

Electricity Progression map Year 4

<u>Previous Year: Reception</u>	<u>Current Year: Year 4</u>	<u>Next Year: Year 6</u>				
<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • Identify common appliances that run on electricity. • Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • 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. • Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • Recognise some common conductors and insulators, and associate metals with being good conductors. 	<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. 				
<p style="text-align: center;"><u>How can the learning be applied?</u></p> <p>Construct a range of circuits.</p> <p>Explore which materials can be used instead of wires to make a circuit.</p> <p>Classify the materials that were suitable/not suitable for wires.</p> <p>Explore how to connect a range of different switches and investigate how they function in different ways.</p> <p>Choose switches to add to circuits to solve particular problems, such as a pressure switch for a burglar alarm. •</p> <p>Apply their knowledge of conductors and insulators to design and make different types of switch.</p> <p>Make circuits that can be controlled as part of a DT project. N.B. Children should be given one component at a time to add to circuits</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"><u>Learning Values:</u></td> <td style="width: 50%; padding: 5px;">Physical education links:</td> </tr> <tr> <td style="padding: 5px;"> <ul style="list-style-type: none"> - respect - responsible - resourceful - resilient </td> <td style="padding: 5px; text-align: center;">-</td> </tr> </table>	<u>Learning Values:</u>	Physical education links:	<ul style="list-style-type: none"> - respect - responsible - resourceful - resilient 	-	<p style="text-align: center;"><u>Key learning for the topic:</u></p> <p>Many household devices and appliances run on electricity. Some plug in to the mains and others run on batteries. An electrical circuit consists of a cell or battery connected to a component using wires. If there is a break in the circuit, a loose connection or a short circuit, the component will not work. A switch can be added to the circuit to turn the component on and off. Metals are good conductors so they can be used as wires in a circuit. Non-metallic solids are insulators except for graphite (pencil lead). Water, if not completely pure, also conducts electricity.</p>
<u>Learning Values:</u>	Physical education links:					
<ul style="list-style-type: none"> - respect - responsible - resourceful - resilient 	-					
	<p style="text-align: center;"><u>Possible stimulus:</u></p> <p>Electrical Wizard: How Nikola Tesla Lit Up the World by Peter Brown</p> <p>The Wild Robot by Simon James</p> <p>Overheard in a Tower Block by Joseph Coelho & Kate Milner</p>					

