
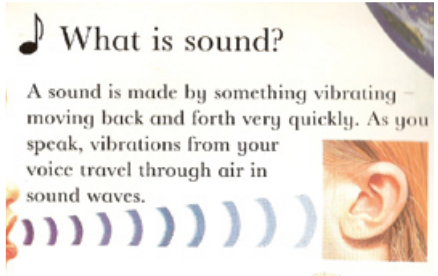




KEEPING LOUD SOUNDS OUT



<p>Equipment:</p>	<p><i>Activity 1:</i> The children's scarves or caps, egg boxes</p> <p><i>Activity 2:</i> Sound source (e.g. ticking clock, radio, buzzer, bell), small Ziploc sandwich bags, sand, water.</p>	
<p>Suggested Class Level:</p>	<p>Junior classes</p>	
<p>Preparation:</p>	<p><i>Activity 1:</i> The children should be asked to bring in their caps and/or scarves to school for this activity.</p> <p><i>Activity 2:</i> Put sand in 2 small Ziploc bags, and water in another 2 Ziploc bags.</p>	
<p>Background information:</p>	<p>Some materials, especially hard rigid ones like metals, allow sound waves pass through them very easily, Other materials, especially soft ones like cotton wool, absorb sound, i.e. they are good sound insulators.</p> <p>Very loud sounds damage our ears. So it is important to protect our ears if we are near loud sounds for more than a short time.</p>	 <p><i>Taken from Kingfisher "My First Encyclopedia: Science"</i></p>
<p>Trigger questions:</p>	<p>What was one of the main things that you noticed about the World Cup in South Africa, apart from the football? (<i>The sound of the vuvuzelas! These are plastic horns.</i>)</p> <p>Some people may have enjoyed this sound, but can you think of any sounds that really annoy you? (<i>Neighbours using electric drill in the night!...</i>)</p> <p>How do you think you could block out loud sounds? (<i>Put hands over ears, wear ear protection...</i>)</p> <p>Is it always good to block out all sound? (<i>No, you cannot hear traffic or other possible dangers if you completely close off to the outside world.</i>)</p> <p>What happens to the loudness of a sound when you move away from it? (<i>It gets fainter.</i>)</p>	





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Content:	SCIENCE: Energy and Forces: Sound Materials: Properties and Characteristics Living Things: Human Life MATHS: Number: Comparing and Ordering Measures: Length
Skills:	Predicting, Investigating, Observing, Analysing
Cross - curricular links:	SPHE - Health and Safety Noise pollution
Science Activities:	<p>KEEPING SOUNDS OUT:</p> <p>1. Covering ears with hands or caps. Ask the children to say what sounds they hear. Then ask <i>“What do you think will happen to the sounds when you cover your ears?”</i> Then ask them to cover their ears with their hands, and then ask them: <i>“What sounds can you hear now?”</i> <i>“What sounds can’t you hear when you cover your ears?”</i> <i>“Do the sounds change when you cover your ears?”</i> <i>“Is there any difference in the sounds between covering one ear and covering both ears?”</i> Can they find out whether putting their hands or a hat (or scarf) over their ears blocks out sound the best. Are the sounds just quieter? Do they also sound different? (Vocabulary: e.g. muffled). <i>“What happens to sounds when you put egg boxes over your ears?”</i></p> <p>2. Comparing sand and water for keeping out sound Ask the children <i>“Do you think sand or water will keep out sound better?”</i> The children sit at some distance (e.g. 3 metres) from the sound source. They listen to the loudness of the sound. Then, in turn, they put the 2 bags with water in them to their ears. <i>“What happened to the sound?”</i> <i>“Was there any difference in the loudness?”</i> They repeat this using the bags with sand.</p>





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They can then compare the effects of sand and water by moving away from the sound until the sound 'disappeared'.

The following measurements could be made:

(Non-standard units can be used. If using standard units, estimates should be made first)

"At what distance did the sound 'disappear' using the sand bags?"

"At what distance did the sound 'disappear' using the water bags?"

"Does sand or water keep sound out better?" (whichever had the shorter distance for the sound 'disappearing')

(They will probably find that sand does).

N.B. There may be many different items in the classroom, e.g. copybooks, small soft toys.... which can be investigated for sound insulation (keeping safety in mind, no small items to be used) – teacher's discretion to be used.

Safety:

CARE WITH EARS – NOTHING SHOULD BE PUT INTO THE EARS.