Foxford Learning Plan

Year 8

Spring 1

Waves, Sound and Light

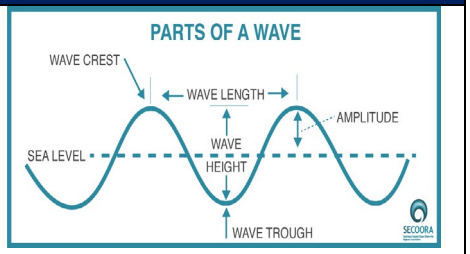
Key Vocabulary

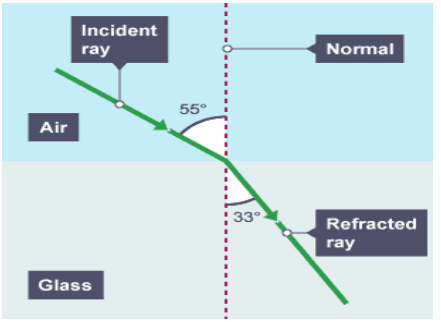
Wave	A disturbance that transfers energy without an overall transfer of matter.
Amplitude	The maximum displacement from the resting position of a wave.
Wavelength	The distance between matching points on neighbouring waves, measured in metres.
Frequency	The number of complete waves passing a point each second, measured in hertz (Hz).
Wave speed	The distance a wave travels each second; speed = frequency × wavelength.
Superposition	When waves overlap, their displacements add together.
Echo	A reflected sound heard after the original sound.
Reflection	The bouncing back of a wave from a surface.
Refraction	A change in direction when a wave enters a different medium at an angle and changes speed.
Lens	A transparent object that refracts light to bring rays together or spread them out.
Retina	The light-sensitive layer at the back of the eye where an image forms.
Spectrum	The range of colours produced when white light is separated.

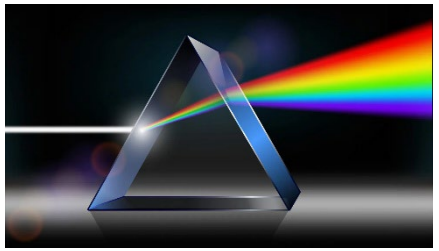
Over this course I will be able to

Key Skills

- Draw and label waves, comparing transverse and longitudinal waves and describing how they transfer energy.
- Use wave speed = frequency × wavelength, selecting the correct units and showing calculations clearly.
- Investigate sound, echoes and wave interactions; record observations and explain patterns using evidence.
- Draw ray diagrams for reflection, refraction and lenses, measuring angles from the normal accurately.
- Use models of the ear and eye to explain hearing and vision, and investigate how we see colours.







I will understand

- How vibrations produce waves that transfer energy, how waves differ and what happens when waves overlap.
- How wave speed, frequency and wavelength are linked, and how amplitude and frequency affect loudness and pitch.
- How reflected sound produces echoes, how the ear detects sound and how sound is used in technology.
- How light reflects and refracts, how lenses focus light and how the eye forms images so we can see clearly.
- How light enters our eyes, how white light contains different colours and how reflection, absorption and filters affect colour.