Science – Year 4

Spring 1 - Electricity

Energy can be transferred from one place to another in many different forms. **Appliances** can change **electricity** to light, heat, sound, or movement energy.

Key Vocabulary	Definition
Electricity	Form of energy that is carried through wires and used to operate lights, etc.
Plug	Device for making an electrical connection between an appliance and the mains.
Circuit	A pathway that electricity can flow around. It is based around wires and a power supply.
Components	The parts that something is made from.
Cell	Device used to generate electricity. 2 or more cells together form a battery.
Battery	Device that produces electricity, in parallel or series.
Conductor	A conductor of electricity is a material that will allow electricity to flow through it.
Insulator	Materials that are electrical insulators do not allow electricity to flow through them.

Some appliances run on **mains electricity** and some use **batteries**.

Mains-powered

Battery-powered

These **components** can be used to build a **circuit**…

Switch

Buzzer

Motor

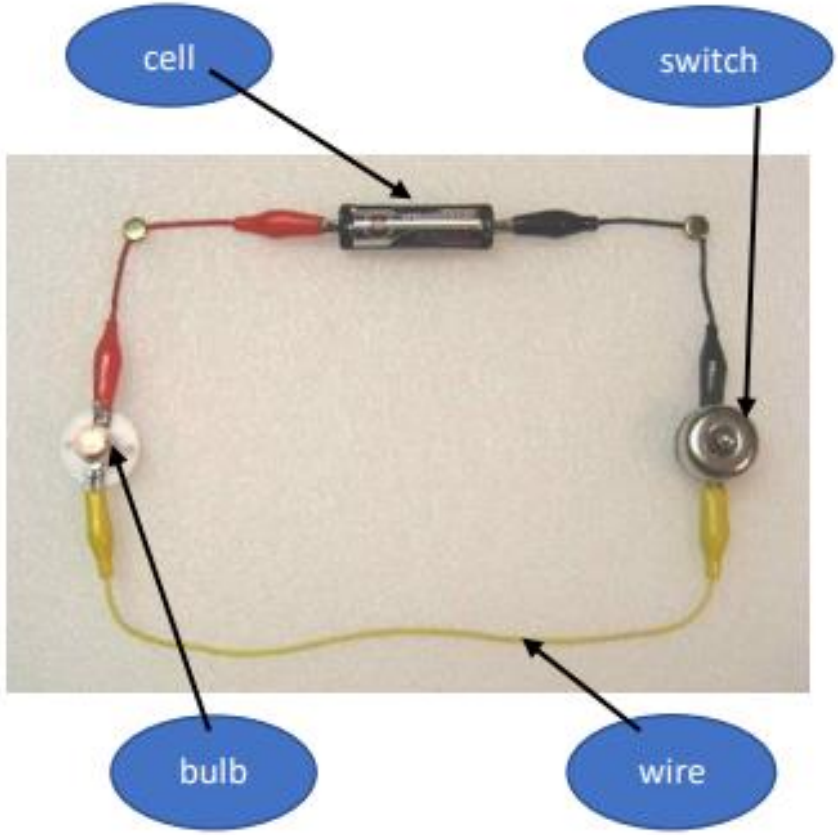
Battery or cells

Electrical wires and crocodile clips

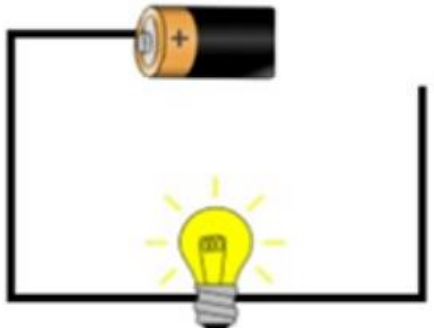
Lightbulb

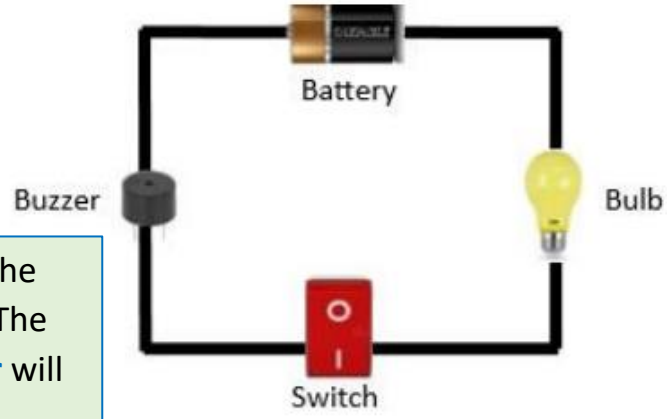
Some materials let electricity pass through them easily. These are known as **electrical conductors.** Many metals are good electrical conductors, such as iron, copper and steel.	Some materials do not allow electricity to pass through them. They are known as **insulators**. Plastic, wood, rubber and glass are good electrical insulators.
	

Components must be connected in a loop so that electricity can flow. The **electricity flows** through each component in a single pathway.



This circuit is not complete which prevents the electricity from flowing. The component (bulb) will not work.





This circuit is complete so the components will not work. The **bulb** will light and the **buzzer** will sound.

When a **switch** is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit.