

**Objectives**

- To know that we hear with our ears.
- To identify a variety of sounds.
- To investigate how sound changes in volume as you move away from it.

**Resources**

A selection of percussion instruments; examples of stringed instruments, recorders and whistles; audio recording equipment

**Speaking scientifically**

volume, loud, quiet, decibels, ear defenders

## Lesson 1: Sense of hearing

### Introduction

Invite the class to sit quietly with their eyes closed. Play your selection of percussion instruments to them from various points around the classroom. Ask the children to listen carefully to the sounds around them. After a minute, ask the children to describe what they could hear and where they think the sounds were being made. Talk about whether these were loud, quiet, easy or hard to recognise and make a list of their observations. Tell the children to point to the part of their body they were using to listen with. Compare the sounds they enjoy hearing with those they don't and talk about how sounds – such as alarm bells and pedestrian crossing beepers – might help to keep us safe.

### Group work

1. Provide small groups of children with a selection of percussion instruments and ask them to investigate how to produce sounds on them. When they have had some time to try out each instrument, tell them to sort them according to whether they require a tap or a shake to make a sound.
2. Ask each group in turn to demonstrate different ways of playing their instruments and to talk about the sounds they make. Identify the loudest and quietest ones and compare the percussion sounds with those made by recorders and whistles, or a stringed instrument such as a guitar.

### Whole-class work

3. Take the class into the school grounds to hear outdoor sound levels. Begin by standing quietly and listening for a minute, then talk about the variety of sounds the children can hear. Use audio equipment to record examples to listen to in the classroom later.
4. Draw children's attention to natural sounds such as birdsong or barking dogs and compare them with traffic noises, sirens, planes, and so on. Talk about which sounds are loudest or quietest, and whether the quieter sounds are coming from further away.
5. Show the children one of the percussion instruments used earlier in the classroom and ask them to say what they think will happen to the sound as they walk away from it. Ask one of the children – or an accompanying adult – to carry the recording equipment and record what they hear as they walk away from the sound. You can then play the result of this investigation back in the classroom.
6. Begin by making a gentle sound and tell the children to walk quietly and slowly away from you and, if the school grounds are large enough, to stop when they can no longer hear the instrument. At a signal, they should walk slowly back towards you, noticing that the sound gets louder as they approach the instrument again.

### Science in the wider world

Sounds are measured in decibels (dB). A whisper would be around 15dB, while a jet engine would be in the region of 120dB. People who work in noisy environments using very loud machinery or tools have to wear ear defenders to prevent damage to their hearing.

### Review

Children could listen to the recordings taken outside and list or draw the sounds they recognise. Children could also be assessed on drawings they make of their investigation to find out how sounds change in volume as you move away from them.