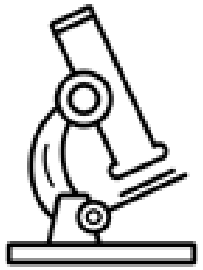


Learning Journey

Physics: Sound

LINK IT

Remember, you will have covered some of this in everyday life. We know that sound travels and can be detected by your ears. We know that musical notes can be repeated and that there are a vaiety of different instruments.

KNOW IT

- I can describe how to get different sounds from a musical instument.
- I know how sound waves are produced
- I know how to label a wave with wavelength and amplitude.
- I can describe what you would hear if the amplidude of a sound wave changes.
- I can relate frequeny to the pitch of a sound wave.
- I know the range of hearing for human hearing.
- I can use a diagram to expalin how the ear "hears".
- I can measure the speed of sound.

PROVE IT

- End of unit test
- DIRT activity – how to get different sounds from an instrument
- DIRT activity –

SAY IT

Vocabulary	Definition
Vibration	When particles move about a fixed position
Pitch	How high or low a note is. Determined by the speed of vibration.
Amplitude	How loud or quiet a sound is. Determined by how displaced a particle is during vibration.
Wavelength	The distance from peak to peak or trough to trough.
Frequency	How many waves pass a fixed position each second.
Vacuum	An absence of particles.
Absorption	When a sound wave does not reflect off of a soft surface and the energy is absorbed by the particles in the material.
Auditory Range	The difference between the highest and lowest pitch a person can hear.
Echo	When a sound wave reflects off of a hard surface.

14. Sound

Vibration: A back and forth motion that repeats.

Longitudinal wave: Where the direction of vibration is the same as that of the wave.

Volume: How loud or quiet a sound is, in decibels (dB).

Pitch: How low or high a sound is. A low (high) pitch sound has a low (high) frequency.

Amplitude: The maximum amount of vibration, measured from the middle position of the wave, in metres.

Wavelength: Distance between two corresponding points on a wave, in metres.

Frequency: The number of waves produced in one second, in hertz.

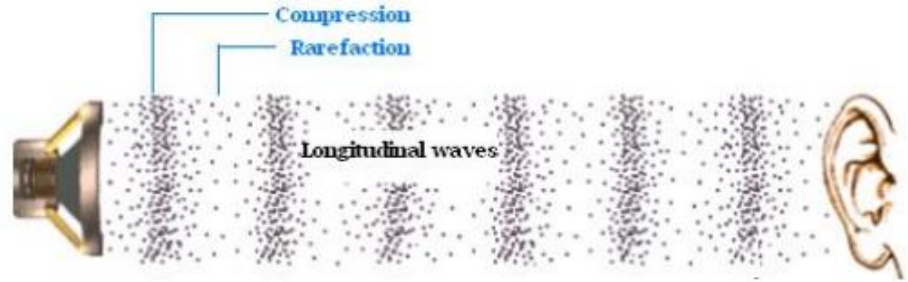
Vacuum: A space with no particles of matter in it.

Oscilloscope: Device able to view patterns of sound waves that have been turned into electrical signals.

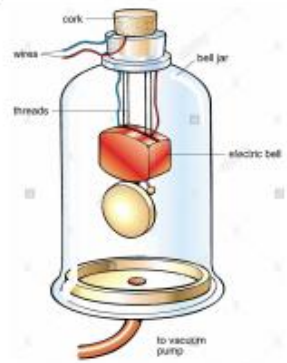
Absorption: When energy is transferred from sound to a material.

Auditory range: The lowest and highest frequencies that a type of animal can hear.

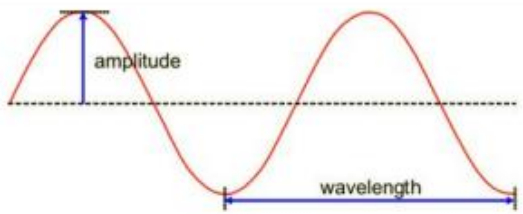
Echo: Reflection of sound waves from a surface back to the listener.



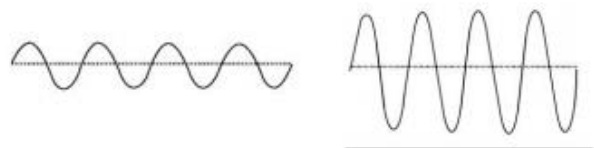
- When an object vibrates it creates sound waves.
- A sound wave is a longitudinal wave, the particles vibrate in the same direction



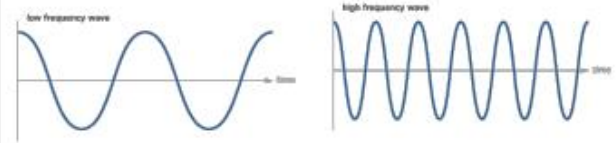
- Sound can't travel in a vacuum as sound waves require matter to vibrate for the sound wave to travel.
- Sound travels at 330m/s in air.
- Sound travels fastest in solids and slowest in air.



An oscilloscope can be used to convert a longitudinal wave into a standard waveform, we can use this type of wave to understand the characteristics of the sound.



The left sound wave will be quiet, the right sound wave will be louder as the wave has a greater amplitude.



The left sound wave has a low frequency and a large wavelength, this sound will be low pitch.

The right sound wave has a high frequency and short wavelength, this sound will be high pitch