

Science Progression Framework: Electricity

Year 4	Year 6
Identify common appliances that run on electricity	
Chn to understand that electrical appliances can run on batteries or mains (or both) as both are examples of electricity	Chn should be confident in being able to construct simple series circuits, identify and name its basic parts as well as investigate insulators and conductors. It is a good idea to begin this topic with a practical recap of work completed in Year 4 to ensure the chn are confident with the basic vocabulary involved
Construct a simple series electrical circuit, identifying and naming its basic parts, including: cells, wires, bulbs, switches and buzzers.	Use recognised symbols when representing a simple circuit in a diagram
Chn can name all basic electrical components such as bulb, buzzer, motor, cell/battery and wires and make a simple series circuit using these components. To evidence their constructions, chn could take photos, record a short video or draw a visual representation of each, labelling the components (it is not expected that chn use conventional symbols at this stage; these will be introduced in Year 6)	Chn to identify, use and name correctly, all recognised symbols when representing circuits in diagrams.
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 the battery.	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in a circuit.
Chn to understand the principles required for a basic understanding of how simple circuits work	Chn to understand and remember why the unit of electricity is called 'volt/voltage' and that voltage is what makes the electrical charges move around a circuit to power a bulb or buzzer
Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple 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
Chn to investigate how real switches work in circuits to control a buzzer, bulb or motor <ul style="list-style-type: none"> masking tape, sticky tape, split pins, glue and scissors. The chn should share and demonstrate their switch designs with each other. NB The above activity links perfectly to challenge 6 whereby chn distinguish between electrical conductors and insulators	Chn to investigate how switches, increasing/decreasing the number of components in circuits, using wires to make circuits smaller/bigger and using different thickness of wires can vary the brightness of lamps and the loudness of buzzers
Recognise some common conductors and insulators, and associate metals with being good conductors	
Chn to understand that circuits work when electricity can pass through the materials used to connect them and that all metals conduct electricity.	