Year 6 Knowledge Organiser – Electricity

Key Knowledge
Learn these key facts – key points in red

What are electrical conductors and insulators?

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!

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.

Electrical safety

Focus Scientists — Nicola Tesla

Nikola Tesla (1856-1943) was a Serbian-American electrical and mechanical engineer. He was a prolific inventor and engineer who made big strides in the areas of electricity, radio and X-rays. Without Tesla's development of a type of electrical circuit (AC) we would not have electric lights in our homes.

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.

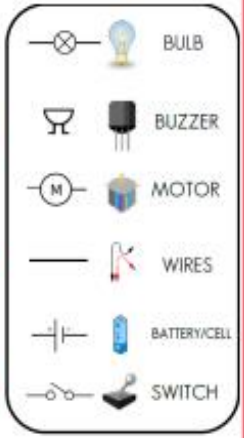
However, a circuit will not work properly if:

the cells aren't connected correctly (+ to - not ++ or - -);

a component isn't working or there's no bulb;

the circuit has gaps;

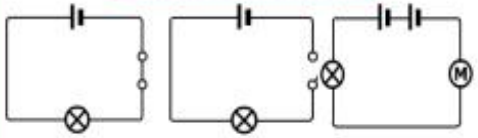
one of the components acts as an insulator.



Resistors

Resistors (bulbs, buzzers, motors etc) use energy. The more resistors in a circuit, the less energy there is for each of them to use. E.g. two bulbs will shine less brightly than one bulb. Using more cells or batteries will increase the energy available.

Examples of circuit diagrams



Key Vocabulary
Understand these key words

electricity	a form of energy that can be carried by **wires** and is used for heating and lighting, and to provide power for devices.
bulb	the glass part of an electric lamp, which gives out light when **electricity** passes through it.
battery	a container of one or more **cells** in which chemical energy is converted into electrical energy and used as a source of power.
buzzer	an electrical device that is used to make a buzzing sound.
cells	a single unit used for converting chemical or solar energy into **electricity.**
circuit	a complete path which an electric **current** can flow around.
switch	a small control for an electrical device which you use to turn the device on or off.
wires	a long thin piece of metal that is used to fasten things or to carry electric **current.**
motor	a device that uses **electricity** or fuel to produce movement.
conductors	a substance that heat or **electricity** can pass through or along.
insulators	a non-conductor of **electricity** or heat.
amps	the measurement of how much **electricity** is flowing through a **circuit** measured using an Ammeter.
volts	a unit of electrical force.
component	the parts that something is made of.
current	a flow of **electricity** through a **wire** or **circuit.**
energy	the power from sources such as **electricity** that makes machines work or provides heat.