

**What should I already know?**

- Electricity can be used to power devices, such as lamps or heaters.

**What will I know by the end of the unit?**

Which appliances run on electricity?

- Some **appliances** use **batteries** and some use **mains electricity**.
- Batteries** come in different sizes; larger appliances usually need larger, more powerful batteries.
- Here are some **common appliances** that require **electricity**:



How does a circuit work?

- A complete **circuit** is a loop that allows **electrical current** to flow through **wires**.
- A **complete circuit** contains a **battery**, **wires** and an **appliance** that needs electricity (such as a bulb, motor or buzzer) to work.
- A **switch** can break or complete a circuit
- A **switch controls electricity flow**. When the switch is off or open electricity cannot flow. When it is on or closed electricity can flow again.

What are conductors and insulators?

- When objects are placed in the **circuits**, they may or may not allow **electricity** to pass through.
- Materials that allow **electricity to pass through** them are electrical **conductors**.
- Metals** are good **conductors** of electricity and allow electricity to pass through them easily.
- Materials that will **not allow** electricity to pass through them are electrical **insulators**.
- Plastic, wood and rubber are good electrical **insulators**. Electricity finds it difficult to pass through them.



**Vocabulary**

appliance	a device or <b>machine</b> in your home that you use to do a <b>job</b> e.g. kettle
battery	these provide power for electrical items such as torches
bulb	the glass part of an electric lamp
buzzer	an electrical device that makes a buzzing sound
cell	a synonym for <b>battery</b>
circuit	a complete route which an <b>electric current</b> can flow around
conductor	a substance or material that heat or <b>electricity</b> can pass through or along
current	a flow of <b>electricity</b> through a <b>wire</b> or <b>circuit</b>
device	an object that has been invented to do a job
electricity	a form of energy that can travel through wires and can be used for powering devices
energy	the power that electricity gives us
fuel	a substance that is burned to provide heat or <b>power</b>
generate	cause it to begin and develop
insulator	does not conduct <b>electricity</b> or heat
motor	a <b>device</b> that uses <b>electricity</b> or fuel to produce movement
power	<b>power</b> is <b>energy</b> (especially <b>electricity</b> ) that we get from a fuel <b>source</b>
source	where something comes from
switch	a small control for an <b>electrical device</b> which you use to turn the <b>device</b> on or off
wires	a long thin piece of metal that is used to carry <b>electric current</b>

**Data Handling**

Choose the appropriate graphical representation from bar chart, pictogram or table to present data from conductors or insulators investigation.