

# Science – Circuit Training

Key Vocabulary	
<b>electricity</b>	The flow of an electric current or charge through a material, e.g. from a power source through wires to an <b>appliance</b> .
<b>generate</b>	To make or produce.
<b>renewable</b>	A source of <b>electricity</b> that will not run out. These include solar, nuclear, geothermal, hydro and wind.
<b>non-renewable</b>	This source of energy will eventually run out and so will no longer be able to be used to make <b>electricity</b> . These include fossil fuels – coal, oil and natural gas.
<b>appliances</b>	A piece of equipment or device designed to perform a particular job, such as a washing machine or mobile phone.
<b>battery</b>	A device that stores electrical energy as a chemical.
<b>circuit</b>	A pathway that <b>electricity</b> can flow around. It includes wires and a power supply and may include bulbs, switches or buzzers.
<b>electrons</b>	Small particles with an electric charge.

Lightning and static electricity occurs naturally but for us to use electricity to power appliances, we need to make it.



How many different ways can you think of that we can generate electricity?

Electric Circuit Symbols			
Symbol	Circuit Component	Symbol	Circuit Component
	Open switch		Bell
	Cell		Motor
	Battery of cells		Buzzer
	Bulb		Wire

A conductor of electricity is a material that is made up of free electrons which can be made to move in one direction, creating an electric current. Metals are good conductors. Electrical insulators have no free electrons and so no electric current can be made. Wood, plastic and glass are good insulators.

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## There are two types of electric current:

Mains electricity: power stations send a charge through cables to transformers and pylons, then underground cables carry electricity to our homes. The current is constant.

Battery electricity: batteries are available as non-rechargeable and rechargeable. Batteries make appliances portable but last for varying amounts of time before needing to be recharged or replaced.

Electricity can only flow around a complete circuit that has no gaps. There must be wires connected to both the positive and negative terminals of a power supply.



Battery electricity: batteries store chemicals which produce an electric current. Eventually, even rechargeable batteries stop producing an electric current.



How many different appliances can you think of that need electricity to work?

