

## Year 4 Science Curriculum

Working scientifically links   Rubric/PCMD opp.   Key Vocabulary

### Sound

**What's the big picture?** Big Picture - Sound is important because it alerts us to danger and allows us to communicate - children to generate own questions to investigate - *"I know how to ask simple scientific questions"*

**Prior learning:**

Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (Y1 - Animals, including humans)

National Curriculum Principles	Objectives	Knowledge and key Vocabulary	Reading opportunities	Technology
To identify how sounds are made, associating some of them with something vibrating	To identify how sounds are made, associating some of them with something vibrating	<p>A <b>sound</b> produces <b>vibrations</b> which travel through a <b>medium</b> from the <b>source</b> to our <b>ears</b>. Different mediums such as solids, liquids and gases can carry sound. The vibrations cause parts of our ears to vibrate allowing us to sense/hear the sound.</p> <p><b>Draw a diagram to show how sound travels from the source to the ear.</b></p> <p><b>Children to conduct a sound walk throughout the school - what can we hear and where do we hear it? - predict what/where is the loudest? Where is the quietest? Classify sound sources.</b></p> <p><b>Observe movement of grains on a drum, observe a tuning fork in water.</b></p>	<p>Horrid Henry Rocks (Francesca Simon)</p> <p>Moonbird (Joyce Dunbar)</p> <p>The Pied Piper of Hamelin (Natalia Vasquez)</p>	Create a mind map of what you already know about sound.
Recognise that	Recognise that	<b>Explore how string telephones work to show how</b>		

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vibrations from sounds travel through a medium to the ear	vibrations from sounds travel through a medium to the ear	vibrations travel to the ear. Explore how ear gongs using slinkys or coat hangers work.		
Find patterns between the pitch of a sound and features of the object that produced it	Find patterns between the pitch of a sound and features of the object that produced it	To know what <b>pitch</b> is, identify <b>sounds</b> as <b>high</b> or <b>low pitched</b> . Children to explore how instruments produce sounds of different pitch. Make own musical instruments (sources) which produce different pitches.		
Find patterns between the volume of a sound and the strength of the vibrations that produced it	Find patterns between the volume of a sound and the strength of the vibrations that produced it	Children to know that <b>stronger vibrations</b> make a <b>louder sound</b> . Children to measure the loudness of a drum using the data logger.		
Recognise that sounds get fainter as the distance from the sound sources increases.	Recognise that sounds get fainter as the distance from the sound sources increases.	Children to measure how sound/volume changes as distance from source increases using data loggers - to show results in a graph.		

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### Famous scientists

Alexander Graham Bell - invented the telephone

### Common misconceptions

Pitch and volume are frequently confused, as both can be described as high or low.

Some children may think:

- sound is only heard by the listener
- sound only travels in one direction from the source
- sound can't travel through solids and liquids
- high sounds are loud and low sounds are quiet.

### Enquiry ideas

<u>Comparative tests</u>	<u>Identify and classify</u>	<u>Observations over time</u>	<u>Pattern seeking</u>	<u>Research</u>
How does the volume of a drum change as you move further away from it?	Sort the sounds according to their pitch	When is our classroom the quietest?	where in our school is the loudest? Is it different at different times of day?	Do all animals have the same hearing range?
How does the length of the guitar string affect the pitch of the sound?				How do our ears work?
Which material is best to use for ear defenders?				