

Bomere and the XI Towns Federation Knowledge Organiser—Science

Topic:- Science—Sound


Class/Year Groups: Year 4

Term: Summer


What you already know?
Pupils may have come across some of the terms associated with the study of sound through music, e.g. pitch, volume. They have not studied the science of sound prior to this unit.

What you will learn:

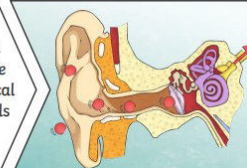
When you hit the drum, the drum skin **vibrates**. This makes the air **particles** closest to the drum start to **vibrate** as well.



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**.

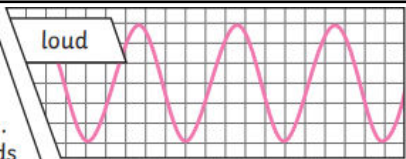


Inside your **ear**, the **vibrations** hit the **eardrum** and are then passed to the middle and then the inner **ear**. They are then changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound.

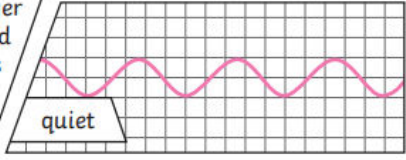


The size of the **vibration** is called the **amplitude**. Louder sounds have a larger **amplitude**, and quieter sounds have a smaller **amplitude**.

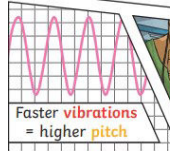
loud




quiet

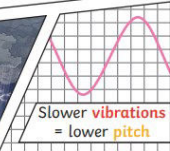


Pitch is a measure of how high or low a sound is. A whistle being blown creates a **high-pitched** sound. A rumble of thunder is an example of a **low-pitched** sound.



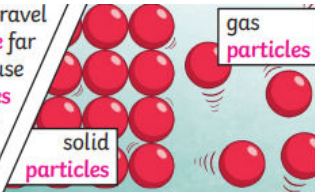
Faster **vibrations** = higher **pitch**






Slower **vibrations** = lower **pitch**

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.



solid particles



gas particles

Vocabulary

| | |
|------------|--|
| Vibration | A movement backwards and |
| Sound wave | Vibrations travelling from a sound source. |
| Amplitude | The size of a vibration. A larger amplitude will equal a louder sound. |
| Particles | Solids, liquids and gases are made of particles. They are so small we are unable to see them. |
| Soundproof | To prevent sound from passing. |
| Eardrum | A part of the ear which is a thin, tough layer of tissue that is stretched out like a drum skin. It separates the outer ear from the middle and inner ear. Soundwaves make the eardrum |



- National Curriculum Objectives:**
- To identify how sounds are made, associating some of them with something vibrating
 - To recognise that vibrations from sounds travel through a medium to the ear
 - To find patterns between the pitch of a sound and features of the object that produced it
 - To find patterns between the volume of a sound and the strength of the vibrations that produced it

