

Key Vocabulary

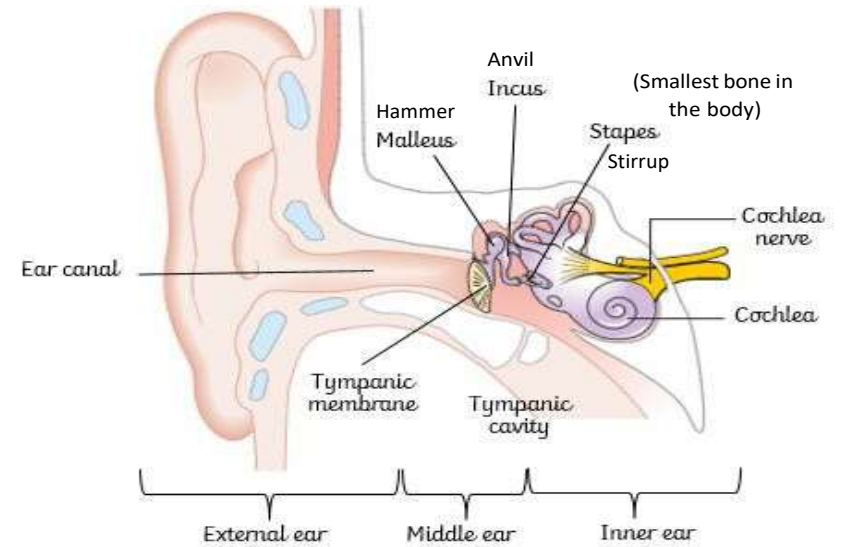
Volume	The amount of sound there is (called amplitude, measured in decibels)
Pitch	Whether a sound is high or low (called frequency, measured in hertz)
Vibration	The movement of a sound. The quicker the vibration, the higher the pitch (frequency)
Solids, liquids, gases	Different states a material can be in.

Sound is a type of energy that can pass through many different materials.
 The bigger the vibration, the louder the sound.
 The quicker the vibration, the higher the pitch.

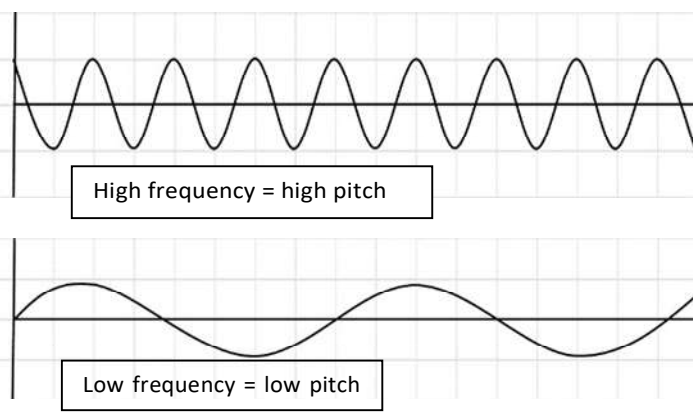
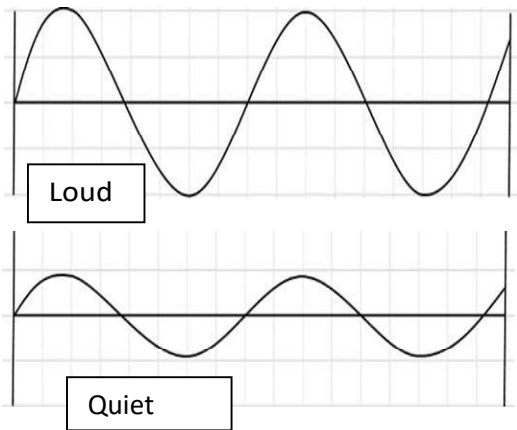
- I can:
- identify how sounds are made
 - recognise that vibrations from sounds travel through a medium to the ear
 - find patterns between the pitch of a sound and features of the object that produced it
 - find patterns between the volume of a sound and the strength of the vibrations that produced it
 - recognise that sounds get fainter as the distance from the sound source increases.

<https://www.bbc.com/bitesize/topics/zgffr82/resources/1> - Very interesting and useful short clips.

Structure of the ear



Wave length patterns – amplitude (volume) and frequency



The pitch of a sound can be shown by the **length** of the wave. The more frequent the wave, the more of them occur within a given time. This is the frequency of the wave.
 High frequency = short wave length = high pitch
 Low frequency = longer wave length = low pitch.
Notice how both of the sound waves below have the same volume, but a different pitch.

- The **height** of the sound wave shows the **amplitude**.
- A loud sound has a larger amplitude (taller wave).
 - A quiet sound has a smaller amplitude (shorter wave).

How do we hear?

● = air particle

1. Vibrations are passed through the particles in the air.
2. Vibrating air particles pass into the ear until the particles hit the ear drum. The higher the frequency, the quicker the particles hit the tympanic membrane (ear drum).
3. The vibrations pass from the ear drum to the inner ear. Here they are converted into an electrical signal
4. Message of sound sent to brain.

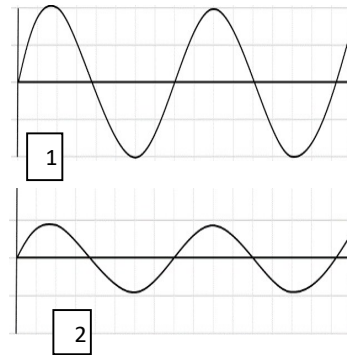
- Ear defenders help by blocking all or some of the sound reaching your ears.
- Sound absorption reduces the sound “bouncing” around inside a room.
- Sound blocking prevents sound from entering or leaving a room.

Quiz

Question 1

How is sound wave 2 different to sound wave 1?

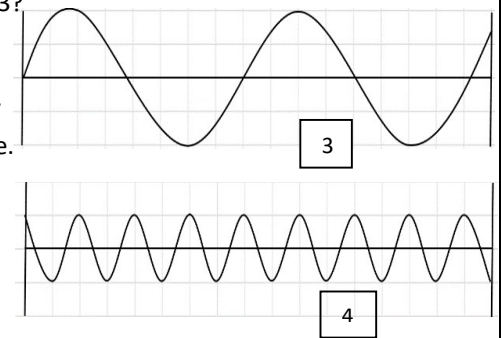
- a) Wave 2 is higher in pitch.
- b) Wave 2 is louder.
- c) Wave 2 is lower in pitch.
- d) Wave 2 is quieter.



Question 2

How is sound wave 4 different to sound wave 3?

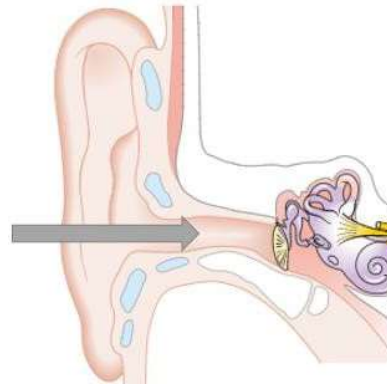
- a) Wave 4 is higher in pitch and volume
- b) Wave 4 is higher in pitch, lower in volume.
- c) Wave 4 is lower in pitch, higher in volume.
- d) Wave 4 is lower in pitch and volume.



Question 3

What part of the ear is labelled here?

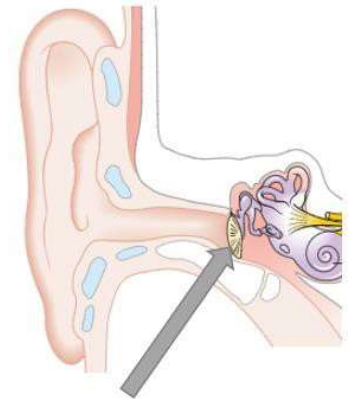
- a) Tympanic membrane
- b) Ear drum
- c) Ear canal
- d) Inner ear



Question 4

What part of the ear is labelled here?

- a) tympanic membrane
- b) Stapes
- c) Ear canal
- d) Inner ear



Question 5

Which part of the ear is the smallest bone in the human body?

- a) Tympanic membrane
- b) Cochlea
- c) Stapes
- d) Incus

Question 6

What can be called amplitude and is measured in hertz?

- a) Sound
- b) Volume
- c) Pitch
- d) Volume and pitch