

**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.

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

Where does **electricity** come from?

**Electricity** is **generated** using **energy** from natural **sources** such as the Sun, oil, water and wind.  
These can also be called **fuel sources**.

Which **appliances** run on **electricity**?

Some **appliances** use **batteries** and some use **mains electricity**.  
**Batteries** come in different sizes depending on how much and for how long the **appliance** is used.  
Common **appliances** that use **electricity**.



How does a **circuit** work?

A complete **circuit** is a loop that allows **electrical current** to flow through **wires**.  
A **circuit** contains a **battery (cell)**, **wires** and an **appliance** that requires **electricity** to work (such as a **bulb**, **motor** or **buzzer**).  
The **electrical current** flows through the wires from the **battery (cell)** to the **bulb**, **motor** or **buzzer**.  
A **switch** can break or reconnect a **circuit**.  
A **switch** controls the flow of the **electrical current** around the **circuit**. When the **switch** is off, the **current** cannot flow. This is not the same as an incomplete **circuit**.

What are **electrical conductors** and **insulators**?

When objects are placed in the **circuits**, they may or may not allow **electricity** to pass through.  
Objects that are made from materials that allow **electricity** to pass through a create a complete **circuit** are called **electrical conductors**.  
Objects that are made from materials that do not allow **electricity** to pass through and do not complete a **circuit** are called **electrical insulators**.

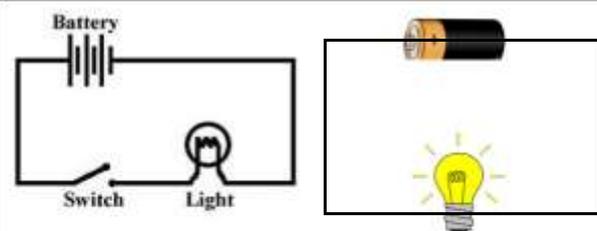
**Investigate!**

Research how to work safely with **electricity**.  
Make a variety of **circuits**, investigating which **circuits** work and why.  
Name the basic parts including **cells**, **batteries**, **wires**, **bulbs**, **switches**, **motors** and **buzzers**.  
Draw **circuits** using pictorial representations (not circuit symbols).  
Create **circuits** using **switches**.  
Investigate which materials are **electrical conductors** and **insulators**.

**Vocabulary**

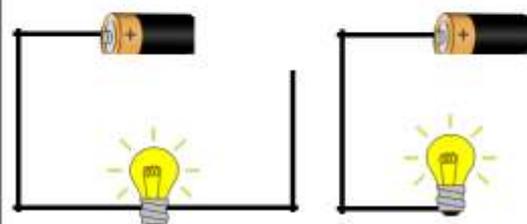
appliances	a <b>device</b> or machine in your home that you use to do a job such as cleaning or cooking. <b>Appliances</b> are often <b>electrical</b> .
battery	small <b>devices</b> that provide the <b>power</b> for <b>electrical</b> items <b>such</b> as torches
bulb	the glass part of an <b>electric</b> lamp, which gives out light when <b>electricity</b> passes through it.
buzzer	an <b>electrical</b> device that is used to make a buzzing sound
cell	a synonym for <b>battery</b>
circuit	a complete route which an <b>electric current</b> can flow around
component	the parts that something is made of
conductor	a substance 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 for a particular purpose
electricity	a form of <b>energy</b> that can be carried by <b>wires</b> and in used for heating and lighting, and to provide <b>power</b> for <b>devices</b>
energy	the <b>power</b> from <b>sources</b> such as <b>electricity</b> that makes machines work or provides heat
fuel	a substance such as coal, oil, or petrol that is burned to provide heat or <b>power</b>
generate	cause it to begin and develop
insulator	a <b>non-conductor</b> of <b>electricity</b> or heat
mains	where the supply of water, <b>electricity</b> , or gas enters a building
motor	a <b>device</b> that uses <b>electricity</b> or fuel to produce movement
power	<b>Power</b> is <b>energy</b> , especially electricity, that is obtained in large quantities from a fuel <b>source</b> and used to operate lights, heating, and machinery
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 fasten things or to carry <b>electric current</b>

**Diagrams**



These are complete **circuits** - they have a **battery (cell)** and a **component (bulb)**.

The **wires** are placed in the right places of the **battery** for the **circuit** to work.



These **circuits** will not work as they are incomplete.