

## 37. How sound travels

Years  
5-6

A sound is made because something moves. A guitar produces a note when it is plucked. A machine makes a noise when it is working. Human beings and animals produce noises by making their mouths and throats move.

Some sounds are natural sounds. Others are artificial sounds; they are caused by or are by-products of things human beings have made.

A sound is made by a movement backwards and forwards, called a vibration. It's like when you throw a stone into water: it makes small waves or ripples. The waves spread outwards from the point where the stone enters the water. Sound also travels in waves. They spread outwards in all directions from the object making the sound.

Sound waves can travel only when there is a substance to carry the vibrations. They can travel faster through some solid and liquid things than through air. It depends on how easily the substance vibrates.

Sounds can travel a long way. The North American Indians used to put their ears to the ground, to listen for the sound of their enemies. They could hear horses' hoof beats from several kilometres away.

- ◆ Discuss how sound travels in waves.
- ◆ Talk about which sounds are natural and which are artificial. Make a list of at least five examples of each type.
- ◆ Discuss why North American Indians sometimes put their ears to the ground.
- ◆ Sounds travel through some materials and substances more easily than others. How well do you think sound will travel through wood, plastic, cardboard, glass, metal, leather? How could you find out if your prediction is correct?
- ◆ Tap on the top of a table with a pencil and listen. Then put your ear against the table and tap on it again. Which sound is louder? Can you explain why?
- ◆ Tie two or three spoons to the end of a piece of string about a metre long. Swing the spoons gently so they strike each other. Listen to the sound they make. Then tie the string round a finger and put the finger in your ear. Swing the string so that the spoons knock together.

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Listen to the sound. How is it different? Can you explain why?

- ◆ Do you think sound can travel through space? Give your reasons.
- ◆ In a thunderstorm, do you hear the thunder before you see the lightning? Can you suggest why this is?
- ◆ What is an echo? What do you think causes an echo?
- ◆ Suggest how echoes can be used by ships to find out the depth of water in a lake or sea.

