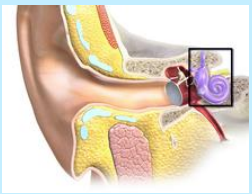
Coley Primary School – Knowledge Organiser

SUBJECT FOCUS: Physics strand	Science: Sound	YEAR 4	TERM 5

WHAT? – Key Knowledge

What is a sound?	A thing that can be heard. The object that makes the sound is called the source.
How is a sound made?	When objects vibrate the air around the object vibrates and this produces a sound. Sounds travel in waves – these are called sound waves. 
How do sounds travel?	Sound waves can travel through solids, liquids and gases. For example, if somebody is playing music in the room next door, the sound can travel through the bricks in the wall.
How do we hear sounds?	When an object vibrates, the air around it vibrates too. The sound waves reach the ear. Inside the ear, the ear drum vibrates and sends messages to the brain. 
How do sounds change?	**Pitch:** The pitch of a sound is how high or low it is. Pitch can be altered on an instrument by shortening or tightening strings. The shorter the instrument the higher pitched. **Volume:** How loud or quiet a sound is. **Quiet Sounds** When a sound is created by a little amount of energy, a weak sound wave is created, which doesn't travel far. This makes a quiet sound. **Loud Sounds** A vibration with lots of energy makes a powerful sound wave and therefore a loud sound. Very loud sounds can cause people to damage and even lose their hearing. The **further** you move from a sound the **fainter** it becomes. The **volume doesn't change** but the energy of the vibrations are spread over a wider distance.

WHAT? – Key Vocabulary

Vibration	A shaking or wobbling movement.
Soundwave	Vibration travelling from a sound source.
Pitch	How low or high a sound is.
Volume	How loud or quiet a sound is – measured in decibels.
Distance	A measure of length between two points.
Source	Where a sound started.
Absorb sound	To take in sound energy. Absorbent materials have the effect of muffling sound.
Sound-proof	Making something with a material that stops the passage of sound.
Frequency	How close together the waves of a sound are.
Energy	The power used to start the vibration.

Diagrams and symbols

Pitch

High pitch sounds are created by short soundwaves. The waves are closer together.

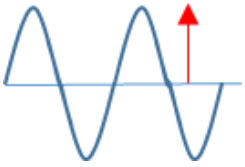


Low pitch sounds are created by long soundwaves. The waves are further apart.

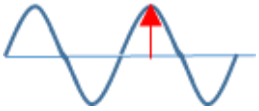


Volume

The taller the height of the soundwave the louder the volume.



The shorter the height of the soundwave the quieter the volume.



I wonder…

Can I explain how sounds are made and how we hear them?

Can I explain why sound gets fainter or the further away I am?

Can I explain what pitch and volume are?

Can I explain how pitch and volume can be changed in a variety of ways?

Possible experiences: Curious minds…

Experiment with changing the pitch of different instruments and looking at how musicians makes high and low pitch notes.

Use different instruments to experiment how to create louder and quieter sounds.

Plan an investigation to prove sounds are fainter the further from the source.

Test different materials for ear defenders with different materials to see which block sounds.

Record and draw soundwaves and find out what they show us.

Resources

Listen UP! Investigate materials to see which will provide the best insulation against sound.

Sound (All about Science) by Angela Royston

Working Scientifically Challenge:

Let's think like scientists…

Can I make careful observations.

Can I explain what I have found out from an experiment?

Can I think of other questions after I have experimented?

Can I plan a test and make sure that it is a fair test?

Can I present my findings using labelled diagrams and tables?