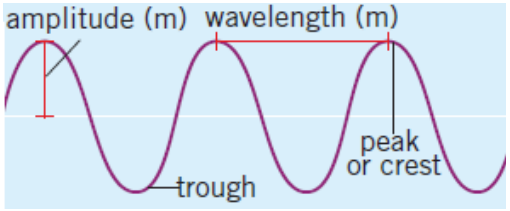
Waves

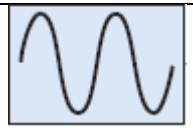
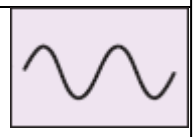
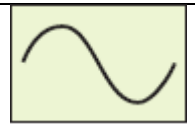
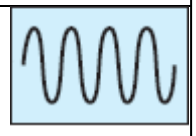
Wave Properties

- A wave is an oscillation or vibration which transfers energy from one place to another
- Amplitude – the distance from the middle to the top or bottom of the wave
- Wavelength – the distance between a point on the wave to the same point on the next wave
- Trough – the bottom of the wave
- Peak – the top of the wave
- Frequency – How many waves pass a fixed point per second (Hertz, Hz)



Sound waves

Oscilloscopes display sound waves on a screen

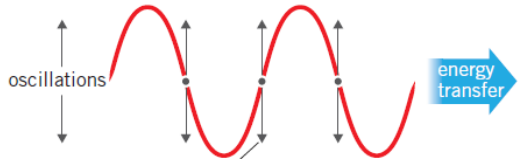
	High	*Low*
Loudness		
Pitch		

Types of waves

There are two main types of waves

Transverse waves (light)

- Particles move/oscillate at 90° (perpendicular) direction of energy transfer
- Do not need a medium to travel through



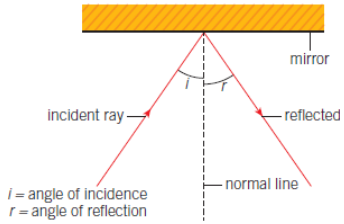
Longitudinal waves (sound)

- Particles move/oscillate in the direction (parallel) of energy transfer
- Need a medium to travel through

Reflection and refraction

Reflection

The law of reflection states that the angle of incidence will be equal to the angle of reflection

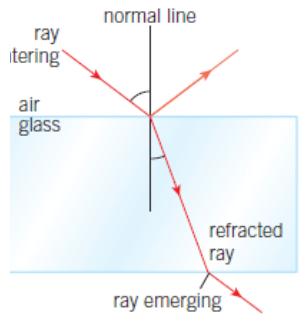


Refraction

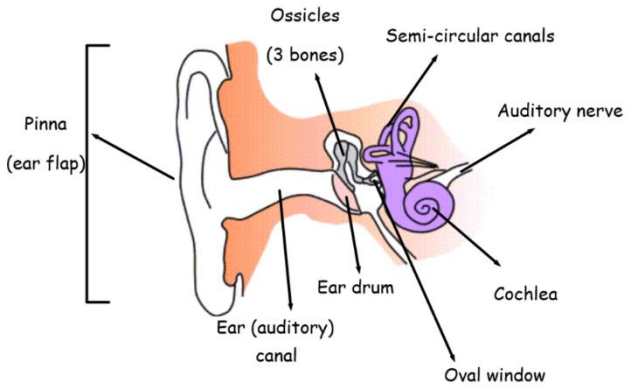
Refraction occurs when a wave passes between two different substances.

More dense = change direction towards normal.

Less dense = change direction away from normal



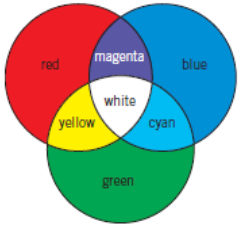
The ear and hearing



Colour

Light can be split using a prism and is made up from different colours of light.

Objects appear a certain colour as they absorb all other colours, but reflect the colour of light they appear



Electromagnetic spectrum