

What should I already know?

- **Electricity** is a form of **energy** that can be carried by wires and is used for heating and lighting, and to provide **power** for **devices**.
- **Sources** of light and sound may need **electricity** to work.
- Where **electricity** comes from
- Which **appliances** need **electricity**
- What a **circuit** is, the **components** of a circuit and how it works.
- What **electrical conductors** and **insulators** are.
- What happens when a **switch** is added to a circuit.
- What **forces** and **resistance** are.

Circuit Symbols

| Symbol | Component |
|--------|-----------------|
| | ammeter |
| | battery |
| | bulb |
| | buzzer |
| | cell |
| | motor |
| | resistor |
| | switch (open) |
| | switch (closed) |

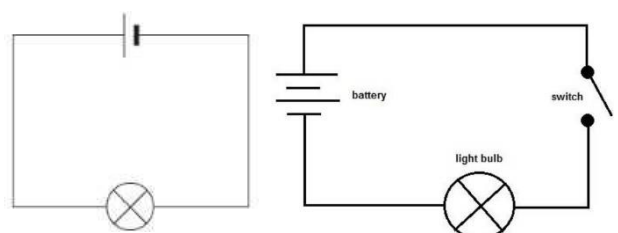
Investigate!

- Match **circuit** symbols to their meanings and their words.
- Predict, then investigate what happens when more batteries are added to a circuit. Explain why this happens.
- Predict, then investigate what happens when more bulbs, motors are added to a circuit. Explain why this happens.
- Systematically identify the effect of changing one component at a time in a circuit.
- Use **circuit** symbols when representing a simple **circuit** in a diagram.
- Design and make a set of traffic lights, a burglar alarm or some other useful **circuit**.
- Investigate what happens when the **voltage** of the battery changes.
- Investigate what happens when the length of the wires changes.
- Investigate what happens when you add a **resistor** to a **circuit**.
- Use **ammeters** to measure the **current** in a **circuit**.

Vocabulary

| | |
|-------------|--|
| ammeter | measures the current in a circuit |
| appliances | a device or machine in your home that you use to do a job such as cleaning or cooking. Appliances are often electrical . |
| battery | small devices that provide the power for electrical items such as torches |
| bulb | the glass part of an electric lamp, which gives out light when electricity passes through it. |
| buzzer | an electrical device that is used to make a buzzing sound |
| cell | a synonym for battery |
| circuit | a complete route which an electric current can flow around |
| component | the parts that something is made of |
| conductor | a substance that heat or electricity can pass through or along |
| current | a flow of electricity through a wire or circuit |
| device | an object that has been invented for a particular purpose |
| electricity | a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for devices |
| energy | the power from sources such as electricity that makes machines work or provides heat |
| fuel | a substance such as coal, oil, or petrol that is burned to provide heat or power |
| generate | cause it to begin and develop |
| insulator | a non- conductor of electricity or heat |
| mains | where the supply of water, electricity , or gas enters a building |
| motor | a device that uses electricity or fuel to produce movement |
| power | Power is energy , especially electricity , that is obtained in large quantities from a fuel source and used to operate lights, heating, and machinery. |
| resistance | a force which slows down a moving object or vehicle |
| resistor | a part of an electric circuit that provides resistance to some of the current |
| source | where something comes from |
| switch | a small control for an electrical device which you use to turn the device on or off |
| voltage | the force of an electric current as measured in volts |
| wires | a long thin piece of metal that is used to fasten things or to carry electric current |

Diagrams



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