

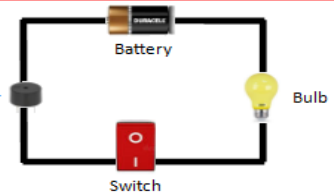
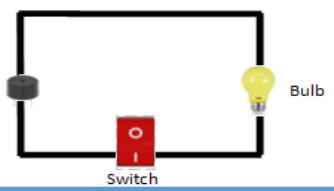
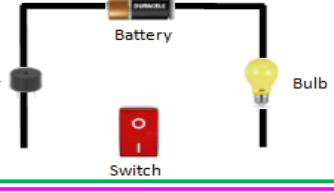
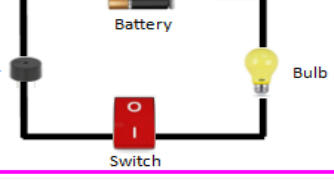
Uplands Manor Primary School - Science Unit Organiser

Science Topic:	Electricity		Year 4		
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What? (Key Vocabulary)	
Spelling	Definition/Sentence
Generator	A machine that make electrical energy
Component	A part of something (a part of a circuit)
Circuit	A path through which an electrical current flows
Current	The flow of electrical charge
Connected	Something that is joined or linked





Diagrams and Symbols

Would the bulb light up?


	<p>Will the bulb light?</p> <p style="text-align: center; color: green; font-weight: bold;">Yes</p> <p>Why?</p> <p>The circuit has a battery and a bulb and is complete.</p>
	<p>Will the bulb light?</p> <p style="text-align: center; color: red; font-weight: bold;">No</p> <p>Why?</p> <p>The circuit has no battery to provide the electrical power.</p>
	<p>Will the bulb light?</p> <p style="text-align: center; color: red; font-weight: bold;">No</p> <p>Why?</p> <p>The circuit is not complete.</p>
	<p>Will the bulb light?</p> <p style="text-align: center; color: red; font-weight: bold;">No</p> <p>Why?</p> <p>The switch is in the off (0) position.</p>

Recommended Experiments

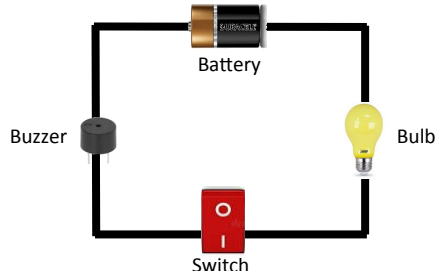
A minimum of two experiments should take place during this unit of work with one final written outcome linked to the scientific enquiry skills and approaches used.

	Constructing a working circuit then test a range of items to see which would let electricity pass through
	Applying knowledge of circuits and switches by creating a switch for a purpose e.g. house alarm, light house model
	Setting up circuits and predict whether the bulb will get brighter, light up or not light up
	Experimenting to test materials that are conductors or insulators

What? (Key Knowledge)

Electricity	
What is Electricity?	<ul style="list-style-type: none"> Electricity is created by generators which can be powered by gas, coal, oil, wind or solar The electrical energy can be converted into other types of energy such as light, heat, movement or sound Electricity is dangerous, so be careful when using electrical appliances
What are common appliances that run on electricity?	<p>Any appliances that need to be plugged in run on electricity, for example:</p> <ul style="list-style-type: none"> ⇒ Television ⇒ Computer ⇒ Microwave ⇒ Lights <div style="text-align: right;">  </div>

An electrical circuit

A series circuit (One pathway around the circuit)	<ul style="list-style-type: none"> Electricity can flow through the components in a complete electrical circuit A circuit always needs a power source, such as a battery, with wires connected to both the positive (+) and negative (-) ends (a battery is made from a collection of cells connected together) A circuit can also contain other electrical components, such as bulbs, buzzers or motors, which allow electricity to pass through Electricity will only travel around a circuit that is complete, that means it has no gaps <div style="text-align: center;">  </div>
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What is a switch?	<ul style="list-style-type: none"> You can use a switch in a circuit to create a gap in a circuit - this can be used to switch it on and off When a switch is open (off), there is a gap in the circuit - electricity cannot travel around the circuit When a switch is closed (on), it makes the circuit complete. Electricity can travel around the circuit
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Electrical Conductors and Electrical Insulators

Conductors	<ul style="list-style-type: none"> Some materials let electricity pass through them easily - they are known as electrical conductors Many metals, such as iron, copper and steel, are good electrical conductors
Insulators	<ul style="list-style-type: none"> Some materials do not allow electricity to pass through them - they are known as electrical insulators Wood, glass, plastic and rubber are good electrical insulators - that is why they are used to cover materials that carry electricity

Builds on: learning in Year 3 - Summer - Unit: Forces and Magnets	Learning links	Leads to: learning in Year 6 - Summer - Unit: Electricity and Light
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