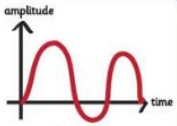
Good Vibrations

Key Questions

- How are sounds made?
- How are sounds detected?
- What is pitch?
- What is the volume of sound?
- How do sounds travel?
- How can you make a sound louder or quieter?
- What is an echo?
- How far can sound travel?

LOUDNESS

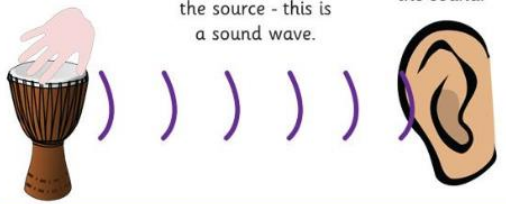


The **loudness** of a sound depends on how big the vibrations are.
Beating the drum harder causes larger **vibrations** and a louder sound.

The sound is louder closer to the sound **source**.
The sound is **fainter** further away from the sound source.
The **amplitude** of a **sound wave** tells us how big the vibration is.

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.



SOURCES OF SOUND

Sources of sound are all around us.

What causes all these different types of sound?

HOW YOU HEAR

Sounds are really **vibrations** in the air. Your ears collect the vibrations and funnel them into the ear **drum**.
The ear drum shakes and passes the vibrations onto three small bones: the **hammer**, **anvil** and **stirrup**.
The vibrations then reach the **cochlea**, which is lined with **nerve endings** that send messages to the brain.

The brain then **translates** the vibrations as sounds.

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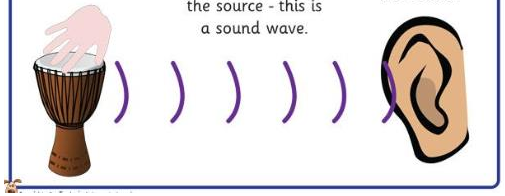
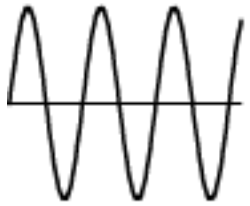
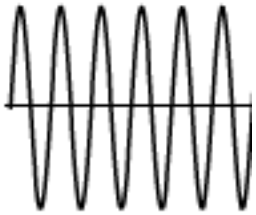




Lower Pitch



Higher Pitch

Key Vocabulary

Vibrations	When the molecules in the air begin to shake.
Sound	Sound is caused by vibrations. If an object vibrates the air particles close to it (molecules) vibrate causing sound waves.
Pitch	How low or how high a sound is.
Volume	The perception of loudness from the intensity of the sound. The higher the intensity of sound the louder the sound is perceived to the ears.
Echo	A sound wave that is reflected back when bouncing off a surface.
Frequency	The speed of the vibrations which determines the pitch of the sound.
Source of sound	An object that causes a vibration e.g. a ringing telephone or a person's vocal cord.