



Knowledge Organiser	Subject: Science	Topic: Changing Sound	Year: 4
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Key Knowledge

A sound produces vibrations which travel through a medium from the source to our ears. Different mediums such as solids, liquids and gases can carry sound, but sound cannot travel through a vacuum (an area empty of matter). The vibrations cause parts of our body inside our ears to vibrate, allowing us to hear (sense) the sound. The loudness (volume) of the sound depends on the strength (size) of vibrations which decreases as they travel through the medium. Therefore, sounds decrease in volume as you move away from the source. A sound insulator is a material which blocks sound effectively. Pitch is the highness or lowness of a sound and is affected by features of objects producing the sounds. For example, smaller objects usually produce higher pitched sounds.

Common misconceptions

- Sound is only heard by the listener.
- Sound only travels in one direction from the source.
- Sound can't travel through solids and liquids.
- High sounds are loud and low sounds are quiet.

Key Learning

- 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.

Disciplinary Skills

- Asking relevant questions and using different types of scientific enquiries to answer them.
- Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Identifying differences, similarities or changes related to simple scientific ideas and processes.
- Using straightforward scientific evidence to answer questions or to support their findings.

Key Concepts

Sound is produced by vibrations and travels through a medium

Sounds are created when objects vibrate.

These vibrations travel through solids, liquids, and gases to reach our ears.

Sound cannot travel through a vacuum because there is no medium to carry the vibrations.

Pitch and volume depend on vibrations and object characteristics

Pitch (highness or lowness of a sound) is affected by the size and features of the object producing the sound—smaller objects usually create higher-pitched sounds.

Volume (loudness) depends on the strength of vibrations—the stronger the vibrations, the louder the sound.

Sound changes with distance and materials

Sounds become fainter as the distance from the source increases because vibrations lose energy.

Some materials act as sound insulators, blocking or reducing the transmission of sound.

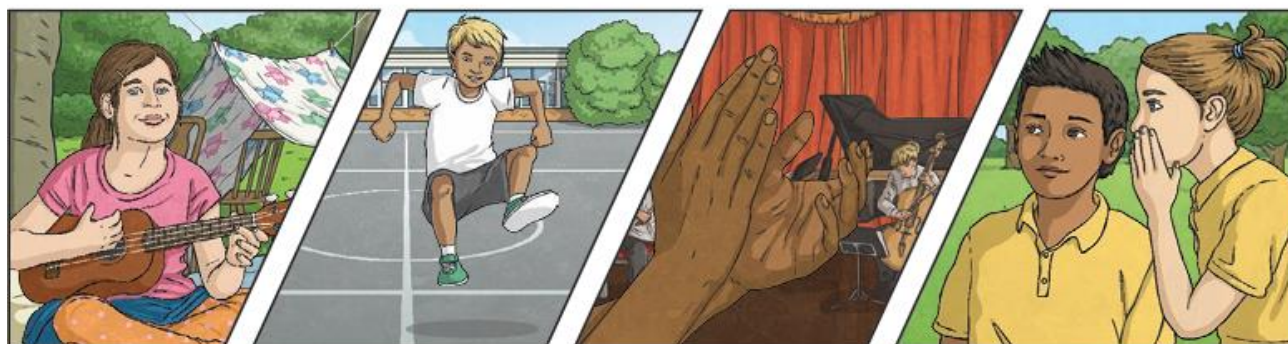
The Big Question

How do we hear the sounds that we hear?

Key Vocabulary	
Vibration	A quick movement back and forth.
Sound wave	Vibrations travelling from a sound source.
Volume	The loudness of a sound.
Amplitude	The size of a vibration. A larger amplitude = a louder sound.
Pitch	How low or high a sound is.

Key Knowledge

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.



Linking Thinking Across Our Learning Journey

Early Years	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Sound Explore how things work. Describe what we see, hear and feel whilst outside.	Animals including Humans Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.		Animals including Humans Identify that humans and some other animals have skeletons and muscles for support, protection and movement.	Changing Sound		