Year 7 Computer Science

Knowledge Organiser

Contents

Computer Hardware Topic

Computer Hardware – the **physical** components that make up the inside of the computer so it can work effectively

Hardware name	Description
CPU Central Processing U nit	The CPU is where the main processing takes place within the computer.
RAM Random Access Memory	This type of memory is fast and temporary. It stores programs, applications and data.
ROM Read Only Memory	This type of memory cannot be edited by the user and remains even when the machine has been switched off.
Motherboard	This is the link between the different components within the computer and allows them to communicate with each other.

Hardware name	Description
HDD Hard Disc Drive	This is internal storage which holds the operating system and software applications. HDDs can also store large amounts of data.
SSD Solid State Drive	This is internal storage which holds the operating system and software applications. SSDs are known for being fast at loading and copying files.
DVD Drive Digital Versatile Disc Drive	The DVD drive allows the DVD (or CD) to be used, most commonly as a storage device.
Graphics Card	This is the device that enable images to be loaded onto the monitor.

Computer Hardware Topic

Computer Hardware – can be measured in terms of speed and capacity – often preceded by an indication of size using a letter

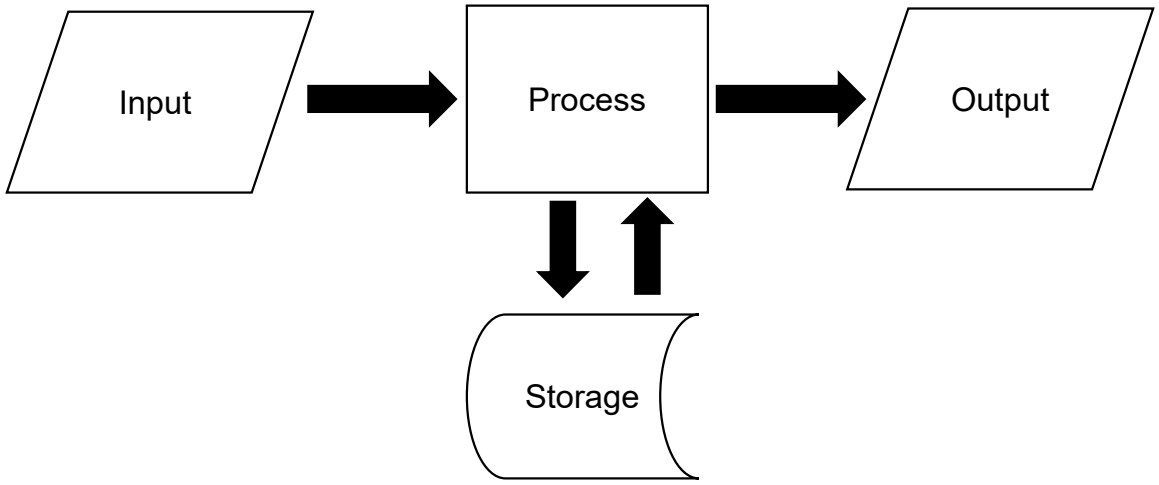
Measurement	Speed
Speed	The time taken to complete something, measured in Hertz (Hz) e.g. KHz
Capacity	The storage capability of the system, measure in Bytes (B) e.g. Mb

Size	Description
Byte (B)	8 bits
Kilo (K)	1000 bytes
Mega (M)	1000 kilo
Giga (G)	1000 mega

Computer Hardware Topic

Computer Hardware– the devices that connect to the computer to enable it to be used

Type of device	Description
Input Devices	Allow data to be entered into a computer
Processing Devices	Processes data within a computer
Output Devices	Allow information to be retrieved and interpreted
Storage Devices	Can be both internal and external Allows files to be retrieved



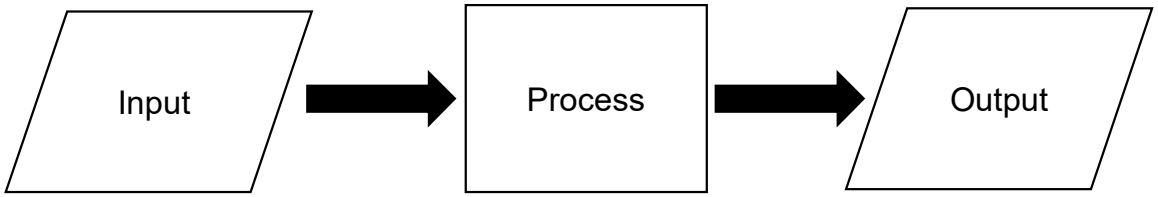
Computer Hardware Topic

Common Types of Input Devices

Device	Description
Keyboard	Allows characters to be entered using keys
Mouse	A hand-held device that detects motion which in turn moves a pointer which is displayed on a monitor
Microphone	Allows for audio input
Touchscreen	Allows data and information to be input via a screen using touch

Common Types of Output Devices

Device	Description
Monitor	Allows data and information to be displayed on a screen
Speakers	Allows audio to be heard
Touchscreen	Allows data and information to be displayed on a screen
Printer	Allows files to be printed out to become a physical document



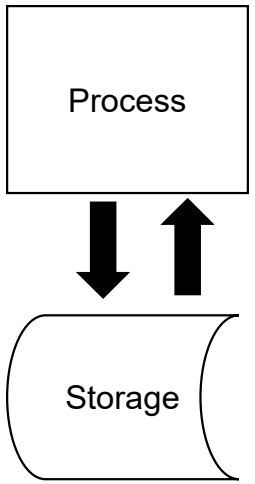
Computer Hardware Topic

Common Types of Processing Devices

Device	Description
CPU (Central Processing Unit)	Where the main processing takes place within the computer.
GPU (Graphical Processing Unit)	A processor designed to speed up the rendering of images
Network Card	A device that connects a computer to a network
Sound Card	Provides input and output of audio signals to and from a computer

Common Types of Storage Devices

Device	Description
USB Flash Drive	A small external drive that can be plugged in to a USB port
CD	A circular disc that can hold data stored as notches and read by a laser from an optical drive
DVD	A circular disc that can hold data stored as notches and read by a laser from an optical drive, larger storage capacity than a CD
HDD	Uses magnetic storage to hold data



Computer Hardware and Software Topic

As part of this topic you will present your work using presentation **software**.

Below is a reminder of what to think about when creating a presentation.

What to consider	How to do it	Why it is important
A simple colour scheme	Use a dark background with light writing or a light background with dark writing.	It will make the text easier to read.
Limit bullet points and text	5 bullet points of one sentence each is usually enough.	Too much information on one slide can become distracting and may not be read.
Limit animations and transitions	Choose one type of animation and one type of transition and apply them only where needed.	If there are too many used or they are not consistent, it can look unprofessional and become distracting

What to consider	How to do it	Why it is important
Relevant, high quality images	Ensure any images used are not blurry and are relevant to the text on the slide.	If the images are not relevant or poor quality it makes the presentation look unprofessional
Ensure the text is in your own words	After reading the information, see if you can reword the key explanations.	There are copyright issues to consider and it also shows that you have used only the key information.

Computer Hardware and Software Topic

As part of this topic you will be using the Internet to research about **Computer Hardware and Software**.

Below are two reminders of what you could do when entering search criteria online for better results.

What to consider	How to do it	Example
Use specific terms	Instead of entering a whole sentence as a search term, select the keywords from the sentence	Instead of searching for: ‘How is an Ethernet cable used in a computer?’ you could just search using ‘Ethernet Cable Uses’
Use quotations for exact phrases	If you know the exact wording then use speech marks “ “ to restrict the search to just those terms	If you wanted to know ‘how a firewall protects a computer from unauthorised access’ is you could search using the phrase “firewall preventing unauthorised access"