Knowledge Organiser: Yr 8 Computing; Computer Systems

1 Hardware

Hardware is the physical components of the computer, such as the central processing unit (CPU) , hard disk, monitor, keyboard, mouse, RAM

2 Software

Software is the programs that run on a computer. A program is a set of instructions that tells the computer to do something when the instructions are run (executed). For example, Microsoft Word is a set of instructions which makes the computer display the Word editor on the screen and carry out the commands and tool actions when we click on them while Word is running.

3 General Purpose Devices Vs Purpose Built Devices

- A general purpose device, such as a computer will allow us to install software (e.g. programs / apps) onto them so that we can use them for different tasks.

- A purpose built device, for example a digital camera, has its software built into it and this can not easily be changed. When the software for a device is built into it we say that its program/instructions are "hardwired" into the device. The result is that the device can only do what it was designed to do – we can't add more software to make it do different tasks.

4 Operating Systems

An operating system is software which contains the instructions a computer needs to allow the user to communicate (interface) with the hardware which makes up the computer system. Windows, Android, MacOS and iOS are all examples of operating systems. We can use Windows to do things like copying foiles or creating folders… we don't have to write our own complicated code to work with the hard drive in order to do this.
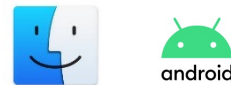
5 Logic Circuits

Logic circuits are diagrams which help us understand the logic a program might follow. It is made up of connected logic gates. We will focus on AND, OR and NOT gates in this unit.
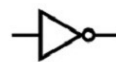
AND
Gives a TRUE output only when both its inputs are TRUE, otherwise gives a FALSE output.

OR
Gives a TRUE output when either its inputs are TRUE, otherwise gives a FALSE output.

NOT
Gives a TRUE output when its input is FALSE, otherwise gives a TRUE output.

Leave blank to allow students to glue.

How do we use Knowledge Organisers in _____

How can you use knowledge organisers at home to help us?

- **Retrieval Practice**: Read over a section of the knowledge organiser, cover it up and then write down everything you can remember. Repeat until you remember everything.
- **Flash Cards:** Using the Knowledge Organisers to help on one side of a piece of paper write a question, on the other side write an answer. Ask someone to test you by asking a question and seeing if you know the answer.
- **Mind Maps:** Turn the information from the knowledge organiser into a mind map. Then reread the mind map and on a piece of paper half the size try and recreate the key phrases of the mind map from memory.
- **Sketch it:** Draw an image to represent each fact; this can be done in isolation or as part of the mind map/flash card.
- **Teach it:** Teach someone the information on your knowledge organiser, let them ask you questions and see if you know the answers.

How will we use knowledge organisers in _____?

Departmental space to utilise as fit.