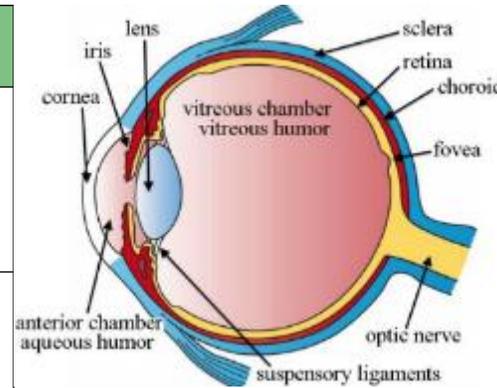


Year 6: Electricity Knowledge Mat

Subject Specific Vocabulary		Electrical symbols	Sticky Knowledge about Electricity																								
conductor	Some materials let electricity pass through them easily. These materials are known as electrical conductors.	<table border="1"> <thead> <tr> <th>Component</th> <th>Symbol</th> <th>Purpose</th> </tr> </thead> <tbody> <tr> <td>Cell (Battery)</td> <td></td> <td>Provides electrical energy</td> </tr> <tr> <td>Power supply</td> <td></td> <td>Alternative to using cells</td> </tr> <tr> <td>Wire</td> <td></td> <td>Allows current to travel</td> </tr> <tr> <td>Bulb/light</td> <td></td> <td>Converts electrical energy into heat and light</td> </tr> <tr> <td>Motor</td> <td></td> <td>Converts electrical energy into movement energy</td> </tr> <tr> <td>Buzzer</td> <td></td> <td>Converts electrical energy into sound energy</td> </tr> <tr> <td>Switch</td> <td></td> <td>Allows circuit to be opened or closed</td> </tr> </tbody> </table>	Component	Symbol	Purpose	Cell (Battery)		Provides electrical energy	Power supply		Alternative to using cells	Wire		Allows current to travel	Bulb/light		Converts electrical energy into heat and light	Motor		Converts electrical energy into movement energy	Buzzer		Converts electrical energy into sound energy	Switch		Allows circuit to be opened or closed	<input type="checkbox"/> Electricity travels at the speed of light. That's more than 186,000 miles per second!
Component	Symbol		Purpose																								
Cell (Battery)			Provides electrical energy																								
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Switch			Allows circuit to be opened or closed																								
insulator	Plastic, wood, glass and rubber are good electrical insulators.		<input type="checkbox"/> Electricity comes from the power station, the wind, the sun, water and even an animal's poo!																								
socket	A socket is a safe device to plug your electrical items into at home. Almost every room at home will have at least one socket.	<input type="checkbox"/> Electricity is a type of energy that builds up in one place (static), or flows from one place to another (current electricity).																									
series circuits	A series circuit is one that has more than one resistor, but only one path through which the electricity (electrons) flows.	<input type="checkbox"/> Coal is the biggest source of energy for producing electricity. Coal is burned in furnaces that boil water and create steam.																									
cells	An electrical cell is a device that is used to generate electricity, or one that is used to make chemical reactions possible by applying electricity.	<p>Important facts to know by the end of the electricity topic:</p> <ul style="list-style-type: none"> • Know that the brightness of a bulb is associated with the voltage. • Compare and give reasons for variations in how components function. • Use recognised symbols when representing a simple circuit in a diagram. • Construct simple series circuits. • Be able to answer questions about what happens when they try different components, for example; switches, bulbs, buzzers and motors. 																									
volts	Voltage is an electrical potential difference, the difference in electric potential between two places.		<input type="checkbox"/> A popular way of generating electricity is through hydropower. This is a process where electricity is made by water which spins turbines attached to generators.																								
generator	A machine that converts energy into electricity.		<input type="checkbox"/> A bolt of lightning can measure up to 3,000,000 volts, and lasts less than one second!																								
turbine	A machine that creates continuous power in which a wheel, or something similar, moves round and round by fast moving water, steam, gas or air.		<input type="checkbox"/> Electric fields work in a similar way to gravity. Whereas gravity always attracts, electric fields can either attract or repulse.																								
fuses	These are safety devices. A fuse is a strip of wire that melts and breaks an electric circuit if it goes over a safe level.																										
Thomas Edison	He was a great inventor that came up with a way of making the electric light bulb accessible for homes, industry and outside in the streets.																										

Year 6: Light Knowledge Mat

Subject Specific Vocabulary	
light wave	One of the characteristics of light is that it behaves like a wave. Light can be defined by its wavelength and frequency. The frequency is how fast the waves vibrate up and down.
light source	Light, or illumination, is a form of energy that travels in waves, like sound. You can find different sources of light, such as a candle or the sun.
concave	Is a lens that curves inwards and reflects light differently as a result.
convex	Is a lens that curves outwards and reflects light differently as a result.
filters	A filter is a transparent material that absorbs some colours and allows others to pass through.
lens	A lens is a curved piece of glass or plastic designed to refract light in a specific way.
retina	The retina is at the back of your eye and it has light-sensitive cells called rods and cones.
cornea	The cornea is thin, clear and covers your eye. It's important because it helps you see by focusing light as it enters the eye.
iris	By opening and closing the pupil, the iris can control the amount of light that enters the eye.
pupil	The pupil can be compared with the shutter of a camera. It is surrounded by the iris which is the coloured part of the eye.



Important facts to know by the end of the light topic:

- Know that light travels in straight lines.
- Understand that because light travels in straight lines objects are seen because they give out or reflect light into the eye.
- Know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
- Know that light travels in straight lines and therefore shadows have the same shape as the objects that cast them.

Sticky Knowledge about Light
<input type="checkbox"/> Light will travel in a completely straight line until it hits an object that will reflect it.
<input type="checkbox"/> Space does not have any light. We can see things in space due to light bouncing off of the objects in space.
<input type="checkbox"/> Light doesn't travel as fast when it has to pass through mediums that are different, such as air, water or glass.
<input type="checkbox"/> The light that we see from the sun actually left the sun ten minutes before we see it.
<input type="checkbox"/> Light can be controlled and produced in so many ways. A camera can control the amount of light that comes into the camera lens. We also use light in televisions, medical systems, copy machines, telescopes and satellites.
<input type="checkbox"/> Light is used by plants to convert the light into energy as their 'food'. The process is called 'photosynthesis' and converts carbon dioxide through the energy of the light.