



COMPUTER BASICS

A Beginner's Guide to Computers

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What is a Computer?

- A computer is a device used to manage information, solve problems or find information by processing data according to a sequence of instructions or a program.

THE FOUR MAIN THINGS COMPUTERS DO

- Computers accept input or information
- Computers process the information according to instructions (programs)
- Computers produce results as output (printouts, slide presentations or calculations)
- Computers store information short term (in computer memory) or long term (on floppy disk or hard drive).



What is a Computer?

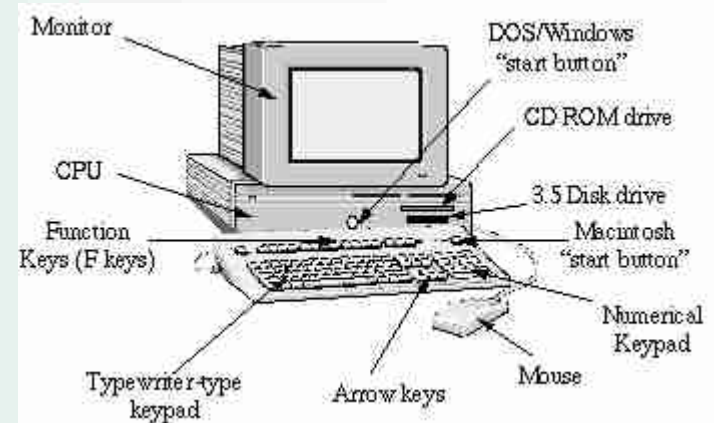
To perform any computer task you need hardware and software:

- Hardware: the physical parts of the computer – the parts you can see or touch.
- Software: the instructions or programs that tell the computer what to do.



Hardware Words to Know:

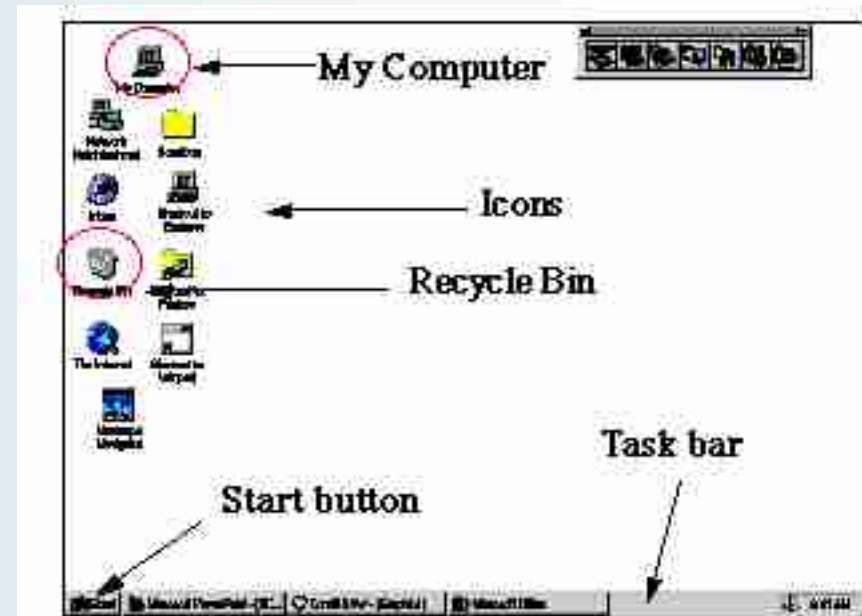
- The **system unit** is the box that holds the brains of the computer
- The **CPU** is the main chip (brain) in the computer that retrieves instructions from memory and does whatever those instructions say.





Hardware: Monitor

- The **monitor** is the screen that provides you with the visual information.
 - Desktop – what you see on the monitor when you “boot up” or turn on the computer.
 - Icons – pictures on the desktop that lead you to programs.
 - double click on icons to make the program execute
 - Cursor – the indicator of where you are on the screen. Usually an arrow point or a blinking vertical line.





More Hardware terms

- The keyboard gives commands and allows you to enter information into computers.
- The mouse allows you to communicate with the computer by pressing buttons to make selections from the monitor display.
- The disk is the storage unit of the computer.
 - Hard disk drive
 - Floppy disk drive
 - External drives and devices



Software words to know:

Software falls into two categories:

system software and applications

- An operating system is system software that works in the background to control and run installed applications or any devices connected to the computer (i.e. printers, scanners, mouse, monitor, keyboard)
- Some examples are Windows XP, Windows 98, UNIX, MS-DOS, Linux



Software words to know

- Applications are software programs that perform a specific task such as word processing, spreadsheets or accounting.
- Some examples are Microsoft Word, Excel, PowerPoint, Outlook Express, Mozilla Firefox browser, Internet Explorer.



Keyboard Input

- The keyboard is similar to an electric typewriter but also has many extra keys.
- Some keyboards have a numeric key pad.
- Special keys include enter, backspace, delete, insert, arrows, shift, caps lock, home, end, escape (esc), tab, page up, page down, control (ctrl), alternate (alt) and function keys (F1...F12)
- Attend the “Navigating your Keyboard and Computer Screens” class for more on this.



Mouse Input

- A mouse is an easy way to communicate with the computer. You can do the following:
 - Point: move the mouse so the cursor (little arrow) points at the word or picture you want.
 - Left Click: press the right button on the mouse to select whatever the cursor is positioned on
 - Right Click: press the left button on the mouse for application options.
 - Double Click: quickly press the left button twice to launch applications.
 - Scroll: roll the scroll wheel to move up and down a page.



How the Computer Stores Information

- Computers organize information in small chunks called “files.” Files are stored on a disk drive. When you work with a computer, you will work with files.

Think of your doctor’s office, with rows of files. The doctor locates your file by your name or by a patient number. Similarly, you store information in files when you use a computer. Files are given ‘file names’ so the computer can find them.

- Files types are:
 - Executable code.
 - System or program configuration information.
 - User data.
- *Attend the “Managing Files and Folders” class for more information on the computer file system.*



How the Computer Stores Information

- Information can be stored on a
 - hard drive
 - diskette known as a “floppy”
 - CD or DVD
 - Flash or “thumb” drive.





Storage Terms

- Disks store information in the basic unit of measurement for computer storage which is a **byte**.
- A **byte** equals one character or letter of the alphabet. (e.g. the word chair would require 5 bytes of storage)
- A **kilobyte** equals 1,024 bytes or characters. This is about $\frac{1}{2}$ page of text.
- A **megabyte** equals 1 million bytes or characters. This is about equal to the text of the average novel.
- A **gigabyte** equals 1 billion bytes or characters (or 1,024 megabytes).



Storage on Drives

- Floppy disks have a capacity of 1.4 megabytes (MB) of storage. Documents are usually less than 1 MB but photos often exceed 5 MB.
- Hard drives have storage measured in gigabytes (GB). For each gigabyte, you can store:

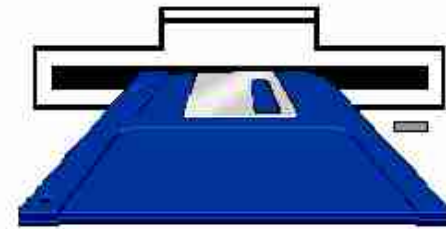
500,000 typed, double spaced pages
2,500 photos
200 CD-quality songs

- Thumb drives vary widely. For example, a web retail site offers:
128 KB, 256 KB, 512 MB, 1 GB, 2GB, 4GB, 8GB, 16GB
They range in price from \$10 to \$350.
- CD's (usually 750 MB) and DVD's (usually 4.7 GB)



Using a Floppy

- Insert with the shiny metal end first and with the round metal circle facing down
- Eject by pushing the eject button





Using a CD-ROM or DVD

- **To Insert**
 - Push open/eject button to open CD/DVD tray.
 - Insert label side up
 - Push button to close tray
- **To Remove**
 - Push open/eject button
 - Remove CD/DVD
 - Push button again to close tray.





Using a Flash Drive

- Insert drive into USB port – note that port has plastic guide on the top and drive has plastic guide on the bottom (or the reverse)
- Use “safely remove hardware” in task bar before removing.





Connecting to the Internet

- Computers can:
 - Be stand-alone and not connected to anything.
 - Have a modem (phone, DSL) to use a phone line to connect to the Internet
 - A voiceband modem for dialup
 - A DSL modem to be always connected
 - Have a cable modem to use the cable infrastructure to connect to the Internet.
 - Have a network card (Ethernet or wireless) to connect to a network (which may or may not be connected to the Internet).
- Most new laptops come equipped with a wireless card.





Computer Security

Computer security includes protecting your privacy and resources, and safeguarding your files and system from loss or unauthorized use.

- **BACKUP**
 - Make a copy of your files regularly
 - Store it somewhere besides next to your computer
 - Keep a log of backup dates
- **Get Security Applications for protection from:**
 - Viruses
 - Spyware
 - Spam
- *Attend the “PC Security Class” for more on this.*



Practice

- Use the Library or classroom computers to:
 - do the mouse tutorial
 - practice a typing tutor program.
 - play a game like solitaire to practice mousing
 - practice inserting a CD, DVD, flash drive and/or floppy disk



Computer Basics

- Questions?
- Suggestions:
 - Find on-line tutorials to help you learn more basics
 - Get as big a thumb drive as you can afford to use for backup or use CD/DVD's
- Exercise: Do the mouse exercises at
 - http://oceancountylibrary.org/In_House/Tutorials/Mouseexercise/page1.html
 - <http://tech.tln.lib.mi.us/tutor/welcome.htm>
- Do the Microsoft Paint Exercise at home.
- See <http://cyberlynxoregon.org>