



Computing

Grade - 3

Cambridge Lower Secondary Computing Learners Book 3

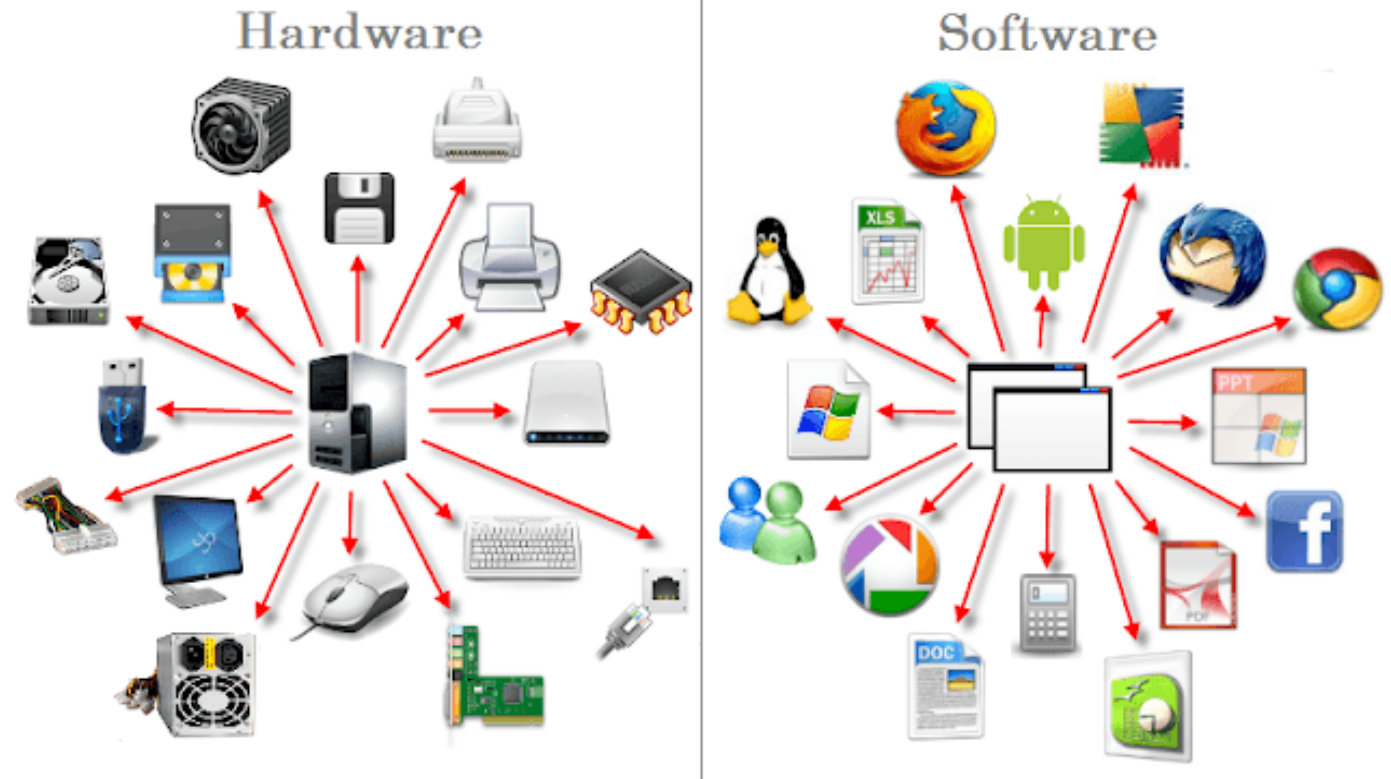
UNIT	4
TOPIC	Computer Systems
Sub Topics	1. Hardware and software working together 2. The role of robots 3. Inputs and outputs around us
Session	2025-26
Prepared By	Isra Naz



4.1: Hardware and software working together

Hardware and software

- **Hardware:** Part of a computer system that we can see and touch.
 - **Example:** A laptop, a printer, a mouse etc.
- **Software:** Programs that tell the computer what to do. we cannot see or touch them.
 - **Example:** an application to make and edit videos.





4.1: Hardware and software working together

Hardware and software

Activity: Identify as hardware or software



Hardware Software



Hardware Software



Hardware Software



Hardware Software



Hardware Software



Hardware Software



Hardware Software



Hardware Software



4.1: Hardware and software working together

Parts of a computer system

- **Hardware and software work together so the computer system works properly.**
- **Without software, the computer would not be very useful.**
 - **Example:**

We use a keyboard to type the letter 'a' into a writing program.

The computer follows the instruction.

The instruction is then sent back to the writing program and shown on your screen as a letter 'a'.



4.1: Hardware and software working together

Parts of a computer system

- Copy and complete the table below to show some of the parts of a computer system and the jobs they do. In the last row, choose your own piece of software to add.

Hint: a software that you may use to type, play games or make presentations.

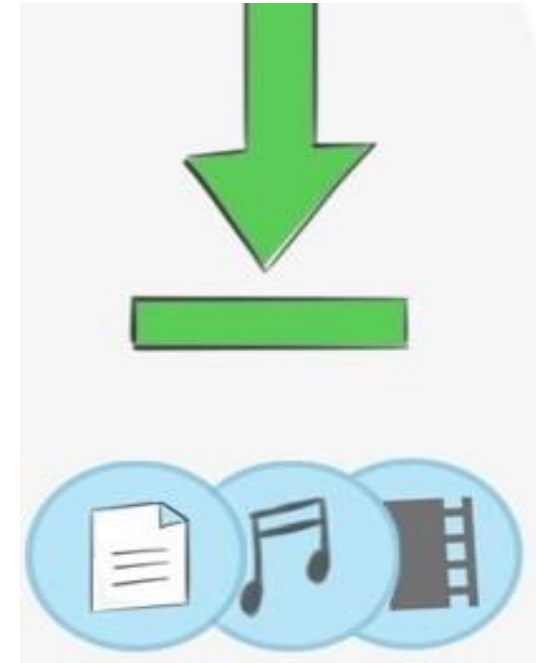
Name	Is it hardware or software?	What does it do?
keyboard		
writing program		
	hardware	It moves a pointer around the screen and is used to choose things.
web browser		
microphone		
	hardware	It prints out work.
	software	



4.1: Hardware and software working together

Downloading

- Software programs can be downloaded to our computer.
- We can pay for the program to be able to download, or we can download for free.
 - **Example:** programs to make music or edit videos.
- **Safety tip!** Programs should only be downloaded from trusted places and under the supervision of an adult.





4.1: Hardware and software working together

File types

- Information is stored in files in a computer system.

- File types:

- Text
- Music
- Pictures
- Videos



- Activity:

- Look on your computer.
- Open the documents or downloads section
- Can you see any files saved there?
- What is one of the files called?
- What different file types can you see?



4.1: Hardware and software working together

Storing files

Files are stored in storage devices.

- **Hard drive:** component inside computer that provides storage for our files.
- Files can be assessed on the same computer.
- **Cloud storage:** a way to save our files on the internet, instead of just on our computer's hard drive storage.
- Files can be assessed from any device if it is connected to the internet.

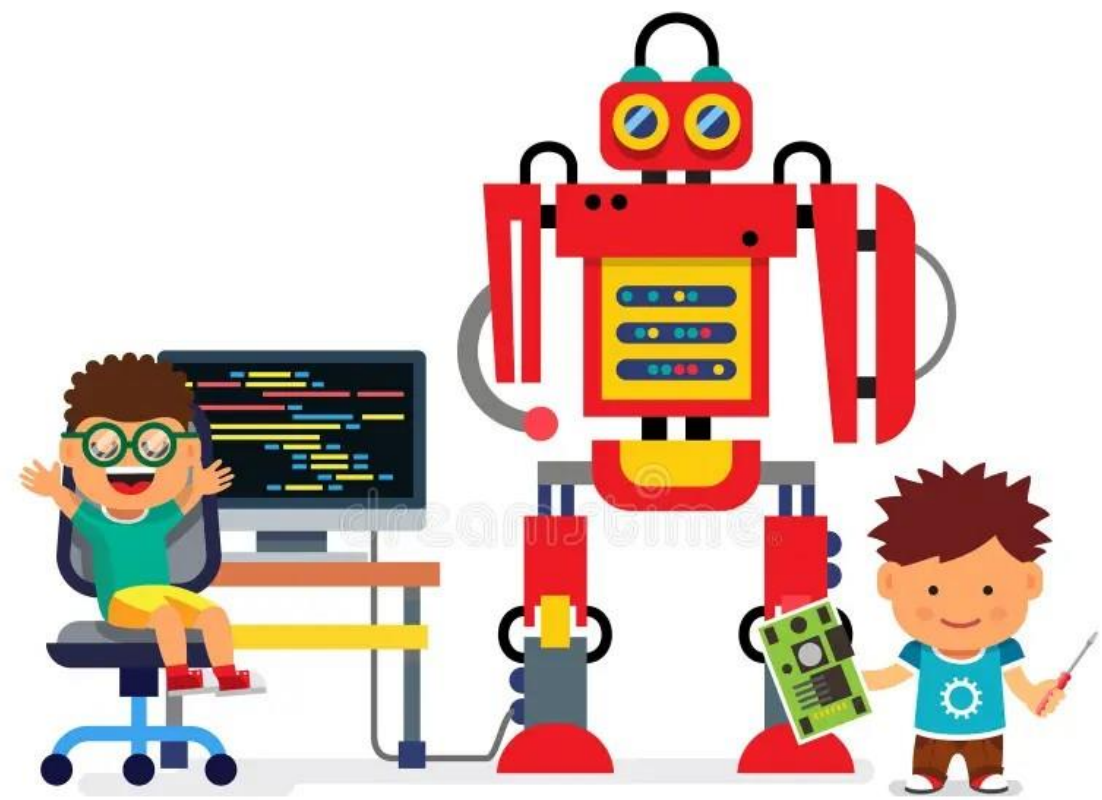




4.2: The Role of Robots

Programming all around us

- **Robots:** Digital devices that can do jobs without much help from humans.
 - Controlled through programmed computers.
- **Sensors:** Digital devices that check and record data around them.
 - **Motion sensors:** detect movement around them .

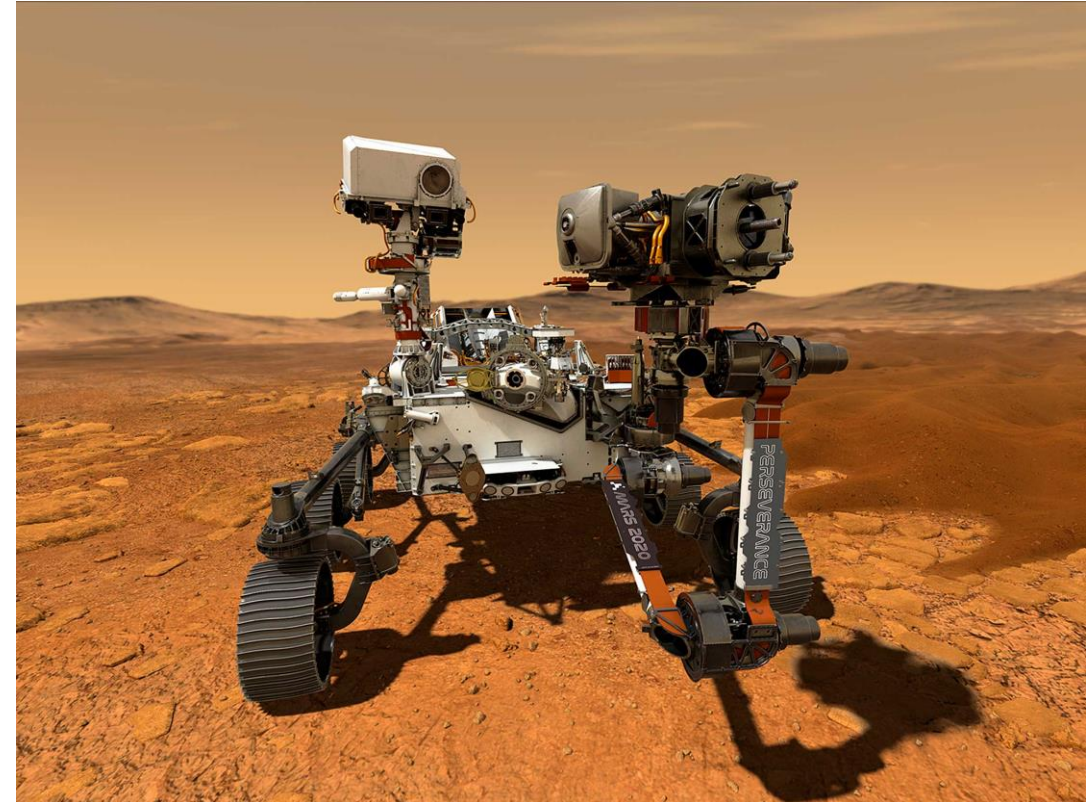




4.2: The Role of Robots

Real world robots

- **Real world robots:** do real jobs like humans and are better at doing task than humans.
 - **Example:** Mars robot explores the planet mars
- Robots do not have feelings, they do not feel cold, sad or lonely.





Factory robots

- **Factory:** Where things are made by humans and machines.
- Robots are used in factories because:
 - They can do repeated jobs over and over again , because they do not get tired or bored like humans
 - Easy to keep clean which is important in a factory that makes drinks or food.
 - They are more precise than humans which means they do job accurately and make less to no mistakes.





4.2: The Role of Robots

Real life robots

- **Activity:** Draw a line to connect each of these robots to the task you think it can do.



UR



Roomba



Aquanaut



Phantom



Colossus

- Take a picture from the sky
- Move boxes in a factory
- Help firefighters put out a fire
- Swim underwater
- Clean dust from the floor

4.3: Inputs and outputs around us



- **Input devices:** used to send information into a computer.
- **Activity:**
Look at the picture and make a list of all the input devices you can see.





4.3: Inputs and outputs around us

Manual input devices:

- **Manual task:** done with hand rather than a machine.
- **Manual input devices:** controlled by a person using their hands.
 - **Example:** using a mouse with hand to point and choose things on the screen.

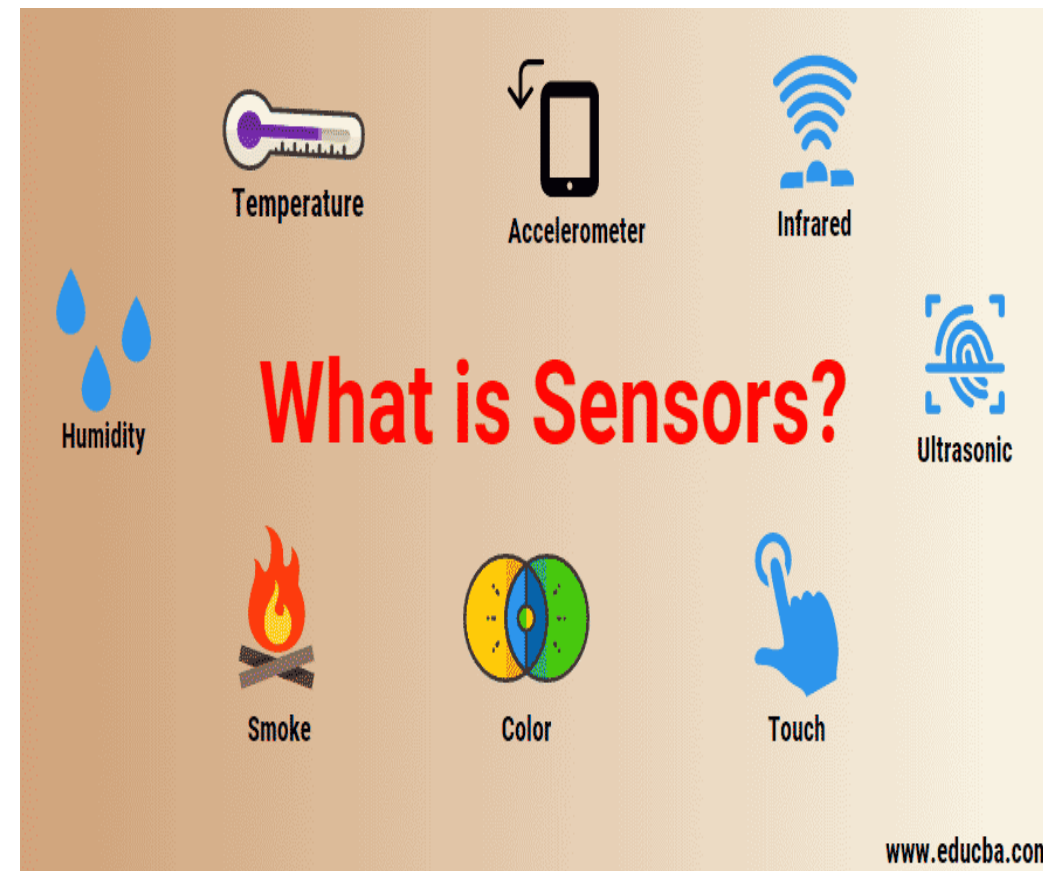




4.3: Inputs and outputs around us

Automatic input devices:

- **Automatic:** means that a machine is programmed once and then can work by itself without people.
- **Manual input devices:** do not need a person to make them work.
- **Example:** Sensor
- Sensors can check lots of things including:
 - Temperature
 - Light
 - Sound
 - Movement
- Sensors turn information into data that computers understand.





4.3: Inputs and outputs around us

Connecting digital devices to the internet

- **Internet of things:** when everyday things such as fridge , television are connected to the internet or other digital devices.
- **Smart devices:** digital devices that connect to the internet and do things on their own when you tell them to.
- **Smart home :** digital devices at home that connect to the internet.





4.3: Inputs and outputs around us

The smart house

- **Activity:** Match the picture with its term and definition.

Automatic lock



When it's cold, this turns on.

Automatic heating



When it's dark, this turns on.

Automatic lighting



When it's hot, this turns on.

Air conditioning



When you go to sleep, this turns on to keep the home safe¹¹.



4.3: Inputs and outputs around us

The smart house

- **Activity:** Match the picture with its term and definition.

Automatic lock



When it's cold,
this turns on.

Automatic heating



When it's dark,
this turns on.

Automatic lighting



When it's hot,
this turns on.

Air conditioning



When you go to sleep,
this turns on to keep
the home safe¹¹.



4.3: Inputs and outputs around us

The smart house

- **Activity:**
 - Choose one smart device from a smart house system and
 - Use internet to find out more about this smart device
 - Find out what more it can do and how it can be useful to us ?

