

Vocabulary

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|--------------------------|--|
| circuit | A path that an electrical current can flow around. |
| symbol | A visual picture that stands for something else. |
| cell/ battery | A device that stores chemical energy until it is needed. |
| current | The flow of electrons , measured in amps . |
| amps | How electric current is measured. |
| voltage | The force that makes the electric current move through the wires. |
| resistance | The difficulty that the electric current has when flowing around a circuit . |
| electron | Very small particles that travel around an electrical circuit . |

By the end of this Unit I will be able to ..

- explain how our understanding of electricity has changed over time;
- draw circuit diagrams using the correct symbols and label the voltage correctly;
- decide which variables to control while planning an investigation;
- decide how to report their findings;
- make new predictions based on the previous results.
- Select an appropriate scientific enquiry

Key Knowledge

What will make a bulb brighter or a buzzer louder?

- More **batteries** or a higher **voltage** create more power to flow through the **circuit**.
- Shortening the wires means the **electrons** have less **resistance** to flow through.

What will make a bulb dimmer or a buzzer quieter?

- Fewer **batteries** or a lower **voltage** give less power to the **circuit**.
- More buzzers or bulbs mean the power is shared by more components.
- Lengthening the wires means the **electrons** have to travel through more **resistance**.

Series Circuit
A **circuit** that has only one route for the **current** to take. If more bulbs or buzzers are added, the power has to be shared and so they will be dimmer or quieter. If just one part of this series **circuit** breaks, the **circuit** is broken and the flow of **current** stops.

More components sharing less power.

A broken circuit with no electrical current.

Did you Know?....

Electricity Fact Cards

Kilowatt is a unit used for measuring electrical power.

1000 watts = 1 kilowatt

Electricity Fact Cards

It takes 6 billion, billion electrons to power a 100-watt light bulb for 1 second.

That's 6 000 000 000 000 000 000 electrons.

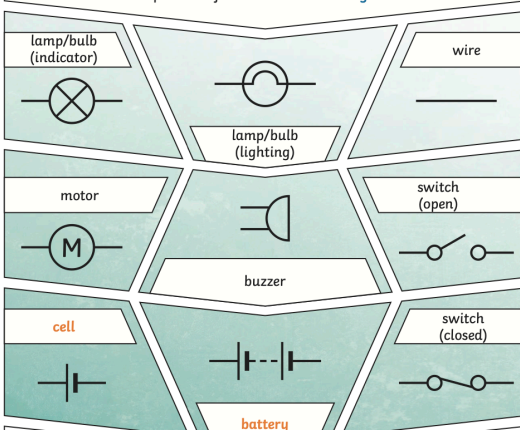
Electricity Fact Cards

The watt is named after James Watt, who was a Scottish inventor.

He made improvements to the steam engine and used it to power machinery!

Key Knowledge

Components of a Circuit and Their Symbols



These symbols can be used to create electrical **circuit** diagrams.

Prior Learning about Electricity

- Identify common appliances that run on electricity.
- Construct a simple series electrical circuit, identifying and naming its basic parts.
- 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.
- Recognise that a switch opens and closes a circuit (as above).
- Recognise some common conductors and insulators, and investigate these.