

Knowledge Organiser Science Year 4 Autumn

Electricity and circuits



St Elizabeth's Catholic Primary School
"Love one another as I have loved you"

Prior knowledge



Year 3

- ❑ Sources of light, sound and heat may need electricity to work.

Year 4

- ❑ Identify how sounds are made, associating some of them with the transfer of energy, as vibrations.

Knowledge and skills covered



- ❑ Children will recognise how electrical appliances are powered.
- ❑ Children will construct an electrical circuit.
- ❑ Children will explain the use of switches in a circuit.
- ❑ Children will explain the use of materials as electrical conductors or insulators.
- ❑ Children will investigate what affects bulb brightness.
- ❑ Children will explain how to be safe around electricity.

Scientific skills developed in this topic



- ❑ To record and classify qualitative data.
- ❑ To draw a scientific diagram.
- ❑ To write a method.
- ❑ To pose questions and plan ways to test them.

Science in action



- ❑ To explore how scientific advances inform safety advice.

British Values



- ❑ Mutual respect
- ❑ Rule of law

Key words



Ammeter: A device that measures the flow of charge around an electrical circuit.

Appliance: A device for a particular task.

Battery: A portable power supply that transfers electrical energy (power) to an appliance.

Bulb: An electrical device that gives off light.

Buzzer: An electrical device that makes a sound; a buzzing noise.

Circuit: The complete path that an electrical charge (an electric current) flows around. Electricity must flow in a complete circuit to do useful work.

Component: A part of an electrical circuit, e.g. a bulb, a wire, etc.

Device: An object that has been invented for a particular purpose.

Electric current: The flow of electricity through a wire or circuit.

Electrical tape: Tape used to insulate materials that conduct electricity.

Electrical insulator: A material that does not let electrical charge pass through it easily.

Electrical conductor: A material that lets electrical charge pass through it quickly.

Electricity: The flow of charge. A form of energy that can be carried by wires.

Energy: The power from sources such as electricity that makes machines work (move) or provide heat or light.

Hazard: Something that is dangerous.

Mains: An electrical supply delivered around the country through the National Grid to power an appliance. The electricity comes through a socket in the wall.

Material: What an object is made from.

Method: Step-by-step instructions.

Motor: An electrical device that moves.

Power source: Something that transfers electrical energy to make an appliance work.

Precaution: Something that stops a bad thing from happening.

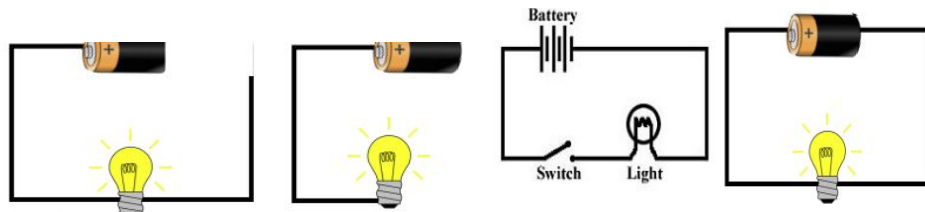
Property: Anything that describes a material or substance.

Safety: Kept from harm or danger.

Series circuit: An electrical circuit with a single loop or pathway.

Switch: Something that can break (turn off) or complete (turn on) an electrical circuit.

Wires: A long thin piece of metal that is used to connect parts (components) of an electrical circuit and carry electric current.



These **circuits** will not work as they are incomplete.

These **circuits** will work as they are complete.