

## Key Vocabulary:

**Sound** – is created when something vibrates and sends waves of energy (vibration) into our ears

**Vibrate** – Move rapidly and continuously to and fro

**Travel** – Move from one place to another

**Sound Waves** – can travel through air, water, and solid objects as vibrations. When they reach our ears, these waves make the delicate skin of the eardrums vibrate.

**Materials** – The material from which something can be made

**Sound Source** – Anything that produces sound

**Pitch** – the quality of a sound. Depending on how fast or slowly something vibrates a sound's pitch will be high or low

**Volume** – How loud or quiet a sound is

**Fainter** – Becomes quieter

**Distance** – How far away you are

**Increases** – Gets bigger

Sound is made when an object vibrates. Sound travels in waves.



Sound vibrations can travel through different materials:

**SOLIDS:** metals, stone, wood

**LIQUIDS:** water **GASES:** air

Sound travels better through some materials than others. It travels very well through metal pipes for example. The **louder** the volume, the **bigger** the vibrations. The size of the vibration is called the amplitude. Quieter volumes have smaller amplitudes and louder sounds have larger amplitudes.



**Holy Family Halewood**

**Year 3 & 4 Science**

**Sound**

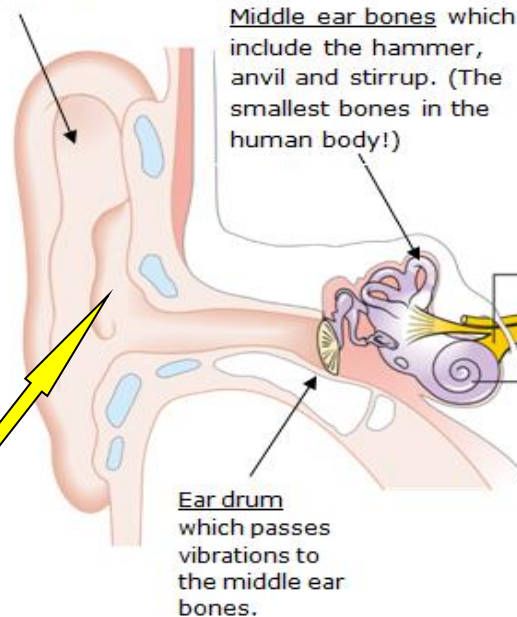


## Learning Objectives:

- To find out that sounds are made when objects and materials vibrate
- To investigate whether sounds can travel through different materials
- To find out that some materials are effective in preventing vibrations from sound sources reaching the ear
- To investigate how sounds can be different pitches and volumes
- To explore the relationship between distance & volume - Recognising that sounds get fainter as the distance from the sound source increases

## How we Hear:

### Outer Ear



Middle ear bones which include the hammer, anvil and stirrup. (The smallest bones in the human body!)

Ear drum which passes vibrations to the middle ear bones.

### DID YOU KNOW?

Sounds get fainter (quieter) as the distance from the sound source increases.

Nerve sends electrical signals to the brain.

Cochlea contains thousands of tiny hair cells which change the vibrations to electrical signals.

## Pitch:

The pitch of a sound is how high or how low it sounds. A high pitch has a high sound and a low pitch has a low sound.

### Stringed Instruments



Tighter, thinner or shorter strings make higher pitches. Faster vibrations make pitches high and slower vibrations make pitches low.

### Wind Instruments



The column of air inside the instrument causes it to vibrate. Shortening this makes a higher sound, lengthening it makes a lower sound.

### Percussion Instruments



The surface is struck and it therefore vibrates. Smaller instruments have higher sounds (smaller keys of a xylophone, hand bells etc.). The tighter or thinner the skin on a drum, the higher the pitch.