

Knowledge Organiser- SCIENCE -YEAR 4 - AUTUMN 2 2024

Sound - What happens when we hear things?

STICKY KNOWLEDGE

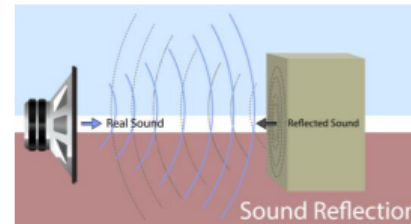
Sound is created by vibrations and travel to our ear, which sends a signal to our brain to understand.	Sound waves travel through air, liquids and gases.	Some materials absorb sound (insulate) and some materials reflect sound.
Volume of sound is measured in decibels and is dependent on how much energy or power the sound source is given. As the volume of sound increases so too does the amplitude, or height, of the sound waves	Pitch is how low or high a sound is and is caused by the speed of the sound source's vibrations.	Sound fades as it travels and there is a relationship between distance and volume.

KEY VOCABULARY

vibration	particles moving very quickly
medium	a substance such as air, water or a solid
source	the start of something
energy	the power to make something work, move or grow
materials	anything used in making something or building
reflect	bounce back from a surface
decibels	the unit to measure loudness
instruments	objects used to play music
particles	tiny pieces that make up something larger
sound source	the object that started the sound.

How sounds are made and travel

When objects vibrate, a sound is made. The vibration makes the air around the object vibrate and the air vibrations enter your ear. These are called sound waves. If an object is making a sound, a part of it is vibrating, even if you cannot see the vibrations. Sound waves travel through a medium (such as air, water, glass, stone, and brick).



How do we hear?

The sound waves travel to the ear and make the eardrums vibrate. Messages are sent to the brain which recognises the vibrations as sounds.



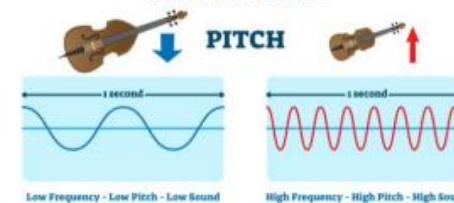
Volume

The volume of a sound is how **loud** or **quiet** it is. Quieter sounds have a smaller **amplitude** and less energy (**smaller vibrations**) and louder sounds have a bigger amplitude and more energy. The **closer** we are to a sound source the louder it will be. A train arriving at a station sounds loud. The further away from a sound the fainter it will be. A train in the distance sounds quieter.



Pitch

The pitch of a sound is how high or **low** it is. A squeak of mouse has a high pitch A roar of a lion has a low pitch.



A high pitch sound is made because it has a high frequency. The sound source vibrates many times a second.

