

SCIENCE: Sound

Spring B

Year 4

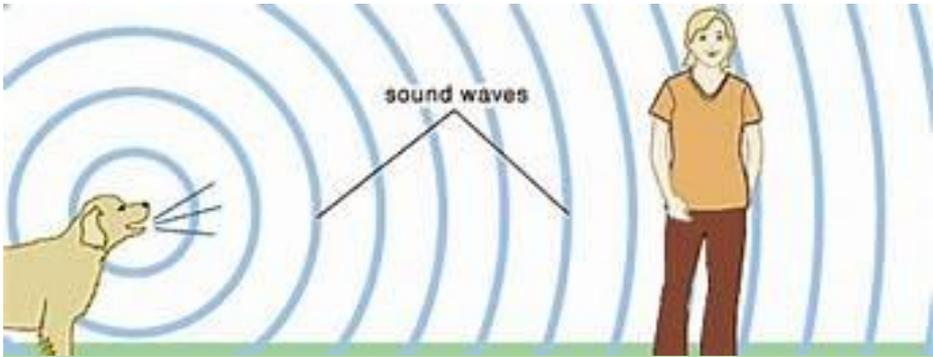
Key Ideas

Sound	A type of energy. Sounds are created by vibrations. The louder the sound, the bigger the vibration.
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How sound is made

- 1) Like light, sound travels through the air in waves.
- 2) Sound is made by particles vibrating.
- 3) When you clap your hands, the air around your hands shakes. This is the air particles vibrating. When air particles inside the ear vibrate, they shake tiny hairs on the inside of your ears. The hairs are connected to nerves under the skin. These nerves send messages to your brain to tell you that you heard a noise.

Sound travels much slower than light, whether in air or water.

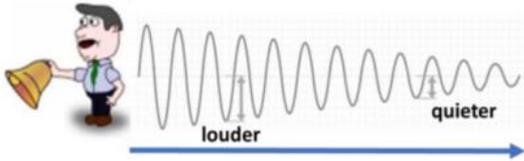


Sound travels from the source as soundwaves until it reaches our ears.

Key Questions

- What can sound travel through?
- Why can you not hear sound in space?
- How does sound reach your ear?

Key words	Explanation
vibration	A movement backwards and forwards/ wobbling
Sound wave	Vibrations travelling from a sound source
volume	The loudness of a sound.
Amplitude	The size of the vibration. A larger amplitude = a louder sound.
pitch	How low or high a sound is.
ear	An organ for hearing
particles	Solids, liquids and gases are made of particles. They are so small we are unable to see them.
distance	A measurement of length between two points.
soundproof	To prevent sound from passing
Absorb sound	To take in sound energy. Absorbent material have the effect of muffling sound.
vacuum	A space where there is nothing. There is no particles in a vacuum.
eardrum	A part of the ear which is a thin tough layer of tissue that is stretched out like a drum skin. It separates the outer ear from the middle and inner ear. Sound waves make the eardrum vibrate,

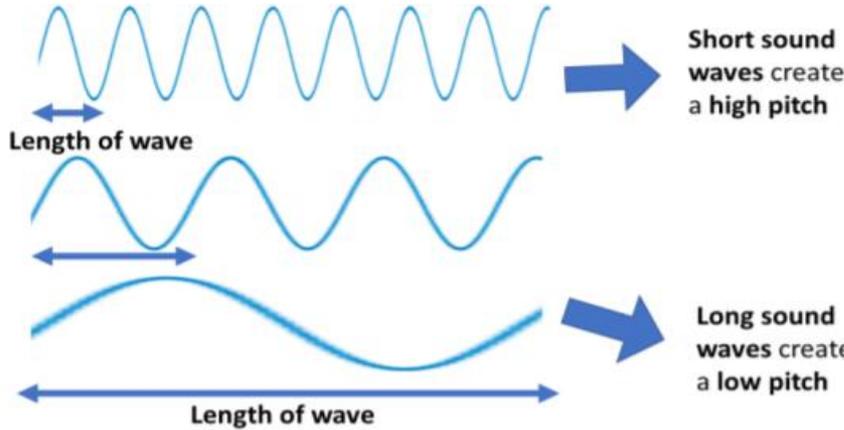


Volume

- The **closer** you are to the **source** of the sound, the **louder** the sound will be.

- The **further away** you are from the **source** of the sound, the **quieter** the sound will be

Pitch



High pitch sound

Low pitch sound

Loud sound

Quiet sound

Bird tweeting, whistle

Drums, trombone

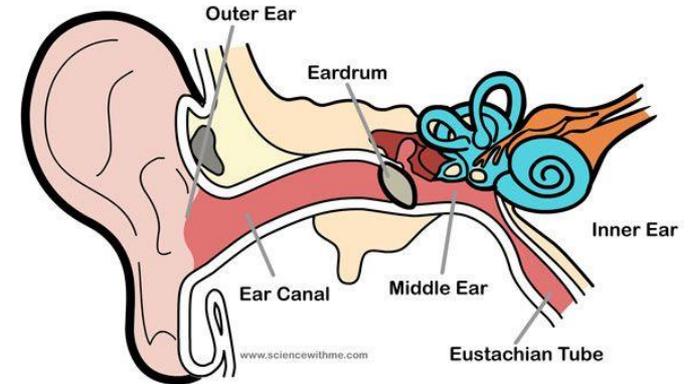
Drill, thunder

Whispering

Sound Vibrations Can Travel Through Different Materials

Solids	Liquids	Gases
Metal	Water	Air
Stone		Oxygen
Wood		
Plastic		

Diagram of our ear



Key Figures

Robert Boyle
(1627 - 1691)



Figured out that sound needs a medium to travel through. He placed an alarm clock in a jar and sucked the air out, creating a vacuum. Gradually, you hear the lock quietening and then silencing completely, proving that sound needs air (or another medium)

Alexander Graham Bell (1847-1922)



Experimented with sounds since he was a teenager. He investigated soundwaves and eventually invented the telephone, using soundwaves.