



Electricity

Prior knowledge



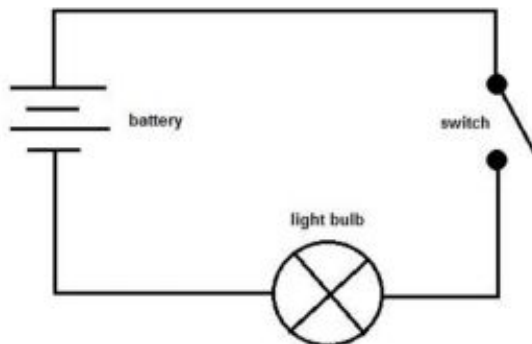
Year 4

- ❑ A complete circuit is required for a bulb to light.
- ❑ Batteries produce electricity.
- ❑ An electric current passes through a circuit.
- ❑ Metals are good conductors of electricity.
- ❑ Some devices run off mains electricity and some off batteries.
- ❑ Batteries have two ends.

Knowledge and skills covered



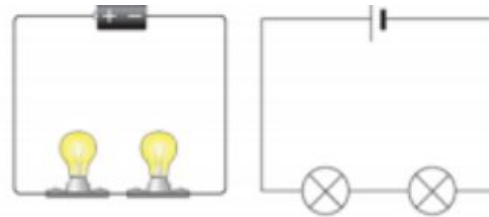
- ❑ Children will construct and draw series circuits using symbols.
- ❑ Children will explore complete and incomplete circuits.
- ❑ Children will explore variations within circuits.
- ❑ Children will plan a voltage experiment.
- ❑ Children will carry out a voltage experiment.
- ❑ Children will evaluate a voltage experiment.



Scientific skills developed in this topic



- ❑ **Recording:** To record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- ❑ **Evaluating and presenting:** To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- ❑ **Planning:** To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- ❑ **Measuring:** To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- ❑ **Evaluating:** To use test results to make predictions to set up further comparative and fair tests.



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

Key words



- Accuracy:** How close a result is to the standard value. Accuracy can be improved by the quality of the equipment used.
- Battery:** A source of electrical power. A battery is more than one cell.
- Bulb:** A component in a circuit that produces light.
- Buzzer:** A component that makes a buzzing or beeping sound.
- Cell:** A source of electrical power (voltage).
- Controlled variables:** What will be kept the same e.g. type of battery.
- Complete circuits:** Circuits that do not have breaks in them.
- Component:** Something that makes up part of a circuit, e.g. a bulb, a wire, a switch, a buzzer, motor, etc.
- Circuit:** The path followed by an electric current. Electricity must flow in a complete circuit to do useful work.
- Current:** The flow of electricity in a circuit.
- Dependent variable:** What will be measured, e.g. brightness of bulb.
- Electricity:** A form of energy that can be carried by wires and is created by negatively charged particles.
- Evaluation:** To consider the quality of the results obtained and suggest improvements.
- Incomplete circuits:** Circuits that have breaks in them e.g. an open switch.
- Independent variable:** What will change, e.g. number of batteries.
- Repeatability:** The likelihood of getting similar results if the experiment is carried out again.
- Series circuit:** A circuit where all the components are in one single loop.
- Switch:** Allows current in a circuit to be turned on and off.
- Voltage:** Causes the current to flow. Its strength is measured in volts (V).