Computing Knowledge Organiser

Unit: Understanding Computers

SANDHILL VIEW
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Hardware are objects you can touch, like a music CD. For example Disks, disk drives, display screens, keyboards, printers, boards, and chips.

You cannot 'touch' software. Software refers to the programs that run on a computer, rather like the music playing on a CD. Examples of software: Windows, MS Word, MS Excel, Kodu and Logo.

An output device is a piece of computer hardware used to display or output data which has been processed or stored in a computer Printer, Speaker

Processor Speed:
One cycle per second = 1 Hertz (Hz) = 1 instruction carried out each second
1 Kilohertz (kHz) = 1000 cycles per second
1 Megahertz (MHz) = 1,000,000 cycles per second
1 Gigahertz (GHz) = 1,000,000,000 (1 Billion) cycles per second

An input device is anything can be used to enter data into a computer Keyboard, Mouse

A storage device is used to permanently record or store data **CD, Hard Drive**

RAM stands for Random Access Memory
ROM stands for Read Only Memory

Bits and Bytes
0 or a 1 = 1 Bit (Binary Digit)
8 Bits = 1 Byte
1000 Bytes = 1 Kilobyte (Kb)
1000 Kb = 1 Megabyte (Mb)
1000 Mb = 1 Gigabyte (Gb)
1000 Gb = 1 Terabyte (T)
1 Byte = 1 Character of text

In Binary, there are only two digits, 0 and 1. As we move from right to left, each digit is worth twice as much as the previous one.

The computer has a list of instructions in memory to carry out:
CPU **Fetches** top instruction from the list
Instructions are passed to **Decoder** to interpret
Decoder passes on the instruction
Each instruction is **Executed** or carried out
CPU **Fetches** top instruction from the list…

It is a character-encoding scheme originally based on the English alphabet. ASCII codes represent text in computers, communications equipment, and other devices that use text.

Pits and Lands

All Optical media have pits and lands. These are microscopic and represent the binary information of the data stored on the disc. A CD is reflective and reflects the laser into a sensor to register it as a 0, but when the light hits the beginning or end of a pit, it scatters with little reflection, and a 1 is registered.