New Mexico Broadband Program

Basic Computer Skills

Module 1

Types of Personal Computers

Computer Hardware and Software
Basic Computer Skills

Learning Objectives

Acquire introductory familiarity with basic computer parts, terms, and functions
First, let’s learn the basics about computers

For computers, as for anything else, different styles exist. The different styles reflect different functions.
Types of Computers

From largest to smallest, the main types of standard computers are:

- Desktop computer
- Laptop computer/notebook
- Tablet computers (iPad)
- Smartphones (iPhone, Blackberry)
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Types of Computers

- Desktops
- Tablets
- Smart phones
- Laptops
Desktop Components

- a case, or tower, that holds the computer’s “guts”
- a monitor, also called a screen
- a mouse, used to move and select information on monitor
- a keyboard, used to type in commands and documents
Laptop Computers

- Designed to sit on your lap
- Portable
- Monitor & keyboard built in
- Mouse built in as “touchpad”
- Smaller models referred to as “notebooks” or “netbooks”
Tablet Computers

- Lighter than laptops
- Very portable
- Keyboard built in on screen
- Mouse built in on screen
- Multiple uses
- Merging functions
Smartphones

• Hand-held devices
• Function as “information managers”
• Most connect to the Internet
• Increased uses as computers
Now, let’s consider the basic components of a computer.
The physical parts of computers are called **hardware** and include elements both inside and outside of the computer.
Hardware

We are going to focus on internal hardware first. Computer hardware generally consists of mostly metal parts with electronic circuitry and wiring.

The key elements of Hardware are:

- Central Processing Unit (CPU)
- Hard drive
- Random Access Memory (RAM)
- Ports and Peripherals
Central Processing Unit (CPU)

The central processing unit (CPU) is the “brains” of a computer. It is often called a microprocessor or microprocessing chip.

The CPU is a computation engine that:

• Allows the computer to perform operations
• Enables the computer to run software
• Determines how fast the computer can make calculations
Despite this ability, the CPU is a very small.
CPUs are made of thin silicon layers with electronic circuitry on and between layers. New models of chips are multi-core and contain one or more processing chips within another, creating dual and quad-core processors.
The **Hard drive** is the physical location on which your computer’s information and data are stored. The hard drive:

- Looks like an aluminum box
- Contains electronic disks on which information is stored in electronic form
- Can be read and written to with arms that function like a very precise record player arm
The hard drive contains wiring that allows it to be programmed and connects it to other parts of the computer.
Three “hard disks” on the hard drive

The read/write arm on the hard disks
A computer’s temporary memory is called RAM, short for “Random Access Memory”

Although called memory, RAM is best thought of as available work space.

The more RAM your computer has, the more “work,” or programs, you can open and work on simultaneously.

Computer RAM
Computer Parts and their Function

RAM

• The amount of RAM is an important factor in a computer’s performance.

• The more RAM a computer has, the greater it’s ability to “multi-task.”

• A large amount of RAM is like having a very large desk – it holds more!
Memory

- Instead of being in your mind, the memory in your computer is held on DIMMs (dual in-line memory modules).
- DIMMs are complex circuit boards that are installed inside your computer.
All these pieces get wired together on a motherboard, hooked up to a power supply and a fan,
and put inside a computer case, where the parts are held in place.
much like a car chassis holds the parts of a car in place.
Now let’s look at the final hardware component of a computer, the peripherals and ports.

- Peripherals are the external hardware devices that get plugged into your computer.
- They can include anything from keyboards to cameras.
- Laptops have fewer peripherals in their standard set up.
Some examples of peripherals are printers and keyboards.
Ports on Your Laptop

Ports are docks, or connecting plugs, for your peripherals.

They are the locations on your computer at which you connect peripherals.

Each peripheral is designed to connect to a particular kind of port.
The most common ports and plugs are USB. USB stands for “Universal Serial Bus.” These plugs and ports are used for many peripherals, such as digital cameras, modems, scanners, webcams, and even your mouse.
Most computers have round ports for the AC power plug. On a laptop, these ports are on the back or the right side.
Now that we’ve looked at the basic parts of the computer, let’s look at the systems that keep it running.
Software

Software is the entire set of programs and procedures associated with a computer. You can think of software as “instructions” rather than the “physical parts” of hardware.

Software comes in two forms:

- Operating system software
- Applications software
Operating System (OS) Software

- **Operating System**, or “OS,” software, is what lets the computer run by setting up the overall requirements in which tasks can be performed.

- You can think of an OS as similar to electricity in a house kitchen – it is the general background system that allows you to run your appliances.
Application Software, or Programs

• **Application Software** allows you to do different kinds of work.

• Application software can be compared to an appliance in your kitchen, such as a blender, which is designed to perform specific tasks. Like appliances, each software application allows you to perform different tasks.
Application software
Performs specific tasks

Operating System
Runs the system

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Operating Systems vary, but they all do the same thing – they allow the computer to run.

The OS for most non-Mac is Microsoft Windows. The most recent version of Windows is Windows 7.

Other Operating Systems
• Mac OS for Apple
• Unix
• Linux

Microsoft Windows logo.
Application Software

• Designed to help users perform particular tasks, such as word processing, spreadsheets, or creative computer painting.

• Word, Excel, PowerPoint, and Paint are all examples of application software.

• Application software is sometimes referred to as software applications, applications, or programs.
Review software

Operating System Software

Similar to:
• Electricity in a house

Produces:
• System requirements
• Interface between user and computer

Application Software

Similar to:
• Appliances

Produces:
• Specific tasks
• Specific products
Review of Hardware

Hardware

• Central Processing Unit (CPU)
• Hard drive
• Random Access Memory (RAM)
• Ports and Peripherals

Software

• Operating System (OS)
• Application Software
We appreciate the time you spent with us. We hope to see you at the next training!

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