

Year 4 Science Knowledge Organiser – Sound

Sound is a thing that can be heard. The object that makes the sound is called the source.

Key questions

How is sound made?

- When objects vibrate, 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?

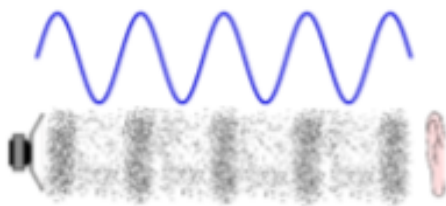
- Sound waves travel through a medium (such as air, water, glass, stone, and bricks).
- For example, if somebody is playing music in the room next door, the sound can travel through the bricks in the wall.

How do we hear sounds?

- When an object vibrates, the air around it vibrates too. This vibrating air can also be known as sound waves.
- The sound waves travel to the ear and make the eardrums vibrate.
- Messages are sent to the brain which recognises the vibrations as sound.

Vocabulary Dozen

Sound	Vibrations that travel through the air and reach a person's ear
Source	Location of sound and what is creating the sound
Vibrate	Moves continuously back and forth
Vibration	invisible waves that move quickly
Pitch	how high or low a sound is
Volume	how loud or faint a sound is
Sound waves	invisible waves that travel through air, water, and solid objects as vibrations
Transmit	to pass from one place or person to another
Amplitude	a measure of the strength of a sound wave
Decibel	a measure of how loud sound is
Frequency	a measure of how many times per second the sound wave cycles
Insulation	Stops sound waves passing through



How do sounds change?

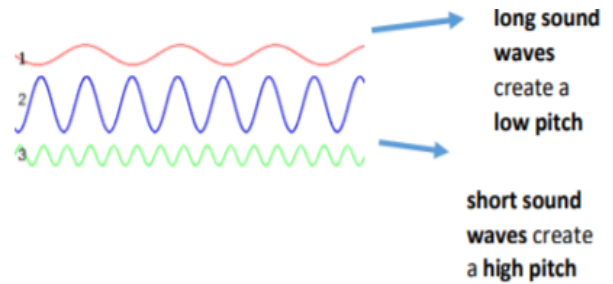
1. Pitch

The pitch of a sound is how high or low it is.

- A squeak of a mouse has a high pitch.
- A roar of a lion has a low pitch.

High pitch sounds are created by a short sound wave.

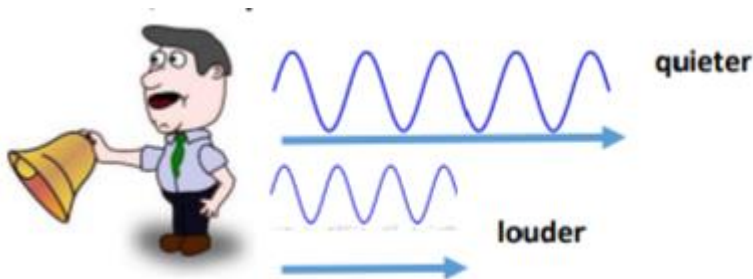
Low pitch sounds are created by long sound waves.



2. 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 closer you are to the source of the sound, the louder the sound will be.
- The further away from the source you are, the quieter the sound will be.



How do we measure sound?

- Amplitude measures how strong a sound wave is.
- Decibels measure how loud a sound is.
- Frequency measures the number of times per second that the sound wave cycles.

