

Vocabulary		
1	Amplitude	A unit used to measure the strength of a sound
2	Decibel	A unit used to measure the intensity (loudness) of a sound
3	Medium	Something that makes possible the transfer of energy from one location to another.
4	Pitch	How high or low a sound is
5	Sound wave	An invisible wave that travels through air, water, and solid objects as vibrations, carrying the sound to our ears.
6	Vibrations	A back-and-forth movement
7	Frequency	A measure of how many times per second the sound wave cycles
8	Volume	How loud or quiet sound is

What is a sound and how are they made?

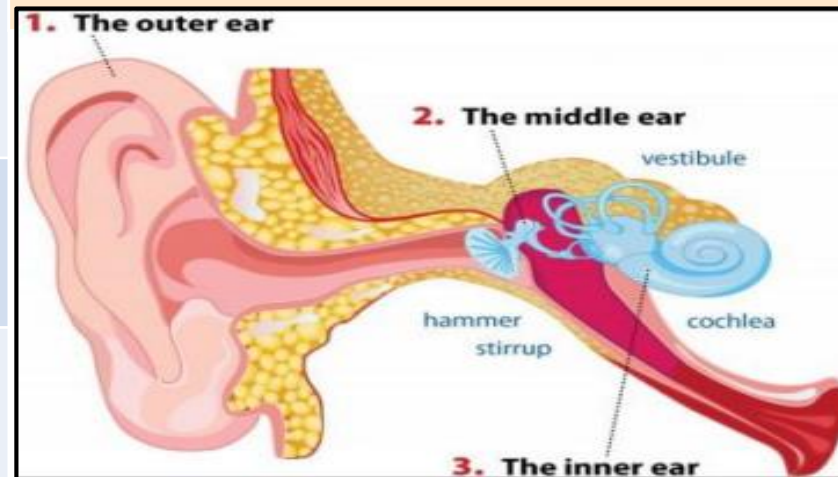
A sound is a thing that can be heard. The object that makes the sound is called the source. When an object vibrates, a sound is made. The vibration makes the air around the object vibrate and the air vibrations enter your ear. These are called sound waves. If an object is making a sound, a part of it is vibrating, even if you cannot see the vibrations.

How do sounds travel?

Sound waves travel through a medium (such as air, water, glass, stone, and brick). For example, if somebody is playing music in the room next door, the sound can travel through the bricks in the wall.

How do we hear sounds?

The inner ear - The inner ear is filled with fluid and has the hearing organ called the cochlea. Sound waves travel to the ear and make the eardrums vibrate. The cochlea helps to take the vibrations and translate them into electrical signals for the nerve to send to the brain. It actually uses little hairs that vibrate with the **sound** waves in the fluid. Then you "hear" it.



How do sounds change?

Pitch: The pitch of a sound is how high or low it is. A squeak of mouse has a high pitch. A roar of a lion has a low pitch. High pitch sounds are created by short sound waves. Low pitched sounds are created by long sound waves

The diagram shows two sound waves. The top wave is a long, low-frequency wave labeled 'Thunder and lightning = low frequency'. The bottom wave is a short, high-frequency wave labeled 'Mouse squeak = high frequency'.

Volume: The volume of a sound is how loud or quiet it is. When a sound is created by a little amount of energy, a weak sound wave is created which doesn't travel far. This makes a quiet sound. A vibration with lots of energy makes a powerful sound wave and therefore a loud sound

The diagram shows two sound waves. The top wave is a small, low-amplitude wave labeled 'quieter'. The bottom wave is a larger, high-amplitude wave labeled 'louder'.

How do we measure sounds?

Amplitude measures how strong a sound wave is.

Decibels measure how loud a sound is.

The bar chart shows sound levels in decibels (dB) for various sources. The y-axis ranges from 40 to 120 dB. The sources and their corresponding sound levels are: 60db washing machine, 70db car engine, 85db amplified music volume, 105db lawnmower, and 114db trumpet.