

Brough Primary School – Curriculum Intention Plan 2021 - 2022



Subject: Science Year Group: Year 6		Area of learning: Electricity
Links to previous work/Remember when	<ul style="list-style-type: none"> • Being able to identify common appliances that run on electricity • Being able to construct simple series circuits, identifying and naming the basic parts: cells, wires, bulbs, switches and buzzers. • Being able to identify if a bulb will light in a simple series circuit based on whether the circuit is complete or not. • Knowing that a switch opens or closes and thus completes or interrupts a circuit. • Knowing that some common materials conduct electricity and that some insulate electricity. <p><u>Working Scientifically</u></p> <ul style="list-style-type: none"> • being able to ask and investigate relevant scientific questions; • setting up simple scientific enquiries; • making systematic and careful observations; • gathering, recording and presenting data; • reporting on findings both oral and written; • using results to draw simple conclusions • using straight forward scientific evidence to support what they have found out. 	
Term	Year 6	Key Skills to be taught
Spring 2022 What the children should know at the end of this series of lessons		<ul style="list-style-type: none"> • 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 • <u>Working Scientifically</u> • plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary • take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate • record results using scientific diagrams and labels • use test results to make predictions to set up further comparative and fair tests • report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • vi. identify scientific evidence that has been used to support or refute ideas or arguments

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Vocabulary

Electricity, electrical circuit, complete circuit, circuit symbol, components, cell, battery, positive/negative, connect/connection, loose connection, wire, crocodile clip, bulb, bright/dim, switch, buzzer, volume, motor, fast(er)/slow(er), voltage, current, conductor, insulator, metal/non-metal, enquiry question, investigation, findings, terminal, short circuit, resistance, scatter diagram, investigation, causal relationship,

Sequence of learning	Objectives and suggested details provided by subject leader.
1	Identify current electrical knowledge retained about simple circuits and the names for component parts, what they understand about a circuit being complete and what they recall about different insulators and conductors. <ul style="list-style-type: none"> • Could be achieved through a quiz style assessment or by a series of annotated drawings and diagrams.
2	Plan and carryout a series of simple electrical circuit investigations. (Revision of circuits from Y4) <ul style="list-style-type: none"> • These could simply be a working circuit with a bulb, then a buzzer, then a motor. • Can they design and make a simple switch?
3	How does the brightness of a bulb or the volume of a buzzer change with changes in the number or voltage of cells? <ul style="list-style-type: none"> • Carry out a simple investigation to determine the effect of voltage on electrical components. • Record and present results graphically. • Begin to use recognised symbols for electrical components.
4	To carry out an investigation of resistance by using pencils of different lengths to create a 'dimmer switch'. To know the relationship between current and resistance is inversely proportional. (This means that increased resistance will decrease the current. <ul style="list-style-type: none"> • Plan to be given here and pupils to record their results and conclusions. • Record the circuits constructed using recognised symbols.
5	Assessment task Part 1:- Construct the circuits required based on the circuit diagrams provided. Label each component and explain clearly the effect that different voltages have on the components.
6	Assessment task Part 2:- Using everything you have learnt design a circuit that could be used to illuminate an instrument panel display which needs to be bright enough to be seen during the day and not too bright to blind an operative at night. A circuit diagram is required here not a complete circuit.

Learning Outcome/product

In the first of two assessment lessons the children will show their understanding of electrical component symbols by correctly constructing the required circuits, clearly explaining how the different voltages are achieved and what effect they have on the component. In the second lesson they will design an appropriate circuit for the required task.

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Assessment records	List only those children who have not achieved the expected outcomes.

Assessment records	List only those children who have exceeded the expected outcomes.

End of unit assessment question
E.g. What effect does increased voltage have on the components of a simple circuit? E.g. a bulb, a buzzer and a motor?