

# Science Knowledge Organiser



## Y7 Waves: Sound

### Sound

A sound wave is caused by the vibration of particles. This vibration is passed from particle to particle by collisions.

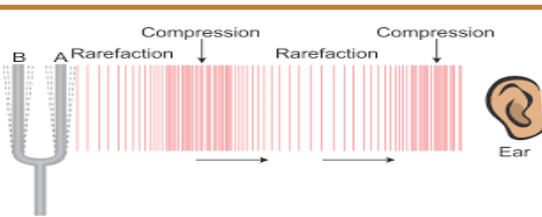
Sound travels as a longitudinal wave

Sound travels fastest when the particles are closest together – in a solid.

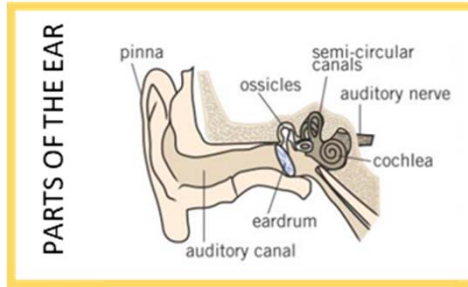
Sound travels slowest when the particles are far apart – in a gas (in air the speed is 330 m/s).

Light travels 1 million times faster than sound.

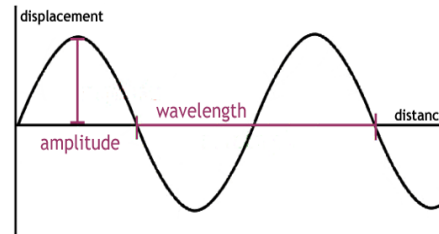
Sound cannot travel through a vacuum.



Longitudinal wave: energy same direction as particle movement.



### Sound wave shown on an oscilloscope



### Different sound waves

	<b>High Frequency</b> <b>High pitch</b>
	<b>Low frequency</b> <b>Low Pitch</b>
	<b>High amplitude</b> <b>Loud Sound</b>
	<b>Small amplitude</b> <b>Quiet Sound</b>

### Key words

<b>Absorption:</b>	When energy is transferred from sound to a material
<b>Amplitude:</b>	The maximum amount of vibration, measured from the middle position of the wave, in metres.
<b>Auditory range:</b>	The lowest and highest frequencies that a type of animal can hear.
<b>Echo:</b>	Reflection of sound waves from a surface back to the listener.
<b>Frequency:</b>	The number of waves produced in one second, in hertz.
<b>Longitudinal wave:</b>	Where the direction of vibration is the same as that of the wave.
<b>Oscilloscope:</b>	Device able to view patterns of sound waves that have been turned into electrical signals.
<b>Pitch:</b>	How low or high a sound is. A low (high) pitch sound has a low (high) frequency.
<b>Vacuum:</b>	A space with no particles of matter in it.
<b>Vibration:</b>	A back and forth motion that repeats.
<b>Volume:</b>	How loud or quiet a sound is, in decibels (dB).
<b>Wavelength:</b>	Distance between two corresponding points on a wave, in metres.