

Year 6 Science Curriculum

Working scientifically links Rubric/PCMD opp. Key Vocabulary

Electricity

What's the big picture? Big Picture - recap knowledge - children to generate own questions to investigate - *"I know how to ask simple scientific questions"*

Prior Learning:

Identify common appliances that run on electricity. (Y4 - Electricity)

Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. (Y4 - Electricity)

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. (Y4 - Electricity)

Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. (Y4 - Electricity)

Recognise some common conductors and insulators, and associate metals with being good conductors. (Y4 - Electricity)

National Curriculum Principles	Objectives	Knowledge and key Vocabulary	Reading opportunities	Technology
Use recognised symbols when representing a simple circuit in a diagram	Use recognised symbols when representing a simple circuit in a diagram	Learn the symbol for wire, battery, bulb, buzzer, switch, motor. Use the symbols to represent circuits Identify whether a circuit drawn using symbols will work or not and explain why.	Electrical Wizard: How Nikola Tesla Lit Up the World (Elizabeth Rusch)	
Pupils should be taught to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells, used in the circuit	Investigate how the brightness of a bulb is affected by different numbers of batteries or strength of batteries - voltage Investigate how loudness of buzzer is affected by voltage Investigate how switches act on a circuit	Goodnight Mister Tom (Michelle Magorian) Blackout (John Rocco)	
Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches	compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches	Children to make a circuit/product for a specific purpose eg model of a lighthouse, burglar alarm, circus big top - this can link to project Research work of Michael Faraday - make a wind turbine	Hitler's Canary (Sandi Toksvig)	

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Famous scientists

Nikola Tesla - founder of AC electric system

Michael Faraday - invented the first electrical generator

Common misconceptions

Some children may think:

- larger-sized batteries make bulbs brighter
- a complete circuit uses up electricity
- components in a circuit that are closer to the battery get more electricity

Enquiry ideas

<u>Comparative tests</u>	<u>Identify and classify</u>	<u>Observations over time</u>	<u>Pattern seeking</u>	<u>Research</u>
How does the voltage of the batteries in a circuit affect the brightness of the lamp?	Find different ways of grouping electrical components and appliances	How can we measure how quickly a battery is used up?	Does the temperature of a lightbulb go up the longer it is left on?	How has our understanding of electricity changed over time?
Which type of fruit makes the best fruit battery? (What is meant by best?)				