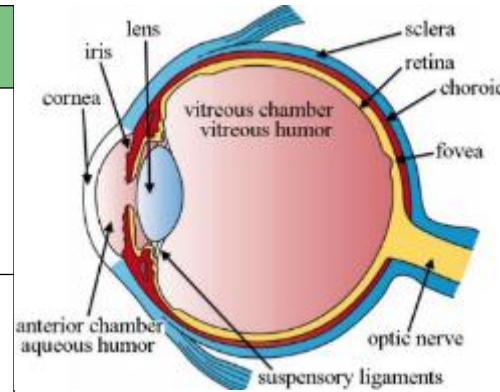




Year 6  
Autumn Term 2024  
Knowledge Mats

# Year 6: Light Knowledge Mat

Subject Specific Vocabulary	
<b>light wave</b>	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.
<b>light source</b>	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.
<b>concave</b>	Is a lens that curves inwards and reflects light differently as a result.
<b>convex</b>	Is a lens that curves outwards and reflects light differently as a result.
<b>filters</b>	A filter is a transparent material that absorbs some colours and allows others to pass through.
<b>lens</b>	A lens is a curved piece of glass or plastic designed to refract light in a specific way.
<b>retina</b>	The retina is at the back of your eye and it has light-sensitive cells called rods and cones.
<b>cornea</b>	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.
<b>iris</b>	By opening and closing the pupil, the iris can control the amount of light that enters the eye.
<b>pupil</b>	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:


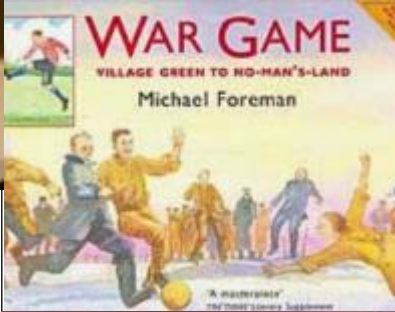

- Know that light travels in straight lines.
- Understand that because light travels in straight lines objects are seen because they give out or reflect light into the eye.
- Know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our 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 bend 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.

# Year 6: Electricity Knowledge Mat

Subject Specific Vocabulary		Electrical symbols	Sticky Knowledge about Electricity																								
<b>conductor</b>	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																								
<b>insulator</b>	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!																									
<b>socket</b>	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).																									
<b>series circuits</b>	A series circuit is one that has more than one resistor, but only one path through which the electricity (electrons) flows.	<p><b>Important facts to know by the end of the electricity topic:</b></p> <ul style="list-style-type: none"> <li>• Know that the brightness of a bulb is associated with the voltage.</li> <li>• Compare and give reasons for variations in how components function.</li> <li>• Use recognised symbols when representing a simple circuit in a diagram.</li> <li>• Construct simple series circuits.</li> <li>• Be able to answer questions about what happens when they try different components, for example; switches, bulbs, buzzers and motors.</li> </ul>																									
<b>cells</b>	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.		<input type="checkbox"/> Coal is the biggest source of energy for producing electricity. Coal is burned in furnaces that boil water and create steam.																								
<b>volts</b>	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.																								
<b>generator</b>	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!																								
<b>turbine</b>	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.																								
<b>fuses</b>	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.																										
<b>Thomas Edison</b>	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.																										

# World War 1: KS2 Knowledge Mat


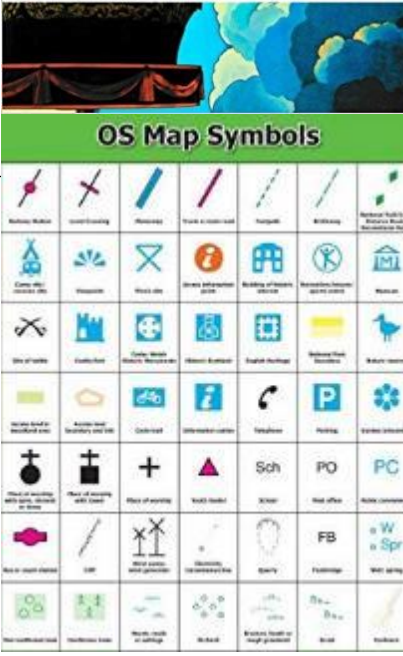
Subject Specific Vocabulary			
<b>trench</b>	A long narrow ditch dug into the ground where soldiers lived		
<b>airships</b>	Huge balloon like crafts used to carry out bombing raids in Britain.	<h2 style="text-align: center;">Sticky Knowledge about World War 1</h2> <ul style="list-style-type: none"> <li><input type="checkbox"/> Aircraft were still very new in 1914, so when the Germans launched bombing raids on London, they were carried out from airships, known as zeppelins</li> <li><input type="checkbox"/> In 1918 a pigeon, Cher Ami, one of about 100,000 homing pigeons used during the war, managed to save 500 US soldiers</li> <li><input type="checkbox"/> Tanks were developed by the British during the first world war</li> <li><input type="checkbox"/> Before the war most women stayed at home or worked in domestic service</li> <li><input type="checkbox"/> When the war started, British soldiers went into battle with just a cloth cap for protection</li> <li><input type="checkbox"/> Many people suffered facial injuries during the first world war</li> <li><input type="checkbox"/> The first ever motorized ambulances were used during the first world war</li> <li><input type="checkbox"/> Approximately 16,000 British conscientious objectors refused to fight during the war</li> <li><input type="checkbox"/> Due to food shortages, Britons were banned from throwing rice at weddings and feeding pigeons</li> </ul>	
<b>Archduke Franz Ferdinand of Austria</b>	His assassination was believed to be the trigger to the outbreak of the WW1 war. He was heir to the Austro-Hungarian throne.		
<b>Central Powers</b>	The alliance of Germany, Austria, Hungary, Bulgaria and Turkey		
<b>front line</b>	the trench closest to the enemy.		
<b>Central Powers no man's land</b>	The alliance of Germany, Austria, Hungary, Bulgaria and Turkey The area between the two sides during battle.		
<b>battle of the Somme</b>	The largest battle of WW1 and the bloodiest battle in history.		
<b>zeppelin</b>	Giant German airships that carried out 52 air raids on Britain.		
<b>blackout</b>	When lights from buildings, including houses, were not allowed to be seen from the sky.		
<b>Armistice Day</b>	The agreement signed between the Allies and Germany to end the war – 11 <sup>th</sup> November		
<b>conscription</b>	A rule that said ALL healthy men aged 18 – 41 had to fight		

# World War 2: KS2 Knowledge Mat




		War Timeline		Sticky Knowledge
<b>axis</b>	Countries which fought on the German side (including: Italy, Germany, Japan (1939-1941)).	1 <sup>st</sup> September 1939	In 1933, Adolf Hitler rose to power as the political leader of Germany. Germany invades Poland. Britain insists Germany withdraw troops from Poland. The Germans refuse. Britain declares war on 3 <sup>rd</sup> Sep 1939. Britain initially responded with bombing raids over Germany.	<b>World War 2 was a battle between two groups of countries</b> – the 'Allies' and the 'Axis'. The major Allied powers were Britain, France, Russia, China and the United States. The major Axis powers were Germany, Italy and Japan.
<b>Allies</b>	Countries which fought on the British side (including: USA, Great Britain, France, Russia (1941-1945)).	1939 Onwards	Children were evacuated from cities expected to be bombed as enemy planes targeted factories etc. Children were evacuated to the countryside.	Adolf Hitler, together with the Nazi Party, wanted Germany to rule Europe. To gain more land and power, on 1 September 1939 German troops invaded Poland. After Hitler refused to stop the invasion, Britain and France declared war on Germany – World War II had begun.
<b>Nazi</b>	Member of the German political group which came to power in 1933.	10 <sup>th</sup> May 1940	Chamberlain resigned and Winston Churchill was chosen to be his successor as Prime Minister on May 10, 1940.	During the course of the war, German forces advanced through Europe. By the summer of 1941 they had invaded France, Belgium, Holland, Luxembourg, Denmark, Norway, Greece, Yugoslavia and the USSR.
<b>evacuation</b>	Organised movement of children and the vulnerable from towns and cities to safe zones.	June 1940	Evacuation of Dunkirk. Large numbers of troops were surrounded by Germans at the French coastal town of Dunkirk. 338, 226 were saved by a fleet of 800 boats. This is known as the 'Miracle of Dunkirk'.	Millions of Germans were imprisoned and killed because they didn't fit the image of the 'perfect' German. Hitler wanted to create what he thought was the 'best' and strongest race – and to the Nazi Party, this excluded certain groups, such as Jews, Gypsies and those with physical and mental disabilities.
<b>evacuee</b>	Someone who was evacuated, moved from a danger area to a safer place.	6 <sup>th</sup> June 1944	D-Day. The Normandy landings were a series of landing operations by the Allies to claim Europe. It was the largest seaborne operation in history.	The group most heavily targeted by the Nazis were the Jews. Around six million Jewish people were killed during World War 2 in one of history's most terrible events – the Holocaust. Racist in his views, Hitler blamed Jewish people for Germany losing World War I and claimed they were dangerous to German people and society.
<b>Blitz</b>	A series of bombing raids on the UK.	7 <sup>th</sup> May 1945	Germany surrenders: The Allies had forced the surrender of Axis troops in Europe. On 7 <sup>th</sup> May 1945 Germany surrender to the Allies – the end of war in Europe.	The US didn't join the war until 1941, when Japan attacked the United States at their Naval Base at Pearl Harbour in Hawaii. On 8 December 1941 (the very next day), the US declared War on Japan and, in turn, its German allies.
<b>propaganda</b>	Controlling news media (such as radio) to depict the war effort .	8 <sup>th</sup> May 1945	VE Day. The VE in VE Day stands for Victory in Europe. It was the public holiday of 8 <sup>th</sup> May 1945 to mark the defeat of Germany by the Allied forces in <a href="#">World War 2</a> .	Some countries remained 'neutral' in World War 2. Such countries were Spain, Sweden and Switzerland – who chose not to join either side.
<b>Holocaust</b>	Murder of Jews and other groups of people by the Nazis.	6 <sup>th</sup> August 1945	Atomic bomb on Hiroshima. Japan refused to surrender, threatening to fight on. The US considered invasion but this would have led to deaths of 500,000. On the 6 <sup>th</sup> of Aug and 9 <sup>th</sup> Aug, the US dropped an atomic bomb on Nagasaki and Hiroshima.	The Germans surrendered on 8 May 1945. In 1944, an Allied army crossed from Britain to free France from Nazi rule. One year later, Allied armies invaded Germany, forcing the Germans to surrender. After nuclear attacks on Japan's major cities Hiroshima and Nagasaki, Japan also surrendered to Allied forces in August the same year. World War 2 had ended.
<b>Luftwaffe</b>	The German Airforce.	15 <sup>th</sup> August 1945	End of WW2 . The surrender of Japan was announced on August 15 <sup>th</sup> 1945.	
<b>RAF</b>	The Royal Airforce (British).			
<b>refugees</b>	A person who has been forced to leave their country in order to escape war.			
<b>Kindertransport</b>	Transport arranged for Jewish children to flee German occupied countries.			



# Map Reading KS2 Knowledge Mat

Subject Specific Vocabulary			Exciting Books
<b>Ordnance Survey</b>	An Ordnance Survey map is a detailed map produced by mapping agency of the United Kingdom (UK).		<h3>Sticky Knowledge about Map Reading</h3> <ul style="list-style-type: none"> <li>Cartography is the study of maps and map making. Someone who makes maps is called a cartographer.</li> <li>There are two norths: true north and magnetic north. True north is the direction of the geographic North Pole. Magnetic north is the direction the north end of a needle in a compass points.</li> <li>Throughout Medieval times in Europe most maps of the world, known as Mappae Mundi, were expensive to create by hand, so were used by royals and nobles as displays of wealth rather than for practical purposes.</li> <li>The map that's familiar to most of us is the Mercator projection, but it is also, full of distortions.</li> <li>North may be at the top of maps today, but that wasn't always the case. During the middle ages, most Western maps put east at the top instead.</li> </ul>
<b>symbol</b>	Map symbols are used to represent real objects. Both shapes and colours can be used for symbols on maps.	 <p><b>OS Map Symbols</b></p>	
<b>hemisphere</b>	A hemisphere is formed by dividing the earth into the Northern and Southern Hemispheres at the equator.		
<b>latitude</b>	The lines extending around the Earth horizontally are called lines of latitude.		
<b>longitude</b>	The lines extending around the Earth vertically are called lines of longitude.		
<b>time zones</b>	Time zones give specific areas on the earth a time of day that is earlier or later than the neighbouring time zones.		
<b>grid reference</b>	Numerical grid references consist of an even number of digits. Eastings are written before Northings.		
<b>aerial photograph</b>	Aerial photography is the taking of photographs of the ground from an elevated/direct-down position.		
<b>Greenwich meridian</b>	The prime meridian is the imaginary line that divides Earth into two equal parts: the Eastern Hemisphere and the Western Hemisphere, often called the Greenwich meridian.		
<b>tropics</b>	The tropics are regions of the Earth that lie roughly in the middle of the globe.		

# Europe KS2 Knowledge Mat

Subject Specific Vocabulary			Exciting Books
<b>European Union</b>	The EU tries to make it easier for Europeans to buy and sell things/trade with each other.		
<b>Mediterranean</b>	It is a body of water that separates the continents of Europe, Africa and Asia.		
<b>Euros</b>	Euros is the currency used by many of the European Union countries.		
<b>paella</b>	Paella is a dish cooked especially in Spain, which consists of rice mixed with small pieces of vegetables, fish, and chicken.	<b>Sticky Knowledge about Europe</b>	
<b>Brexit</b>	Brexit stands for Britain exiting the European Union. In a vote in 2016, adults in Britain narrowly voted for leaving the EU.	<ul style="list-style-type: none"> <li>There are 44 countries in Europe. A small number of countries on the continent are transcontinental, meaning they are considered to be a part of both Europe and Asia.</li> </ul>	<b>Some European flags</b> 
<b>Berlin Wall</b>	The wall that used to separate East Berlin and West Berlin. It was built in order to prevent people from fleeing East Berlin.	<ul style="list-style-type: none"> <li>Moscow, in Russia, is the largest city (not including transcontinental cities) with more than 12 million inhabitants.</li> </ul>	
<b>Eiffel Tower</b>	The Eiffel Tower is situated in Paris and was constructed as part of the world fair in Paris in 1889.	<ul style="list-style-type: none"> <li>Mount Elbrus in Russia (5,642 metres/18,510ft) is the highest mountain in Europe and is part of the Caucasus mountain range.</li> </ul>	
<b>Greek Isles</b>	Greece has a number of islands around its main land which are famous for being holiday destinations.	<ul style="list-style-type: none"> <li>The Volga River in Russia (3,530km) is Europe's longest river.</li> </ul>	
<b>fjords</b>	Long, narrow, deep inlet of the sea between high cliffs, as in Norway, typically formed by submergence of a glaciated valley.	<ul style="list-style-type: none"> <li>The Danube is the most important commercial waterway in Europe.</li> <li>Lake Ladoga in Russia is Europe's biggest lake and among the world's biggest freshwater lakes.</li> </ul>	