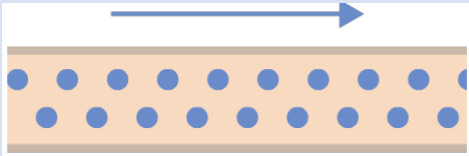


Key Knowledge: Some appliances require electricity.

What uses electricity?

Electricity is a flow of small particles called **electrons**. Electricity gives electrical appliances power and makes them work.



A lot of **appliances** we use every day require electric power.



Key Knowledge: How to construct a simple circuit.

Can I make a simple circuit?



A simple circuit is a complete path for electricity to flow. It requires a **cell** (a battery), **wires** and **device** (a bulb or a motor).

Key Knowledge: What can stop a circuit from working.

What makes a circuit work?

If a circuit is broken, the device will not work because the electricity cannot flow.

It can be broken if:

- There is no battery or power source
- The conductive wires are not attached to each component of the circuit.
- The switch is open



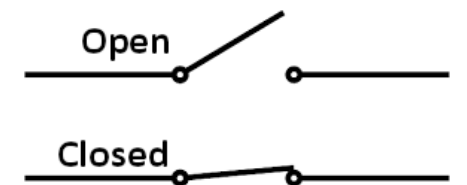
Key Knowledge: A switch turns something off.

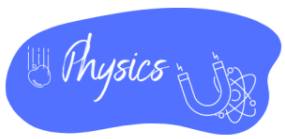
What is a switch?

A switch allows an electrical appliance to be turned on and off.

If a switch is open, the electricity cannot flow, so it is turned off.

If the switch is closed, the electricity can flow again and the device is turned on.





Key Knowledge: Components in a circuit can change voltage and efficiency.

Can I spot patterns in a circuit?

Adding additional components to a circuit can change the **voltage**.

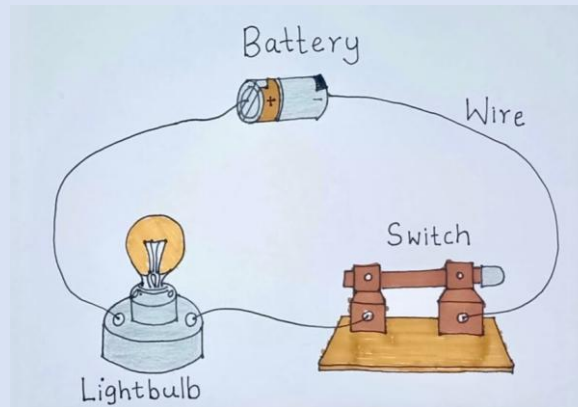
Voltage – the amount of ‘push’ the electric flow has. More voltage, or ‘more push’ = stronger electrical current. Voltage is measured using a **voltmeter**.

If more batteries are added to a circuit, the voltage is higher, so a bulb may be brighter.

If more bulbs are added, the voltage needs to be shared between them, so the bulbs will be dimmer.

Key Knowledge: How to draw and label a circuit.

Can I draw and label a circuit?



Key Knowledge: What materials are conductors and which are insulators.

Conductor or insulator?

Conductor – a material that allows electricity to flow through it.

Most metals are electrical **conductors**.

Insulator – a material that stops electricity flowing through it.

Plastic, glass and wood are all insulators.



						TAPS
<u>What Uses Electricity?</u> <u>Skill LO:</u> Can create own tables with own headings. <u>Knowledge LO:</u> Identify common appliances that run on electricity and group appliances that use electricity (practically), explaining how electricity is useful to us.	<u>Can I make a simple circuit? [2 lessons]</u> <u>Skill LO:</u> Observe closely and describe processes. <u>Knowledge LO:</u> Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.	<u>What makes a circuit work?</u> <u>Skill LO:</u> Can identify the type of enquiry needed to answer a question. <u>Knowledge LO:</u> Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.	<u>What is a switch?</u> <u>Skill LO:</u> Can use subject knowledge or research to make logical predictions (predict if the lamp will work). <u>Knowledge LO:</u> Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.	<u>Can I spot patterns in a circuit?</u> <u>Skill LO:</u> Use voltmeters to measure voltage in a circuit to observe patterns and answer questions. <u>Knowledge LO:</u> Can spot patterns relating to the number of bulbs, batteries, etc.	<u>Can I draw and label a circuit?</u> <u>Knowledge LO:</u> Can draw labelled diagrams (NOT using symbols) to explain how a circuit works. <u>Skill LO:</u> Can decide when to use scientific and observational drawings, with increasing accuracy and appropriate vocabulary.	<u>Conductor or Insulator? [2 lessons]</u> <u>Skill LO:</u> Can draw simple conclusions from results to answer questions and support their ideas. <u>Knowledge LO:</u> Recognise some common conductors and insulators, and associate metals with being good conductors.
						