Year 4 – Summer 2nd half
Title of topic: High Voltage
Topic Focus: Electrical Circuits and Electrical Safety

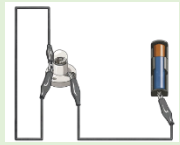
This is the knowledge organiser for our topic. It includes all the learning outcomes, key facts and vocabulary. Please share this with your child to help them develop their knowledge and understanding of our topic.

Cell	Bulb	Wires
		
A **cell** is a component that converts stored chemical energy to electrical energy.	A bulb is an electrical component that produces light.	Wires are a component that connect other components together to create a **circuit**.

Buzzer	Motor	Switch
		
A buzzer is an electrical component that produces sound.	A motor is an electrical component that produces movement.	A switch is a component that controls the flow of **electricity** in a **circuit**.

Complete circuits will work because the components are all connected as part of a continuous loop.

An incomplete circuit will not work because it will either be missing components or connected in such a way that it does not form a continuous loop.



Electrical Safety:

Exposed electrical wires can cause electric shocks or result in fires.

Keep electrical appliances and components away from water.

Electricity

Electrical circuits rely on cells. There is an important difference between mains powered electricity and battery powered electricity.

Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Water, if not completely pure, also conducts electricity.

Vocabulary: hydro-electrical power, sustainable power, switches, insulators, conductors, volts, amps.

Key vocabulary:

Electricity – Electricity is a type of energy that can flow through certain materials, e.g. from a power source through wires to an appliance.

Circuit – A circuit is a complete route that electricity can flow around.

Cell – A cell is a component that converts stored chemical energy to electrical energy.

Battery – A battery is a device that stores electrical energy as chemical energy. Two or more cells joined together form a battery.

Appliance – An appliance is a piece of equipment or device designed to perform a particular job.

Electrical Conductor – An electrical conductor is a material that allows electricity to flow through it.

Electrical Insulator – An electrical insulator is a material that does not allow electricity to flow through it.

Mains Electricity – Mains electricity is electricity supplied to buildings through a network of power lines.

Battery Powered Appliances – These appliances require the use of batterie as an electrical power supply.

Mains Powered Appliances– These appliances require the use of mains electricity as an electrical power supply.

Non-Electrical Appliances – These appliances do not require the use of electricity.