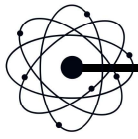


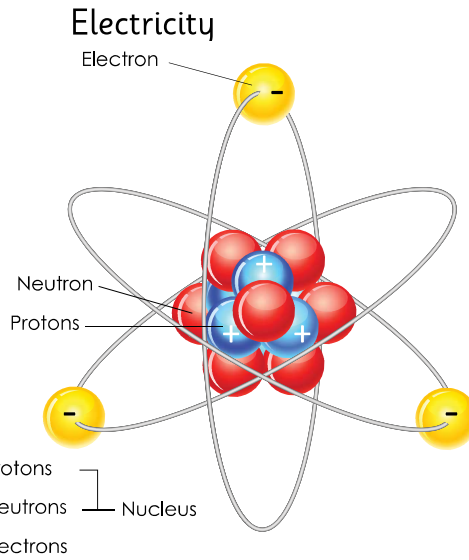


## Science study

Atoms are the **smallest** part of an element.



Atoms have a **nucleus** containing **neutrons** and **protons (+)** **electrons (-)** orbit around the central **nucleus**



## Electricity

Year \_\_\_\_ Term \_\_\_\_

**nucleus** = protons (+) and neutrons (no charge) they are held together in the nucleus of atoms

**electron** = negative (-) charge and are free to move about

**electrons** repel each other (-) and (-) When one moves it repels another and this causes the current of electricity.

**electricity** – a word we use to describe the position or movement of charge



**potential difference** (used to be called 'voltage')

- The energy transferred to/from charge to induce current
- a small battery is usually 1.5V
- mains electricity has a potential difference of 230V
- potential difference** is still measured in **Volts**

**current**

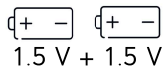
- 'continuous loop' of charges moving through the circuit
- measured in amps (A)

positive (+) **terminal** (end of battery)

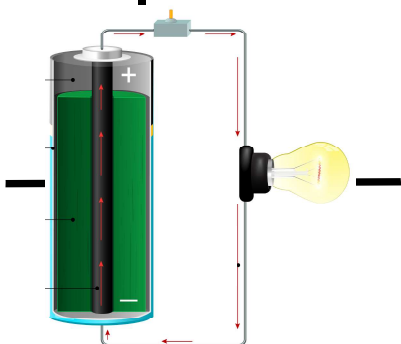
negative (-) **terminal** (end of battery)



This remote control needs a **potential difference of 3 volts** to work.  
 $1.5\text{ V} + 1.5\text{ V} = 3\text{ volts}$



Batteries create a current when the circuit is complete.

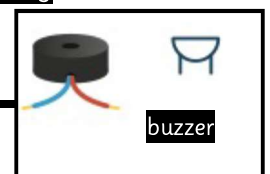
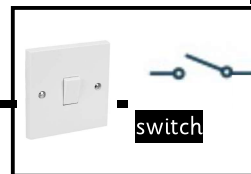
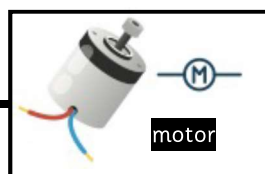
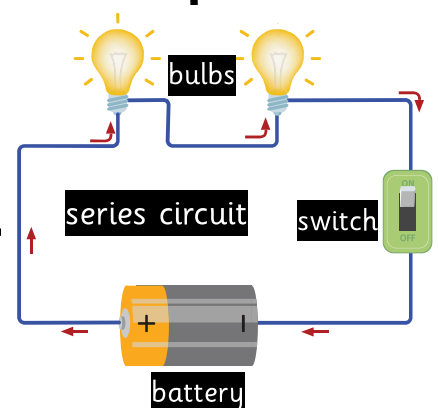


If the **positive** and **negative** terminals of a battery are joined by a wire, then electrons will flow. We call this current.

The conventional current flows from the **positive** terminal to the **negative** terminal.

**circuits**

a closed series circuit – electric **current** follows one path



- It is dangerous to play with plugs or leave liquid near electrical items
- Never touch exposed wires



- Never touch switches with wet hands
- Don't fly kites near overhead power lines