



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.

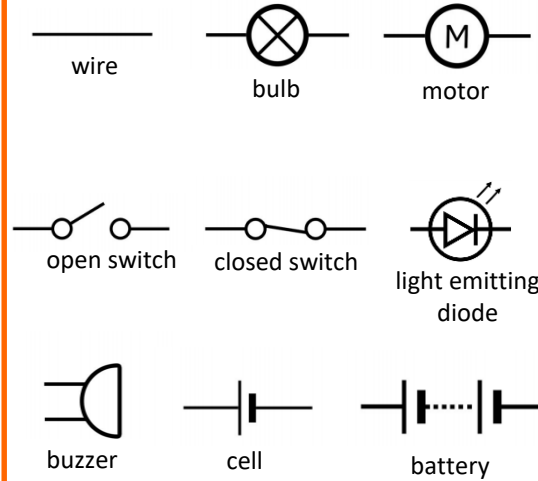
Metals such as copper, aluminium, zinc and gold are good conductors of electricity.



Vital Vocabulary

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 <i>With more resistance, less electricity will flow; with less resistance, more electricity will flow.</i>
electrons	Negatively charged particles that travel around an electrical circuit
electrical current	The flow of electrons (electric charge).

Electric circuit symbols



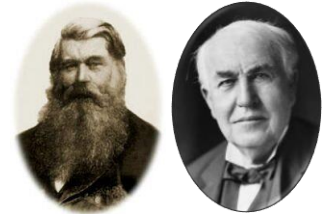
Resistance in a circuit

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 causes light to be released.



Many scientists contributed to the invention of the light bulb but the most famous are the English Physicist **Joseph Swan** and American inventor **Thomas Edison**, who made this invention cost effective.



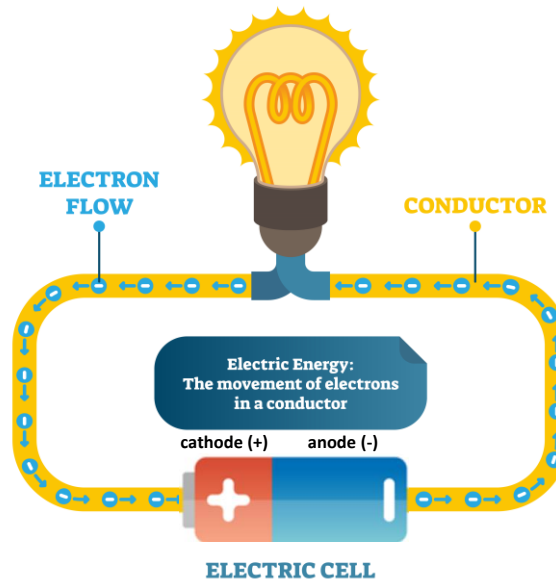
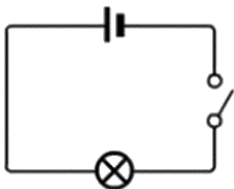
Joseph Swan Thomas Edison

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?

