

What should I already know?


- Hearing is one of my five senses.
- Sounds can be combined using musical instruments.
- What the word **vibration** means.

What will I know by the end of the unit?

What is a sound?
A thing that can be heard.
The object that makes the sound is called the **source**.

How is a 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**.

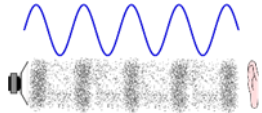


How do sounds travel?

- **Sound waves** travel through a **medium** (such as air, water, glass, stone, and brick).
- 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 sounds.



How do sounds change?
Pitch:

- The **pitch** of a sound is how **high** or **low** it is.
 - A squeak of mouse has a **high pitch**.
 - A roar of a lion has a **low pitch**.

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 small tap of a hammer is used with small amounts of **energy** and so creates a **quiet** noise.
- A **vibration** with lots of **energy** makes a powerful **sound wave** and therefore a **loud** sound.
 - A powerful, smashing tap of a hammer is used with lots of **energy** and so creates a **loud noise**.

How do we measure sound?

- **Amplitude** measures how strong a **sound wave** is.
- **Decibels** measure how **loud** a sound is.

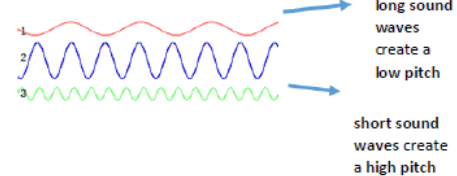
Frequency measures the number of times per second that the **sound wave** cycles.

Vocabulary

amplitude	a measure of the strength of a sound wave
decibel	a measure of how loud a sound is
electricity	a form of energy that can be carried by wires and in used for heating and lighting, and to provide power for devices
energy	the power from sources such as electricity that makes machines work or provides heat
frequency	a measure of how many times per second the sound wave cycles
medium	something that makes possible the transfer of energy from one location to another
pitch	how high or low a sound is
power	Power is energy, especially electricity, that is obtained in large quantities from a fuel source and used to operate lights, heating, and machinery
sound waves	invisible waves that travel through air, water, and solid objects as vibrations
source	where something comes from
transmit	to pass from one place or person to another
travel	how something moves around
vibrations	invisible waves that move quickly
volume	how loud or quiet a sound is

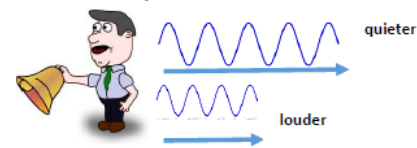
Pitch:

- **High pitch** sounds are created by short **sound waves**.
- **Low pitched** sounds are created by long **sound waves**.



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.



Diagrams

Investigate

- Fill identical jars with different volumes of water. Which one creates the highest pitch?
 - Which material would make the best sound defender? How can you investigate this?
- Make musical instruments using different length strings. How do their pitches differ?