

## Unit 1F Sound and hearing

### ABOUT THE UNIT

In this unit children develop their understanding of the huge variety of sounds and sources of sound they encounter. They relate sounds to their sense of hearing and are introduced to the idea that sounds travel away from a source.

Experimental and investigative work focuses on:

- making, recording and presenting observations
- drawing conclusions.

Work in this unit also offers opportunities for children to relate understanding of sound and hearing to everyday experiences.

Hearing impaired children will need particular support in this unit. They will be helped by visual demonstrations of the properties of musical instruments and by attention to the vibrations as sounds are produced. It is important for teachers to help children to be sensitive to those who are hearing impaired.

This unit takes approximately 9 hours.

### WHERE THE UNIT FITS IN

Builds on Unit 1A 'Ourselves'

Children need:

- to know that hearing is one of their five senses and that we hear sounds through our ears.

Links with Units 1C, 1D and music and design and technology.

### VOCABULARY

In this unit children will have opportunities to use:

- words describing sounds or ways of making sounds *eg high, low, loud, quiet, shake, pluck, rattle, ring, silence, direction*
- words and phrases for making comparisons *eg louder, quieter, further away, nearer*
- near synonyms *eg soft/quiet, noise/sound*
- words which have different meanings in other contexts *eg low, high, soft.*

### RESOURCES

- tape of familiar sounds
- tape of children speaking
- selection of musical instruments and other objects which can make sounds
- blindfold
- ear muffs/sponges
- apparatus for measuring length, non-standard or standard, *eg metre sticks, tape measures*
- 'buzzers' or other continuous sound sources
- secondary sources *eg video, CD-ROM, simple reference books*

### EXPECTATIONS

at the end of this unit

*most children will:*

recognise and describe many sounds; describe how sounds are generated by specific objects; state that they hear sounds through their ears; describe what they observe when they move further away from a source of sound; make observations or measurements relating to sounds and with help present these in charts

*some children will not have made so much progress and will:*

recognise and describe many sounds; relate their sense of hearing to their ears; make and record observations of sounds

*some children will have progressed further and will also:*

recognise that when sounds are generated by objects, something moves or vibrates

**LEARNING OBJECTIVES**

**POSSIBLE TEACHING ACTIVITIES**

**LEARNING OUTCOMES**

**POINTS TO NOTE**

Introduce unit by a 'listening walk' starting in the classroom and then going into other areas of the school and playground. Ask children to keep very quiet during the activity and when they return to the classroom to talk about the sounds heard.

 **SAFETY** – Children should be warned that loud sounds including loud music can damage the ear.

**CHILDREN SHOULD LEARN**

- that there are many different sources of sounds
- to explore sounds using their sense of hearing
- to make observations of sounds by listening carefully

- ◆ Carry out a 'sound quiz' by asking children to listen to a tape containing familiar sounds *eg a car engine, birds singing, children singing, a piano playing, footsteps, a tap running* and to identify what they are. Record different children in the class speaking and ask children to identify who they are.

**CHILDREN**

- identify a range of familiar sounds *eg that's water trickling, that's us singing in assembly*
- listen carefully to identify different speakers

- that there are many different ways of making sounds
- to present results and to interpret these

- ◆ Present children with a range of musical instruments *eg percussion, recorders*, and other objects *eg rattles, spoons, cardboard*, and ask children to explore how these make sounds and to group them *eg into those you shake, pluck, bang, blow*. Help children to represent their groups *eg in a chart or by labelling groups* and ask them to compare the groups and suggest what this shows.

- identify different ways in which simple musical instruments make sounds
- group instruments and objects and compare how many there are in each group

- that there are many ways of describing sounds

- ◆ Ask children to explore the sounds made by the musical instruments and other objects and to suggest ways of describing them *eg high, low, loud, quiet, rattling, ringing*. Ask children to identify sounds they like and sounds they dislike and to describe them. Extend by asking children to use secondary sources *eg CD-ROM, video clips, simple reference books* to find out about other musical instruments and how they make sounds.

- describe sounds using a range of appropriate vocabulary
- recognise that some sounds give us pleasure and others do not

Children may need to be told that 'noise' and 'sound' are essentially the same but that 'noise' usually refers to unpleasant sounds.

Children could make their own tape recording of sounds with their descriptions.

- that we can make sounds in a variety of ways
- to explore sounds using the sense of touch

- ◆ Ask children how they themselves can make sounds *eg by talking, whistling, clapping*. Ask them to feel their faces and throats while they are talking/singing and while they are not.

- identify how they can make sounds
- recognise that when they do so parts of their bodies move

It is not essential to introduce the word 'vibrate' at this stage although if children use the word teachers may wish to explore their understanding. CD-ROMs could be used to demonstrate sounds made by other animals.

- that we hear with our ears
- to turn ideas about hearing into questions that can be tested
- to make and record observations and present them in drawings and writing

- ◆ Ask children to draw a picture or describe how they think we hear. Carry out a number of short activities *eg ask them to point to where a sound is coming from; using ear muffs over both or one ear see if children can hear as well as with both ears* which will test their ideas. Encourage them to raise questions during the activities *eg What will happen if we use earmuffs? What happens if we only cover one ear?* Discuss with children what they have found out and help them to record this using drawings and writing.

- state that they hear sounds through their ears
- recognise that our ears also give information about where sounds are coming from *eg I pointed to where the buzzer was when I had my eyes shut, I didn't need to see*
- suggest how to find out about hearing *eg you could cover one ear and both ears and listen to the sound*

Children's pictures may show misunderstandings about how they hear. Teachers will need to take these ideas into account in subsequent teaching.

 **SAFETY** – Warn children it is dangerous to put objects into their ears (unless specially designed *eg earplugs*).

- that we use our sense of hearing for a range of purposes, including recognising hazards and risks

- ◆ Show children a video or video clip about traffic or road safety and ask them to suggest ways in which hearing is important for safety.

- recognise that we use hearing to sense danger as well as to communicate and to hear pleasant sounds

- that some sounds can be heard from a long distance
- that sounds seem louder the nearer you are to the source

- ◆ Ask children which sounds they can hear from far away *eg thunder, ambulance/police sirens, shouting* and whether they are louder if they are nearer. Ask children to describe what it is like to be near a very loud sound *eg fire alarm, police siren*.

- identify some very loud sounds
- recognise these sounds are louder when they are nearer to the source
- recognise that loud sounds can be harmful

## LEARNING OBJECTIVES

### CHILDREN SHOULD LEARN

- that sounds get fainter as they travel away from a source
- to measure distances using non-standard (or standard) measures
- to make and record their measurements

## POSSIBLE TEACHING ACTIVITIES

- ◆ Ask children to think about how far away they can hear sounds *eg in the hall, can they hear someone talking at the other end? Can they hear someone talking at the other end of the playground?* Take children into a hall (or playground on a still day) and explore with them whether they can hear a quiet sound *eg a buzzer* at one end from the other. Explore a number of alternative ways of finding out *eg moving towards, away from the sound, using different sources of sound, placing the sound source at one end, one side, in the middle of the hall.* Agree a way of finding out with the children. Use the method with one source and ask children to measure how far they were from the source. Repeat using a quieter sound source and record measurements.

- to communicate what happened using diagrams or charts to present results
- to make comparisons between their results and use these to draw conclusions

- ◆ Show children the measurements they have made and talk about how they could be presented to show clearly what happened. Help children to present results as a chart *eg block diagram.* Ask children to compare the results asking questions *eg Was everyone the same distance from the sound when they stopped hearing it? Why not? Did the louder sound travel further? How do you know?*

Review work on sound by telling or reading a story or poem and asking children to supply suitable sound effects.

## LEARNING OUTCOMES

### CHILDREN

- state that when they are far away they can't hear people talking
  - measure distance from their position to the sound source using a non-standard measure or a metre stick or tape measure and record their measure
- 
- contribute to a chart *eg a block graph* presenting the results
  - compare measurements *eg I stopped nearer to the sound than John stopped*
  - compare how far they were from the two sources when they stopped hearing them *eg I went five metres with the loud source and two metres with the soft source*
  - state that they could hear the louder sound further away than the softer sound

## POINTS TO NOTE

This activity, together with the following activity, offers the opportunity of a class investigation. It may be helpful to concentrate on the aspects of investigation highlighted in the learning objectives.

The units in which the distances are measured should enable a suitable chart to be made from the results. Children should be encouraged to use units with their measurements in all their work.



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