



SOUND



Overview



Sounds are made when objects **vibrate**.

Vibrations travel from objects in **waves** to our ears, allowing us to hear sound.

Weak vibrations make a gentle soundwave which does not travel as far as strong vibrations. This is why sounds have different **volumes**.

Sounds can be **high-pitched** or **low-pitched**. Tight, short **frequency** waves make a high-pitched sound, while looser, longer waves make low-pitched sounds.

Soundwaves

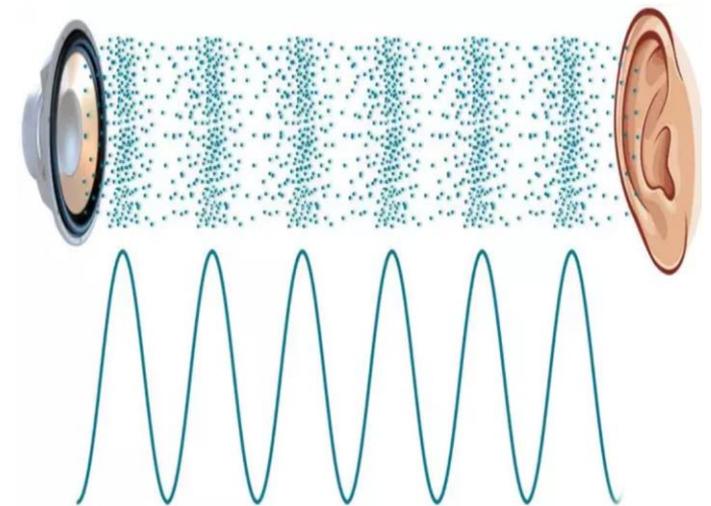
Sounds are created when something **vibrates** (shakes back and forth).

This creates soundwaves which travel to the ears of the listener.

When a bell is struck, the metal of the bell vibrates. These vibrations create waves in the air (soundwaves).

When they reach our ears, they make our eardrums vibrate, and we hear the sound of the bell ringing.

Soundwaves are able to **reflect** off surfaces and can cause echoes.



Pitch

Pitch is how high or low a sound is.

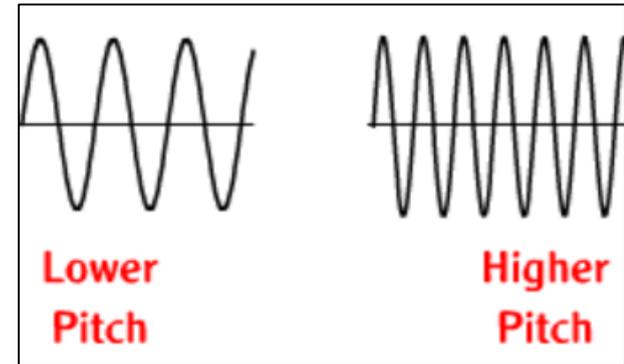
Pitch is caused by the **frequency** of vibrations (how many times vibrations go back and forth per second).

The higher the rate of vibrations, the higher the pitch.

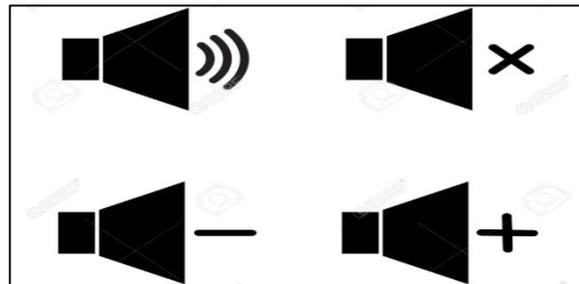
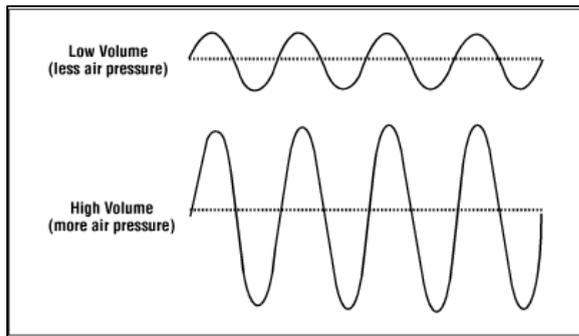
Lower pitch sounds have a lower rate of vibrations.

Humans can hear a large range of pitches, high-pitch sounds e.g. a mouse squeak to low-pitch sounds e.g. the rumble of an earthquake.

However, some sounds are too high or low-pitched for us to hear.



Volume



Volume is how loud a sound is.

The volume of a sound depends on the amount of energy that the vibrations contain.

Vibrations with lots of energy create large soundwaves.

When these large soundwaves arrive at your ears, they push harder on your eardrums.

This is why when we strike a drum harder (with more energy) it is louder than when we strike it more softly.

Our ears can detect a wide range of loud and quiet sounds, from rumbling jet engines to leaves rustling.

Low Pitch Sounds

Lion's Roar

Tuba

Bass Guitar

Thunder

Child's voice

Whistle

Shriek

Mouse Squeak

High Pitch Sounds