

Broadmayne First School Knowledge Organiser

Science Focus

Electricity

Year 4

Autumn Term 2

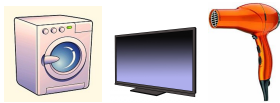
Key Knowledge

What is electricity?



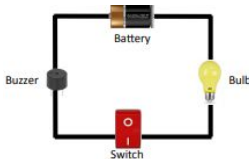
- Electricity is a source of power that is generated by coal, gas, oil, wind or solar power.
- Electrical energy can be turned into heat, light, movement and sound.
- Electricity is very dangerous and must be treated very carefully

What are common electrical appliances?



- An **appliance** is something that needs to be plugged into an electrical circuit to work. It will not work if it is not plugged in.
- Common appliances include television, washing machine, hairdryer, iron, gaming console, lights, microwave.
- Some appliances also run on batteries. These appliances can be charged up and then used without a plug, for example, mobile phone, tablet, toothbrush.

Electrical circuits



- Electricity flows through the **components** of a complete electrical circuit.
- A circuit must have a power source (usually a battery), wires to connect the components and different components such as light bulbs, buzzers or motors.
- There cannot be any gaps in the circuit, otherwise the electricity cannot flow through.

Switches



- A **switch** can be used to create a gap in a circuit so that the components can be turned ON and OFF.
- When the switch is open, there is a gap in the circuit and the electricity cannot flow around the circuit.
- When the switch is closed, there are no gaps in the circuit and the electricity flows around the circuit.

Electrical conductors

- Electrical conductors let electricity pass through them easily. Many metals are good conductors of electricity.

Electrical insulators

- Electrical **insulators** do not allow electricity to pass through them. Wood, plastic, glass and rubber are examples of good insulators.
- Electrical insulators can be used to cover materials that carry electricity.

Spelling
(Key Vocab)

Definition

appliance

something that needs to be plugged in to work.

circuit

a complete route that electricity can flow around.

component

part of a circuit such as battery, bulb, wires

conductor

allows electricity to pass through

insulator

does not allow electricity to pass through

switch

Can create a gap by turning the circuit on and off

Planned experiences

Set up circuits and predict whether the bulb will light or not.

Set up circuits and explore how to make a bulb shine brighter.

Set up a circuit and test whether materials are conductors or insulators.

Visitor to discuss electrical safety.

