



Science Focus Electricity Year 3/4 Summer Term 2

What? (Key knowledge)

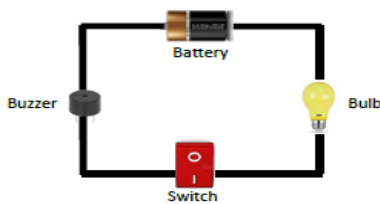
Electricity

What is electricity?	<ul style="list-style-type: none"> <li>Electricity is created by generators which can be powered by gas, coal, oil, wind or solar.</li> <li>The electrical energy can be converted into other types of energy such as light, heat, movement or sound.</li> <li>Electricity is dangerous so be careful when using electrical appliances.</li> </ul>
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What are common appliances that run on electricity?	<p>Appliances that need to be plugged in run on electricity.</p> <p>For example</p> <ul style="list-style-type: none"> <li>television</li> <li>computer</li> <li>kettle</li> <li>microwave</li> </ul>
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An electrical circuit

<p>A series circuit</p> <p>One pathway around the circuit.</p>	<ul style="list-style-type: none"> <li>Electricity can flow through components in a complete electrical circuit.</li> <li>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).</li> <li>A circuit can also contain other electrical components, such as bulbs, buzzers or motors, which allow electricity to pass through.</li> <li>Electricity will only travel around a circuit that is complete. That means it has no gaps.</li> </ul>
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What is a switch?	<ul style="list-style-type: none"> <li>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.</li> <li>When a switch is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit.</li> <li>When a switch is closed (on), it makes the circuit complete. Electricity can travel around the circuit.</li> </ul>
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Electrical conductors and insulators

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

What? (Key vocabulary)

Spelling	Definition/sentence
generator	a machine that makes electricity
component	a part of something (part of a circuit)
circuit	a pathway through which an electrical current flows
current	the flow of electrical charge
connected	something that is joined or linked

Diagrams and symbols

	Will the bulb light?
	<b>Yes</b>
	Why? The circuit has a battery and a bulb and is complete.

	Will the bulb light?
	<b>No</b>
	Why? The circuit has no battery to provide the electrical power.

	Will the bulb light?
	<b>No</b>
	Why? The circuit is not complete.

	Will the bulb light?
	<b>No</b>
	Why? The switch is in the off (0) position.



Science Focus Electricity Year 5/6 Summer Term 2

What? (Key knowledge)	
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<b>An electrical circuit</b>	
<p>A series circuit</p> <p>One pathway around the circuit.</p>	<ul style="list-style-type: none"> <li>Electricity can flow through components in a complete electrical circuit.</li> <li>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).</li> <li>A circuit can also contain other electrical components, such as bulbs, buzzers or motors, which allow electricity to pass through.</li> <li>Electricity will only travel around a circuit that is complete. That means it has no gaps.</li> </ul>
What is a switch?	<ul style="list-style-type: none"> <li>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.</li> <li>When a switch is open (off), there is a gap in the circuit. Electricity cannot travel around the circuit.</li> <li>When a switch is closed (on), it makes the circuit complete. Electricity can travel around the circuit.</li> </ul>
Increasing the brightness of a bulb or the volume of a buzzer.	<ul style="list-style-type: none"> <li>The more cells that are used in a circuit, the brighter the bulb or louder the buzzer.</li> <li>If one cell is used, the higher its voltage, the more powerful the cell is.</li> </ul>

What? (Key vocabulary)	
Spelling	Definition/sentence
generator	a machine that makes electricity
component	a part of something (part of a circuit)
voltage	<i>Voltage</i> is a measure of the difference in electrical energy between two parts of a circuit

Diagrams and symbols			
Electrical symbols for circuit diagrams			
Lamp / bulb	Motor	Switch	Cell / battery
Buzzer	Ammeter	Wire	Voltmeter