



Science Focus Electricity Year 3/4 Summer Term 2

What? (Key knowledge)

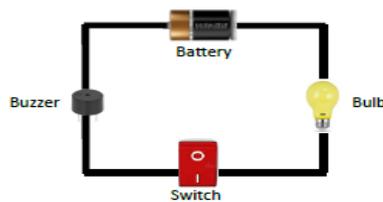
Electricity

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>Appliances that need to be plugged in run on electricity.</p> <p>For example</p> <ul style="list-style-type: none"> television computer kettle microwave
---	---

An electrical circuit

<p>A series circuit</p> <p>One pathway around the circuit.</p>	<ul style="list-style-type: none"> Electricity can flow through 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.
--	--



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.
-------------------	---

Electrical conductors and 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.

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?
	Yes
	Why? The circuit has a battery and a bulb and is complete.

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

	Will the bulb light?
	No
	Why? The circuit is not complete.

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



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.
An electrical circuit	
<p>A series circuit</p> <p>One pathway around the circuit.</p>	<ul style="list-style-type: none"> Electricity can flow through 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.
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.
Increasing the brightness of a bulb or the volume of a buzzer.	<ul style="list-style-type: none"> The more cells that are used in a circuit, the brighter the bulb or louder the buzzer. If one cell is used, the higher its voltage, the more powerful the cell is.

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