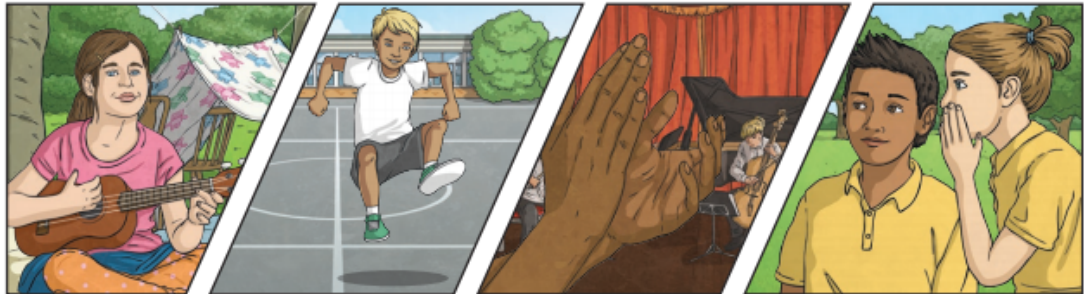


Year 4 Science Knowledge Organiser - Sound

Key Vocabulary	
vibration	A movement backwards and forwards.
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.

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



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**

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.



Year 4 Science Knowledge Organiser - Sound

Key Vocabulary	
ear	An organ used for hearing.
particles	Solids, liquids and gases are made of particles . They are so small we are unable to see them.
distance	A measurement of length between two points.
soundproof	To prevent sound from passing.
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 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 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.

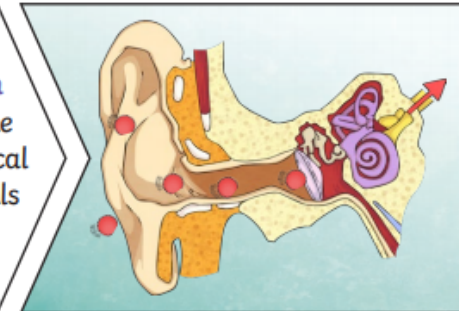
When you hit the drum, the drum skin **vibrates**. This makes the air **particles** closest to the drum start to **vibrate** as well.



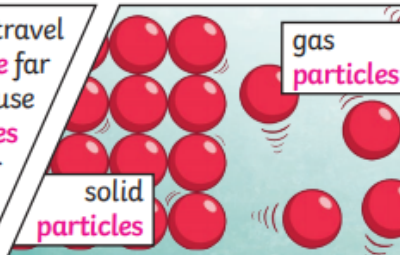
The **vibrations** then pass to the next air **particle**, then the next, then the next. This carries on until the air **particles** closest to your ear **vibrate**, passing the **vibrations** into your **ear**.



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.



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.



If you throw a stone in a pond, it will produce ripples. As the ripples spread out across the pond, they become smaller. When sound **vibrations** spread out over a **distance**, the sound becomes quieter, just like ripples in a pond.

