Year 4 Sound knowledge Organiser

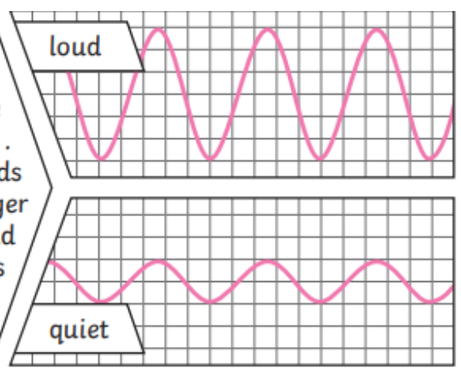
Key Vocabulary	
vibration	A quick movement back and forth.
sound wave	Vibrations travelling from a sound source.
volume	The loudness of sound.
amplitude	The size of a vibration. A larger amplitude = a louder sound.
pitch	How low or high a sound is.
ear	An organ used for hearing.
particles	Solids, liquids and gases are made of particles. The are do small we are unable to see them.
distance	A measurement of length between two points.
soundproof	To prevent sound from passing through.
absorb sound	To take in sound energy. Absorbent materials have the effect of muffling sound.
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 us stretched out like a drum skin. It separates the outer ear from the middle ear. Sound waves make the eardrum vibrate.

How do sounds change over distance?

Sounds get quieter as the distance between the sound source and your ear increases.

Sounds travel as vibrations.

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



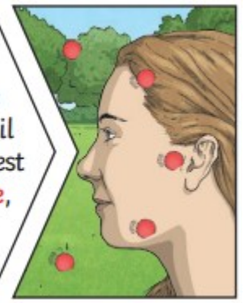
What is sound and what causes it to happen?

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.

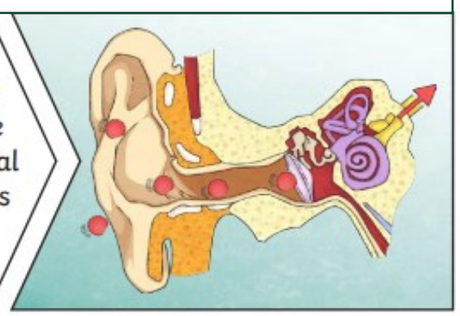
When you hit the drum, the drum skin **vibrates**. This makes the air **particles** closest to the drum start to **vibrate** as well.

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**.



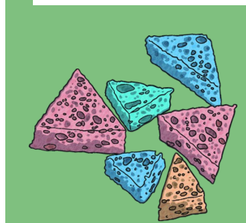
How does sound travel to reach our ears, and how do we hear it?

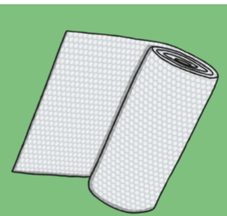
Inside your **ear**, the **vibrations** hit the **eardrum** and are then passed to the middle and then the inner **ear**. They are then changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound.



Can sounds be absorbed?

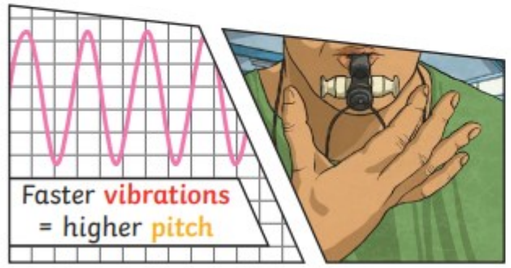
Generally, soft, pliable materials that have air pockets in, like a sponge or bubble wrap, will be the best at absorbing sound.

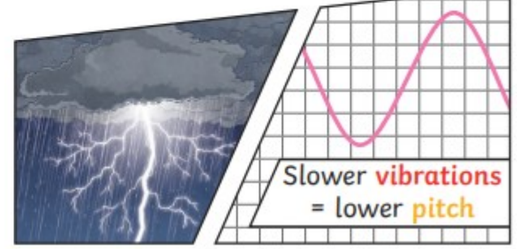




What can we change to make a sound higher or lower in pitch?

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.





You can change the **pitch** of a sound in different ways depending on the type of instrument you are playing.

For example, if you are playing a xylophone, striking the smaller bars with the beater causes faster **vibrations** and so a higher **pitched** note. Striking the larger bars causes slower **vibrations** and produces a lower note.