

# Knowledge Organiser Science Year 4 Sound

## How are sounds made and how do they travel?

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



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

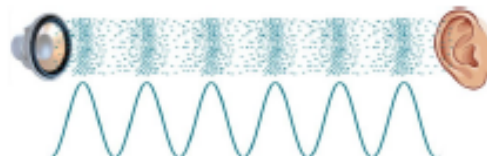


## Key Vocabulary

amplitude	A measure of the strength of a sound wave. The size of the vibration
energy	Sound energy is a type of energy that we can hear
frequency	How many vibrations are made in one second
insulation	A material used to block sounds
medium	A material that allows the transfer of energy from one place to another, eg solids, liquids and gases
pitch	How high or low a sound is. It depends on the frequency of the sound
sound source	Where sound comes from. A sound source will produce vibrations
vibrations	Something moving backwards and forwards very quickly
volume	How loud or quiet a sound is. It depends on the amplitude of the sound wave
wave	A sound wave is an invisible wave which moves through different medium

## How do we hear?

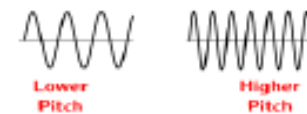
The sound waves travel to the ear and make the ear-drums vibrate. Messages are sent to the brain which recognises the vibrations as sounds.



## 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.



A high pitch sound is made because it has a high frequency. The sound source vibrates many times a second.

## Volume

The volume of a sound is how loud or quiet it is.

Quieter sounds have a smaller amplitude and less energy (smaller vibrations) and louder sounds have a bigger amplitude and more energy.

The closer we are to a sound source the louder it will be.



A train arriving at a station sounds loud

The further away from a sound the fainter it will be.



A train in the distance sounds quieter