



Prior Learning					
EYFS:			KS1		
<ul style="list-style-type: none"> Talk about what they see and hear, using a wide vocabulary Sound walks Observe & interact with natural processes, such as ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object & a boat floating on water 			<ul style="list-style-type: none"> Distinguish between an object and the material from which it is made High and low pitch (music) 		
			Substantive	Disciplinary	
Lesson 1	L.O. 28 To be able to recognise that they need light in order to see things and that dark is the absence of light.	Light mind map activity sheet to assess prior knowledge. Share PowerPoint Light sources sorting game. Feely bag game to introduce the idea that dark is the absence of light. Activity - light/dark activity	<ul style="list-style-type: none"> Know that dark is caused by the absence of light. Know that I need light to see things. 		Light Dark Light source
Lesson 2 and Lesson 3 Double Lesson	L.O. 29 To be able to understand that light is reflected from surfaces.	Focus - Reflecting Light Discuss that when light hits an object, it is reflected (bounces off). If the reflected light hits our eyes, we can see the object. Some surfaces reflect light better than others and discuss examples explaining why - explore this in the activity. <u>Investigation (Comparative/Fair</u>	<ul style="list-style-type: none"> Know when light hits an object it is reflected Know smooth, shiny surfaces reflect light well but dull, dark 	<ul style="list-style-type: none"> ask simple, relevant questions and use scientific enquiries to answer them Set up a simple light investigation 	Light source, dark, reflect, see, illuminate, visible

Comparative / fair testing
Changing one variable to see its effect on another, whilst keeping all others the same.

	<p><u>Working Scientifically</u> Y4 L.O. 2 To be able to set up simple practical enquiries, comparative and fair tests.</p> <p>Y3 L.O. 2 To be able to set up simple practical enquiries, comparative and fair tests, with support</p>	<p><u>Testing-</u> changing one variable to see its effects on another whilst keeping all others the same) - Which materials would make the best reflective keyring for a bookbag? Activity - Children to test different materials explore how well they reflect light e.g. wood, metal, fabric, tin foil, paper etc</p> <p>Children explain in their books which materials were the most reflective and why using scientific vocabulary.</p>	<p>surfaces do not reflect light well.</p>		
Lesson 4	<p>L.O. 30 To be able to recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p>	<p>Discuss the dangers of light and UV light from the sun. Discuss the effect of bright lights and the importance of protecting eyes including using sunglasses.</p> <p>Activity - Create a poster to explain how dangerous the Sun is and explain the different ways we can protect ourselves.</p> <p>Plenary - Cut out a shape out of card and stick it to another piece of card. Leave the card on the windowsill for a period of time and see what will happen to the coloured card that is left exposed to the sun.</p>	<ul style="list-style-type: none"> Know light from the sun can be dangerous 		<p>UV Light Dangerous</p>
Lesson 5	<p>L.O. 31 To be able to recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p>	<p>Explain and discuss key vocabulary - opaque, translucent and transparent</p> <p>Focus on the fact that opaque objects block light. Making shadows.</p> <p>Practical activity - Shine a torch</p>	<ul style="list-style-type: none"> Know opaque objects. let no light pass through. Translucent objects let some light pass through. Transparent objects let light pass through 		<p>Opaque Translucent Transparent Shadow</p>

		onto a variety of materials and observe whether it creates a shadow or not. Use key vocabulary in discussions.	<ul style="list-style-type: none"> ● Know shadows are formed when an opaque object blocks light. 		
Lesson 6	L.O. 32 To be able to find patterns in the way that the size of shadows change.	<p>How Do Shadows Change When the Distance Between the Light Source and the Object</p> <p>Practical activity - How does the size of a shadow change?</p> <p>Exploring how the size of the shadow changes depending on how close the light source (torch) is the object.</p>	<ul style="list-style-type: none"> ● Know the closer the light source the bigger the shadow. ● Know the further away the light source the smaller the shadow. 	<ul style="list-style-type: none"> ● Observe patterns in the way shadows change size. 	Distance Bigger Smaller
Lesson 7 (New Topic) Sound	L.O. 33 To be able to identify how sounds are made, associating some of them with something vibrating.	<p>Focus - What is sound? Discuss/explain what a sound is, how it is heard (ear) and examples of different sounds they may hear in everyday life.</p> <p>Activity - School Sound Survey Go for a walk around school and listen to different sounds they can hear in different parts of the building. Take clipboards for the children to write down what they hear and where they hear it.</p>	<ul style="list-style-type: none"> ● Know that sounds are vibrations that travel through the air and other mediums and can be heard. 	<ul style="list-style-type: none"> ● Record sounds they can hear around school 	Sound, Mediums
Lesson 8	L.O. 34 To be able to recognise that vibrations from sounds travel through a medium to the ear.	<p>Focus - The Ear</p> <p>Discuss the process of how we hear sound - sound waves travel through a medium (e.g. the air) to our ear. The outer ear funnels the sound down the ear canal to the brain.</p> <p>Activity - Extended writing - Write a written explanation of how vibrations from sounds travel through a medium to the ear.</p>	<ul style="list-style-type: none"> ● Know that we hear sound because sound waves travel through the air to our ear. ● The outer ear funnels the sound down the ear canal to the brain. 		Sound waves Outer ear Funnels Ear canal

<p>Lesson 9</p>	<p>L.O. 36 To be able to find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Decide whether to do a full investigation on volume or pitch which ever one we choose needs to have two lessons for the full investigation</p>	<p>Focus - Volume</p> <p>Children discuss what is vibrating in each picture to make a sound. Children conduct the mini investigation to find a link between the size of the vibrations and the loudness of a sound. Discuss and explain their findings. How does sound travel: Children discuss the ideas about sound travelling Children explore the process of hearing the sound of clapping hands. Explain how the ear works and how we hear sounds. Children work in groups to create and perform a factual programme to explain how different sounds travel.</p> <p>https://www.twinkl.co.uk/resource/tp2-s-152-new-planit-science-year-4-sound-lesson-2-hearing-sounds-lesson-pack</p> <p>Activity ??</p>	<ul style="list-style-type: none"> • Know the stronger the vibration the louder the volume of the sound. • Know the weaker the vibration the quieter the volume of the sound 	<p>Add skills in once decided the activity</p>	<p>Stronger Vibration Volume Weaker Louder Quieter</p>
<p>Lesson 10</p>	<p>L.O. 35 To be able to find patterns between the pitch of a sound and features of the object that produced it.</p>	<p>Focus - Pitch</p> <p>Children try to make high and low sounds to their partner. Explain what pitch is. Identify how different instruments make different sounds. Children try to play high and low sounds on different instruments, and observe how they can change the pitch. Children record their observations of the features of the instruments that create different pitches. Children will explore and discuss an explanation of how pitch can be changed. Explain how to change the pitch on different instruments. Children make their own set of pan pipes using</p>	<ul style="list-style-type: none"> • Know the difference between high and low sounds. 	<ul style="list-style-type: none"> • Observe and describe patterns between the pitch of a sound and features of the object that made the sound. • Create a musical instrument and explain how it makes high and low sounds. 	<p>High pitch Low pitch</p>

		<p>straws. Their challenge is to make each straw create a sound of a different pitch. They should achieve this by cutting the straws to different lengths. Children explain how they can change pitch on their pan pipes.</p> <p>https://www.twinkl.co.uk/resource/tp2-s-153-new-planit-science-year-4-sound-lesson-3-higher-and-lower-lesson-pack.</p>			
Lesson 11	<p>L.O. 35 To be able to find patterns between the pitch of a sound and features of the object that produced it.</p>		<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • 	Pitch
Lesson 12	<p>L.O. 37 To be able to recognise that sounds get fainter as the distance from the sound source increases.</p> <p>Working Scientifically L.O. 6 To be able to record findings using simple scientific language, drawings, labelled diagrams and tables. (Y3)</p> <p>L.O.6 To be able to record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.(Y4)</p>	<p>Focus - Distance</p> <p>Explain how distance affects the loudness of a sound as it travels. As the distance from the sound source increases, the area covered by the sound waves increases too. Explain how sounds get quieter as you move further away from the source you move.</p> <p>Activity - Outstand Science Investigation (sound and distance) https://www.outstandingscience.co.uk/index.php?action=view_page&page=view_unit&unit=4d</p> <p>Working in the school hall/on playground, children investigate the maximum distance at which</p>	<ul style="list-style-type: none"> • Know the further away the sound the quieter it will be • Know the closer the sound the louder it will be 	<ul style="list-style-type: none"> • Create a bar chart graph 	Distance Graph

		<p>somebody can hear one of 5 body sounds (hand clap, sniff, cough, foot stamp and thigh slap). They place each sound in order of loudness and create a bar chart showing their results. They discuss the difficulty of getting accurate results without measuring equipment and ways of improving the investigation. Create a bar chart to show results.</p>			
Lesson 12	End of unit assessment				