Weston Turville CE School – Science Knowledge Organiser

Topic: Sound	Year: 4 Summer 2	Strand: Biology

Previous Knowledge

- Year 3 Animals Including Humans – Skeletons and muscles.
- Year 4 States of Matter – Solids, liquids and gases.

Main Knowledge

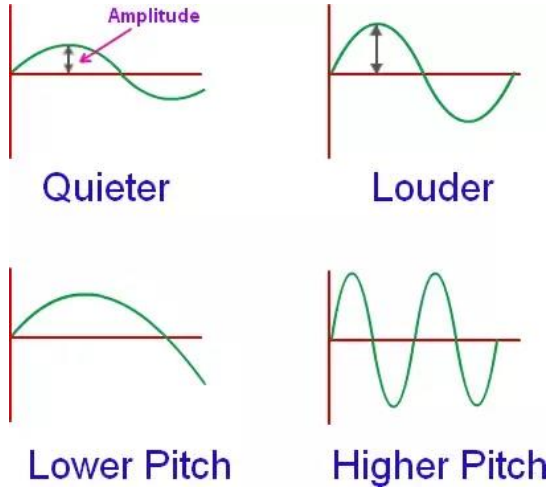
Sound is a type of energy. Sounds are created by vibrations. The louder the sound, the bigger the vibration.
The size of the vibration is called amplitude. Louder sounds have a larger amplitude, and quieter sounds have a smaller amplitude.
Pitch is a measure of how high or low a sound is. A whistle being blown creates a high-pitched sound. A rumble of thunder is an example of a low-pitched sound. Faster vibrations make a higher pitch. Slower vibrations make a 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 a beater causes faster vibrations and so a higher pitched note. Striking the larger bars causes slower vibrations and produces a lower note.
Sounds 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.

Vocabulary

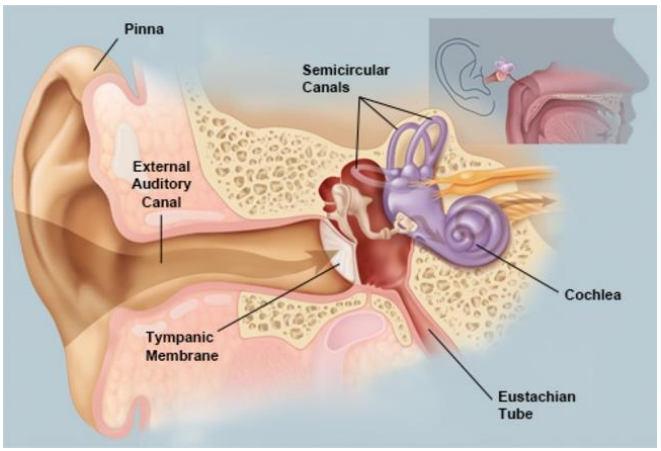
Absorb sound	To take in sound energy. Absorbent materials have the effect of muffling sound.
Amplitude	The size of a vibration. A larger amplitude means a louder sound.
Distance	A measurement of length between two points
Ear	An organ used for hearing.
Eardrum	A part of the ear which is a thin, tough layer of tissue that is stretched out like a drum skin. It separates the outer ear from the middle and inner ear. Soundwaves make the eardrum vibrate.
Particles	Solids, liquids and gases are made of particles. They are so small, we are unable to see them.
Pitch	How low or high a sound is.
Soundproof	To prevent sound from passing.
Soundwave	Vibrations travelling from a sound source.
Vacuum	A space where there is nothing. There are no particles in a vacuum.
Vibration	A movement backwards and forwards.
Volume	The loudness of a sound.

Diagrams

Quora.com Amplitude



webmd.com The inner ear



Weston Turville CE School – Science Assessment

Topic: Sound	Year: 4 Summer 2	Strand: Biology

Question 1: What is sound?	Start of unit:	End of unit:
A noise that enters your ear		
A vibration that enters your ear		
A pitch that enters your ear		
An amplitude that enters your ear		

Question 2: What can sound **NOT** travel through?	Start of unit:	End of unit:
A wall		
Water		
A vacuum		
Air		

Question 3: What is sound measured in?	Start of unit:	End of unit:
Decibels		
Lux		
Degrees		
Grams		

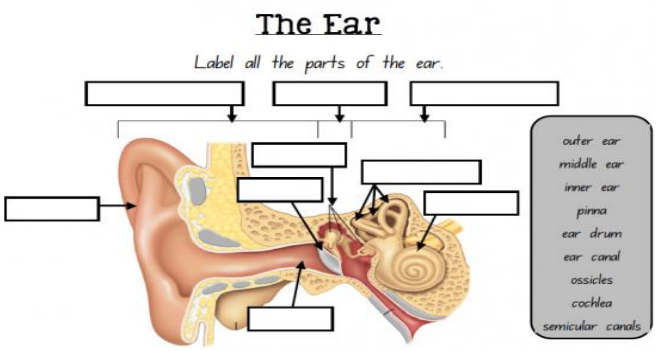
Question 4:Tom hits a cymbal with his drumstick. What happens to the sound when he grabs the edge of the cymbal?	Start of unit:	End of unit:
It gets quieter		
It gets lower in pitch		
It stops		

Question 5: When a sound wave hits your ear, it makes the air in your ear vibrate. These vibrations cause what part of your body to vibrate?	Start of unit:	End of unit:
Your auditory nerve		
Your ear drum		
Your aorta		
Your retina		

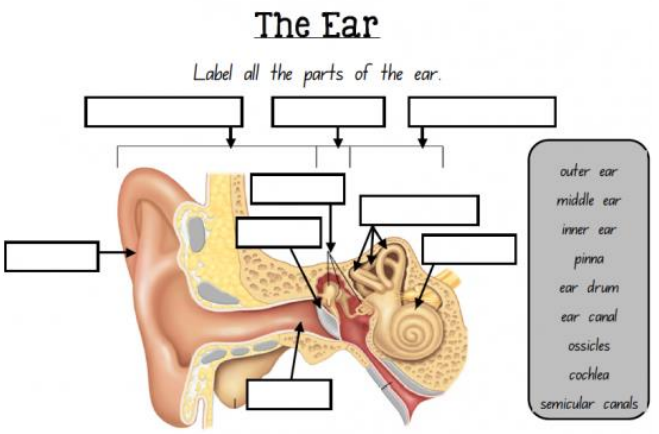
Question 6: Sound waves can be reflected, transmitted or….?	Start of unit:	End of unit:
Bounced		
Deflected		
Absorbed		
Transcribed		

Question 7: Label the ear …

Start of unit:



End of unit:



Question 8: What happens to a guitar string as you tighten it?	Start of unit:	End of unit:
The sound made when plucked makes a lower pitch		
The sound made when plucked makes a higher pitch		
The sound made when plucked stays the same		