

Light / Sound Science enquiry

	Year 1	Year 2	Year 3 Light	Year 4 Sound	Year 5	Year 6 Light
Investigations			<p>What material would make the best reflector on a book bag?</p> <p>What materials block light from forming shadows?</p> <p>What happens when you change the distance of a light source from an object?</p>	<p>How is sound made? – explore</p> <p>How can pitch/ volume be changed?</p> <p>Investigate how sounds get fainter as the distance from the source increases.</p>		<p>What happens to light when it changes direction? How do we see?</p> <p>Explore light reflection.</p> <p>Is a shadow the same size as the object? Why?</p>
Working scientifically <ul style="list-style-type: none"> Research 			<p>How does the sun make light?</p>	<p>How does the volume of a drum change as you move further away from it?</p> <p>How does the length of a guitar string/tuning fork affect the pitch of the sound?</p>		<p>Why do some people need to wear glasses to see clearly?</p> <p>How do astronomers know what stars are made of?</p>
Working scientifically <ul style="list-style-type: none"> How scientific ideas have changed over time 			<p>How have our ideas about eclipses changed over time?</p>	<p>How has our understanding and use of ultrasound changed over time?</p> <p>Since the 1800s, how has science helped people who are deaf?</p>		<p>Cameras detect light – how has our understanding of light and its effects changed</p> <p>camera design throughout history?</p>
Working scientifically <ul style="list-style-type: none"> Identifying and classifying 			<p>Can you identify and classify natural light sources and man-made light sources?</p>	<p>Can you arrange given bottles/ musical instruments from the same family eg violin to cello and explain your choices?.</p>		<p>Can you identify all the colours of light that make white light when mixed together?</p> <p>What colours do you get if you mix different colours of light together?</p>

Working scientifically <ul style="list-style-type: none"> • Pattern seeking 			<p>Is there a pattern to how the sun changes position over a day?</p>	<p>Is there a link between how loud it is in school and the time of day?</p> <p>If there is a pattern, is it the same in every area of the school?</p>		<p>Is there a pattern to how bright it is in school over the day?</p> <p>And, if there is a pattern, is it the same in every classroom?</p>
Working scientifically <ul style="list-style-type: none"> • Observing over time 			<p>When is our classroom darkest?</p> <p>Is the Sun the same brightness all day?</p>	<p>When is our classroom the quietest?</p>		<p>How does my shadow change over the day?</p>
Working scientifically <ul style="list-style-type: none"> • Comparative tests 			<p>Which pair of sunglasses will be best at protecting our eyes?</p>	<p>Which material is best to use for muffling sound in ear defenders?</p> <p>Are two ears better than one?</p>		<p>Which material is most reflective?</p>
Working scientifically <ul style="list-style-type: none"> • Fair tests 			<p>How does the number of layers of transparent plastic affect how much light can pass through?</p> <p>How does the distance between the shadow puppet and the screen affect the size of the shadow?</p>	<p>How does the volume of a drum change as you move further away from it?</p> <p>How does the length of a guitar string/tuning fork affect the pitch of the sound?</p>		<p>How does the angle that a light ray hits a plane mirror affect the angle at which it reflects off the surface?</p> <p>Chromatography investigation (a 'who dunnit' activity)</p>
Specialist Vocabulary			<p>Light, see, dark, reflect, surface, blocked, solid, artificial, torch, candle, lamp, sunlight, natural, star, sun, moon, shadow.</p>	<p>Vibrate, air, ear, hear, sound, volume, pitch, faint, loud, string, percussion, woodwind, brass, insulate.</p>		<p>Light, travels, reflect, light source, object, shadows, mirrors, periscope, rainbow filters</p>
Equipment to be used			<p>Torches</p> <p>Lolly sticks (puppets)</p> <p>Light sources</p> <p>Metre ruler</p>	<p>Drum</p> <p>Musical instruments</p> <p>Pitch forks</p> <p>Ear defenders</p>		<p>Mirrors,</p> <p>Torches</p> <p>Periscopes</p>

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