

Key Knowledge

| Key Vocabulary | |
|-----------------------------|--|
| electricity | The flow of an electric current through a material, e.g. from a power source through wires to an appliance . |
| appliances | A piece of equipment or a device designed to perform a particular job, such as a washing machine or mobile phone. |
| battery | A device that stores electrical energy as a chemical. |
| circuit | A pathway that electricity can flow around. It is based around wires and a power supply. Examples of components (parts) you can add in to a circuit are bulbs, switches, buzzers and motors. |
| mains electricity | Electricity supplied through wires to a building. |
| electrical conductor | A conductor of electricity is a material that will allow electricity to flow through it. |
| electrical insulator | Materials that are electrical insulators do not allow electricity to flow through them. |

| Examples of Electrical Conductors | Examples of Electrical Insulators |
|-----------------------------------|---|
| <p>water metal</p> | <p>wood plastic paper rubber glass fabric</p> |

Many everyday **appliances** rely on **electricity** for them to work. Some **appliances** use **mains electricity** (are plugged into a socket) and others have a **battery** to make them work. Examples of **mains-powered appliances** include toasters and televisions. **Battery-powered appliances** can include mobile phones and torches.

| mains-powered | battery-powered |
|---------------|-----------------|
| | |

To work **safely** with **circuit** components in the classroom:

- None of the equipment needs to use mains power, so do not put any of it in or near plugs.
- Report any damaged or broken equipment to your teacher. Do not use it.
- Only use equipment as instructed.
- Connect equipment correctly.
- Disconnect equipment after use and put it away neatly.

Series Circuit

A **circuit** where the components are connected in a loop. **Electricity** flows through each component in a single pathway.

Complete Circuit

Electricity can flow. The components will work.

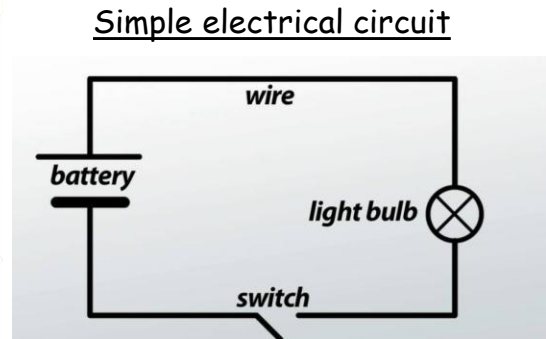
Incomplete Circuit

There is a break in the **circuit** that prevents the **electricity** from flowing. The components will not work.

Switches can be used to open or close a **circuit**. When off, a switch 'breaks' the **circuit** to stop the flow of **electricity**. When on, a switch 'completes' the **circuit** and allows the **electricity** to flow.

push button switch slide switch

| Components (Parts) Vocabulary | | |
|--|--|--|
| <p>cell: Normally, we would call this a battery but scientifically, this is a cell. Two or more cells joined together form a battery.</p> | <p>bulb: Lights up in a complete circuit.</p> | <p>buzzer: Makes a noise in a complete circuit.</p> |
| <p>wires: Used to connect the different components in the circuit together.</p> | <p>motor: Produces movement in a complete circuit.</p> | <p>switch: Used to turn other components in the circuit on or off.</p> |



Materials can be tested in a **circuit** to see if they are **electrical conductors** or **electrical insulators**.

| | | |
|---|----------------------------|---|
| <p>10p = metal = electrical conductors</p> | <p>test circuit</p> | <p>ruler = plastic = electrical insulators</p> |
|---|----------------------------|---|

