Enriching lives every day; enabling our school community to learn, achieve and flourish through living 'life in all its fullness'

Sustainability

Subject: Science

Year group: 4

Term: Autumn 2

Unit name: Electricity

Strand: Physics

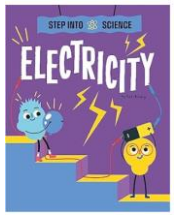
Prior Knowledge –
Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. (Early Learning Goal)

Key Vocabulary: Electrical, appliance, mains, plug, circuit, component, cell, battery, positive, negative, connect/connectors, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol, voltage, current

Key Scientists:

Alessandro Volta
Thomas Edison
Michael Faraday

Suggested books:



National curriculum:

- I can identify common appliances that run on electricity
- I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers
- I can identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery
- I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit
- I can recognise some common conductors and insulators, and associate metals with being good conductors.

Working Scientifically:

- Ask relevant questions.
- Make careful observations and use a range of equipment.
- Gather, record and classify data.
- Record findings using scientific language, drawings, labelled diagrams.
- Identify similarities and differences.
- Use straightforward scientific evidence to answer questions to support findings.

Excellence	Nurture

Enriching lives every day; enabling our school community to learn, achieve and flourish through living 'life in all its fullness'

Key learning objectives- ***Highlighted boxes = Learning Objective for that lesson. The other two are your Success Criteria.***		
Knowledge	**Working Scientifically**	**Scientific Enquiry**
To identify common appliances that run on electricity.	To record my work using labelled drawings.	To identify electrical components and classify electrical appliances.
To identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery	To make predictions using scientific language	To identify patterns in my observations.
To recognise some common conductors and insulators, and associate metals with being good conductors	To interpret my results using my scientific knowledge.	To conduct a comparative test.
To recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.	To evaluate my switch design	To identify the properties of different materials.
To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.	To pose scientific questions.	To find out about different scientists and energy sources
To construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.	To record how electricity has helped us.	To know how electricity has developed over time.

Scientific Enquiry Key

Comparative / fair testing
Changing one variable to see its effect on another, whilst keeping all others the same.

Pattern-seeking
Identifying patterns and looking for relationships in enquiries where variables are difficult to control.

Research
Using secondary sources of information to answer scientific questions.

Identifying, grouping and classifying
Making observations to name, sort and organise items.

Observation over time
Observing changes that occur over a period of time ranging from minutes to months.

Problem-solving
Applying prior scientific knowledge to find answers to problems.

Assessment- Key indicators:

Can name the components in a circuit.
Can make an electric circuit.
Can control a circuit using a switch.
Can name some metals that are conductors.
Can name materials that are insulators.
Can communicate structures of circuits using drawings.
Can incorporate a switch.
Can add a circuit with a switch to a DT project and demonstrate how it works.
Can describe how a switch works.