**Electricity**

**NC Statutory Guidance**

Pupils should be taught to:

* 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**

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

* planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
* taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
* 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
* reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
* identifying scientific evidence that has been used to support or refute ideas or arguments

**Resources**

Twinkl PlanIt to be adapted.

**Lesson Overview (Statutory in Bold)**

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| WALT | Knowledge to be Taught | Skills to be Taught and Investigations | Vocabulary |
| Explain the importance of the major discoveries in electricity. | History of electricity. | Identifying scientific evidence that has been used to support or refute ideas or arguments. | Electricity  Positive charge  Negative charge  Voltage  Volt |
| Observe and explain the effects of differing volts in a circuit. | A battery is the scientific name for a collection of cells joined together.  Electrical circuit symbols. | **Use recognised symbols when representing a simple circuit in a diagram** | Circuit  Cell  Electrode  Electrolyte  Bulb  Switch  Motor  Wire  Buzzer |
| Observe and explain the effects of differing volts in a circuit. | Current:  This is the steady flow of electrons.  This is measured in amperes (amps)  Voltage:  This is the force that makes the electric current flow.  This is measured in volts (V)  The greater the voltage, the more current will flow. | **Associate the brightness of a bulb or the volume of a buzzer with the number and voltage of cells used in the circuit**  Investigation into voltage using voltmeter. | Current  Electrons  Amps  Voltage |
| Plan an investigation. Understand variations in how components function. | Plan an investigation | **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**  Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary | Variable  Controlled variable  Independent variable  Fair and comparative test  Practical enquiry |
| Conduct an investigation. Record my data and report my findings. | Conduct investigation | 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  Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs Reporting and presenting 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 | Objectivity  Accuracy  Reproducibility  Consensus  Sample size |
| Investigate my results further. | Report results | 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  Using test results to make predictions to set up further comparative and fair tests | Objectivity  Accuracy  Reproducibility  Consensus  Sample size |