



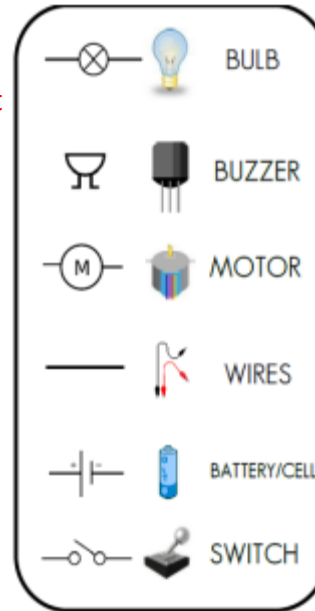
Key Vocabulary	
circuit	A complete route which an electric current can flow around.
current	A flow of electricity through a wire
battery	A small device that provides power for electrical items.
cell	A device used to generate electricity. A battery is an example of a cell.
conductor	Any material that electricity can pass through or along.
insulator	Any material that electricity cannot pass through or along.
buzzer	An electrical device that makes a buzzing Sound.
motor	A device that changes electrical energy into Movement.
wire	A long thin piece of metal that carries an electrical current often covered in plastic for safety.
voltage	An electrical force that makes electricity move through a wire, measured in volts (V).
socket	A device on a wall that you can plug electrical equipment into.
electricity	A form of energy used for lighting, heating, making sound and making machines work.

### How does a circuit work?

In a series circuit all the components are joined together and the electricity can only flow in one direction. You must learn the different symbols for the different components. Switches can be used to open and close circuits.

However, a circuit will not work properly if:

- the cells aren't connected correctly (+ to - not ++ or --)
- a component isn't working or there's no bulb;
- the circuit has gaps
- one of the components acts as an insulator.



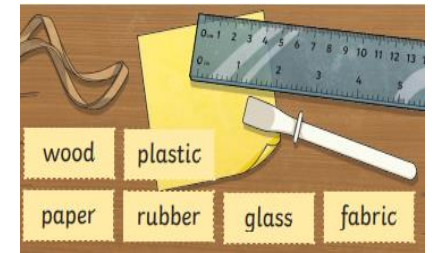
### Electrical Conductors

An electrical conductor lets electricity pass through it. They are often metal (e.g. iron, copper and gold) but also include carbon and water. As our bodies are 18% carbon, electricity is very dangerous to us and because water is a very good conductor of electricity we mustn't use electrical appliances near it!



### Electrical Insulators

An insulator doesn't let electricity pass through it, e.g. wood, leather and plastic. Plastic is used to cover electrical wires because it is a good insulator.



### Creation and Uses of Electricity

Electricity can be created in a number of different ways, for example:

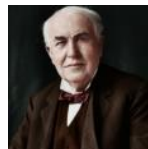
- Burning fossil fuels (oil, gas, etc.) in power stations;
- Using solar power generated from the sun;
- Using wind power from wind turbines;
- Using water power (hydropower).

Electricity is used to power numerous household appliances, for example laptops, TVs, fridges, microwaves, toasters, ovens and lights/ lamps. Life would be very different without it!



### Focused Scientist – Thomas Edison

Thomas Edison was born in 1847 and died in 1931. He lived in the state of New Jersey in the United States of America (USA) He is known as one of the greatest inventors in history. He invented the light bulb, the phonograph (which could record and play sound) and an early video camera called the Kinetograph. The films were then watched on a Kinetoscope which he also invented.



### Electrical Safety

Electricity can be dangerous if not used properly. It can cause shocks, burns and even death. There are electrical dangers both in the home and outdoors.

