

What will I know by the end of this unit?

- Electricity is a type of **energy**.
- Electricity is used to **power** lots of things, including many items that we use in everyday life such as a toaster, game console and lights.
- Electricity can be stored in **batteries** and can be sometimes called **cells**.
- Electricity can flow in simple **series circuits**.
- The flow of electricity is known as a **current**.
- In a series circuit I will need **wires**, a **bulb** and a **battery** to make a light come on.
- The position of each **component** in a series circuit is important to make the lamp work.
- A **switch** can open and close a circuit.
- Some materials **conduct** electricity. They let electricity to travel through it.
- Some materials are **insulators**. They don't let electricity to travel through them.
- The brightness of the bulb can change by adding or removing other components.
- **Voltage** is the electrical **force** that forces electricity to flow. A **volt** is a measure of electrical pressure.
- A **watt** is the power or energy used by a circuit.

Electrical Appliances



Science

Year 4

Topic: Electricity

Strand: Physics

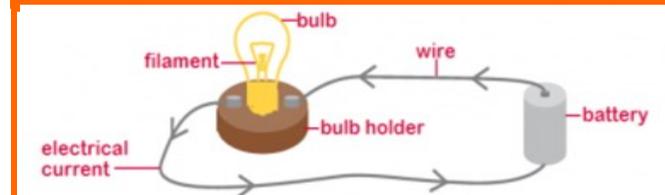
What should I already know?

- Electricity makes things work.
- We plug things in to make them work.
- Electricity travels through wires.
- We switch things on and off.
- Electricity is in their homes and in their school.
- Electricity can be dangerous.

Scientific Skills

- Ask questions about electricity.
- Sort and classify objects using a criterion.
- Set up comparative and fair tests.
- Explore and investigate how to make a series circuit and how to put a switch into the circuit to create a break in the flow of energy.
- Explore and investigate which materials are good conductors of electricity and which material are good insulators.
- Make careful observations.
- Explain what I found out using scientific language.
- Use written explanations, drawings and labelled diagrams to help me to explain what I found out.

A Series Circuit



Electrical Conductors and Insulators

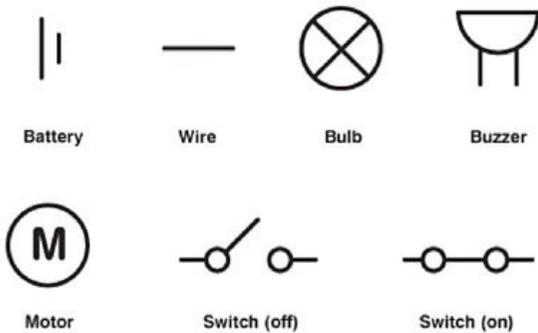
5 Electrical Conductors



5 Electrical Insulators



Circuit Symbols



Subject Specific Vocabulary

electricity	Electricity is a form of power. It is a flow of tiny particles called electrons and protons.	current	This word is used to describe the flow of electricity around the circuit.
energy	Energy is the ability to do work. Energy is how things change and move.	wire	This is made of metal. It allows electricity to travel across it to other components in the circuit.
power	This is the rate in which energy is used.	bulb	This is a component that produces light from electricity.
battery batteries	A battery is a sort of container that stores energy (electricity) until it is needed.	component	This is an object that is placed in a circuit. A circuit needs different components to work.
cells	A cell has two ends, labelled + (positive) and - (negative).	conductor	This is a material that allows electricity to travel through it.
series circuit	A series circuit consists of a single pathway through which electricity can flow.	insulator	This is a material that does not allow electricity to travel through it.
appliances	Appliances are electrical machines that help us to complete tasks.	renewable energy	This is made from resources that nature will replace like wind, water and sunshine
voltage	Is the electrical force that forces electricity to flow. A volt is a measure of electrical pressure.	non-renewable energy	This is energy that the Earth has created but will run out like, coal, oil and nuclear power

Danger! Danger!

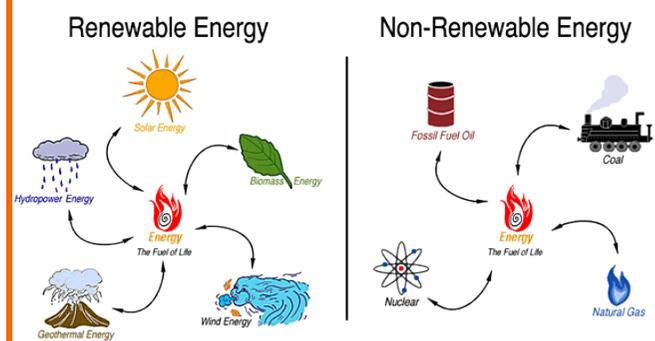
Electricity can be extremely dangerous if it is not used safely.

Important Electrical Safety Trips

- Do not put fingers and other objects in a plug socket.
- Never use anything with a cord or plug around water.
- Don't put metal spoons or bowls in a microwave.
- Stay away from power stations and power lines.
- Never pull a plug out by its cord.
- Never touch or climb trees near power lines.



Different types of energy



What materials make good conductors of electricity?

Why is it important to use renewable energy?

