Knowledge Organiser: year 3/4 - **Sound**

Careers connected to sound:
audiologist, sound engineer

Lesson Sequence

1. Identify how sound is made

2. Explore how vibrations from sounds travel through a medium to the ear

3. Explore sound insulation

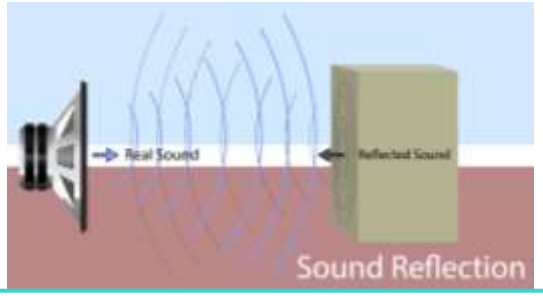
4. Explore volume

5. Explore pitch

6. Explore sounds

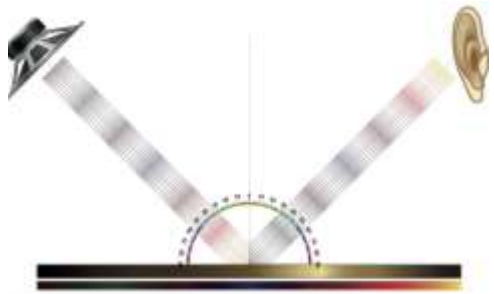
How sounds are made and travel

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).



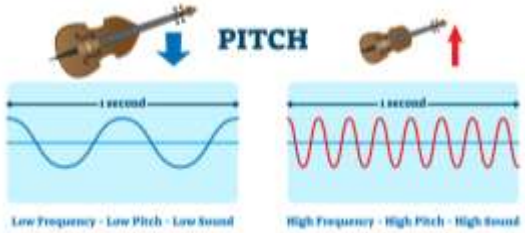
How do we hear?

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



Pitch

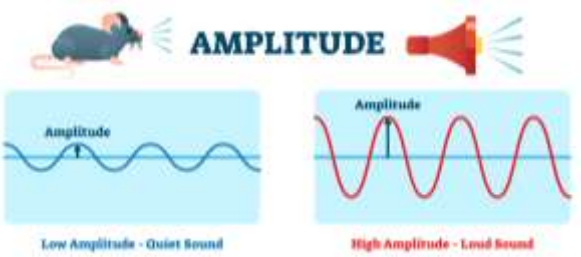
The pitch of a sound is how high or **low** it is. A squeak of mouse has a high pitch A roar of a lion has a low pitch.



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

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.



Rocket Words

	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
	Volume	How loud or quiet a sound is
	Decibels	The unit to measure loudness
	Pitch	How high or low a sound is
	Instruments	Objects used to play music
	Particles	Tiny pieces that make up something larger
	Sound source	The object that started the sound

What I already know:

KS1

- ❑ I know that objects make different sounds.
- ❑ I know that I use my ears to hear sounds.
- ❑ I know about my different senses.

What I will learn now:

Year 4

- ❑ **I can identify how sounds are made, associating some of them with something vibrating**
- ❑ **I can recognise that vibrations from sounds travel through a medium to the ear**
- ❑ **I can find patterns between the pitch of a sound and features of the object that produced it**
- ❑ **I can find patterns between the volume of a sound and the strength of the vibrations that produced it**
- ❑ **I can recognise that sounds get fainter as the distance from the sound source increase**

What I will learn next:

KS3

- ❑ I know that frequencies of sound waves are measured in hertz (Hz)
- ❑ I know sound needs a medium to travel
- ❑ I know the speed of sound in air, in water and in solids
- ❑ I know auditory range of humans and animals.

Knowledge Organiser: Year 4 - Sound

Before and After Test

How does sound travel?	before	after
In a curvy line		
In a straight line		
As a series of vibrations		
By making a noise		

The volume of sound is measured in…	before	after
decibels		
centimetres		
kilograms		
miles		

Sounds gets louder… (tick 2)	before	after
as we move further away from the source		
as we move closer to the source		
the less energy there is when creating the sound		
the more energy there is when creating the sound		

The origin of the sound is called the…	before	after
noise		
source		
vibration		
frequency		

The pitch of a sound describes…	before	after
how fast or slow a sound is		
how loud or quiet a sound is		
how low or high a sound is		

When a sound hits the ear…	before	after
nothing vibrates		
the eardrums vibrate		
the whole ear vibrates		
the brain vibrates		

Sound can travel through…

	Before	After
the air		
water		
the floor		
all of the above		

A pupil blows through two different length straws. Which statement is true

	Before	After
The shorter straw will make a higher-pitched sound.		
The shorter straw will make a louder sound.		
The longer straw will make a higher-pitched sound.		
The longer straw will make a louder sound.		