

Medium Term Planning

Unit:	Light and Sound
Year Groups:	Year 4, Year 6

Year 4			
Lesson	Knowledge	Previously Taught	New Vocabulary
1	<p>I know that darkness is the absence of light.</p> <p>I know that we need light to see.</p> <p>I know that light travels in straight lines.</p> <p>I know that white light is made from a spectrum of colours, called the visible light spectrum.</p> <p>I know that the light we see is called visible light.</p> <p>I know that light changes direction when it travels through a glass prism and this is called refraction.</p>		<p>Darkness, light, white light, spectrum, visible light spectrum, refraction.</p>
2	<p>I know that light travels from a light source in a straight line.</p> <p>I know that flames, electric lights and the sun are examples of light sources.</p> <p>I know that light is a type of energy and that light sources give out light energy.</p> <p>I know that beams of light reflect off materials and objects that are not a light source.</p> <p>I know that shiny materials are better light reflectors than non-shiny materials.</p> <p>I know that smooth, shiny and flat surfaces reflect light the best.</p>	Light.	<p>Light source, energy, reflect, light reflectors.</p>
3	<p>I know that reflected light is light that has bounced off objects.</p> <p>I know that light beams are reflected in the same direction when they bounce off a smooth, shiny and flat surface.</p> <p>I know that mirrors, glass and shiny metal can reflect light really well.</p>	reflected light reflect.	<p>Light beams, mirrors, glass.</p>
4	<p>I know that a transparent material let light beams through them.</p> <p>I know that a translucent material let some light beams through them.</p> <p>I know that an opaque materials do not let any light beams through them.</p> <p>I know that a shadow is formed when a beam of light is blocked by an object.</p> <p>I know that shadows are different if an object is transparent or translucent.</p>	Light beams.	<p>transparent, translucent, opaque, shadow.</p>



5	<p>I know that a shadow changes when a light source moves closer or further away.</p> <p>I know that when a torch is close, an object creates a wide angle of light, so a large shadow is created.</p> <p>I know that when a torch is further away, an object creates a narrow angle of light, so a smaller shadow is created.</p> <p>I know that a shadow cannot be smaller than the object that is creating it.</p>	shadow, light source,	
6	All previous statements		



Year 4			
Lesson	Knowledge	Previously Taught	New Vocabulary
1	I know that sound travels from its source in all directions. I know that we hear sound with our ears. I know that sound moves through particles by making them vibrate . I know that noise pollution is noise that causes a problem in an area.		Sound, hear, particles, vibrate.
2	I know that faster vibrations produce I know that sound is transmitted from a source and that it travels in waves. I know that sound can travel in air, solids and liquids . I know that sound travels by causing the particles around the vibrating source to vibrate , which in turn vibrate other particles .	sound, particles, vibrating.	Faster vibrations, transmitted, source, travels, air, solids, liquids.
3	I know that sound is a form of energy . I know that the more energy used to make a sound , the louder the sound will be. I know that the size of a vibration is called the amplitude . I know that if the volume increases, the amplitude is larger. I know that if the volume decreases, the amplitude is smaller. I know that faster vibrations (higher frequencies) produce higher pitched sounds I know that a low pitch is created by smaller vibrations (low frequencies) .	Sound.	energy amplitude, vibrations, higher frequencies, pitch, smaller vibrations, low frequencies.
4	I know that vibrations in air (sound waves) are caused by vibrations of objects and these vibrations travel to our ears. I know that sound travels in waves .	Vibrations, sound.	Waves.
5	I know that when sound vibrations spread over a distance, the sound becomes quieter .	Sound vibrations, sound, quieter.	
6	All previous statements		



Year 6			
Lesson	Knowledge	Previously Taught	New Vocabulary
1	<p>I know that when light bounces off a surface, it has been reflected.</p> <p>I know that light waves travel from a light source in straight lines.</p> <p>I know that light, smooth and shiny surfaces (e.g. a mirror) reflect light really well.</p> <p>I know that mirrors work light by reflecting the light that hits them.</p> <p>I know that bright colours reflect light better than dark colours.</p> <p>I know that we see objects and materials that are not light sources because light reflects off them and the light enters our eyes.</p> <p>I know that light can only fully pass through transparent materials.</p> <p>I know that light will partially pass through translucent materials.</p> <p>I know that light cannot pass through opaque materials.</p>	<p>Light, reflected, light source, reflect, mirrors, bright, transparent, translucent, opaque.</p>	<p>light waves, straight lines,</p>
2	<p>I know that light travels in straight lines.</p> <p>I know that light comes from a light source.</p>	<p>Light, straight lines, light source.</p>	
3	<p>I know that torches, flames and the sun are examples of light sources.</p> <p>I know that the angle of incidence is always equal to the angle of reflection.</p> <p>I know that rough, dull surfaces reflect less light because the light is absorbed.</p> <p>I know that bright, smooth surfaces reflect the most light as the light rays travel in one direction.</p>	<p>Light sources, reflect, light, absorbed.</p>	<p>angle of incident, angle of reflection, light rays.</p>
4	<p>I know that a ray of light cannot travel through an opaque object.</p> <p>I know that a shadow can be different lengths depending on how close the object casting the shadow is to the light source.</p> <p>I know that shadows have the same shape as the objects casting them.</p> <p>I know that a shadow is the absence of light.</p>	<p>Light, opaque, shadow, object, light source, shadows.</p>	



<p>5</p>	<p>I know that a magnifying glass bends light to focus it on a set point. I know that in a magnifying glass, all the light rays are focused onto one point. I know that when light slows down, it can be bent. I know that refraction is the refraction of light. I know that white light is made up of a range of colours. I know that we see colour because objects absorb all of the white light except for one colour, which it reflects.</p>	<p>Magnifying glass, light, reflects.</p>	<p>Bent, white light, colour, absorb, refraction, bending.</p>
<p>6</p>	<p>I know that bright colours reflect light better than dark colours. I know that we see objects and materials that are not light sources because light reflects off them and the light enters our eyes. I know that when light shines through a transparent prism, white light can be separated into the colours of the rainbow. I know that all the colours of the colour spectrum merge and make visible light.</p>	<p>Bright, light sources, light reflects, light, transparent prism, white light.</p>	<p>visible light.</p>