Year 6 – Electricity (biology, chemistry, physics)	
NC objectives	
• 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	Future 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)	• 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)

Key vocabulary	Common misconceptions
Circuit, complete circuit, circuit diagram, circuit symbol, cell, battery, bulb, buzzer, motor, switch, voltage N.B. 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.	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.
Areas of enquiry	**Hook suggestions**
• Observation over time - What factors can affect the performance of an electrical circuit over time? • Comparative and fair testing - How does the voltage of the batteries in a circuit affect the brightness of the lamp? • Identifying and classifying - How would you group electrical components and appliances based on what electricity makes them do? • Pattern seeking - Does the temperature of a light bulb go up the longer it is on? • Researching using secondary sources - How has our understanding of electricity changed over time?	<u>Books</u> Goodnight Mr Tom *by Michelle Magorian* Blackout *by John Rocco* <u>Scenarios</u> ***Scenario –*** Gordon says that things that are magnetic are always good conductors of electricity. Is he correct? *(Pattern seeking & Research)*