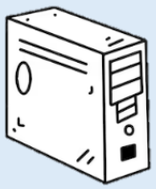
Year 9 ICT:
Term 2 – Computer Systems



Week 1

Computer Hardware

Computer hardware are the physical components that you can physically see or touch.

Key Hardware Components:

- CPU – Central processing unit (brains of the computer).
- RAM – Random access memory (Volatile memory that is stored for a short period of time).
- ROM – Read only memory (Non-volatile memory that is stored for the long term).
- Hard-drive – The computer's long-term memory.
- BIOS – A chip that helps a computer boot-up and start.

Week 2

Computer Software

Computer Software is a set of instructions, data or programs used to operate computers and execute (carry out) specific tasks.

The **operating system** has many roles, these include; Error handling, Program management, Memory management, Interaction with the user, Processor management, Input and output, Security and File management.

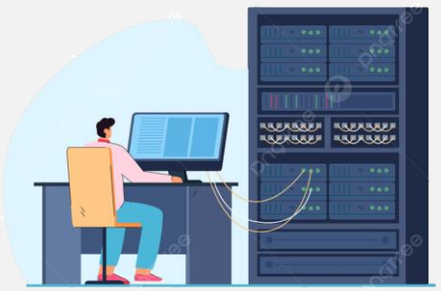
Utility software is always running in the background. Examples of utility software are security and optimisation programs that help keep your computer running smoothly.

Week 3

Computer Networks

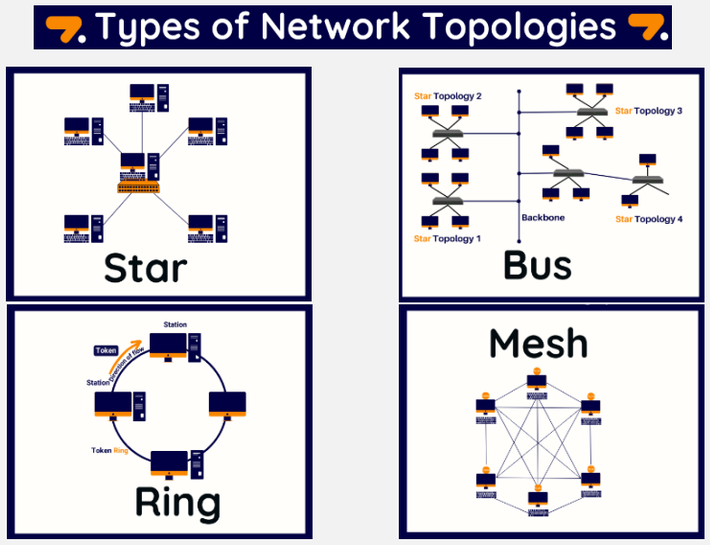
There are **three** types of network set-up that tend to be used in everyday life, there are:

Personal Area Network (PAN)
Local Area Network (LAN)
Wide Area Network (WAN)



Week 4

Network Topologies



Weeks 5 & 6

Assessment Weeks

Topic Breakdown		
Computer Hardware	**Computer Software**	**Computer Networks**
▪ What a computer and computer system is? ▪ What is the computing cycle? ▪ Differences between an embedded system and a general-purpose device. ▪ The roles of key computing hardware.	▪ The three key types of computer software. ▪ What their role is? ▪ The role of the operating system. ▪ How applications work and their purpose.	▪ What a computer network is? ▪ Their advantages and disadvantages. ▪ The three most common types of networks. ▪ The difference between wired and wireless connection. ▪ What a network topology is? ▪ Their advantages and disadvantages.

Grading Level	Percentage
Bronze	0% - 39%
Silver	40% - 74%
Gold	75% or above

Key words:

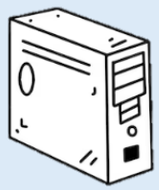
Computer Network: One or more computers/devices linked together through a form of connection.

Components: Different parts of a computer set-up, which together, makes a complete system.

Hardware: The physical parts that form a device.

Software: The entire set of programs, procedures, and routines associated with the operation of a computer system.

Network Topology: The individual structure of a computer network and how the connection is formed.



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Week 1

Questions	Answers
What is a computer?	A programmable device that takes in data, processes it into useful information, and then outputs the information so it can be used.
What is the difference between an embedded system and a general purpose device?	**General purpose** computers are devices that have a variety of uses, the user chooses the task for the computer to complete. **Embedded systems** are more specialised, they can only do a limited number of things, but they do them very well

Week 2

Questions	Answers
What is an operating system?	Operating systems are pieces of software that regulate interactions between software and hardware.
What is utility software?	Utility software is part of the system software and performs specific tasks to keep the computer running.
What is application software?	This is the system that is in place that allows all apps and programmes to run effectively.

Week 3

Questions	Answers
What is a computer network?	A computer network consists of a number of computer systems/devices connected together either through wired or wireless connection.

Advantages	Disadvantages
• Share hardware • Share software • Share data/files (Collaborative Working) • Easier for internal communication/can send email • Central backup • Easier to monitor network activity • Centrally controlled security • Can access data from any computer	• A network manager may need to be employed – expensive • Security problems – files sent between computers could spread a virus across the network • Hackers can gain access to data more easily • If the server is down, all workstations on the network are affected • Initial cost of servers, communication devices, etc. can be expensive

Week 4

Questions	Answers
What is a bus network?	A network setup where each computer and network device is connected to a single cable or backbone.
What is a ring network?	A network configuration where device connections create a circular data path. Each networked device is connected to two others, like points on a circle.
What is a star network?	I one of the most common network setups. Every node connects to a central network device in this configuration, like a hub, switch, or computer.
What is a mesh network?	A network setup where each computer and network device is interconnected with one another.

Weeks 5 & 6

Assessment Work Checklist:

Criteria
During week 5 of the topic, pupils will be going back through all content covered in weeks/lessons 1 to 4. Catch up opportunities will be provided along with pupils having the chance to revise ahead of the assessment in lesson 6, with notes from all lessons shared with classes on Microsoft Teams. Assessment to be carried out in exam conditions, instructions/expectations outlined and assessment given through a Microsoft Forms link shared with classes at the beginning of lesson 6.

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