SCIENTIFIC ENQUIRY OVERVIEW

Electric Circuits

YEAR 6 | SPRING 1 | 6 LESSONS

LESSON	OBJECTIVES	SCIENTIFIC ENQUIRY	EQUIPMENT
L1 **How do electrical appliances work?**	• Identify common electrical appliances. • Know whether appliances run on mains or batteries. • Explain why we need to use electricity safely.	**IDENTIFYING, CLASSIFYING AND GROUPING** Pupils sort appliance picture cards by power source (mains/battery) and by use (heating, lighting, sound, movement) and justify each choice.	• Appliance picture cards (1 set per group) • Sorting hoops or labelled mats (1 per group) • Recording sheet (1 per child) • Booklet (1 per child)
L2 **Why do batteries have voltage?**	• Know what voltage means. • Compare cells of different voltage. • Explain how the number and voltage of cells affect components.	**COMPARATIVE AND FAIR TESTING** Pupils vary the number of cells in a circuit, keeping the bulb the same, and measure or rank the brightness of the bulb.	• 1.5V cells (varied number) • Battery holders and wires (1 per group) • Bulbs and bulb holders (1 per group) • Buzzer (optional) (1 per group) • Recording sheet (1 per child)
L3 **What are the parts of a circuit?**	• Identify the components of a series circuit. • Describe the function of each component. • Build a working series circuit.	**IDENTIFYING, CLASSIFYING AND GROUPING** Pupils match real components to their function and build a working circuit, classifying components by their role (energy source, conductor, output).	• Circuit kits (cells, wires, bulbs, switches, buzzers, motors) (1 per group) • Component function cards • Recording sheet (1 per child) • Booklet (1 per child)

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L4 **What are circuit diagrams?**	• Recall the standard circuit symbols. • Read a simple circuit diagram. • Draw a diagram from a real circuit.	**IDENTIFYING, CLASSIFYING AND GROUPING** Pupils match real components to their standard symbols, classify symbols by component type, and translate a real circuit into a diagram.	• Symbol cards • Blank circuit templates • Ruler and pencil (1 per pair) • Booklet (1 per child)
L5 **How can we use electricity safely?**	• Identify electrical hazards at home. • Describe basic electrical safety rules. • Explain the role of fuses and earthing.	**RESEARCHING USING SECONDARY SOURCES** Pupils research electrical safety using the booklet and create a class poster showing safety rules and explanations.	• Booklet on electrical safety (1 per child) • Hazard picture cards (1 per child) • Poster paper • Pens and coloured markers
L6 **What is the history of electricity?**	• Recall key inventors of electrical technology. • Describe key inventions and their impact. • Sequence inventions on a class timeline.	**RESEARCHING USING SECONDARY SOURCES** Pupils research key figures (Volta, Faraday, Edison, Swan, Tesla, Ayrton) and place them in chronological order on a class timeline.	• Information cards on each scientist • Long timeline strip on the wall (whole class) • Sticky notes (1 per group) • Pens