Science Medium Term Plan

	Year Group:	Term:	Topic/Unit :
	6	Spring	Electricity

National Curriculum Programme of Study	• 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	• 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)
Future Learning	• Electric current, measured in amperes, in circuits, series and parallel circuits, currents add where branches meet and current as flow of charge. (KS3) • Potential difference, measured in volts, battery and bulb ratings; resistance, measured in ohms, as the ratio of potential difference (p.d.) to current. (KS3) • Differences in resistance between conducting and insulating components (quantitative). (KS3) • Static electricity. (KS3)
Links to other subjects	PSHE, History
Enrichment	Bend water with static electricity/ static electricity with balloons

Working Scientifically	**Comparative tests**	**Identify and classify**	**Observation over time**	**Pattern seeking**	**Research**
					
	How does the voltage of the batteries in a circuit affect the brightness of the lamp? How does the voltage of the batteries in a circuit affect the volume of the buzzer?	How would you group electrical components and appliances based on what electricity makes them do?	How does brightness of bulb change as the battery runs out?	Does the temperature of a light bulb go up the longer it is on?	How has our understanding of electricity changed over time?

Working Scientifically Assessment Focus	Do: Observe and measure – Electricity – conductive dough **Working Scientifically: Use equipment and make systematic observations** **Assessment Focus** • Can children use the conductive dough to make a circuit? • ·Can the children systematically trouble shoot if something is not working?

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Sticky vocabulary	Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage **Working Scientifically vocabulary:** variables, justify, accuracy, precision, line graph, relationship
End points	• Adding more cells to a complete circuit will make a bulb brighter, a motor spin faster or a buzzer make a louder sound. • If you use a battery with a higher voltage, the same thing happens. • Adding more bulbs to a circuit will make each bulb less bright. • Using more motors or buzzers, each motor will spin more slowly and each buzzer will be quieter. • Turning a switch off (open) breaks a circuit so the circuit is not complete and electricity cannot flow. • Any bulbs, motors or buzzers will then turn off as well. • You can use recognised circuit symbols to draw simple circuit diagrams