

Science

Sound

Year 4

Summer 2

Key Knowledge

Sound waves	Sound energy travels in the form of waves. Sound travels through a medium. It cannot travel through a vacuum, because there are no atoms to transmit the vibrations.
Vibration	When objects vibrate, a sound is made. The vibration makes the air around the object vibrate and the air vibrations (sound waves) enter your ear.
How Sound Travels	Sounds can travel through solids, liquids and gases. Sound travels faster in water and loses its energy less rapidly than in air. Sound travels more quickly through solids and liquids than through gases.
Volume	Sounds can be quiet or loud. Louder sounds have a larger amplitude, while quieter sounds have a smaller amplitude. Sounds get fainter as the distance from the sound source increase. When you are standing close to an alarm clock, it seems quite loud. As you move away from the clock, the alarm sounds quieter, so our distance from the source of a sound will affect how loud it seems.
Pitch	Sounds can be high or low. A squeak of a mouse has a high pitch (short sound waves), while the roar of a lion has a low pitch (long sound waves).

Statutory Requirements

- Identify how sounds are made, associating some of them with something vibrating
- Recognise that vibrations from a sound 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.

Key Vocabulary

Vibrations	Invisible waves that move quickly back and forth or up and down.
Source	Where something originates or comes from.
Pitch	How high or low a sound is.
Volume	How loud or quiet something is.
Medium	Something that makes possible the transfer of energy from one location to another.
Decibel	A measure of how loud a sound is.
Amplitude	The size of the vibration. A larger amplitude creates a louder sound.
Eardrum	Part of the ear. Sound waves make the eardrum vibrate.

Diagrams and Symbols

Possible Experiences

- 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?
- Investigate the different sounds that can be heard when you walk around your local park.
- What happens to the sound of the drum when we get further away from it?
- Where in your house would be the best places to put fire alarms? Why?
- Investigate how does the height from which a tube is dropped affect the volume of the sound produced.
- Does the length of an elastic band affect the pitch of the sound produced?