

Year Group	4
Term	Autumn 2
Subject	Science

Topic	Electricity
Curriculum Intent	To know how to make a series circuit with a switch work and understand what materials could be used for the electrical components in their DT projects.

Key Vocabulary	Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol
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Scientific Skills	• To ask relevant questions and using different types of scientific enquiries to answer them • To set up simple practical enquiries, comparative and fair tests • To gather, record and present data in a variety of ways to help in answering questions • To record findings using simple scientific language, drawings and labelled diagrams • To report on findings from enquiries, including displays or presentations of results and conclusions • To use results to draw simple conclusions, • To make predictions for new values, suggest improvements and raise further questions
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Scientific Knowledge	• To identify common appliances that run on electricity. • To construct a simple series electrical circuit • To identify and name basic parts of a circuit, including cells, wires, bulbs, switches and buzzers. • To identify whether a lamp will light a simple series circuit, based on whether the lamp is part of a complete loop with a battery. • To recognise that a switch opens and closes a circuit and associate this with whether a lamp lights. • To recognise some common conductors and insulators, and associate metals with being good conductors.
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Week	Learning Objective	Activities	Outcome
1	To identify appliances that use electricity.	Explore electrical appliances in the home. Group and organise electrical appliances. Discuss and explore electrical safety.	To identify which appliances, use electricity and know how to use them safely.
2	To construct a simple series circuit. To name components in a circuit.	To make a range of simple series circuits using a range of components e.g. buzzers, bulbs, motors and switches.	To make a simple series circuit.
3	To plan and compete an investigation to explore electrical conductors and insulators.	Explore which materials can be used instead of wires to make a circuit. Classify the materials that were suitable/not suitable for wires.	To identify electrical conductors and insulators.
4	To design and test switch designs.	Explore how to connect a range of different switches and investigate how they function in different ways. Choose switches to add to circuits to solve problems, such as a pressure switch for a burglar alarm. Apply their knowledge of conductors and insulators to design and make different types of switches.	To apply their knowledge about switches to design and create their own.
5/6	To apply their knowledge of circuits to design an illuminated decoration (DT).	Make a simple series circuit that can be controlled as part of their DT project – illuminated decoration. Design and create a switch to work in their final product.	To apply their knowledge to create a decoration with a fully working electrical circuit controlled by a switch.