

St. Benedict's Primary School
SCIENCE
KNOWLEDGE AND SKILLS BUILDER

Science element from the National Curriculum – **Electricity**

Phase	Context for learning	Knowledge and Skills for ELECTRICITY
<p>LOWER KEY STAGE 2</p>	<p>YEAR 3 Context: Standalone Lessons Programme of Study Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p>	<p>Skills Compare common household equipment and appliances that are and are not powered by electricity.</p> <p>Knowledge Electricity is a type of energy. It is used to power many everyday items, such as kettles, computers and televisions. Electricity can also come from batteries. Batteries eventually run out of power and need to be recycled or recharged. Batteries power devices that can be carried around, such as mobile phones and torches.</p> <p>Skills Construct operational simple series circuits using a range of components and switches for control.</p> <p>Knowledge Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.</p> <p>Skills Predict and describe whether a circuit will work based on whether or not the circuit is a complete loop and has a battery or cell.</p> <p>Knowledge A series circuit is a simple loop with only one path for the electricity to flow. A series circuit must be a complete loop to work and have a source of power from a battery or cell.</p> <p>Skills Describe materials as electrical conductors or insulators.</p> <p>Knowledge Electrical conductors allow electricity to flow through them, whereas insulators do not. Common electrical conductors are metals. Common insulators include wood, glass, plastic and rubber.</p> <p>Skills Construct operational simple series circuits using a range of components and switches for control.</p> <p>Knowledge</p>

<p>Year 6 Summer 1 ILP Hola Mexico Context: Learning to Investigate Can you turn a light down?</p> <p>Programmes of Study Use recognised symbols when representing a simple circuit in a diagram.</p> <p>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.</p> <p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p>		<p>Electrical components include cells, wires, lamps, motors, switches and buzzers. Switches open and close a circuit and provide control.</p> <p>Skills Create circuits using a range of components and record diagrammatically using the recognised symbols for electrical components.</p> <p>Knowledge There are recognised symbols for different components of circuits.</p> <p>Skills Compare and give reasons for variations in how components in electrical circuits function (brightness of lamps; volume of buzzers and function of on or off switches).</p> <p>Knowledge A circuit needs a power source, such as a battery or cell, with wires connected to both the positive and negative terminals. Other components include lamps, buzzers or motors, which an electric current passes through and affects a response, such as lighting a lamp or turning a motor. When a switch is open, it creates a gap and the current cannot travel around the circuit. When a switch is closed, it completes the circuit and allows a current to flow all the way around it.</p> <p>Skills Explain how the brightness of a lamp or volume of a buzzer is affected by the number and voltage of cells used in a circuit.</p> <p>Knowledge Voltage is measured in volts (V) and is a measure of the difference in electrical energy between two parts of a circuit. The bigger the voltage, the more electrons are pushed through the circuit. The more voltage flowing through a lamp, buzzer or motor, the brighter the lamp, the louder the buzzer and the faster the motor.</p>
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