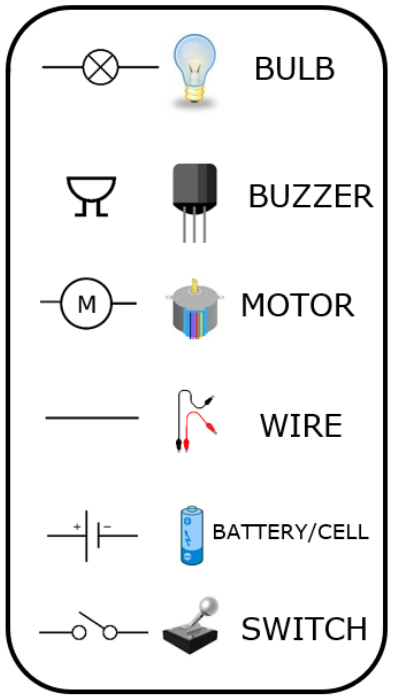
Science: Electricity



Although we may not have looked at electricity before in school, we all use electricity every day! From common appliances, personal devices, even the lights – electricity is all around us in the modern world.

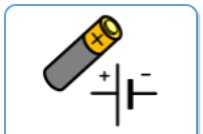
Have you or an adult used any of these appliances today? What about this week? What might they all have in common?

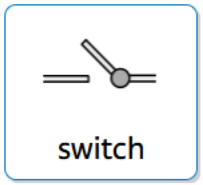
Cell	An electrical power source that provides the 'push' (or voltage) to make electricity flow in a complete circuit.
Battery	A number of cells linked together.
Series	A simple circuit with one single pathway which may flow through bulbs, buzzers, wires etc.
Bulb	Something that converts electricity into light.
Buzzer	Something that converts electricity into sound.
Motor	Something that uses electricity to make mechanical movement.
Switch	A switch is something that is used to control a circuit.
Affect	A term to describe how changes to an electrical circuit may change the outcome or how the circuit works.

Insulator	An object or material that doesn't allow electricity to pass through it.
Conductor	An object or material that allows electricity to pass through it.
Circuit	A complete path in which electricity can flow.
Electrical	Something that needs electricity to work
Appliance	A device or piece of equipment which is designed to complete a specific function.
Mains	Mains electricity is powerful electricity that comes from wall sockets and is used to power big appliances, like TVs.
Positive	Every power source, like a battery, has positive and negative terminals. Positive are shown with a +
Negative	Every power source, like a battery, has positive and negative terminals. Negative are shown with a -

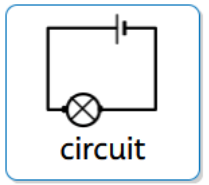
Michael Faraday
1791-1867

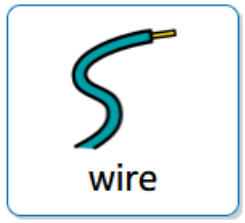
Michael Faraday was an English Scientist who discovered the links between magnets and electricity.

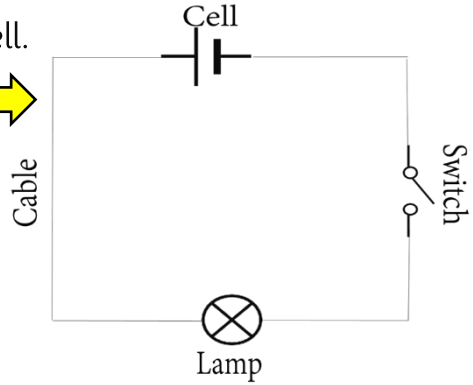




This is a circuit. It will not work because the switch is open.
A circuit must be complete to work. It must also always have a battery/cell.

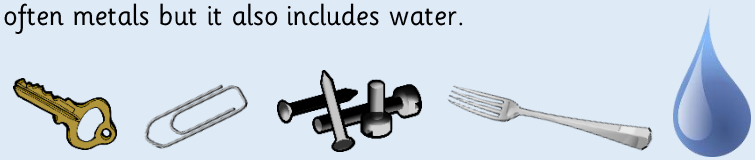






Different factors can have an influence on how bright the bulb is in a complete circuit. For example, more bulbs or a longer wire will make the bulbs dimmer because there is more resistance.

An electrical <u>conductor</u> lets electricity pass through. They are often metals but it also includes water.



An electrical <u>insulator</u> does not let electricity pass through.

The human body is around 70% water so conducts electricity. This can make electricity dangerous. Take care around plugs and batteries. If someone has a shock, turn off the electricity, then call for help!

Key Skills

Combine observations, basic research and simple testing or demonstrations to form answers to enquiry questions
Outline simple practical investigations that represent a fair test by identifying the variable that will change (introduce the term 'Independent variable'
Predict outcomes using prior knowledge and compare with observed results.
Analyse a range of results and identify patterns