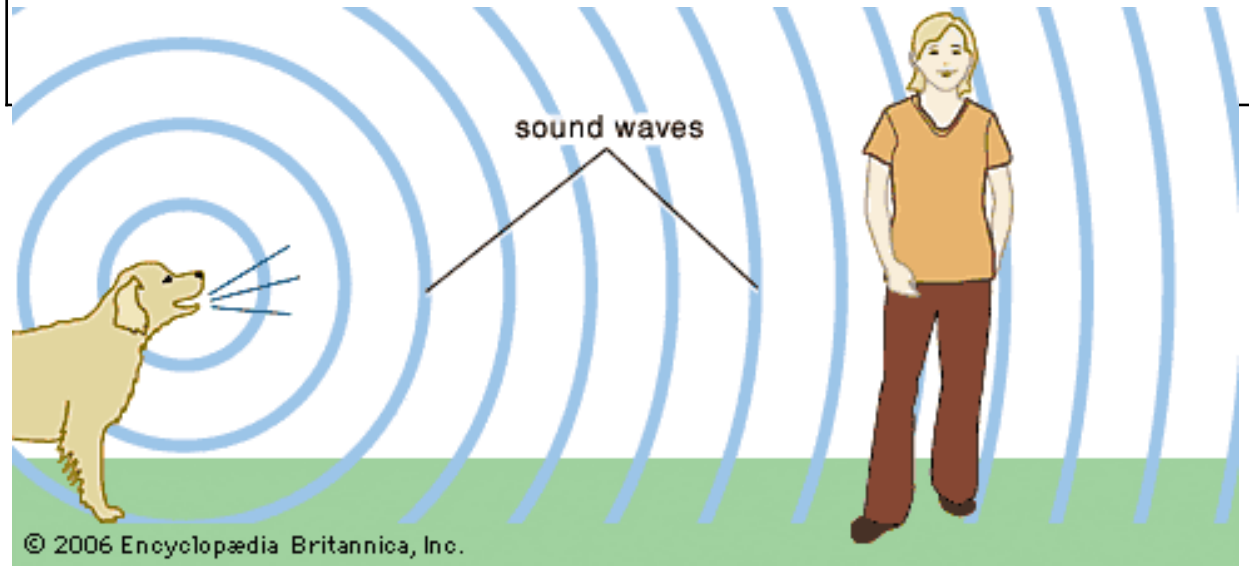
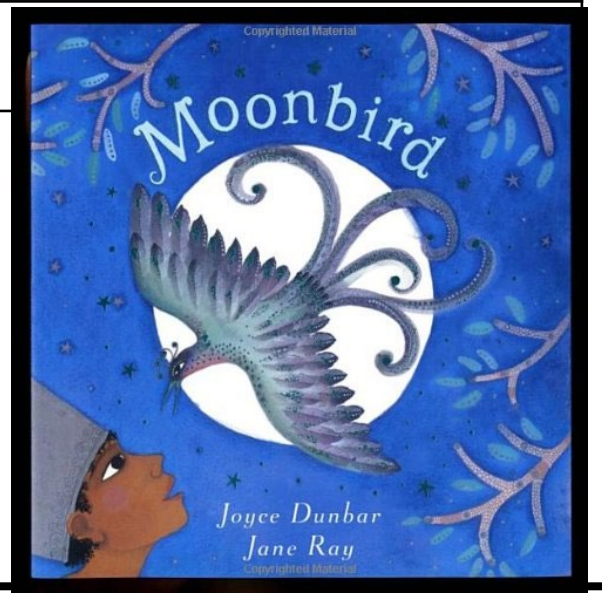
Year 4: Sound

What should I already know?

Science - Asking questions about how the world works and finding the answers.	May have some understanding that objects make different sounds. Some understanding that they use their ears to hear sounds. Know about their different senses.

N/C - Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.





Significant information

An **acoustician** is a scientist that studies sound

A sound source is something that makes a sound.

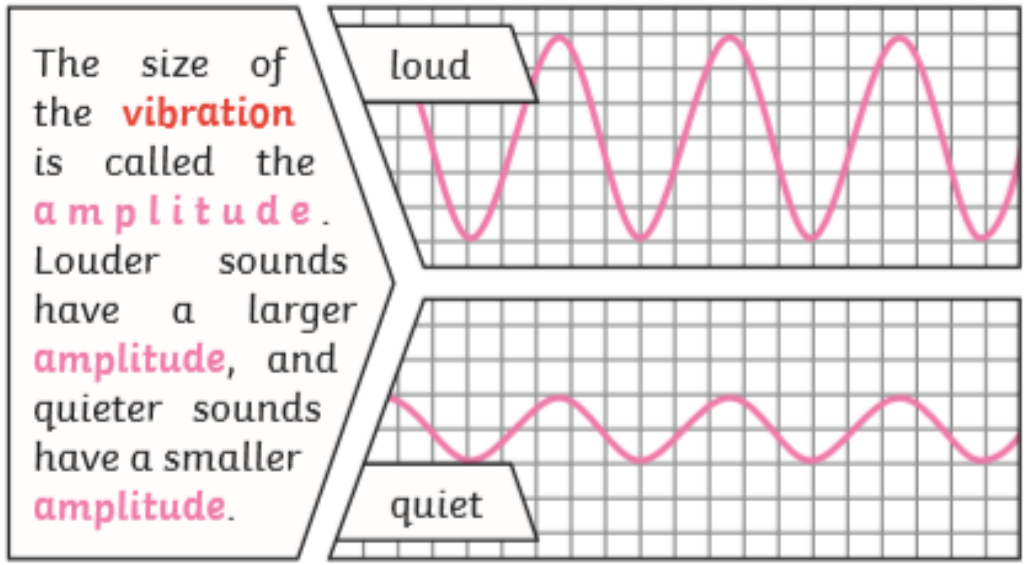
Soundproofing is when a material is used to absorb loud sounds.

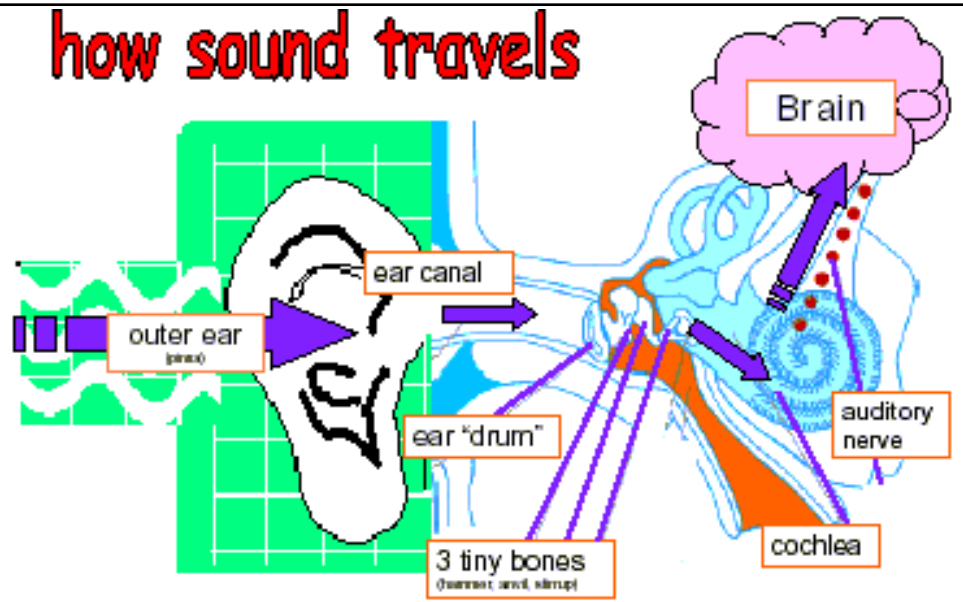
Sound travels better through some materials than others.

Interesting fact - Sound can travel in air at approximately 332 **metres per second.**

Glossary/Key Learning

Vibrating	A movement backwards and forwards.
particles	Tiny bits of **matter** that make up everything in the universe.
Sound wave	Vibrations travelling from a sound source.
What is sound?	Sound is a type of energy. Sounds are created by vibrations. The bigger the sound the bigger the vibration.
How does sound travel?	Sound travels as a wave. The vibrations make particles closest to the object vibrate, which then passes to the next particle.
How does distance effect sounds?	Sounds gets quieter as the distance from the sound source increases.
What is pitch?	Pitch of a sound is how low or high it sounds. A high pitch has a high sound and a low pitch has a low sound.





Science Year 4 – Sound

National Curriculum Objectives:

- Identify how sounds are made, associating some of them with something vibrating
- Recognise that vibrations from sounds travel through a medium to the ear
- Find patterns between the pitch of a sound and features of the object that produced it
- Find patterns between the volume of a sound and the strength of the vibrations that produced it
- Recognise that sounds get fainter as the distance from the sound source increases.

Prior Objectives:

- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.

Prior Knowledge:

- May have some understanding that objects make different sounds.
- Some understanding that they use their ears to hear sounds.
- Know about their different senses.

Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Skill – Knowledge –	Skill – Knowledge –	Skill – Knowledge –	Skill – Knowledge –	Skill – Knowledge –	Skill – Knowledge –
<u>WALT: Explore sounds.</u> WILF: -Experiment fairly. -Make observations. -Use data loggers. Discuss which areas in the school might be the loudest and quietest. Chn generate their own questions about sound. Show the act of vibration by feeling vocal cords, putting rice on a drum and putting a tuning fork in the water. Make observations. **Recording:** Chn walk around school to find the loudest areas and the quietest areas. Use data loggers to measure these.	<u>WALT: Understand how sound travels.</u> WILF: -Describe how vibrations make sound -Draw a diagram -Experiment safely Chn close eyes & point to where they can hear sound. Place some rice on a drum and discuss what happens when you bang the drum (gentle, medium, hard). Discuss how the sound travels. Chn all have a go at putting the tuning fork in water after banging it on the table. **Recording:** Draw a diagram to show how sound travels. (Before and after lesson)	<u>WALT: Explore the pitch of sounds.</u> WILF: -Identify high and low pitch -Identify different sound waves. -Describe the sound. Chn listen to sounds of different pitch and see if they can hear them. Listen to different animals and decide whether the sound the make is high or low pitched Show a picture of a sound wave and explain what this is. **Recording:** Match pictures to whether the sound is high or low and whether the waves or long or short.	<u>WALT: Explore the volume of sounds.</u> WILF: -Identify loud/quiet sounds -Identify different sound waves. -Describe the sound. Children attempt to make a loud sound and a quiet sound. Predict what the sound wave of a loud sound looks like. Predict what the sound wave of a quiet sound looks like. Use cups and strings to create a telephone **Recording:** Draw a diagram to show sound waves of different volumes.	<u>WALT: Investigate ways to absorb sound.</u> WILF: -Find materials that absorb sound -Experiment safely -Explain why some materials absorb sound. What can we do to make sure other classrooms can hear us? Glue cotton balls of a cup. Blow the whistle into the empty cup. Then blow the whistle into the cotton ball cup. How is the sound different? **Recording:** Record and QR code. List the resources used for the experiment and explain what each resource represented.	<u>WALT: Create different sounds.</u> Create various musical instruments. Collect multiple materials over the weeks so chn can use them to create instruments.

Assessment:

Use the vocabulary mat to assess the children's prior knowledge and use the mats again to assess what the children have learnt.

Key Vocabulary:
Vibrations, volume, quiet, loud, ear, pitch, high, low, particles, instruments, wave.

Vibrations	Volume	Quiet	
Loud	Ear	Pitch	
High	Low	Particles	
Instrument	Wave		