systems can be customized to the type of tasks you need the computer to do. For example multi-media software packages may be selected, office performance software such as word processing, spreadsheets and

databases may be included, or a combination of both of these features may be included. As a consumer you should question the type of software that is included with your new computer so you will know what to expect.

When large organizations purchase computers they usually keep the standards on the computers similar so everyone in the company will be able to perform the basic tasks associated with their responsibilities. However, upgrades may be required on some of the equipment purchased. An upgrade usually means some of the specs on a system are increased to assure optimal performance by the user due to specific tasks they are required to perform.

Warranties Many companies offer a full one year warranty on the computer system you purchase. Sometimes you can purchase an additional two or three year warranty. You should ask what types of warranty are included and what additional warranties are available. Some warranties cover all parts and labor while others may only cover parts. If you are not trained on how to replace parts on a computer you should be careful about who makes any needed repairs.

R

Recycle Bin

Deleted files are placed in the recycle bin. This icon is located on your desktop. You must open

the recycle bin to delete these files entirely from your computer.

Recycling, Computer

Recycle computer system materials whenever possible. Inform your friends and family about the value of recycling, and the harm old, abandoned computers do to the environment. To recycle technology hardware:

- Check product packaging for recycling information.
- Ask local merchants if they collect and recycle used computer and phone products.

- Check your community for programs that recycle computers to needy families, and donate any usable, old equipment to them.
- Donate old computer parts to community recycling programs.
- Start a recycling program at your school.

Relational Database

Databases are made up of tables of information. Relational databases are tables that relate to each other, but store the data in different tables for easier organization. A query can be created to extract data from any of the related databases. For example a business may have a database of customers which includes fields

for the customer name, address, and customer number. Another table in the database may have the customer number, item order number, item description, and cost. The two tables have a relationship because the field customer number is common to both tables.

Relative Cell Address

(See Absolute Versus Relative Cell Address.)

Replace

The **Replace** command is found in the same window as Find and Go To. Replace can be used to replace one word or several occurrences of the same word.

- 1 Start Word. Open the E-Waste document. Ask your teacher for the E-Waste data file.
- 2 Enter the word *e-waste* on the line that says **Find what**.
- 3 Enter the words *electronic waste* on the line that says **Replace with**.
- 4 Click **Find Next**, and the first occurrence of *e-waste* will be highlighted.
- 5 Click **Replace**. *E-waste* will be replaced with *Electronic Waste*.



- 6 Click **Find Next**. The next occurrence of *e-waste* will be highlighted.
- 7 If you want to replace this text, click on **Replace**. If you do not want to replace this text, click on **Find Next**.

Router

(See Telecommunications Terminology.)

Ruler

Rulers are used to measure adjustments to your margins or to set tabs. Two rulers appear automatically on your document screen. One is displayed beneath the toolbar at the top of your screen. The other runs down the left margin of your document. The tab settings shown in the figure below are:

1" mark	=	left tab
2" mark	=	right tab
3" mark	=	center tab
4" mark	=	decimal tab

The blue area of the rulers highlights the margin area. The numbers represent inches, and the smaller marks between numbers represent $\frac{1}{8}$ " intervals.

- 1 To show the ruler, click **View, Ruler**.
- 2 When adding a table, the columns of the table can be adjusted by moving the settings on the ruler. Move the tab and margin markers along the ruler by pointing to the desired mark on the ruler with the mouse, clicking and holding the left mouse button, and sliding the mark to a new position.



S

Safety, Working Environment

Computers need to be used in a safe working environment. Electrical wires placed in the wrong location may cause people to trip. Plugging too many electrical devices into an outlet is a fire hazard. Following a few simple rules can help you prevent these and other hazards to maintain a safe work environment:

- Tie loose wires and computer cords together, and place them out of traffic, to keep from tripping on them.
- If cords must run across the floor, use the proper equipment to cover them.
- To prevent computers from overheating, position computers so the fans in the CPUs are not blocked.
- Do not plug too many electrical wires into one socket as this could cause a fire.
- Use power strips and surge protectors suitable for your computer.

Section Break

(See Breaks, Page and Section.)

Server

(See Telecommunications Terminology.)

Shading

(See Borders and Shading.)

Shut Down and Restart, Computer

It is a good idea to shut down and restart your computer from time to time. One benefit of this practice is that if security or virus protection updates have become available since you last shut down, you will receive notifications of these updates when you restart your computer. To shut down or restart the computer safely, always use the Start menu.

A computer should always be turned off by clicking **Start, Shut down**. If the computer “freezes,” or does not respond to clicking the mouse, the **Task List** may be opened to view which programs are not running and then they can be cancelled. To access the Task List, simultaneously press **CTRL + ALT + DELETE**. When the Task Manager window appears, click Task list and view the list of programs running. Select any programs that may not be running, then click End now. The program will be closed

and may free up your computer. If this does not work, you may have to shut off your computer with the power button and then turn it back on. If this does not work, unplug the computer, and then plug it back in. You may need to wait for a longer time than normal for the computer to boot up while it does system checks.

Networked computers may require a username and password to log on to the network and access the applications.

Users who have their own logon identity on a network should always log off when they leave a computer. If you do not log off, the next person who sits at that computer will have access to all of your files. To keep your data secure you should always be sure to log off a computer you are using. Depending on how the network is designed, you may also need to shut down the computer after you log off.

Slide Background, Modify

In PowerPoint you can change the background color on one slide or on all slides in your presentation by clicking **Format, then Background**.

- 1 Click the **arrow** to choose background fill.
- 2 Click either **More Colors** or **Fill Effects**.
- 3 Select the color or the effect you want to place on your slide.
- 4 Click **Apply** to change the current slide or click **Apply To All** to change all slides in your presentation.



Software Development

Software is created through a specific process called development. Companies that develop and sell software spend time on design and quality control to try to assure that their product is appropriate for the purpose and that it is free of bugs, or problems. They employ programmers to write code (called programming), then test that it works correctly.

The Software Development Process:

1. Needs assessment and analysis
 - Determine requirements for the software.
 - Decide what the software will do.
2. Design
 - Determine how the program will look.
 - Determine what colors will be best.
3. Writing the code (programming)
 - Divide program writing among the development team.
 - Programmers provide their ideas for the software.
4. Product alpha testing
 - Once the code is written, the product is tested in a simulated live environment.
 - Any errors, or bugs, that are found are corrected, or debugged.
5. Quality assurance
 - See that features meet the original design specifications.
 - Apply systematic tests to the software.
 - Debug as necessary.
6. Beta testing
 - Have external reviewers review the software to find any errors.
 - Continue to debug.
7. Final release
 - Make the product available to general public.
 - Release upgrades to improve the initial version.

Software, Multimedia and Graphics

Multimedia and graphics software allow children and adults alike the opportunity to express themselves creatively as well as to create professionally designed materials and to produce media such as audio and video.

Multimedia programs accomplish several functions. They provide users with a way to create video demonstrations to be used on the Internet, displayed on computers, or to provide tutorials for a wide variety of tasks.

Multimedia may combine audio, text, video, voice-over, animation, or graphics to create a presentation. Video clips taken with a video camera or digital camera are often included in the presentation.

Graphics programs, on the other hand, are designed to help create original illustrations. Some of the popular ones throughout the

graphic design industry include CorelDraw[®], Adobe Illustrator[®], Adobe Photoshop[®], and Microsoft Visio[®]. Graphic artists use Adobe Illustrator and CorelDraw to design book covers, company logos, magazine ads, and other original art illustrations.

Video programs that are commonly used include Microsoft Movie Maker[®] and QuickTime[®]. With these programs you can edit video that has been recorded with a digital or video camera.

All multimedia files have file extensions that are easily recognized. Graphic file extensions include .BMP, .JPG, .GIF, and .JPEG.

Audio file extensions include .WAV and .MP3.

Video and animation include .MOV and QuickTime.

Software Upgrades

Software is often updated, or upgraded, to add new features, be compatible with new operating systems or new hardware, and to fix problems, or bugs. When you register your software, this helps the manufacturer keep you advised of upgrades.

Advantages of Upgrading:

- Upgrades may fix problems in the earlier version of the software.
- Upgrades can improve current features and make them work more effectively.
- Upgrades can make your system compatible with new operating systems or new hardware.
- Upgrades are often easily to get by one of the following methods:
 - Downloaded from the Internet.
 - Purchased and installed in CD or floppy disk formats.

- Upgrades might be automatically applied to your computer if you have registered your software.

Disadvantages of Upgrading

The upgraded software:

- May not be compatible with your computer's current operating system.
- May be incompatible with older hardware and other software in your system.
- May be incompatible with the software of others you communicate with if you are the first to upgrade.

To avoid the disadvantages of upgrading, you can stay informed. Read industry news, or visit a manufacturer's Web site to be aware of updates and any new bugs or problems of incompatibility.

Sort Data

(See Table, Sort Data and Worksheet, Sort Data.)

Spacing and Indent Options

As you enter text into a Word document the insertion point moves across the line. When the insertion point reaches the right margin, it is automatically moved to the next line so you can continue to enter text. This process of the text automatically continuing to the next line is known as wrap text. The text you enter in this manner forms a paragraph. To start a new paragraph, or to go to the next line before the text wraps automatically, press the **Enter** key.

Each time you press **Enter**, you create a new line or paragraph. When keying an address in a letter, the recipient's name goes on the first line. Press **Enter** to go to the next line and then key the street address. Press **Enter** again to go to the next line, and key the city, state, and Zip code on the third line.

To increase the amount of space between lines or paragraphs, you can adjust the space setting. Look in the box labeled Preview to see the effect of your settings.

- 1 Click inside the paragraph you want to adjust.
- 2 Click **Format, Paragraph**.

- 3 Click the **Indents and Spacing** tab.
- 4 Change the number in the **Before** box if you want to add more space before the paragraph.
- 5 Change the number in the **After** box if you want to add more space after the paragraph.
- 6 In this same box, you can change the line spacing. Under **Line spacing**, click the **arrow** and choose from the settings, such as single, 1.5 lines, or double.



In the same box, you can choose different indentation options for a paragraph.

- 1 From the Menu bar, click **Format, Paragraph**. Click the **Indents and Spacing** tab.
- 2 Under **Indentation** in the middle of the box, you can choose how far from the left or right you want a paragraph indented from the margin.
- 3 Click the drop-down arrow to see that the choices under **Special** are **first line** and **hanging**.
- 4 **Hanging indent** is commonly used in keying bibliography information. The first line aligns with the left margin and lines below are indented five spaces.

Speed, Microprocessor

Megahertz

The speed of microprocessors is measured in megahertz (MHz) and gigahertz (GHz). A megahertz is one million cycles per second. A 200 MHz computer runs 200 million cycles per second. This is the clock speed of the computer, which determines how many instructions per second can be executed by the microprocessor.

Gigahertz

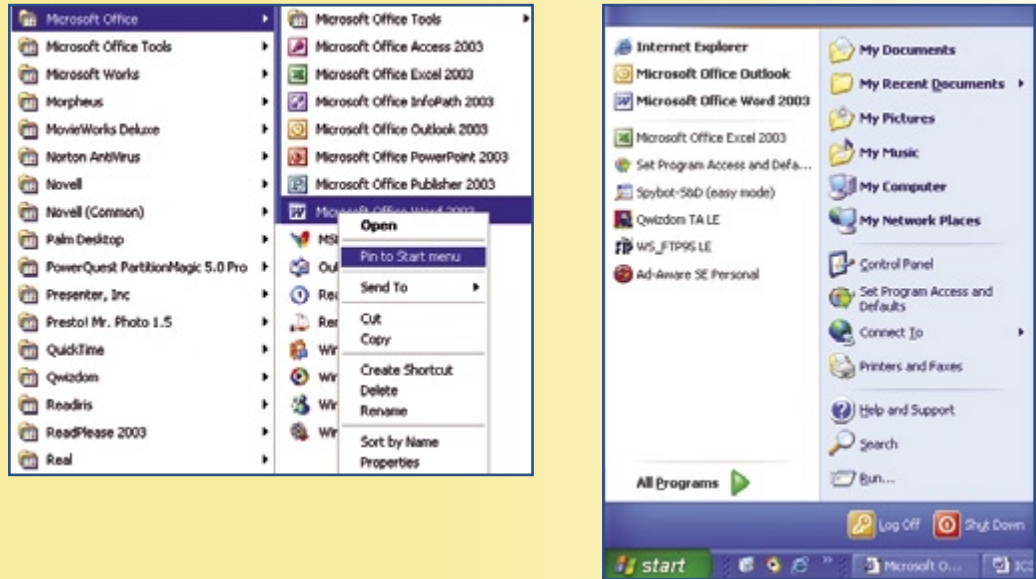
A GHz is one billion cycles per second. Personal computers that were available in the early 1980s had a microprocessor speed of 5, 8, or 10 MHz. Now many personal computers have microprocessors that are crossing the GHz boundary, at a billion operations a second.

Start Menu, Add Program Shortcut Icon

New program shortcuts can be added to the Windows Start menu. To add a new program shortcut or icon to Start features, follow these steps:

- 1 Click **Start**.
- 2 Go to the program you want to add.

- 3 Right-click on the program name.
- 4 Select **Pin to Start Menu**. The program icon will be added to Start features.



Stay Informed

When you stay informed of new developments in technology, it will help you in your life in general, and on the job. You will know about the availability of software upgrades, new hardware for new types of applications, new software, new viruses to protect your computer against, and the affordability of technological devices.

To stay informed:

- Read the technology section of the daily newspaper.
- Read reputable computer publications, either online or in hardcopy format.
- Attend technology and education conferences in your area.

Styles, Pre-Existing

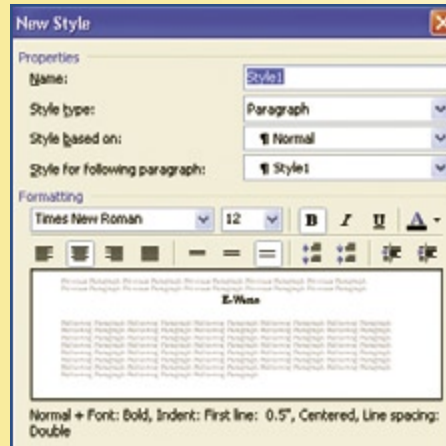
Microsoft Word provides a collection of pre-existing text styles. You can use Word's Style Gallery, or you can create and save a collection of style formats and give them a special name. You can apply the special style to text at any time by clicking the style name. For example, you can apply a paragraph style that includes

tab stops, line spacing, and Arial, font size 12 character formatting.

Word has four basic styles: character styles, paragraph styles, table styles, and line styles. Selecting a style or creating a new style for a document can save time and give a consistent appearance to your documents.

- 1 Start Word. Open the E-Waste document. Ask your teacher for the E-Waste data file.
- 2 To create a style for the title, select the title.

- 3 Click Format. Then, choose Styles and Formatting. A task pane will open on your screen. Click New Style.



- 4 Change the name of the style to Title1.
- 5 Change the font size to 16. Bold is already selected; keep this setting. Center is also already selected. Click OK.
- 6 The new style name will appear in the Task pane.
- 7 Select the first paragraph of this document.
- 8 Click the drop-down arrow to the right of the Normal style in the menu.
- 9 Choose Modify.
- 10 Change the font setting to Arial, 11 point, and the line spacing to double.
- 11 Click OK.

Switch

(See Telecommunications Terminology.)

Symbols/Special Characters, Insert

Special symbols and characters can be inserted into a Word document. These symbols correspond with different fonts. Some commonly used symbols are copyright (©), registered (®),

trademark (TM), or international pricing marks. There are also symbols for Basic Latin, Greek, and other languages.

- 1 Start Word. Open a new document.
- 2 After keying text requiring a symbol, place the insertion point where the symbol is needed.

- 3 Click **Insert**. Then, choose **Symbol**.
- 4 If you do not see the symbol you want, scroll down the list, or view other font names on the pull-down **Font** menu. Click on the arrow to the right of the **Font** box.
- 5 Choose the symbol you want. Then, click **Insert**.
- 6 The symbol will be placed at the insertion point in your document.
- 7 Choose another font name and view another set of symbols.

T

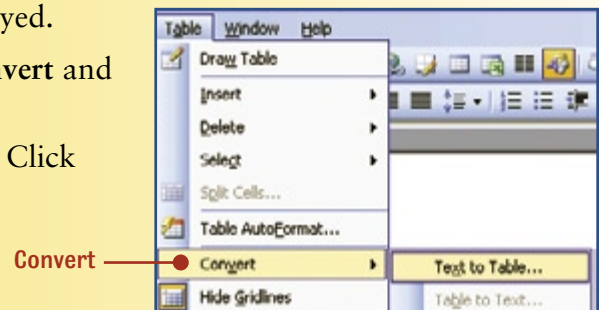
Table, Convert from Text

The text in a document can easily be converted to information in a table.

- 1 Start Word. Open a new document.
- 2 Enter text as follows, pressing TAB between words:

PDA Tablet PC Computer

- 3 Select the words you just keyed.
- 4 Click **Table**. Then click **Convert** and then **Text to Table**.
- 5 The Convert box will open. Click **OK**.



Table, Sort Data

Data in a table can be sorted in ascending or descending order.

- 1 Start Word. Open a new document.
- 2 Create the following table:

Name	Grade	Sport	Age
Ryan	12	Soccer	18
Crystal	12	Softball	17
Stephen	11	Football	17
Mary	10	Swimming	16

- 3 Select all the text except the headings; that is the text from *Ryan* to 16. To do this, click and drag the mouse.
- 4 Click **Table**. Then, choose **Sort**. The Sort box will open. You can choose which column you want to sort. Click the Sort by drop-down arrow and choose Column 2 to sort by grade. Click **OK**. Your data will be sorted by grade in ascending order.

Sort by dropdown arrow



Tabs

Tabs are used to indent text within a document. A tab can be set in any location on the ruler. You can also choose from different types of tabs. They are:

Left tab = Aligns all text on the left of the tab marker.

Right tab = Aligns all text on the right of the tab marker.

Center tab = Aligns text with the center of the tab marker.

Decimal tab = Aligns text with the decimals of the text or numbers entered at the tab marker.

- 1 Start Word. Open a new document.
- 2 If the ruler is not displayed, click **View**, then **Ruler**.
- 3 Move the pointer to the 1" mark on the ruler and click the left mouse button.
- 4 Move the pointer to the 2" mark and click the left mouse button. Another left tab marker will appear.
- 5 Double-click the tab marker at the 2" location.
- 6 The Tabs window will open on your screen and display the two tabs you have set.
- 7 In the window, click the 2" tab. See the figure.
- 8 In the **Alignment** area, click the circle next to **Right** to make this a right tab.
- 9 Click **OK**.
- 10 On the ruler, point to the 2" right tab you just set. Click and hold the left mouse button and drag the marker to the 2" location.



- 11 Double-click the 2" marker to open the **Tabs** window again.
- 12 Click the 1" tab to select it.
- 13 In the Alignment area, click the circle next to **Center**, to change this tab to a center tab.
- 14 Click **OK**. Notice how the shape of the marker changed at the 1" location.
- 15 Double-click the 1" tab marker to open the **Tabs** window again.
- 16 Click **Clear All**. Click **OK**.
- 17 Both tab markers have been removed.

Telecommunications Terminology

Following are important terms related to telecommunications, networks, and the Internet.

Bridge—A device that connects two local networks and controls the data that flows between them.

Broadband—Type of data transmission that allows multiple channels to be broadcast at the same time on a single wire, as with cable television.

Client—Application program installed on a user's computer that requests information from other computers within the network.

Fiber Optics—A thin strand of glass or plastic (wrapped in a protective coating) that transmits data by reflecting beams of light.

Hub—An electronic device that links groups of computers to each other so they can communicate with each other.

Modem—Modulator/demodulator. An input/output device that allows computers to connect to and communicate through the Internet via telephone lines.

Node—The name given to a group, or network, of computers.

Router—A device that stores address information for each computer in a network, so information can be transferred to locations along the data line.

Server—Also called file server; the main computer in a network that stores the software programs for all computers connected to it.

Switch—The device that filters and forwards messages over a local network.

Telephone Modems

When the telephone system is used to transmit computer information, a modem is required. Here is a brief summary of how the transmission works.

- Computer data is in digital form (zeros and ones).
- Modems convert data from analog to digital forms and from digital to analog forms.
- Modems convert digital data to analog data during transmission.
- At the receiving end, the modem converts the analog data back to digital form for the receiving computer.

Telephone Network

Telephone systems are connected in networks much the same way that computers are connected. Telephone networks send or receive information. The standardization of telephone networks allows for communication via:

- Land lines or cellular (wireless) phones.
- Sound can be transmitted via a telephone line.
- Data or graphics can be transmitted via fax modem.

Telephone networks connect people all over the world. They are used to send voice transmissions as well as data transmissions more commonly known as facsimiles (faxes). Communities have a network of telephone systems made up of individual users. Each system

connects to other systems thereby connecting the users between systems.

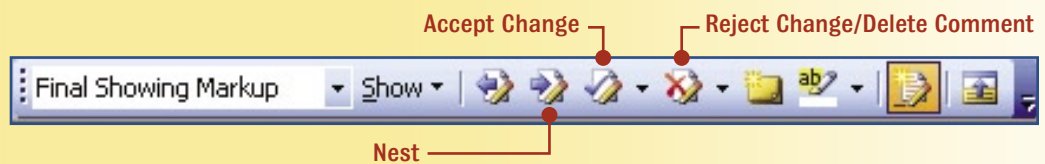
In recent years the growth of cellular phone systems has grown tremendously. Some people do not even have land lines any more they just use cellular telephones. Cellular telephones work in a similar manner to the network of regular telephones except they send and receive their transmissions from towers located around the world. Their ability to send and receive information via towers makes them genuinely attractive to users because they provide such mobility. Users can call each other from cars, trains, office locations, ships, and so on. Cellular systems today can even send text messages, photos and connect to the Internet.

Track Changes

Track Changes is a convenient function for editing documents electronically. It is especially helpful when a document is going to be reviewed and edited by more than one or two

people. Track Changes will show what each person has changed in the document. You can move through the document change-by-change and decide whether or not to keep the changes.

- 1 Start Word. Enter a sentence about a sport that you like.
- 2 Click Tools, Track Changes. The Track Changes toolbar will appear.



- 3 Let the pointer hover over each icon on the toolbar to see what they do.
- 4 Delete one word of your sentence. Choose another word to change and key a word to replace it.
- 5 Notice that the change is noted in red. A comment box is added to the right margin.
- 6 Go to the beginning of the document.
- 7 Click the Next button to track the change in the document.
- 8 The item is bolded. Click the button again to move to the next change.
- 9 To accept the change, click the Accept button.
- 10 Click the Next button. Reject this change.

U

URL

(See **Internet Terminology**.)

Utility Programs

Utility programs are available to do routine, behind-the-scenes type tasks on a computer. An anti-virus program is a well known utility program. The program is installed on a computer so it can detect files that may contain viruses which may be downloaded from the Internet or an email message, or a floppy disk. File compression utility programs are used to make large files smaller so they can be stored or transmitted (usually via email) to another source. These programs reduce the number of bits in a file. The data is not lost it is just compressed. A file compression program must be used to open a compressed file too. Data or file compression works by storing files on

a floppy disk or hard drive. Disk compression is between the operating system and the disk drive. When the operating system tries to save a file to the disk, the utility intercepts it and then compresses it. The same thing happens when the file is trying to be opened. Disk compression will work with all applications because all files pass through the operating system.

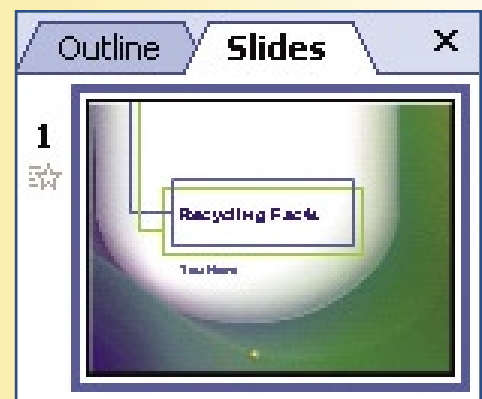
As files are saved they are split into parts, or fragments, and stored in different places on a disk. Defragmentation takes the fragmented parts of the file and puts them closer together which makes retrieval of the file easier and quicker.

V

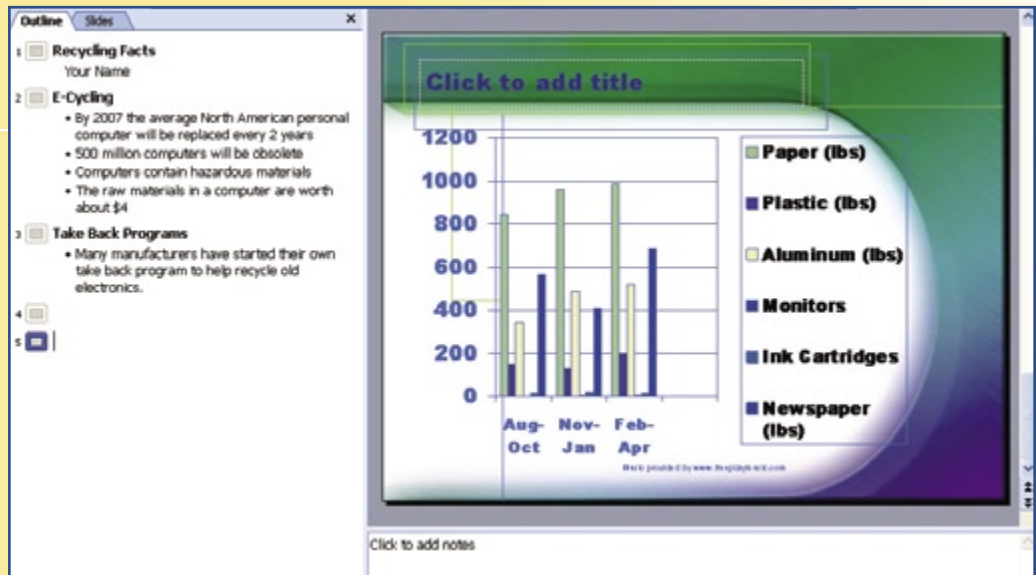
View, Slide Layout / Slide Master

Presentation software offers several different views to help you create your presentation, including outline view, slide layout view, and master slide view. You can easily change between views.

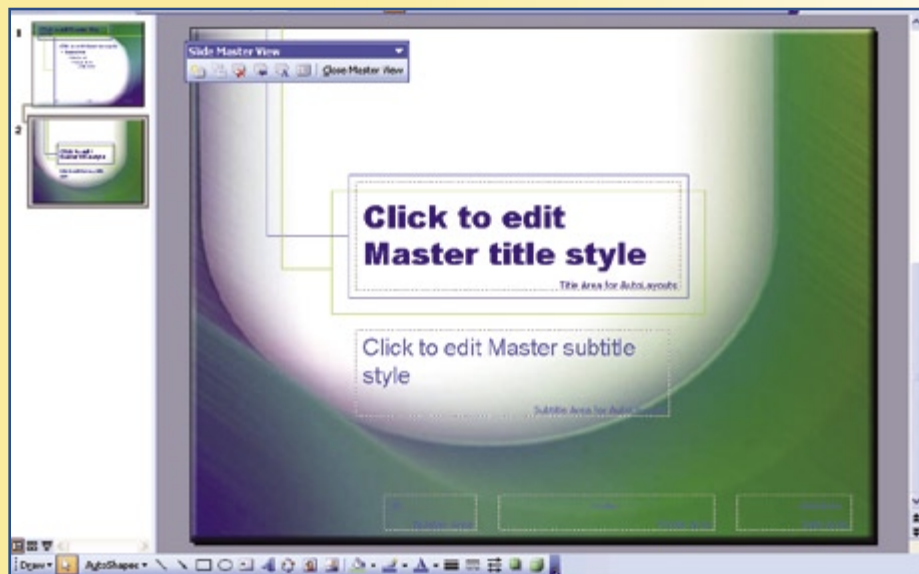
- 1 Start PowerPoint. Open the E-Cycle PowerPoint presentation. Ask your teacher for the E-Cycle data file.
- 2 Slide View displays the slide you are currently creating, and gives you a smaller view of additional slides in the left margin. You can easily move to another slide in the presentation. Try clicking on a slide at the left. A scroll bar allows you to browse through these slides.



- 3 Switch to Outline View by clicking the Outline tab on the left side of the screen. Outline View displays the slide on the right side of the screen and shows only the text of each slide in the left margin.



- 4 Click View. Then click Master, Slide Master.



- 5 Slide Master View allows you to make changes to the format of a slide so all slides in your presentation will display the changes. For example, a company may want to include a logo on each slide. The logo can be added as a graphic on the Slide Master so it will appear on each new slide. Change the color of the background on the Slide Master.
- 6 Switch to Slide View to see the effect.

W

Web Page

(See **Internet Terminology**.)

Web Pages, Saving Content

A Web page can be saved to a computer's hard drive for access at a later time. This is often referred to as "caching." Web pages contain text and graphics. When you save a Web page to your hard drive you can choose whether or not you want to save the graphics. Graphics may take a lot of the computer's storage space. If your computer is short of storage space you may choose not to save the graphics.

From the Save As box you can choose how to save your Web page:

- Web page complete *.htm; *.html—This will save all of your Web page and its formatting. The graphics, fonts, links, and text will be saved.
- Web archive *.mht—All of the page information is saved into one MHTML file. The graphics, links, and formatted text is all

saved. If you plan to e-mail the Web page to someone, this format makes it easy.

- Web Page HTML only *.htm; *.html—The Web page is saved but not the graphics, sounds, or other supported files. When you open the Web page, you will see blank boxes with an X in the corner in place of the graphic file.
- Text File *.txt—Saves only the text of the Web page.

When you save a Web page you can reopen the page anytime you are on your computer, even if you are not connected to the Internet. The pages are stored on your hard drive. A page saved in text-only format can be opened from your word processor.

Steps to Save a Web page

Follow these steps to save a Web page:

- 1 Go to the page on the Web that you want to save.
- 2 Click **File, Save As**
- 3 Choose to save the entire Web page (including graphics).
- 4 Enter a file name for the Web page.
- 5 Click **Save as type** and select an appropriate file type from the drop-down menu.
- 6 Click **Save**.
- 7 Repeat the steps, but save the Web page without graphics.

Web Site

(See **Internet Terminology**.)

Web Sites, Drilling Down for Information

Drilling down is the term used to describe the use of hyperlinks in a Web site to find specific information that you need. All Web sites contain a home page where surfers are usually directed first. From the home page many, many pages can be linked. When you are at a Web site's home page you may click on a hyperlink to go to the next page. From there you may click on another hyperlink to go down into the site to the next page. This process of clicking hyperlinks on connecting pages is referred to as drilling-down. You may need to go through several levels before you reach the information you are looking for.

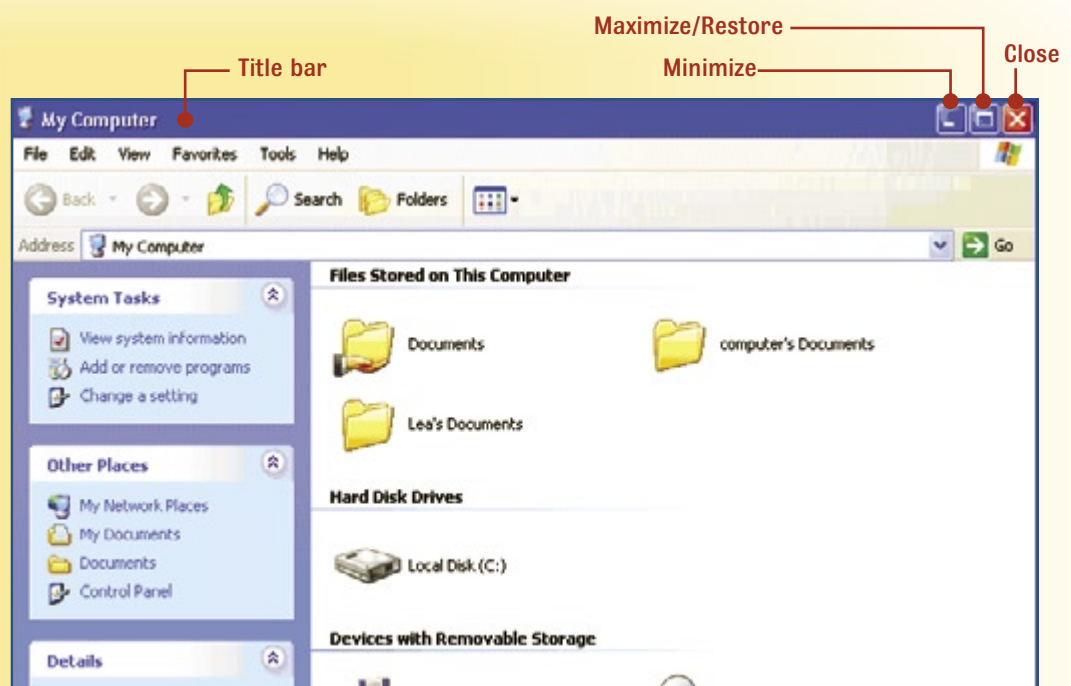
Site Map Another way to find the specific information you need within a Web site is to use the site map. The site map is often displayed as a tab, button, or link on a Web page. The site map is similar to an index, showing you the topics covered within the Web site. Some sites have a box labeled Quick Links in place of a site map.

Web Site Search Box Often a search box is provided within a specific Web site. You enter keywords in a similar way to when you are browsing the Internet, but the Web site only searches its own resources for the information you need. Look for a box labeled Search, or Find.

- 1 Choose a university Web site, such as ucdavis.com.
- 2 Drill down through various hyperlinks from the home page.
- 3 Go back to the home page. Explore the site map or Quick Links box.
- 4 Go back to the home page. Explore the box labeled Search or Find.

Windows, Manipulating

Click **My Computer**. Follow the instructions on the following page.



Maximize and Minimize

- 1 Click the Maximize button to make the window expand to full screen size or right-click on the title bar of the window, then click maximize.
- 2 Click the Minimize button to place the window on the Taskbar at the bottom of the screen. A button will appear on the Taskbar with the window's name displayed. This is a way to move the window out of your way while you work in another window. You can also right-click in the menu bar to minimize a window.
- 3 Restore is used to return a window to its previous size. With the minimized window on the Taskbar, click on the window button to restore the window to its previous size on your screen. You can also right-click on the button and click restore.
- 4 To restore a maximized window, click the restore button in the upper right-hand corner of the window. Or right-click on the title bar of the window and choose restore.

Move a Window A window can also be moved from one location on the screen to another.

- 1 Point the mouse in the title bar of the window, then click and hold down the left mouse button.
- 2 Now move the mouse on the screen and lift the mouse button to “drop” the window in a new position. This is called “drag and drop.”

Size a Window A window can be resized. By resizing your windows you can easily copy or move data from one window to another. You cannot resize a window that is maximized. On any other window:

- 1 Move the mouse to the edge or corner of the window. You will see the mouse change to a double-headed arrow.
- 2 Click and hold the left mouse button down. Then move the mouse in the direction of either arrow to resize the window.

Close a Window A window can be closed by simply clicking the X in the upper right-hand corner of the screen.

Word Count

Word Count is a feature in Word that displays the number of characters (with and without spacing), number of words, number of paragraphs, and number of lines in a document.

- 1 Start Word. Open E-Waste document. Ask your teacher for the E-Waste data file.
- 2 Click Tools. Then, click Word Count.



Statistics:	
Pages	2
Words	552
Characters (no spaces)	2,877
Characters (with spaces)	3,425
Paragraphs	10
Lines	42

Include footnotes and endnotes

Worksheet, Sort Data

Data in a spreadsheet can be sorted the same way you sorted it with table data.

- 1 Start Excel. Open the Trash.xls spreadsheet you created in Chapter 10, pages 313–358, or enter the data shown in the figure.
- 2 Select the cells from A2 to B5.

	A	B	C
1	Trash Type	Pounds	
2	Paper	320	
3	Metals	500	
4	Plastics	189	
5	Glass	224	
6			
7			

- 3 Click **Data**. Then, click **Sort**. Choose the field you want to sort. Click **OK**.



- 4 To sort by multiple fields, click **Data**. Then click **Sort**, and choose a field for **Sort By** and a different field for **Then By** to sort by multiple fields. Choose ascending or descending for each sort.

World Wide Web

(See Internet Service Provider and Networks.)