

Y6 Science – Electricity

NC Targets to be covered:

- investigate and describe the variations in how components function e.g. the brightness of bulbs, loudness of buzzers and on/off position of switches
- investigate the impact the and voltage of cells has on the volume of a buzzer
- investigate the impact the number and voltage of cells has on the brightness of a lamp
- construct simple series circuit diagrams using recognised symbols.

Learning Ladders:

I can construct simple series circuit diagram using recognised symbols

I can investigate the impact the number and voltage of cells has on the brightness of a lamp

I can investigate the impact the number and voltage of cells has on the volume of a buzzer

I can investigate and describe the variations in how components function e.g. the brightness of bulbs, loudness of buzzers and on/off position of switches

Working Scientifically

- I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate.
- I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

Week	Order of Study – Main plots and Subplots
1	LI- I can construct simple series circuit diagram using recognised symbols. Identifying and Classifying enquiry- How would you group electrical components and appliances based on what electricity makes them do? Stick in and complete the first two sections of the KWL grid, and then stick in knowledge organiser. Look at ppt slides and review parts of a circuit. Chn to draw circuit symbols and match to their name and definition. Ensure chn know the difference between a battery and a cell. <i>A battery is a collection of cells.</i> Use a Venn diagram to classify electrical objects according to what they do e.g. movement, light or sound. Chn to then label the parts of circuit diagrams (Bronze), draw circuit diagrams using the correct symbols (Silver) and/or identify the faults in the circuit diagrams and correct them (Gold). <i>Teacher mark.</i> Resources needed: ppt slides, Venn diagram, bronze, silver and gold sheets Key terminology – circuit, component, energy source, controller/switch, electrical load, conductor, insulator, battery, cell, motor, lightbulb, buzzer, closed circuit, simple circuit, series circuit, parallel circuit, circuit diagram
2	LI- I can investigate the impact the number and voltage of cells has on the brightness of a lamp and volume of a buzzer. Fair Testing enquiry- How do the number of cells in a circuit affect the brightness of the lamp? Watch first video link. Show chn pictures of cells which are different sizes and voltages. Which of them do you think will provide the most electrical energy? Some chn may have the misconception that larger batteries are more powerful. Explain that the size of the battery doesn't matter; it depends on the voltage. Watch second video link. Introduce fair testing enquiry. Chn to write up hypothesis, variables, equipment and method (chn to draw circuit diagrams for each circuit they will test e.g. 1-4 cells) before carrying out the investigation. Now, what happens with the buzzers when you add more cells? Chn to write up their conclusion and evaluation. <i>Self assessment.</i> Resources needed: ppt slides, https://www.bbc.co.uk/programmes/p011991n, https://www.bbc.co.uk/programmes/p0118cfl Key terminology– circuit, component, energy source, controller/switch, electrical load, conductor, insulator, battery, cell, motor, lightbulb, buzzer, closed circuit, simple circuit, series circuit, parallel circuit, circuit diagram, voltage
3	LI- I can investigate and describe the variations in how components function e.g. the brightness of bulbs, loudness of buzzers and on/off position of switches. Link to DT- electrical game. Chn to use knowledge of circuits to design and make an electrical game which includes a buzzer/lightbulb in a complete circuit. Stick in photo of completed game. They should evaluate their game e.g. how could they have made the lightbulb brighter or the buzzer louder? Resources needed: butterfly pins, wires, cells, wire cutters, ruler, lightbulbs, buzzers



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	Key terminology – circuit, component, energy source, battery, cell, lightbulb, buzzer, closed circuit, simple circuit, series circuit
Assessment time – Complete the final column of their KWL grid.	