

Inspiring and enabling our school community to live life to the full



YEAR 6

Subject: Science
Electricity: Changing circuits

Our Science curriculum aims to enthuse children and help them to be curious and develop a sense of excitement about the world. Through a range of teaching, learning and extra-curricular opportunities, children will develop scientific knowledge and conceptual understanding to recognise the uses and implications of Science, today and for the future. We encourage children to ask their own questions; predict how things will behave and analyse causes, using Science to explain what is happening.

Characteristics of an Effective Learner

Courage
Commitment
Collaboration
Creativity
Curiosity

Prior Learning:

- In Year 4, children learn about electricity and how to make a complete circuit. They learn about conductors and insulators.

Key Vocabulary taught in this unit:

Voltage, circuits, buzzers, motors, components, resistors

Key Questions:

Q: How do we light the lamp?

Circuits diagrams using standard symbols are used to record circuits.

Q: How can we change a circuit?

Adding more cells to a circuit makes a lamp brighter.

Q: How can we change the brightness of a lamp?

A lamp gets brighter if the voltage in the circuit is increased. The lamp gets dimmer if thinner wires are used.

Q: How can we change how other components work?

If the voltage is increased in a circuit, a buzzer makes a louder sound and a motor turns more quickly.

Q 5: How can we predict which circuit will have the brighter lamp?

When comparing two circuits it is possible to predict which circuit will have the brighter lamp by considering the voltage and the number of lamps.

Intent: What do we want the children to know, be able to do by the time they complete this unit?

- 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.

Working scientifically

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Recording data and results of increasing complexity using scientific diagrams and labels, [classification keys,] tables, [scatter graphs, bar and line graphs.]
- Using test results to make predictions to set up further comparative [and fair] tests.
- Identifying scientific evidence that has been used to support or refute ideas or arguments.

Impact / Outcome:

What will the final product / result be?

- Children will learn about the methods scientists use to build scientific knowledge.
- They will learn that scientists use standard symbols in diagrams so that they can communicate with scientists in other parts of the world. They use what they have learnt from one enquiry to make predictions that can be tested in further enquiry work.
- They will develop an understanding of the following type of enquiry: carrying out comparative [and fair] tests.

P4C Inquiry (where appropriate)