

# Knowledge Organiser

Unit 2 – The Computer

## Unit 2 – The Computer

### Summary

Computers require input hardware, processing hardware and output hardware. The hardware that defines a computer is the CPU and memory. Without these a computer could not function.

**CPU** - You can think of the CPU is being like the brain in a human. It is responsible for all of a computer's processing.

**Memory** - stores program operations and data while a program is being executed. There are several types of memory, including: registers, cache, RAM and virtual memory.

**Storage** - stores programs and files long term, even when they are not in use. Devices such as hard drives, USB memory sticks or SD cards are used to store files such as photos, music and software applications long term.

An **input device** is any piece of computer hardware used to provide data to a computer system. Examples include: keyboard, mouse, scanner, digital camera and webcam.

An **output device** is any piece of computer hardware used to communicate the results of data that has been processed.

#### Input

Mouse

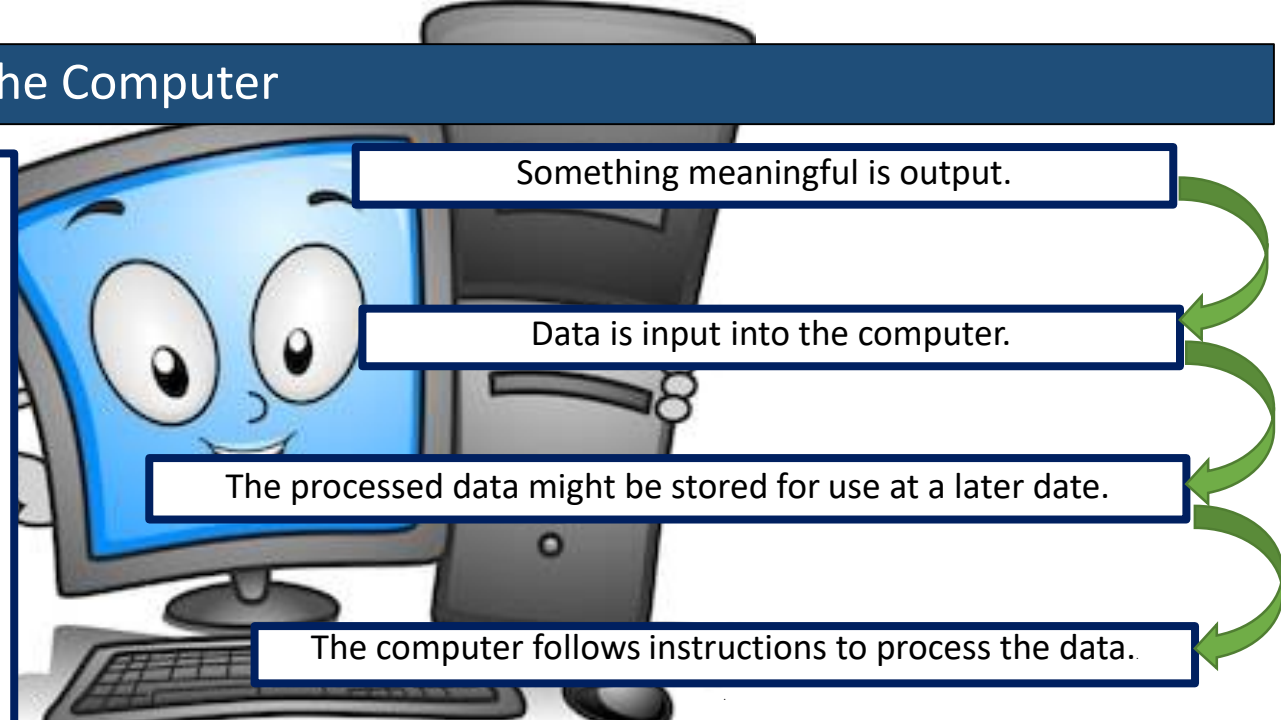
Keyboard

#### Output

Printer

Speaker

A **touch screen** is both input and output because as well as being a screen that outputs visually to the user, it allows the user to enter data via a touch sensitive display.



Task	Short Cut
Cuts out selected text / object.	Ctrl + X
Copies selected text / object.	Ctrl + C
Pastes previously selected text / object.	Ctrl + V
Saves the current document.	Ctrl + S
Undo last action.	Ctrl + Z
Opens print window.	Ctrl + P

A **USB stick** is neither an input or output device because it is simply a storage device, and so is categorised as such.

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## Software

Software is a computer program (or programs) that provide the instructions for telling a computer what to do and how to do it. Different pieces of software can be categorised into two different types.

### System software

These are the files and programs that make up your computer's operating system.

### Application software

These are the everyday programs that you use such as Microsoft Office, graphics packages and web browsers

### Examples:

Windows

Linux

Mac OS

iOS

Android

### Examples:

Internet Explorer

Calculator

Microsoft Excel etc

Safari

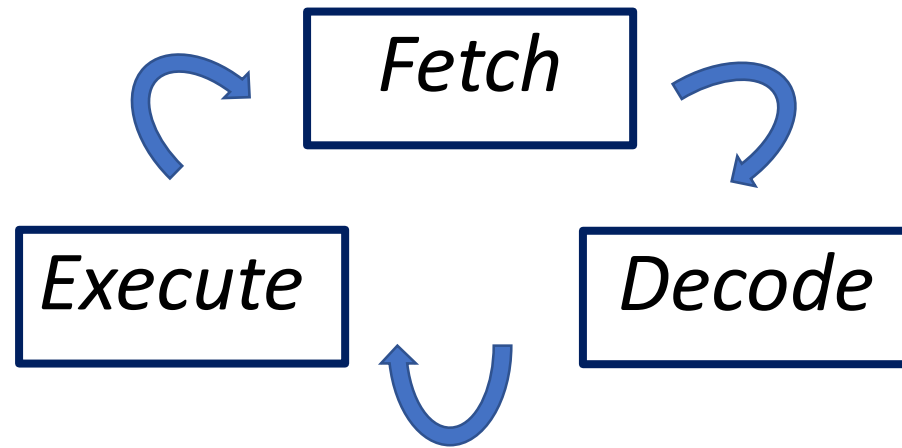
Photoshop



# Unit 2 – The Computer

## The CPU

The purpose of the CPU is to process data. The CPU is where processes such as calculating, sorting and searching take place. Whatever is done on our computers, such as checking emails, playing games and doing homework, the CPU has processed the data we use.



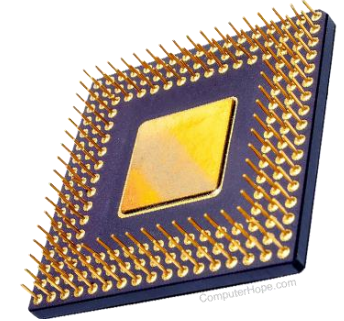
What can happen to the CPU if it runs really fast?

It can get really hot by a process called overclocking.

What can you do to keep it cool?

Use a fan, heatsink or liquid nitrogen in extreme cases!

Picture of CPU



## Memory and Storage

### Random Access Memory (RAM)

- RAM is the main place for storing instructions and data whilst a program is being executed.
- It is also called main memory. Program data is copied into RAM before the CPU can run the program.



### Read Only Memory (ROM)

- ROM is memory that cannot be changed by a program or user.
- ROM retains its memory even after the computer is turned off.
- For example, ROM stores the instructions for the computer to start up when it is turned on again.

