

Year 7 Sound and Light

12 Lessons

Stage	Description
Emerging	<p>You can state that waves can be reflected.</p> <p>You can state that the frequency of a wave is measured in hertz (Hz).</p> <p>You can define the following terms – echo, reflection and absorption.</p> <p>You can state that sound waves need a medium to travel through.</p> <p>You can draw a basic ray diagram.</p> <p>You can label the basic parts of a wave.</p>
Developing	<p>You can describe waves on water as undulations which travel through water with transverse motion.</p> <p>You can describe how sound is produced and how it travels.</p> <p>You can describe sound waves as longitudinal.</p> <p>You can describe how we hear sound.</p> <p>You can use a ray diagram to prove the law of reflection.</p> <p>You can describe the different frequencies of light.</p> <p>You can describe the difference between reflection and refraction.</p> <p>You can describe how sound waves change depending on the loudness and pitch of the sound.</p> <p>You can describe the uses of ultrasound.</p>
Secure	<p>You can explain and give examples of superposition.</p> <p>You can compare the speed of sound in a range of different mediums.</p> <p>You can explain how we hear.</p> <p>You can compare the auditory range of humans and animals.</p> <p>You can explain how waves are used to transfer information.</p> <p>You can explain how waves are used for cleaning and physiotherapy.</p> <p>You can compare light waves to waves in matter.</p> <p>You can use ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focussing and the human eye.</p> <p>You can explain how the eye works.</p> <p>You can explain the Doppler effect.</p> <p>You can explain how ultrasound is used to create a picture of an unborn baby.</p>
Excellence	<p>You can state the speed of sound in air.</p> <p>You can investigate the use of cochlea implants.</p> <p>You can create your own method to investigate the light waves travelling through materials: absorption, diffuse scattering and specular reflection at a surface.</p> <p>You can compare photosensitive material in the retina and in cameras.</p> <p>You can explain the colour effects in absorption and diffuse reflection.</p>