Year 6 – Electricity

Lights bulbs turn electricity into light due to resistance.

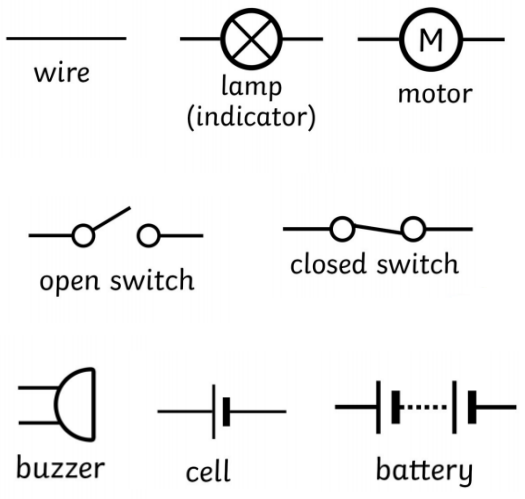
When a light is switched on, you are making electrons flow around the circuit.

Metals such as copper, aluminium, zinc and gold are good conductors of electricity.

ROCKET WORDS – learn these words and their definitions

Key Word	Definition
voltage	An electric force which 'pushes' the electric current round the circuit (measured in Volts)
resistance	The measure of how well a conductor conducts electricity *With more resistance, less electricity will flow; with less resistance, more electricity will flow.*
electrons	Negatively charged particles that travel around an electrical circuit
electrical current	The flow of electrons (measured in *amps*)

Electric circuit symbols



Resistance in a circuit

Adding components to a circuit, such as bulbs, buzzers, motors and wire, increases the resistance in the electric circuit. This slows down the **electric current**.

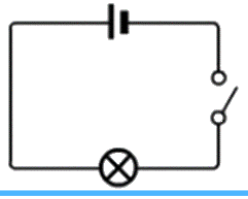
For example, the bulbs in your circuits, convert electrical energy to heat and light energy because the electricity flows through a high **resistance** wire (called a filament). The increased **resistance**, heats the filament to a temperature that produces light.

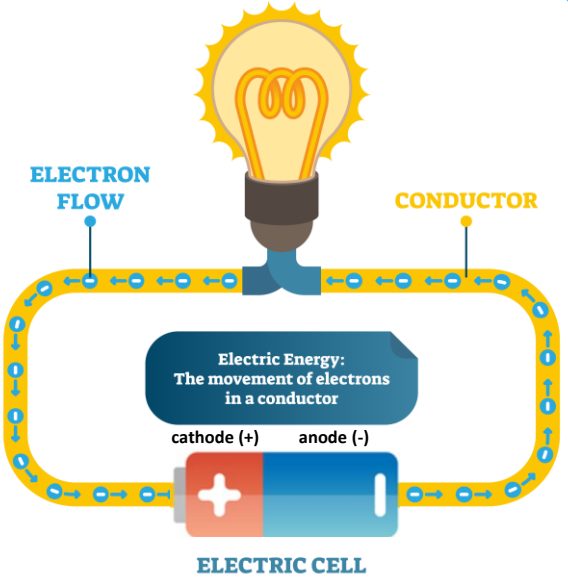
Series circuits

A series circuit is one that has only one route for the current to take.

In this circuit, chemical reactions in the battery causes free **electrons** to flow through the wire, creating an **electrical current**. As **electrons** are negatively charged, they flow towards the cathode (positive end of the battery).

Switches create a gap in a circuit in order to stop the **electron** flow.





Changing circuits

In this unit, you will be planning your own scientific investigation.

What variables could affect the brightness of a bulb, the speed of a motor or the loudness of a buzzer?

For example, which circuit do you think would be the brightest?