

National CE Junior School Knowledge Organiser

Science Focus:	Electricity and Light	Year 6	Autumn Term
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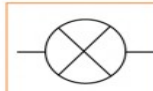
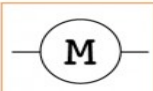
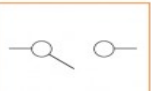



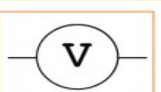
What? (Key Knowledge)	
Electricity	
What is Electricity?	<ul style="list-style-type: none"> Electricity is created by generators which can be powered by gas, coal, oil, wind or solar. The electrical energy can be converted into other types of energy such as light, heat, movement or sound. Electricity is dangerous, so be careful when using electrical appliances.
An electrical circuit	
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.
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 Knowledge)	
Light Sources	
We need light in order to see things. When there is no light we say it is dark.	
What is a light source?	<ul style="list-style-type: none"> A light source is something that makes its own light.
More about light	
Things you need to know about light	<ul style="list-style-type: none"> Light travels in straight lines
	<ul style="list-style-type: none"> Light travels extremely fast - 186,282 miles per second (that's like travelling around the world over 7 times in a second)
	<ul style="list-style-type: none"> If something gets in the way of light, a shadow is formed.
Shadows	
How is a shadow formed?	<ul style="list-style-type: none"> When light from a source is blocked by an opaque (solid) object, you get a shadow.
How does the size of the shadow change?	<ul style="list-style-type: none"> If an object is moved closer to the light source, the shadow gets bigger. If an object is moved further away from the light source, the shadow gets smaller.

What? (Key Vocabulary)	
Spelling	Definition/Sentence
Generator	A machine that make electrical energy
Component	A part of something (a part of a circuit)
Voltage	A measure of the difference in electrical energy between two parts of a circuit
Shadow	A shadow is a dark area where light from a light source is blocked by an opaque object.
Refraction	When light travels from air into water, it slows down, causing it to change direction slightly. This change of direction is called refraction.

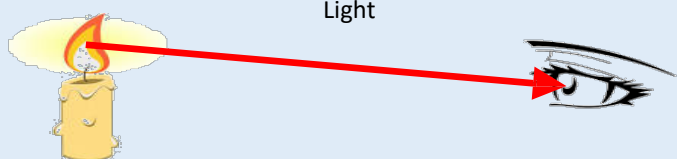
Diagrams and Symbols

Electrical Symbols for circuit diagrams

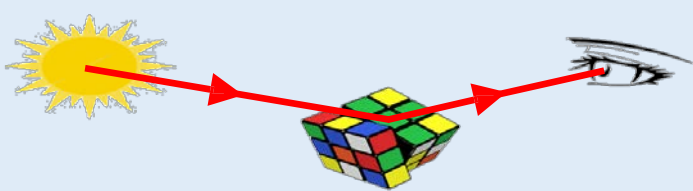
			
Lamp / bulb	Motor	Switch	Cell / battery
			
Buzzer	Wire	Voltmeter	

Diagrams and Symbols

Light



Above: Light travels directly from the light source (candle flame) to the eye.



Here the light goes form the light source, bounces off the object and into your eyes, so that you see the object.

Prior Learning Electricity
<ul style="list-style-type: none"> Identify common appliances that run on electricity. Construct a simple circuit and name its basic parts Recognise some common conductors and insulators and associate metals with being good conductors.

Prior Learning Light
<ul style="list-style-type: none"> Recognise we need light to see things and that light is reflected. Know shadows are formed when light is blocked by an opaque object