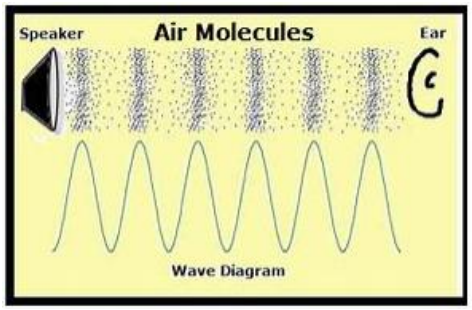
Year 4: Sound

Kindness Enjoyment Achievement

Key Concepts:

You hear a sound when something is vibrating.
Sometimes you can see the object vibrating and sometimes you can feel it.
Vibrations travel from the object to our ears in waves, allowing us to hear sound. The sound waves cause parts of our body inside our ears to vibrate, allowing us to hear (sense) the sound.



Examples of vibrations in instruments:
Cymbal/ glockenspiel- material from which its made vibrates
Drum: skin vibrates
Recorder/ bottle half filled with water: air vibrates inside the tube

Types of Enquiry:

Sorting and classifying:
Group instruments by how they make sounds.
Fair/ comparative test:
How does the volume change according to the material the sound travels through?
Use of secondary sources:
What is ultrasound? How do we use it?
Change over time:
Pattern seeking:
Is there a relationship between the length of the elastic band and the pitch it makes when twanged?
How does the volume of a drum/ instrument change as you move further away?

Working scientifically skills:

Questioning:
Consider prior knowledge when asking questions.
Independently use a range of question stems; answer their own questions where appropriate.
Develop a question to investigate in a small group.
Observing:
Use a sound sensor to measure sound in decibels.
Make systematic observations based on hearing, sight and touch.
Use standard units for measures.

Vocabulary:

Sound
Source
vibrate, vibration
travel
pitch -high, low
volume- faint, loud
insulation
solid/ liquid/ gas
amplify/ amplified
sound wave

How it fits in with the rest of the curriculum:

KS1: know about their senses.
Know that they use their ears to hear sound.
Y3: smallest bone of body is in the ear.
Y4: molecule layout in gases, solids and liquids.

Not touched on again until KS3:
Frequencies of sound waves, echoes, reflection and absorption of sound
Sound needs a medium to travel; the speed of sound in air, water and solids.

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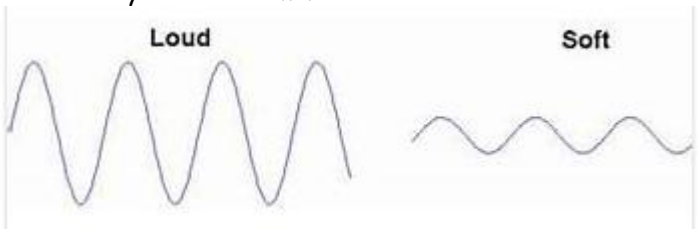
Guitar: the strings vibrate Different mediums such as air or water or wood can carry sound but sound cannot travel through a vacuum (an area empty of matter). Volume is how loud or soft the sound is. The volume of a sound depends on the energy the vibrations contain: Vibrations with lots of energy create bigger soundwaves.(ie if you bang a drum hard with lots of energy). When the soundwaves arrive at your ears, they push harder on your eardrums.  Pitch is the highness or lowness of a sound. Pitch is caused by the frequency of the vibrations (how many times the vibrations go back and forth in a second). The higher the rate of vibration, the higher the pitch. Lower pitches have a lower rate of vibration.	<u>Testing:</u> Develop a question to run a fair test on in a small group: form a plan with support and carry it out. <u>Recording:</u> In pictures and writing. Labelled diagrams. Tables of information. Oral explanations. <u>Concluding:</u> Generate simple comparative statements based on their evidence (e.g. the longer the string, the lower the sound…)	Auditory range of humans and animals. **<u>Cross curricular links:</u>** DT: making instruments Music: Instruments from around the world; listening for different instruments/ pitch/ volume; composition.