How A Computer Works
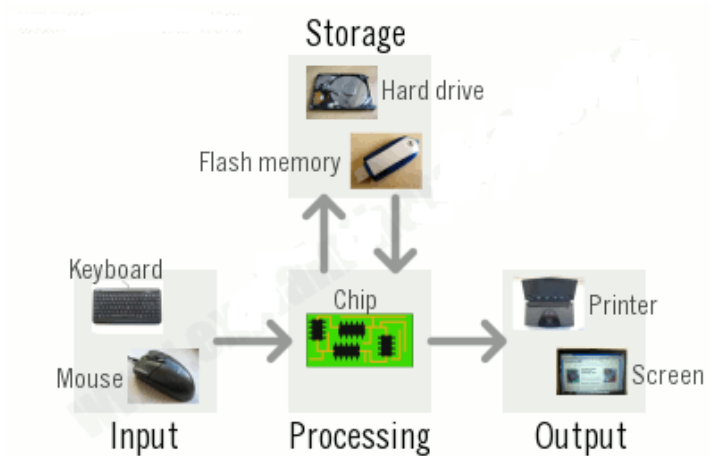
A **computer** is an electronic machine that processes information

1) The Computer accepts data from one of the Input devices (mouse, keyboard, etc.)

2) Information is put into memory for temporary storage (RAM) for processing

3) The CPU processes the info and decides what to do with it - usually sent to an Output device (monitor, printer, etc.)

The Motherboard :

      The motherboard is the most important piece of hardware in your computer. All the components are connected though the Motherboard. The components that control your computer (CPU, RAM, BIOS, etc.) are all directly on the Motherboard.

The CPU :

- This is the brains of the computer. The CPU or "Processor", like all computer chips is made up of silicon with tiny electronic circuits etched on it. Data is processed by passing electricity though the circuits (silicon will not conduct electricity).

- The CPU speed is a major factor in determining how fast you computer will operate. CPU speed is measure in Mhz (megahertz) or millions of cycles per second.

- The CPU has 2 main functions
  1) **CONTROL UNIT** ➔ controls how instructions/data is handled and decides what goes to the ALU
  2) **ALU** (Arithmetic Logic Unit) ➔ which is responsible for all arithmetic and logical operations and processing

Operating System :

-        The computers operating system is the software that controls the overall
         activity of the computer. It ensures that all parts work together smoothly and
         efficiently. It manages the hardware and assists with software operations.
         ex : Windows, OS (mac), Linux

BIOS :
-        The BIOS chip is located on the motherboard. The BIOS is responsible for
         "booting" the computer when the power is turned on.
-        During the boot process the BIOS checks the processor, RAM, Drives, etc.
         to ensure correct operation. If all is OK the Operating System is loaded
-        The BIOS also loads all the "Drivers" for each piece of hardware.

How the Computer Communicates :

-        Data is transmitted from one part to another using a collection of wires
         called a "**BUS**". All the internal components are connected using Buses. A
         Bus consists of 2 parts :
                            1) Address Bus
                            2) Data Bus

         The Data bus transfers actual data whereas the Address Bus will transfer
         info as to where the data will go.

-        A "**PORT**" is a connection point where external devices (mouse, keyboard,
         monitor, etc.) are connected to the computer (motherboard)

Assignment :

Identify the various types of Ports on the outside of a computer