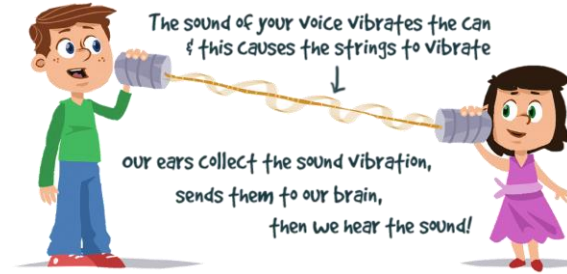


Year 4: Science Spring Term

Sound

Sound Travels

- Sound travels in waves.
- Sound must travel through matter to be heard.
- Remember: Matter can be a solid, a liquid, or a gas.
- A sound is made when things vibrate.
- Sound travels by sending vibrations through matter.



Our Ears

The human ear is incredible! Ears can sense sound in the form of vibrations and send and receive signals from the brain.

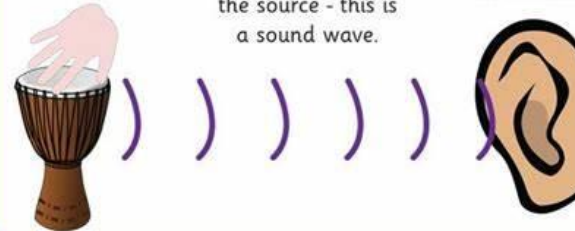


SOURCES OF SOUND

The drum skin vibrates and makes the air around the drum vibrate.

The vibrating air spreads away from the source - this is a sound wave.

Finally, your ear picks up the sound wave and your brain translates the sound.



Depending on wave frequency we hear either high or low sounds.



Higher wave frequency = high pitch.

Lower wave frequency = low pitch.

'Vibrations'

Sounds are made when something **VIBRATES**.

'What is vibrating in each of these pictures to make a sound?'

- 1) Vocal chords
- 2) strings
- 3) The skin
- 4) The air inside

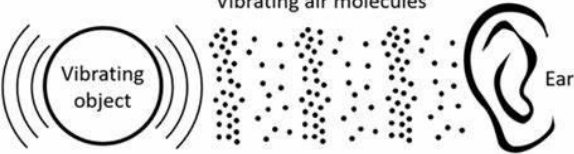
Bang the instrument harder for a louder sound.

Blow the instrument harder for a louder sound.

Pluck the strings harder for a louder sound.



Vibrating air molecules

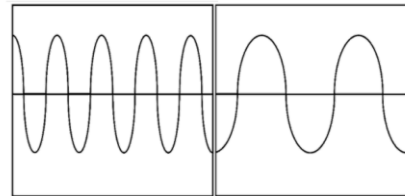


Generally, the shorter, tighter or thinner the object is, the higher the pitch of sound will be.

This is because the vibrations will be faster.

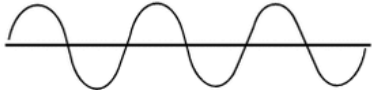
The longer, looser or thicker the object is, the lower the pitch of the sound will be.

This is because the vibrations will be slower.



One Millisecond Duration

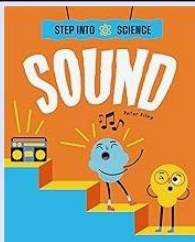
Low Pitch
(Waveform of
Bass Guitar)



High Pitch
(Waveform of
Whistle)



Read more:



Research more:

[Explorify \(website\)](#)

Science - Year 4 - Sound

Key Vocabulary	
sound	vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear
source	All objects can be sound sources that create sound in the same way – by vibrating and transferring those vibrations to an adjacent medium, such as the air.
vibration	Sounds are vibrations. They travel out from a source as waves. The vibrations from the source make the molecules around them vibrate (shake and wobble) too.
travel	Sound travels through space in longitudinal waves. An object waves quickly back and forth, so the air around it starts to wave too.
pitch	Different pitches correspond to different frequencies. High pitch means high frequency, and low pitch means low frequency. Pitch can also be described as the quality of a sound that allows you to label it as "higher" or "lower" to your ear.
volume	The volume of a sound is how loud or quiet the sound is
faint	not strong or clear; slight: a faint sound / noise / smell
loud	strongly audible; having exceptional volume or intensity.
Insulation	Sound insulation relates to the total ability of a building element or building structure to lower the sound transmission through it.