

## Year 4 – Sound

### Topic 10

How does sound travel through the air?	Like light, sound travels through the air in waves.
How is sound made?	Sound is made by air molecules vibrating.
How do we hear?	Our brain hears the vibrations and turns this into a sound.
How fast does sound travel compared to light?	Sound travels much slower than light, whether in air or in water.
What is amplitude?	The size of the vibration is called the amplitude.
How do quieter and louder sounds differ?	Quieter sounds have a smaller amplitude, and louder sounds have a bigger amplitude.
Which states of matter can sounds travel through?	Sound can travel through solids, liquids and gases.
How do we measure sound?	Decibels measure how loud a sound is .
On a stringed musical instrument, how can the pitch be changed?	The pitched can be changed by altering the tension on the string.
How many bones do you have in your ear?	You have three bones in your ear—hammer, anvil and stirrup.

### Say and Be 10

#### Inspiration people and quotes

“Music is the movement of sound to reach the soul for the education of its virtue. “ Plato

“The sound and music are 50% of the entertainment in a movie..” George Lucas

“Where words fail, music speaks.” - Hans Christian Andersen

Galileo	Italian physicist, Galileo, was the first scientist to record the relationship between the frequency of the wave to the pitch it produces.
Pythagoras	6th century BC philosopher, whose experiments on the properties of vibrating strings that produce pleasing musical intervals were of such merit that they led to a tuning system that bears his name.
Vitruvius	1st century BC Roman architect, engineer, and author; who determined the correct mechanism for the transmission of sound waves, and who contributed substantially to the acoustic design of theatres.
Marin Mersenne	In about 1640 the French mathematician Marin Mersenne conducted the first experiments to determine the speed of <i>sound</i> in air.
Ludwig Van Beethoven	German composer , Ludwig Van Beethoven wrote his famous piece of music "Ode to Joy." after he went deaf.
Alexander Graham Bell	Was the first to patent the telephone and is known as the father of the telephone.
Miller Reese Hutchison	In 1898, Miller Reese Hutchison created the first electric hearing aid.



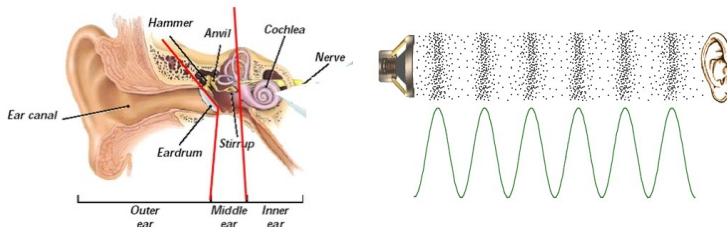
### Think Big?

What is the most pleasant sound you have ever heard??



### Do Ten (key skills)

- I can identify how sounds are made, associating 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 increases.
- I can describe how a human hears a sound.
- I can draw and label a diagram of the ear.
- I know how we can measure and compare sounds.
- I can describe how other living things hear sound.
- I can describe how a musical instrument creates sound and how those sounds can be changed.



### Word Up 10

frequency	a measure of how many times per second the sound wave cycles
vibrations	invisible waves that move quickly
sound waves	invisible waves that travel through air, water, and solid objects as vibrations
source	where something comes from
pitch	how high or low a sound is
dynamics / volume	how loud or quiet a sound is
timbre	the quality of the sound
duration	how long or short a sound is
cochlea	Snail shell shaped part of the ear that receives sound in the form of vibrations
ear canal	part of the ear which sound travels along before reaching the ear drum.