



Hartford Primary School

YEAR GROUP	6	SUBJECT	Electricity	TERM	Autumn 2 (6 weeks)
National Curriculum Statements	Pupils should be taught to: <ul style="list-style-type: none"> • associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit • 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 • use recognised symbols when representing a simple circuit in a diagram. 				
Prior Learning (What should they already know)	<ul style="list-style-type: none"> • 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) 				
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.				
RETRIEVAL VOCABULARY	electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol		NEW VOCABULARY	circuit diagram, circuit symbol, switch, voltage NB Children do not need to understand what voltage is but will use volts and voltage to describe different batteries. The words cells and batteries are now used interchangeably	

	Essential Learning for this lesson	Suggested teaching tasks/approaches	New Knowledge – What I'm leaving the lesson with
LESSON 1	To revise learning from Year 4 electricity	Diff challenges linked to Year 4 learning- Draw circuits using recognised symbols	Circuit symbols are small images that represent different electrical components.

	<p>To recognise electrical hazards</p> <p>To use electrical symbols.</p>	<p>Identify problems in circuits with recognised symbols</p> <p>Plymouth lesson 2 has resources for symbols.</p>	<p>Circuit symbols allow everybody in the world to understand how a circuit is made.</p> <p>Circuit diagrams show how the components in a circuit are connected together.</p>
LESSON 2	<p>To compare and give reasons for variations in the brightness of bulbs in a circuit</p> <p>SE - To notice patterns when I add more bulbs to a circuit.</p> <p>W.S -To use a data logger</p>	<p>Plan and carry out enquiry to find out how changing number of bulbs affects the brightness of a bulb.</p> <p>Record with data logger and record in child drawn table. Record as line graph if time.</p> <p>Resources - Plymouth lesson 2</p>	<p>Scientists can look for patterns to find answers to questions</p> <p><u>To use a data logger</u> to record brightness of bulbs.</p> <p>To use circuit symbols</p>
LESSON 3	<p>To associate the brightness of a lamp with the number and voltage of cells used in the circuit</p> <p>W.S- To take repeat measurements with a data logger.</p> <p>To take repeat measurements</p>	<p>Concept cartoon- who do you agree with?</p> <p>Children investigate how changing the number of cells affects the brightness of a bulb. Record in child drawn table and measure with data logger.</p> <p>Children take repeat measurements.</p> <p>Plymouth lesson 3 or Oak Academy – Investigating voltage</p>	<p>A cell is a single unit that is needed for electricity to flow around a circuit and a battery is a group of cells.</p> <p>The V on a cell stands for volts, and is a measure of the size of electrical push it provides to a circuit.</p> <p>Cells or batteries with a higher voltage provide a stronger electrical push to a circuit.</p> <p>Adding more cells produces a higher voltage and a stronger electrical push to a circuit.</p> <p>Scientists plan different types of enquiries to find answers to questions.</p>
LESSON 4	<p>To associate the brightness of a lamp with the number and voltage of cells used in the circuit</p> <p>W.S - To take repeat measurements with a data logger</p> <p>To draw a line graph.</p>	<p>Lesson 3 continued-</p> <p>Children find average brightness from repeat measurements and draw a line graph to record.</p>	<p>We can find an average from our repeat measurements.</p> <p>We can present our results using a line graph</p>
LESSON 5	<p>To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</p>	<p>Children choose to investigate buzzers or motors and the effect of changing the voltage.</p> <p>Children plan own investigation and prepare table to record results.</p>	<p>A cell is a single unit that is needed for electricity to flow around a circuit and a battery is a group of cells.</p> <p>The V on a cell stands for volts, and is a measure of the size of electrical push it provides to a circuit.</p> <p>Cells or batteries with a higher voltage provide a stronger electrical push to a circuit.</p>

	To take repeat measurements with a data logger MIGHT NEED TO CHANGE THIS TO INVESTIGATE HOW BUZZERS ARE AFFECTED by range of componenets	Plymouth lesson 3 links to this	Adding more cells produces a higher voltage and a stronger electrical push to a circuit. Scientists plan different types of enquiries to find answers to questions.
LESSON 6	To associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit To take repeat measurements with a data logger	Record in a table Take repeat measurements Record in a line graph if time.	To draw conclusions and give explanations
DT LESSON	To apply knowledge of buzzers to create a car alarm	Planning for this in DT plans.	To include a switch in circuits.

Helpful resources to reference	
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