

# Sound

## Knowledge

Living Things and their Habitats

identify how sounds are made, associating some of them with something vibrating

recognise that vibrations from sounds travel through a medium to the ear

find patterns between the pitch of a sound and features of the object that produced it

find patterns between the volume of a sound and the strength of the vibrations that produced it

recognise that sounds get fainter as the distance from the sound source increases

## Working Scientifically

Find patterns in the sounds that are made by different objects such as saucepan lids of different sizes or elastic bands of different thicknesses.

Make earmuffs from a variety of different materials to investigate which provides the best insulation against sound.

Make and play their own instruments by using what they have found out about pitch and volume.

Key Vocabulary	
<b>vibration</b>	A quick movement back and forth.
<b>sound wave</b>	<b>Vibrations</b> travelling from a sound source.
<b>volume</b>	The loudness of a sound.
<b>amplitude</b>	The size of a <b>vibration</b> . A larger <b>amplitude</b> = a louder sound.
<b>pitch</b>	How low or high a sound is.

## Hook into a Book



Key Vocabulary	
<b>ear</b>	An organ used for hearing.
<b>particles</b>	Solids, liquids and gases are made of <b>particles</b> . They are so small we are unable to see them.
<b>distance</b>	A measurement of length between two points.
<b>soundproof</b>	To prevent sound from passing through.
<b>absorb sound</b>	To take in sound energy. Absorbent materials have the effect of muffling sound.
<b>vacuum</b>	A space where there is nothing. There are no <b>particles</b> in a vacuum.
<b>eardrum</b>	A part of the <b>ear</b> which is a thin, tough layer of tissue that is stretched out like a drum skin. It separates the outer <b>ear</b> from the middle and inner <b>ear</b> . <b>Sound waves</b> make the <b>eardrum vibrate</b> .

## Activate Prior Knowledge

EY

- Use all their senses in hands-on exploration of natural materials.
- Describe what they see, hear and feel while they are outside.
- Listen with increased attention to sounds.
- Listen attentively, move to and talk about music, expressing their feelings and response.

KS1

- Animals including humans
  - Body parts and senses

KS2

- Properties of Materials
  - States of Matter
  - Solids, liquids and gases



Investing in

the UNIQUENESS

of each individual

"I Am Fearfully And Wonderfully Made"  
- Psalms 139 v14



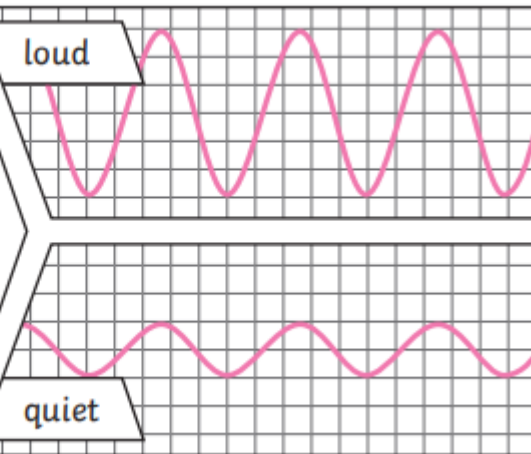
Sound is a type of energy. Sounds are created by vibrations. The louder the sound, the bigger the vibration

**Pitch** is a measure of how high or low a sound is. A whistle being blown creates a **high-pitched** sound. A rumble of thunder is an example of a **low-pitched** sound.



Pitch and Volume

The size of the **vibration** is called the **amplitude**. Louder sounds have a larger **amplitude**, and quieter sounds have a smaller **amplitude**.



You can change the **pitch** of a sound in different ways depending on the type of instrument you are playing.

For example, if you are playing a xylophone, striking the smaller bars with the beater causes **faster vibrations** and so a **higher pitched** note. Striking the larger bars causes **slower vibrations** and produces a lower note.



Sound can travel through solids, liquids and gases. Sound travels as a wave, vibrating the particles in the medium it is travelling in. Sound cannot travel through a vacuum.

When you hit the drum, the drum skin **vibrates**. This makes the air **particles** closest to the drum start to **vibrate** as well.



The **vibrations** then pass to the next air **particle**, then the next, then the next. This carries on until the air **particles** closest to your ear **vibrate**, passing the **vibrations** into your **ear**.



Inside your **ear**, the **vibrations** hit the **eardrum** and are then passed to the middle and then the inner **ear**. They are then changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound.



If you throw a stone in a pond, it will produce ripples. As the ripples spread out across the pond, they become smaller. When sound **vibrations** spread out over a **distance**, the sound becomes quieter, just like ripples in a pond.



Particles

Sound energy can travel from **particle to particle** far easier in a solid because the **vibrating particles** are closer together than in other states of matter.

