Progression in Science at Welwyn St Mary's Primary School

Electricity

	Expectations	Key words
EYFS	• know electricity can be dangerous • explore a range of battery powered devices	Battery, electricity, switch
Y4 Circuits and Components	• **identify common appliances that run on electricity** • identify mains operated and battery operated devices • describe some of the dangers associated with mains electricity • name some components of a simple electrical circuit • know that batteries are sources of electricity • recognise that for a circuit to work it must be complete • construct a working circuit • **construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers** • make drawings of simple working circuits (pictorial only circuit symbols covered in year 6) • make circuits from drawings provided • **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** • *are methodical in tracing faults in simple circuits* • describe the effect of making and breaking one of the contacts on a circuit • explain why some circuits work and others do not • **recognise that a switch opens and closes a circuit and associate this**	Battery, cell, wires, switch, crocodile clips, buzzer, bulb, circuit, symbols, insulator, conductor, plastic, metal, appliance, component

	with whether or not a lamp lights in a simple series circuit • describe how switches work • construct a home-made switch • identify materials as conductors or insulators • construct simple circuits and use them to test whether materials are electrical conductors or insulators • **recognise some common conductors and insulators, and associate metals with being good conductors** • *relate knowledge about metals and non-metals to their use in electrical appliances* • *describe the use of conductors and insulators in components including connecting wires* • *identify playdough and graphite as non-metal conductors and explain why this is unusual*	

Y6 Electricity	• know that the 'amount' of electricity (voltage) depends on the number of batteries • construct some working series circuits with specified components • recognise conventional circuit symbols • **use recognised symbols when representing a simple circuit in a diagram** • draw circuit diagrams and construct circuits from diagrams using conventional symbols • explore how to change the brightness of bulbs and the volume of a buzzer • describe ways of changing the brightness of a bulb in a circuit or the volume of a buzzer • compare different circuits (e.g. for brightness of bulb) • recall that the amount of electricity is measured in voltage • **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** • *explore the thickness of a wire in a circuit* • *describe the differences between wires usually used for circuits and fuse wires* • *describe what would happen if all the lights in a home were connected in the same circuit and one broke* • *explain the current in circuits using simple models and analogies (e.g. piped water, bicycle chain, children and sweets)*	Voltage, current, series, component, circuit, conductor, positive/negative terminal, complete circuit, battery, cell