Your notes

KS3 Computing: revision notes

Hardware and software

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Hardware and software

- **Hardware** is the physical parts of a computer. **Software** is the programs that run on it.
- System **software** runs the computer, such as the **operating system**. **Application software** does jobs for the user, such as word processors, browsers and games.
- Input devices include keyboards, mice, microphones, scanners, touchscreens and sensors. Output devices include monitors, printers, speakers and motors.
- An **embedded system** is a computer built into another device, such as a washing machine, microwave or car.

The CPU

- The CPU (central processing unit) processes data and carries out instructions, repeating the fetch-decode-execute cycle.
- **Clock speed** (in GHz) is how many cycles it carries out each second. More cores let it do more tasks at once. Cache is a small amount of very fast memory inside the CPU.

Memory and storage

- RAM holds the programs and data in use. It is **volatile**: it loses its contents when the power is turned off.
- ROM is non-**volatile** and holds the start-up (boot) instructions.
- **Secondary storage** keeps files when the power is off: hard disk drives (HDD: cheap and large, with moving parts), solid-state drives (SSD: fast, with no moving parts), optical discs (CD, DVD, Blu-ray), flash memory (USB sticks, SD cards) and cloud storage (remote servers reached over the internet).

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The operating system

- The **operating system** manages the processor and memory, provides a user interface, manages files, controls devices through drivers, and keeps the computer secure with user accounts and passwords.

Key terms

Hardware	The physical parts of a computer.
Software	The programs that run on a computer.
Operating system	System software that manages the hardware and runs other programs.
Application software	Programs that do jobs for the user, such as a word processor.
CPU	The central processing unit, which processes data and carries out instructions.
Clock speed	How many cycles the CPU carries out each second, measured in GHz.
RAM	Volatile memory that holds the programs and data in use.
ROM	Non-volatile memory that holds the start-up instructions.
Volatile	Loses its data when the power is turned off.
Secondary storage	Non-volatile storage that keeps files permanently.
SSD	A solid-state drive: fast storage with no moving parts.
Embedded system	A computer built into another device.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is hardware?
2. What does the CPU do?
3. What is RAM used for?
4. What does "volatile" mean for memory?
5. What is stored in ROM?
6. Which type of storage has no moving parts?
7. Which of these is an input device?
8. Which of these is an output device?

Answers

1. The physical parts of a computer
2. Processes data and carries out instructions
3. Holding the programs and data currently in use
4. Its data is lost when the power is turned off

Your notes

5. The start-up (boot) instructions
6. A solid-state drive (SSD)
7. Microphone
8. Speaker

What to do next

Practise 14 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

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