

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.
particles	Solids, liquids and gases are made of particles . They are so small we are unable to see them.
vacuum	A space where there is nothing. There are no particles in a vacuum.
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 . Sound waves make the eardrum vibrate .

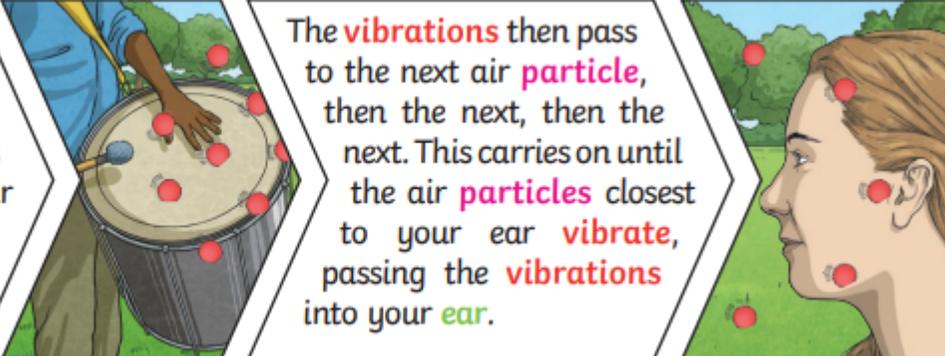
Key Knowledge

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

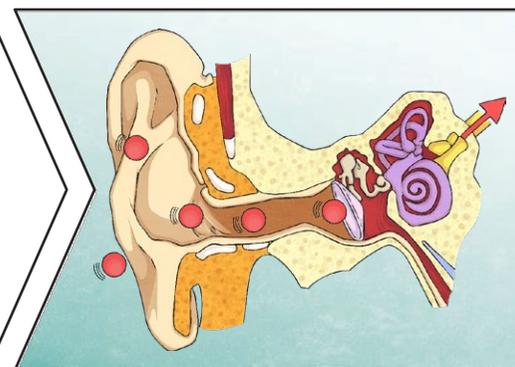
Sound can travel through solids, liquids and gases. Sound travels as a **wave**, **vibrating** the **particles** in the medium it is travelling in. Sound cannot travel through a vacuum.

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**.

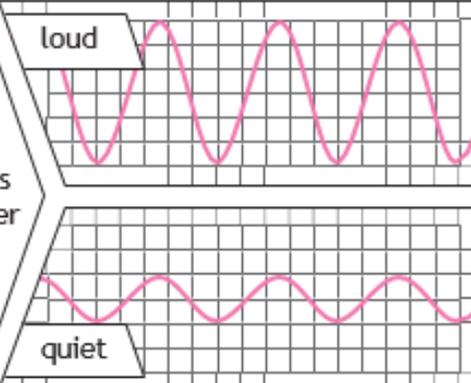


Inside your **ear**, the **vibrations** hit the **eardrum** and are then passed to the middle and then the inner **ear**. They are then changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound.



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.

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



Lesson Progression

1.	What can we hear? – finding sound sources in and around out school.
2.	How are sounds made? – sounds are made from objects vibrating, creating sound waves and these travel from the source to our ears and how we hear these as sounds. – explore vibrations (tuning fork, drum and rice etc)
3.	Why are some sounds loud and others quiet? – explore volume and its link to size of vibrations (amplitude)
4.	How can we change the pitch of a sound? – explore the length, thickness of elastic bands and how the pitch is affected. Make pan pipes with different length straws – study how the pitch of the sound changes
5	How does sound travel through different mediums? – explore how vibrations travel through gas (air) solids (string) liquids (water)
6.	What is the best material for sound proofing? Plan experiment for how to protect children’s ears at a music concert.