



# HOLY TRINITY

## Science Progression of Knowledge & Skills – Electricity

Electricity	Knowledge	Skills	Key Vocabulary
<p><b>Year 4</b> <b>Circuits and Conductors</b></p>	<p>Children will learn about main components and explore ways in which simple circuits are constructed.</p> <p>Children will learn about electrical safety, and why some appliances are mains powered rather than battery powered.</p> <p>Children will learn about insulators and conductors.</p> <p>Children will consider reasons why conductors and insulators are used in different ways inside and outside electrical appliances.</p> <p>Children will learn about, design and test a variety of switch designs.</p> <p>Children will suggest ways in which a bulb in a circuit could be made to glow brighter or dimmer.</p>	<ul style="list-style-type: none"> <li>• Asking relevant questions and using different types of scientific enquiries to answer them</li> <li>• Setting up simple practical enquiries, comparative and fair tests</li> <li>• Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> <li>• Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions</li> <li>• Identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>• Identify common appliances that run on electricity</li> <li>• Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>• 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</li> <li>• Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>• Recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul>	<p>appliances electricity electrical circuit cell wire bulb buzzer danger electrical safety sign insulators wood rubber plastic glass conductors metal water switch open closed components plug motor mains</p>



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<p><b>Year 6</b> <b>Changing</b> <b>Circuits</b></p>	<p>Children will find differences between series and parallel circuits.</p> <p>Children will suggest ways in which changing circuits could affect the brightness of a bulb or the speed of a motor.</p> <p>Children will learn about a variety of symbols used in circuit diagrams.</p> <p>Children will suggest ways in which wires of different lengths, thicknesses and materials may be tested to determine how they affect the brightness of a bulb.</p>	<ul style="list-style-type: none"> <li>• Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>• Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>• 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</li> <li>• Use recognised symbols when representing a simple circuit in a diagram</li> </ul>	<p>appliances electrical circuit complete circuit circuit diagram circuit symbol components cell battery positive / negative terminal connection loose connection short circuit wire crocodile clip bulb brightness switch buzzer volume motor conductor insulator voltage current resistance danger series circuit</p>
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