

# Sound and hearing

## Teacher's Guide CD

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Peter Riley

# Curriculum Visions

## A CVP Teacher's Guide

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# Introduction



## The pupil's book

The Key stage 1 Science@School series is a series of twelve books. Each one addresses one of the QCA units in the Key Stage 1 science curriculum.

Each spread in the book addresses one or more objectives in a QCA unit by providing photographs, simple text and questions to stimulate discussion.

Each book has an illustrated glossary and a simple index for finding information.

## The teacher's guide

It may be that you already have a scheme of work and wish to use the books to support it. Alternatively you could use the books, this CD ROM and the **CurriculumVisions.com** web site, which provides support material in the form of extra text (with audio option), pictures, captions, activities and demonstration videos to build a new scheme. Whichever way you choose, the notes in this teacher's guide have been set out as if you were using each page or spread as the basis for a lesson. You may follow each set of notes in their entirety to build up your lesson or take parts of the notes to fit into your scheme.

The teacher's notes contain information about practical work. You should check your school policies on practical science work and only select activities for which you are confident to take responsibility.

The book *Be Safe!* published by the ASE (ISBN 978-0-86357-324-8) provides useful guidance on carrying out science activities.

## The structure of the notes

The notes for each page or spread follow the same structure, which is outlined here.

### Objectives

These may be linked to the QCA objectives or build on them to enrich the topic.

### Resources and preparation

Suggestions may be made for building on the visual display of the books with posters and models.

There are also pictures (aka flashcards) at the end of the notes to each lesson, which may be printed off and used as triggers to start the lesson or used in the plenary as revision. When the pictures have been used they could be displayed on a wall and others added as the subsequent lessons are completed. This will make a colourful summary of the work which could be used as a final revision resource when the book is completed.

If you are using the **CurriculumVisions.com** web site log in, go to Science, Year 1, Unit 1F Sound and hearing.

There may be some suggestions for building practical work into the use of the pages in the book and these include a list of requirements (simple, readily available materials) and advice on preparing the requirements for use in the lesson.

# Introduction



## Starting the lesson

Each lesson begins with a short activity, which helps settle the children and focus them on the work ahead.

## Activities with the page

These may be reading activities, observing and discussing the pictures or answering a question. There may also be practical activities which are designed to develop a range of practical science skills from making observations to carrying out fair tests.

## Differentiation

There are suggestions for providing help and activities for children of different abilities.

## Assessment

There are suggestions for assessing the children's work. There are three assessments for you to print off at the end of this guide. These are for use with lesson 2 (page 49), lesson 4 (page 51) and lesson 7 (page 53), or you could use all three together as an end of unit test. Guidance for the answers is given in the assessment section of the lesson notes.

## Plenary

The work done in the lesson is reviewed in this section and there may be a further activity to help secure the children's knowledge.

## Outcomes

These may be linked to the QCA objectives or build on them to enrich the topic.



# Teacher's sheet



## Sounds around us

### Objectives

- ▶ To know that there are many different sources of sound.
- ▶ To listen carefully to the sounds around them.
- ▶ To identify a range of sounds.

### Resources and preparation

None.

### Starting the lesson

Ask the children to sit very still and listen for a minute. After a minute ask them what they heard. Tell them that everything they mentioned was a source of sound.

### Activities with pages 4 and 5

- ▶ Read the introductory sentence with the children then stop and ask again what they can hear. Remind them that what they have heard are sources of sound.
- ▶ Read the next three sentences then stop again and ask what they can hear now. Ask if the source of sound, like a car or bus, is moving.
- ▶ Read about dogs howling and look at the picture of the dog and read the caption. Ask the children about other sounds that dogs make and look for growl, whine, whimper and snarl.
- ▶ Read on about water splashing and ask the children to think about water splashing in a shower and water splashing into a sink and compare the sounds.
- ▶ Read about machines whirring and ask about machines that whirr. The children may mention washing machines, spin driers and computers and milk floats. See if they identify the vacuum cleaner as a machine that whirrs.
- ▶ Read about friends calling on the phone and ask about the sounds telephones make. They may respond with bell and buzzer sounds and may hum ring tone tunes.
- ▶ Move on to page 5 and look at the birds and read the caption. Ask the children about the different sounds that birds make and look for answers about tweeting, twittering, going "cheep cheep", quacking, crowing, cawing and whistling.
- ▶ Look at the picture of the city scene and read the caption with the children. Ask them what a city is then ask them to check their answer by looking in the glossary on page 22. Ask the children what sound the people in the picture may be making and look for an answer about the sound of footsteps.



# Teacher's sheet



- ▶ Ask the children to answer the question on page 5 to see if any of the sounds have changed. Be prepared for the children identifying sounds they had missed before such as footsteps.
- ▶ Ask the children to draw a picture of a noisy scene with as many sound sources as they can think of.

## Differentiation

Less confident learners will need the names of the sound sources written onto slips of paper so that they can stick them on their picture. More confident learners could write down the name of the sound sources with help.

## Assessment

The children can be assessed on the number of sound sources in the pictures and their contribution to the listening sessions.

## Plenary

Let the children display their pictures and write down the names of the sound sources on the board. Ask the children about their favourite sound. Let them start with a top three and then decide on one if they are having difficulty deciding. From the results make a pictogram. You could ask colleagues in other years to try the survey and find out if the children's favourite sounds change as they grow up.

## Outcomes

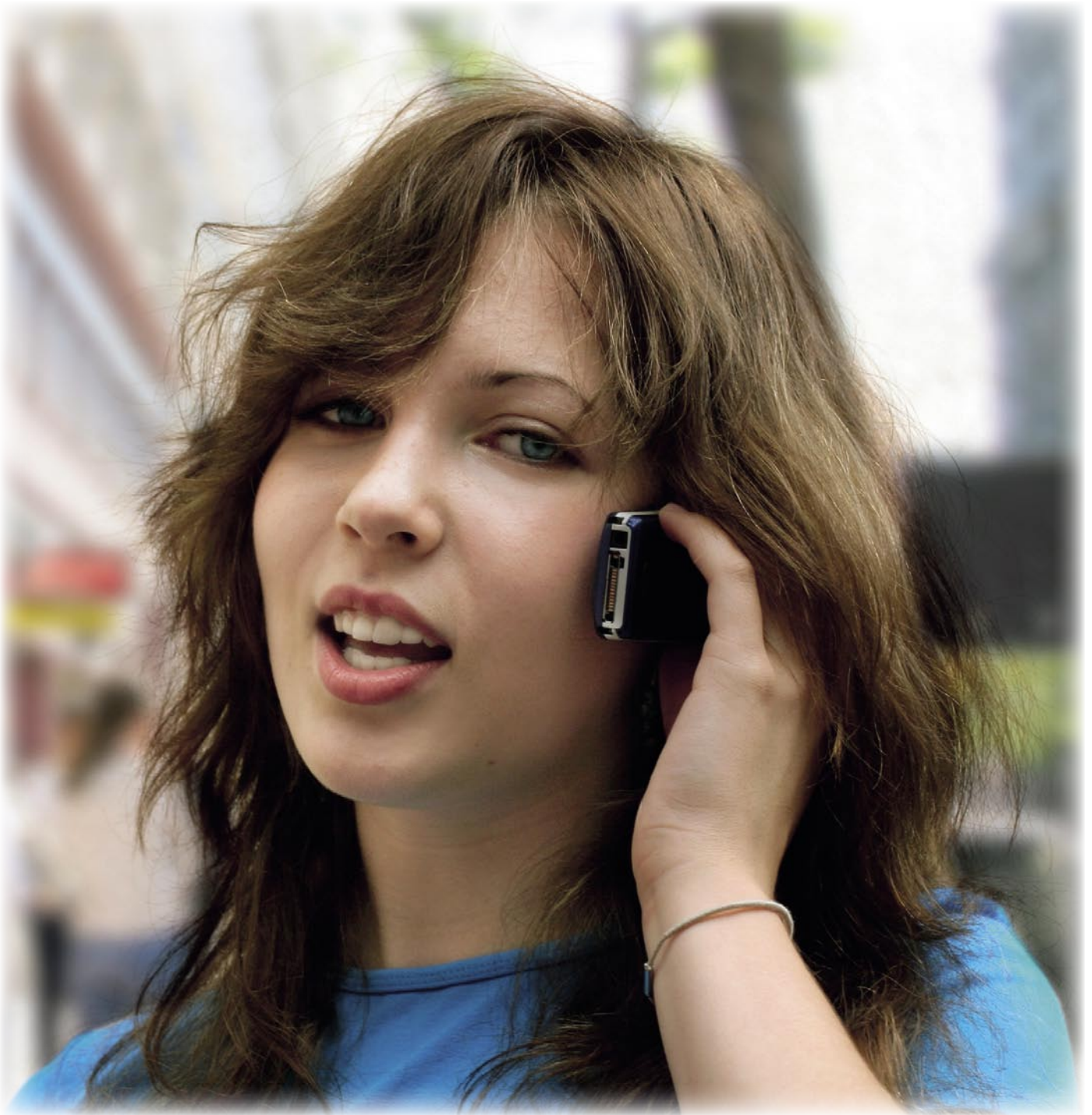
The children:

- ▶ Know that there are many different sources of sound.
- ▶ Can listen carefully to the sounds around them.
- ▶ Can identify a range of sounds.











## Musical sounds

### Objectives

- To know that there is a range of instruments that make musical sounds.
- To know that musical instruments make sounds in different ways.

### Resources and preparation

Each child will need a container such as a tin or plastic tub with a lid. There should be a selection of materials to put in the containers such as rice, beans, peas, paperclips. Sticky paper. A CD with a pleasant relaxing piece of music and player. Time to learn a jolly song selected from other sources. Piece of wood about 12–16 cm wide by 20 cm long. A selection of elastic bands which fit lengthways along the piece of wood, a pencil. Check that the elastic bands can perform as in the activity below and do not snap. A bowl with a smaller diameter than the piece of wood. A recorder, tambourine, drum and drum stick, a pair of maracas.

### Starting the lesson

Tell the children that almost every piece of music has a rhythm which is a regular beat. At first people kept the beat by clapping and at this point you could get the children to sing a song they know well and clap to keep the beat. Tell the children that some of the first musical instruments were designed to help keep the beat and tell them that instead of

clapping they are going to make a shaker and use that. Issue the tins and tubs and let the children select some materials to put in them. They may put small or large amounts, just one kind of material or a mixture. When they have finished they should secure the lid of the container with sticky tape, decorate their shaker and then perform the song again using the shaker instead of clapping.

### Activities with pages 6 and 7

- Read the introduction with the children and remind them that they have made a musical instrument – a shaker.
- Read the first sentence with the children and then play the music on the CD for a short time and ask the children how the music made them feel. Some children may say that it made them feel sleepy!
- Move to the second sentence and ask them to sing a jolly song. They may use their shakers as accompaniment. Ask the children how the song made them feel and look for an answer about feeling lively and happy.
- Read the last sentence, remind the children about the shaker being a musical instrument and then look at the picture of the guitar and read the caption. Point out that the guitar has got strings, which fit tightly on the guitar and make a sound when

they are plucked. Show the children the piece of wood and the elastic bands and ask them how they could make it look like the guitar. Look for suggestions about arranging the elastic bands lengthways and try it. Point out that by the boy's right hand is a part of the guitar called the bridge which raises the strings so that they can be plucked. Show the children the pencil, and ask them how it could be used to make a bridge. Look for an answer about putting it under the elastic bands. Get the children very quiet and pluck the strings. The children should just about be able to hear them. Point out that the guitar has a big wooden box or body with a hole in the top. Show the children the bowl and put the wood across it. Press the wood to the bowl and pluck the elastic bands again. The sound should be louder as the bowl resonates.

- Move on to the picture of the recorder player and show the children a recorder. Place your left thumb over the hole at the back and press your first two fingers over the first two holes and blow gently. Put your third finger over the third hole to produce another note.
- Move on to page 7 and look at the photographs and read the captions. Point out that the drum and the tambourine are beaten to make a rhythm and demonstrate with instruments. Let the children find out more about maracas in the glossary. Demonstrate the maracas and let the children compare them with their

shakers. Look at the photograph of the trumpet with the children and point out that it is a long tube like a stretched out recorder and that instead of holes it has buttons to press called valves which make the notes.

- Ask the children to think about the musical instruments they have seen, select a favourite and answer the question on page 7.

## Differentiation

Less confident learners could draw and label some musical instruments from pages 6 and 7. More confident learners could look at other resources showing a wider range of musical instruments and make labelled drawings. All children could make a drawing of a band using a range of instruments.

## Assessment

The children could be assessed on the way they made their shakers and the detail in their drawings. There is an assessment sheet at the end of the guide (page 49).

## Assessment guidance

1. Blow – c, shake – d, pluck – a, strike – b
2. eg, Recorder – blow; triangle – strike



# Teacher's sheet



## Plenary

Let the children describe how each instrument they have studied makes a sound and mime how it is played.

## Outcomes

The children:

- ▶ Know that there is a range of instruments that make musical sounds.
- ▶ Know that musical instruments make sounds in different ways.
- ▶ Can make a simple musical instrument.
- ▶ Can take part in making music.













## Loud and quiet

### Objectives

- To know that some sounds are loud.
- To know that some sounds are quiet.

### Resources and preparation

The shakers from lesson 2, some more containers such as tins or plastic tubs with lids, a selection of materials to make a quiet sound such as cotton wool, small pieces of fabric, paper, pieces of plastic sponge. Access to the school bell and an arrangement to have it rung, a school hand bell. The school hall or other open space.

### Starting the lesson

Sit in front of the children and whisper very quietly "Can you hear what I'm saying?". Repeat a fraction louder and gradually increase the volume until the children say they can hear you. Ask the children what this exercise tells us about sound and look for an answer about there being quiet sounds and loud sounds.

### Activities with pages 8 and 9

- Read the introduction and the first and second sentences with the children, look at the picture of the fire bell and read the caption. Ask the children to find out more about the fire bell in the glossary. Talk about

the school bell and take the children to look at its location and perhaps arrange to have it rung. If the school has a hand bell show it to the children and ring it. Ask the children why loud sounds can be useful and look for an answer about warning people of a fire and to get out of the way. The school bell tells children when lessons are beginning and ending.

- Read the next two sentences about quiet sounds and move across to the picture of the cat on page 9 and read the caption. Let the children talk about their cats and the sounds they make.
- Move back to page 8 and read about loud sounds being heard from a long way away. Look at the picture of the helicopters and discuss the sound they make. Look for a rr, rr sound and get the children to make a helicopter noise. Take the children in the hall or another large space and let them make their loud helicopter sound. Let groups of children move away and listen to the sound at a distance. They should conclude that they can still hear the sound.
- While the children are still outside the classroom ask them to whisper to each other and let groups move away and listen for the sounds. They should conclude that they can only hear quiet sounds when they are near where the sounds are being made.



# Teacher's sheet



- ▶ Return to the classroom and the book and read about quiet sounds on page 8. Look at the picture of the children whispering on page 9 and the caption and ask if they agree with the information.
- ▶ Let them answer the question on page 9.

## Outcomes

The children:

- ▶ Know that some sounds are loud.
- ▶ Know that some sounds are quiet.
- ▶ Can make a quiet shaker.

## Differentiation

Less confident learners may need help in making their shakers to make a very quiet sound. More confident learners could try and arrange a selection of quiet shakers in order of quietness.

## Assessment

The children could be assessed on the quietness of their shakers and the way they can keep a rhythm.

## Plenary

Give the children their shakers and let them shake them in rhythm. Ask the children if they make a loud or quiet sound. Tell the children that you want them to make shakers which have a very quiet sound. Give out the containers and show them the materials they can use. Let the children make their shakers and compare them to find the quietest of the quiet shakers.









## High and low

### Objectives

- ▶ To know that some sounds are described as high sounds.
- ▶ To know that some sounds are described as low sounds. To know that high and low sounds can be both loud and soft.
- ▶ To be able to recognise high and low sounds.

### Resources and preparation

Rubber ducks with high pitched squeaks, a whistle, the elastic band “guitar” from the last lesson, (comprising a bowl, a piece of wood, a pencil and a number of elastic bands of different thicknesses).

### Starting the lesson

Ask the children about the noise that mice make and be prepared for squeaks. Ask the children about the sound a giant makes and prepare for comparatively low, deep tones. Ask the children if the sounds sound the same and ask how they are different. Help the children by saying that sounds like a squeak are called high (or high pitched) sounds and sounds like the giant are called low (or low pitched) sounds. If you are familiar with the recorder you could play it with just the left second finger on the second hole and the hole underneath left uncovered to provide a high sound. You could then cover the hole at the back with your left thumb and all the holes on

the top with the fingers of your left and right hand to make a low sound.

### Activities with pages 10 and 11

- ▶ Read the introduction and then read it again reading high as a high pitched sound and low as a low pitched sound. Invite the children to read the sentence again with you putting in the high and low sounds. You may like to repeat it loud and soft and point out that high and low do not refer to loud or soft but are a different quality of the sound.
- ▶ Read the first paragraph and look at the picture of the rubber duck and read the caption. Give the children the rubber ducks to pass round and squeeze.
- ▶ Move on to the picture of the boy and read the caption. Blow a whistle to demonstrate that it makes a high pitched note. If any children can whistle they can demonstrate their skills and blow a high pitched note. You could challenge them to blow a low pitched note and tell the children that when people whistle, they can make both high and low sounds.
- ▶ Move on to page 11 and look at the photograph of the guitar and read the caption. Play your “guitar” and show that when thin elastic bands are plucked they make a high sound and when thick elastic bands are plucked they make a low sound. You could





# Teacher's sheet



show that when you press on part of the elastic band, hold it against the wood and pluck the part going up to the pencil you make a higher sound from the elastic band. The shorter the part the higher the sound.

- ▶ Look at the picture of the triangle with the children and read the caption. Ask them to find out more about the triangle in the glossary. Pick up a triangle and strike it to make a high sound. Pass the triangle round and let the children make a high sound with it.
- ▶ Read the second paragraph, then move on to the picture of the lion and the caption and invite the children to roar. They should compare the sound they have made with the sound of the giant. Ask the children about other animals that can make a low sound and look for an answer about a cow lowing and a dog growling.
- ▶ Ask the children to make labelled pictures of things which make high sounds on one piece of paper and pictures of things that make low sounds on another sheet of paper.

## Differentiation

Less confident learners could draw pictures of things that have been discussed in class. More confident learners could be challenged to think of things that have not been discussed. This could include lorries, motorbikes, aircraft, thunder, waves crashing on a beach, babies crying, twittering birds, chinking coins or bottles.

## Assessment

The children could be assessed on the number of pictures on each sheet, the quality of the pictures and writing. There is an assessment sheet at the end of the guide (page 51).

## Assessment guidance

1. B, D, E.
2. A, C, F.
3. An aeroplane, motorbike, tiger.

## Plenary

Let the children answer the question on page 11 and let them say the two words to compare them. Ask them to think of another two words, which give a high and low sound and look for ding dong. Ask the children about the sounds made by a fire engine or ambulance and look for an answer about "hee haw". Tell the children that the two sounds are used because people always notice the change in sound and pay attention. They would not do so if only one of the sounds was used.

## Outcomes

The children:

- ▶ Know that some sounds are described as high sounds.
- ▶ Know that some sounds are described as low sounds.
- ▶ Know that high and low sounds can be both loud and soft.
- ▶ Are able to recognise high and low sounds.
- ▶ Are able to make high and low sounds.











## Sounds you can make

### Objectives

- ▶ To know that the body can be used to make a wide range of sounds.
- ▶ To make a sequence of different sounds with the body.

### Resources and preparation

A plastic mirror for each child.  
A tape recorder.

### Starting the lesson

Issue the mirrors and tell the children to look at their faces in them and say the alphabet. As they say the letters they should look at the shape of their mouths. Ask them if they make the same shape of mouth for any two or more letters. Look for answers about p and b, c, d and e, o, q and u. Tell the children that they are going to study the sounds our bodies can make.

### Activities with pages 12 and 13

- ▶ Read the introduction and the first two sentences. Look at the picture of the boy clapping and read the caption then let the children clap a rhythm.
- ▶ Move on to stamping feet and let the children stamp a simple rhythm.
- ▶ Move across to page 13 and look at the picture of tap shoes and read the caption. If anyone goes to tap dancing classes they could demonstrate their skills. Alternatively, the children could tap a rhythm and compare the effort they have to make with the effort they have to make when stamping.
- ▶ Move back to page 12 and read about singing then let the children sing a song and raise their hands like the boy on page 13.
- ▶ Read about shouting, look at the picture on page 13 and let them shout and cover their ears.
- ▶ Read about whistling and see if any of the children can whistle. They could use the photograph to see how they should put their lips.
- ▶ Read about crying and let the children role play crying but only quietly.
- ▶ Ask the children to answer the question on page 13 and look for answers, which include humming, clicking the fingers or making a clicking sound with the tongue in the mouth.
- ▶ Ask the children to work together in small groups to make a sequence of sounds such as clapping, stamping, shouting, clapping, tapping, whistling. Alternatively the children could sing a song and keep the beat by clapping then stamping then tapping.



# Teacher's sheet



## Differentiation

Less confident learners could learn a short sequence that they could perform well or quickly. More confident learners could work out longer sequences.

## Assessment

The groups could record their sequences or be assessed on their performance. Some children may wish to work alone on making and performing a sequence of sounds.

## Plenary

The children can perform their sequence of sounds in turn.

## Outcomes

The children:

- ▶ Know that the body can be used to make a wide range of sounds.
- ▶ Can make a sequence of different sounds with the body.









## Ears

### Objectives

- ▶ To know that we hear sounds with our ears.
- ▶ To know that our ears help us tell the direction of sounds.
- ▶ To know that we must care for our ears.

### Resources and preparation

A classroom assistant with two coins, a plastic funnel, the children could bring in an item of clothing with a hood, a CD player with music.

### Starting the lesson

Ask the children to sit facing you. They should have space around them so that when they point with their arms they do not hit each other. Ask them to close their eyes and tell them that they are going to hear a clicking sound and have to point to where they think it is without turning their head or opening their eyes. Let your assistant click two coins together and ask the children to point. Let them open their eyes and compare the direction they are pointing with the position of the classroom assistant. Repeat the exercise a few times and conclude that we use our ears to detect sound and to tell us where the sound is coming from.

### Activities with pages 14 and 15

- ▶ Read the introductory sentence and remind the children of the activity at the start of the lesson.
- ▶ Read the next three sentences then ask the children to look up funnel in the glossary on page 23. Show the children the plastic funnel. Tell them that the outside of the ear is like the large part of the funnel and collects sound reaching the head and sends it down the tube part of the funnel. Tell the children that a tube carries the sounds inside our head to a special place where we can hear them. This special place is so delicate it must not be touched otherwise it can be damaged and our sense of hearing destroyed. This is why we must never put things in our ears. Some children may suffer from glue ear, which affects the hearing mechanism temporarily. If appropriate you may like to reassure them that people get better from this condition.
- ▶ Look at the photograph of the boy and read the caption. Ask the children if they have ever seen anyone put their hand to their ear to listen more carefully. Let pairs of children whisper to each other without cupping their hand and then by cupping their hand and they should notice an improvement with a cupped hand. Alternatively if a computer is on in a



# Teacher's sheet



quiet room each child can sit in front of it, close their eyes and listen to the sound of the fan, then cup their ears and hear a louder or stronger sound.

- ▶ Look at the picture of the baby with the children and read the caption. If the children have brought hooded clothes you could repeat the activity at the start of the lesson and see if they performed less well.
- ▶ Move on to page 15 to look at the picture of the earphones and read the caption. Ask the children if they know anyone who uses earphones or who has listened to music with earphones. Ask them to find out more about earphones in the glossary on page 22. Tell the children that just as poking things into ears can damage them so can very loud sounds like those that can be made by earphones if the volume is turned up. Tell the children that loud sounds must not be played through earphones as they can damage their ears.
- ▶ Let the children read the question on page 15 and ask them how it could be tested. Look for an answer about putting on some music and putting hands over ears to see if it goes quieter. Try the experiment with the children and let them compare their prediction and result.
- ▶ Remind the children of the activity at the start of the lesson (and perhaps also with the hoods) and ask them to draw a picture of the arrangement of the experiment with you, them and the classroom assistant. When they have made the drawing ask them to draw a line from the coins held by

the assistant to the ears of one of the children (probably themselves) to show the path the sound takes.

- ▶ Ask the children about how our ears could keep us safe. Look for the following answers. A car horn or ambulance, fire engine or police car siren tells us a vehicle is coming and people must get out of the way. Many lorries have alarms or play loud messages when they are reversing. Pedestrian crossings make a signal you can hear when it is safe to cross. Fire alarms warn people to get out of a building.

## Differentiation

Less confident learners may need help in listening carefully in each activity and in making the drawing of the experiment. More confident learners could label their drawings with the names of the people they have drawn.

## Assessment

The children could be assessed on the detail of their drawings.

## Plenary

Remind the children about how both hands over the ears reduces their ability to hear but ask them what might happen if just one ear is covered. Repeat the activity at the start of the lesson but ask the children to cover first their right ear and then their left ear. Be prepared for less precise responses.



# Teacher's sheet



## Outcomes

The children:

- ▶ Know that our ears help us tell the direction of sounds.
- ▶ Know that we must care for our ears.
- ▶ Can make safe, simple experiments on hearing.
- ▶ Can make a picture of an experiment.













## Sounds near and far

### Objectives

- ▶ To know that sounds get louder as the sound source comes nearer.
- ▶ To know that sounds go quieter as the sound source goes away.
- ▶ To know the distance from the sound source affects the loudness of the sound heard.

### Resources and preparation

The school hall or other large space, a CD player and a CD with fairground music.  
Ticking watch.

### Starting the lesson

Take the children in the hall or other large space and sit them at one end of it. Talk to them in a quiet voice about something such as the weather or tell them a story so they can just about hear you and then walk backwards keeping your voice at the same volume. Look for hands going up from children who can no longer hear you. Ask them what is wrong and look for an answer about not being able to hear you. Ask the children how your voice seemed to change as you moved away from them. Look for an answer about it getting quieter. Move back towards them still talking at the same volume and ask the children if they can hear better now. Tell the children that you have talked at the same loudness all the time so something else must be happening. Take them back in the classroom to the book to find out.

### Activities with pages 16 and 17

- ▶ Read the introduction with the children and remind them of you walking towards them in the hall. They should agree with the sentence.
- ▶ Read the three sentences and remind the children how your voice seemed to be louder when it was near the children and quieter when it was further away.
- ▶ Look at the top picture of the aeroplane and read the caption. If it is a clear day and you are on a flight path you might like to take the children out to see if they can see any distant aeroplanes and note how quiet they are. Look at the bottom picture of the aeroplane and read the caption. If any children have been to an airport ask them to tell the class about the noise. Point out that aeroplanes still make a lot of noise when they are in the air but you cannot hear it because they are a long way away.
- ▶ Move on to page 17 and look at the top picture and read the caption. While you are doing this let the classroom assistant set up a CD player in the hall and put on the fairground music very quietly. Take the children into the hall and tell them to walk in silence towards the CD player. The moment they hear the sound they should stop. Prepare for the children to stop at different distances and point



# Teacher's sheet



out that just as people are different heights and have different coloured hair so they also detect sounds in different ways. Let the children walk on in silence and listen to the music. Let them walk away from the music in silence. The children can walk to and from the source of sound a few times until they all realise how the volume of sound changes with distance.

- ▶ Return to the classroom, look at the picture of the motorbike and read the caption. Ask the children how a motorbike sounds as it comes towards you from a distance then goes past you and goes away again. Let the children make loud and quiet motorbike sounds to answer.
- ▶ Look at the picture of the alarm clock and read the caption. Do a survey about alarm clocks. For example, who has a bell, a buzzer or music. Produce a pictogram from the results.
- ▶ Ask the children about other alarms or warning sounds around the home and look for microwave alarm, oven alarm, fire alarm, carbon monoxide alarm. Some children may mention the doorbell.
- ▶ Let the children read the question on page 17 and answer it.
- ▶ Let the children draw aeroplanes at an airport flying away and coming into land. Next to each picture they should write louder or quieter as appropriate.

## Differentiation

Less confident learners may need reminding that the aeroplanes coming to the airport are getting louder and those flying away are becoming quieter. More confident learners could make longer captions such as 'Getting louder coming into land' and 'Going quieter as it flies away'.

## Assessment

The children can be assessed on the ease with which they label their pictures as they understand how the loudness changes. They can be assessed on the effort they have put into their pictures and captions. There is an assessment sheet at the end of the guide (page 53).

## Assessment guidance

1. quiet
2. loud
3. quieter
4. louder
5. people shuffling
6. traffic, aeroplane, birds

## Plenary

The children can display their pictures. The children could go back in the hall and sit at one end. Some of the children could in turn get up and stretch out their arms as aeroplane wings, make an aeroplane noise and "fly" to the other end of the hall and back. They should take care to make the same level of noise and the children at the "airport" should notice how the sound level changes.



# Teacher's sheet



## Outcomes

The children:

- ▶ Know that sounds get louder as the sound source comes nearer.
- ▶ Know that sounds go quieter as the sound source goes away.
- ▶ Know the distance from the sound source affects the loudness of the sound heard.
- ▶ Can follow instructions to perform simple experiments on sound.











## Noise

### Objectives

- ▶ To know that a noise is a sound a person does not like.
- ▶ To know that loud noises are harmful.

### Resources and preparation

A large metal tray and a spoon. A pair of ear protectors. A CD player and CD tracks featuring classical music, modern music, jazz, folk singing, opera and a brass band. A tape recorder.

### Starting the lesson

Pick up the tray and start banging it with the spoon. Shout over the top of the banging and ask the children what they think of this sound. When you can't hear their replies because of the noise ask them to shout louder. Stop banging and ask the children what they thought of that sound. Look for an answer about noise and ask the children what they think a noise is.

### Activities with page 18 and 19

- ▶ Read the introductory sentence and compare it with the children's answers at the start of the lesson.
- ▶ Read the first sentence and ask the children about the noises they do not like. Record their responses on the board and make a pictogram of the top ten most disliked noises.

The children could also draw a picture which has ten things they think are noisy.

- ▶ Read the second sentence and ask the children about a quiet noise they do not like. Some children may suggest a dripping tap.
- ▶ Move on to the next sentence. Ask the children to pick up their pencils and tap them gently in time on their desks. Keep the sound going for a while and talk about how unpleasant noises can make people feel weary.
- ▶ Read the caption and look at the picture about snoring. Ask the children to find out more about snoring in the glossary on page 23. Ask them what the lady is doing to avoid hearing the snores and look for an answer about covering her ears. Look at the top picture and read the caption then remind the children of when they covered their ears in lesson 6.
- ▶ Move across to page 19 and look at the picture of the traffic with the children and read the caption. Ask the children about the sounds cars, buses lorries and motorbikes make.
- ▶ Look at the picture of the digger and read the caption and ask the children what kind of sound they would expect it to make. Look for an answer about a loud roar. Tell the children that the driver may work in the digger all day long. Ask them what the long loud noise might do to his ears





# Teacher's sheet



and look for an answer about ear damage. Show the children a pair of ear protectors and let them try them on to hear how they cut down the sound. Tell the children that people who work in places where there are loud sounds wear ear protectors to keep their ears safe.

- Look at the picture of the drummer and put on some music with a loud beat and plenty of drumming (rock style). Ask the children if the sound of the drums is musical sound or a noise. You could extend this to playing short pieces of classical music, modern music, jazz, folk singing, opera and a brass band and asking which music was thought to be pleasant and which was thought to be just a noise.

## Differentiation

Less confident learners may need help in thinking of ten things they think are noisy. More confident learners could write the names of the noisy things next to their pictures.

## Assessment

The children can be assessed on the quality of their pictures and their contribution to the lesson. Each child in turn could put on the ear protectors with a classroom assistant and say how they made a difference to the sounds that could be heard.

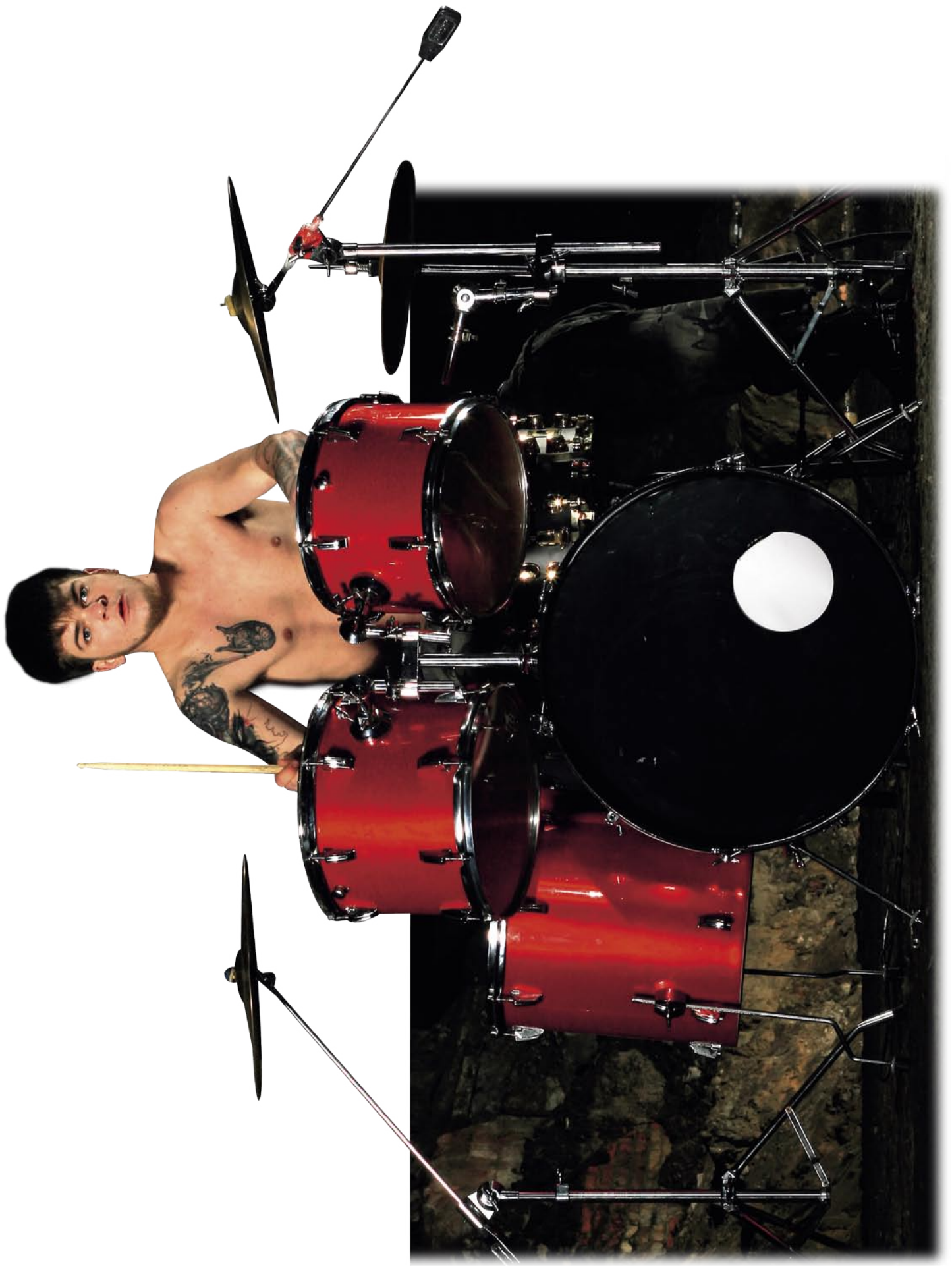
## Plenary

Ask the children to think about the first question on page 19 and then ask them all to cheer. Tape record their cheering and play it back to them. Do they consider the sound a noise or a pleasant sound? Ask groups of children (perhaps table groups) in turn to stand up and let the rest of the class give them a cheer. Ask the group whether they liked being cheered. Conclude that people have different ideas about what is a noise and what is a pleasant sound.

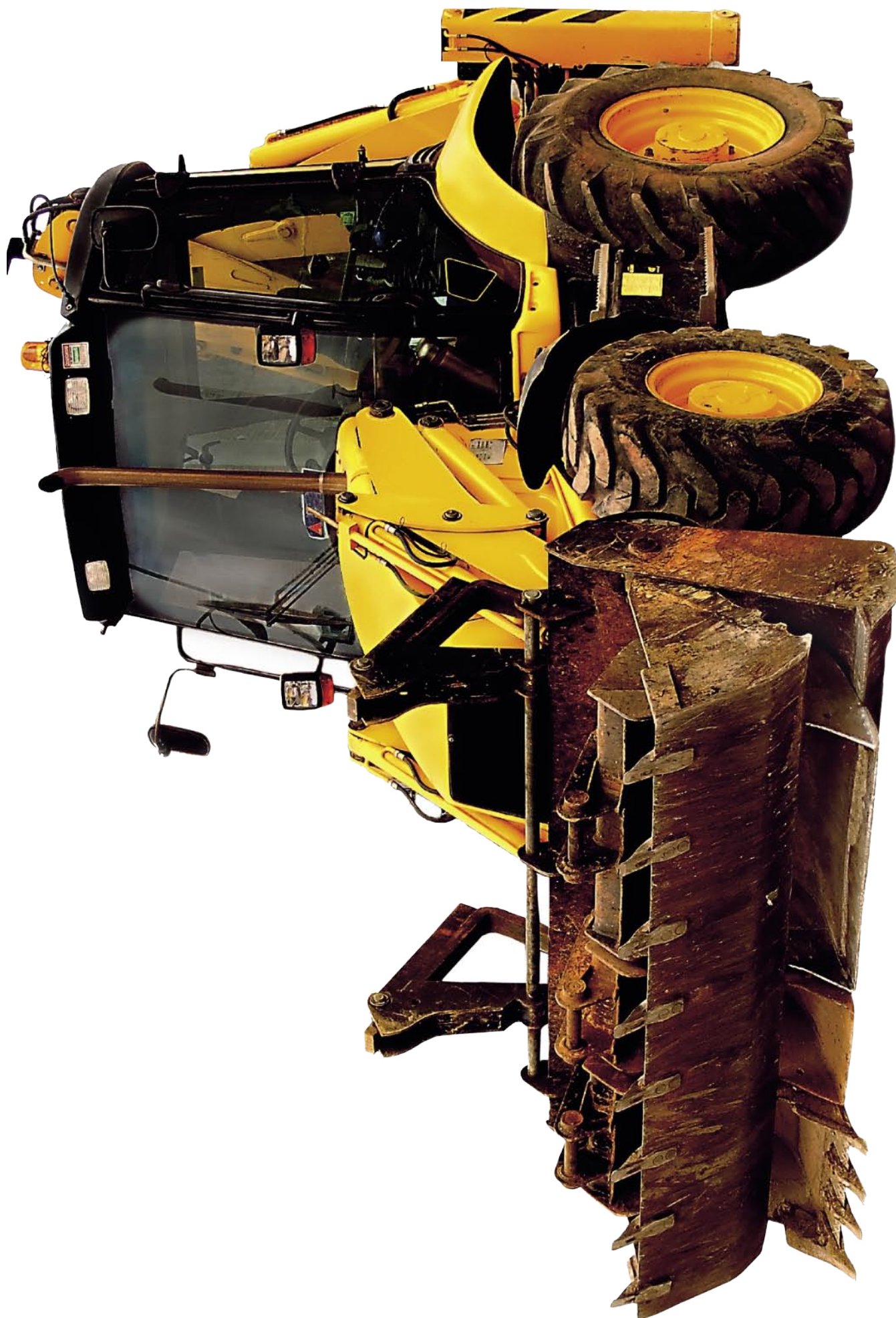
## Outcomes

The children can:

- Know that a noise is a sound a person does not like.
- Know that loud noises are harmful.









## Vibrations

### Objectives

- ▶ To know that vibrations make sounds.
- ▶ To make an investigation on vibrating air.

### Resources and preparation

A plastic shatter resistant ruler, a hardback book, the elastic band 'guitar' from lesson 2, a xylophone. You will need a litre plastic bottle and a plastic jug. Each group will need a litre or half litre plastic bottle marked in felt tip to show one quarter, one half and three quarters full. They may need a tray to keep the bottle, a plastic funnel and jug of water.

### Starting the lesson

Place the hardback book in your lap and then place the shatter resistant ruler so that about 20 cm overhangs the edge of the book. Hold the ruler against the book near its end (about the 1 cm mark) so that when you bend it slightly and let go it makes a slow clattering sound as the ruler goes up and down. Show this action to the children and point out that this up and down movement is called a vibration. Hold up the book and ruler vertically downwards, bend the ruler slightly and let go. Show the children the side to side movement of the ruler and say that this is also called a vibration. Repeat several times so the children get the idea of up and down and side to

side movements being called vibrations. Ask the children to stand up and move from side to side as if they were a twanging ruler. Ask them to describe their movement and look for the word shake. You may like to conclude with the "hokey cokey" where the children "shake it all about".

### Activities with pages 20 and 21

- ▶ Read the introductory sentence and remind the children about the work they have just done on vibrations and shaking.
- ▶ Read the next five sentences with the children and look across at the pictures and captions of the bell and cymbal on page 23.
- ▶ Move back to the picture and caption of the guitar on page 22. Remind the children of the elastic band 'guitar' from the lesson on music and show it to them again. Pluck one of the elastic bands and let the children see it vibrate. They could come out and take turns at plucking the elastic bands.
- ▶ Move back to page 23 to look at the picture and caption of the xylophone. Show the children a xylophone and strike the bars. Let the children look for the bars vibrating and ask the children if all the bars sound the same. Look for an answer about some bars producing high sounds and some producing low sounds. Challenge a





# Teacher's sheet



closer look and help them discover that long bars make low sounds and short bars make high sounds.

- ▶ Show the children a plastic bottle and blow over the top of it. Let the children listen to the sound a few times then tell them that it is the air in the bottle that is vibrating to make the sound. Tell the children that you are going to push some air out of the bottle by pouring some water in. Pour in water to fill about a third of the bottle. Blow across the top of the bottle again and let the children listen to the sound and ask them if it is higher or lower. Look for an answer about it being lower.
- ▶ Give each group a bottle, tray funnel and jug. Ask them to blow across the jug and listen to the sound. Ask them to predict if the sound will be higher or lower when they fill it a quarter full with water. Let them test their prediction.
- ▶ Let the children investigate the sound produced when the bottle is half full and three quarters full of water.
- ▶ Let the children predict what sound is produced when they pour out water so that the bottle is only half full, then test their prediction.

## Differentiation

Less confident learners may need help filling and emptying the bottle. They should draw each bottle with its water content and write underneath whether the sound got higher or lower. More confident learners could

find out what sounds were produced when the volume of water was one, three, five and seven eighths full write up their experiment showing all the bottles with the word higher or lower underneath them.

## Assessment

The children could be assessed on how they handled the simple equipment (and made least mess!). They could be assessed on the presentation of their report in words and pictures.

## Plenary

The children could display their work and discuss their results. Ask the children to answer the question on page 21. You could follow this by asking them if they can blow high pitched and low pitched raspberries. Tell the children that when anything makes a sound it vibrates or shakes but the movements are too small to see.

## Outcomes

The children:

- ▶ Know that vibrations make sounds.
- ▶ Can make an investigation on vibrating air.
- ▶ Can use simple equipment safely.







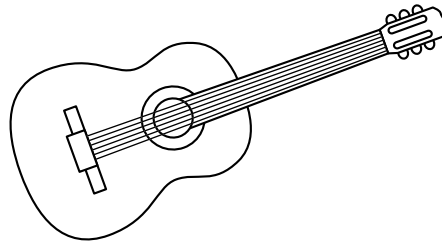
# Assessment



# Musical sounds

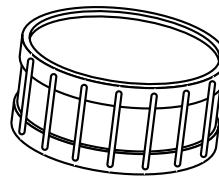
1. Match the words and pictures by drawing lines between them.

blow



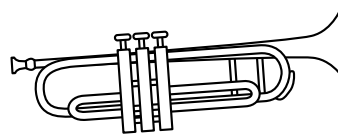
a

shake



b

pluck



c

strike



d

2. Draw another instrument and say how you play it.

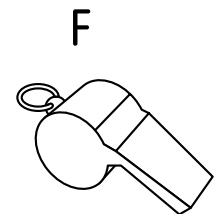
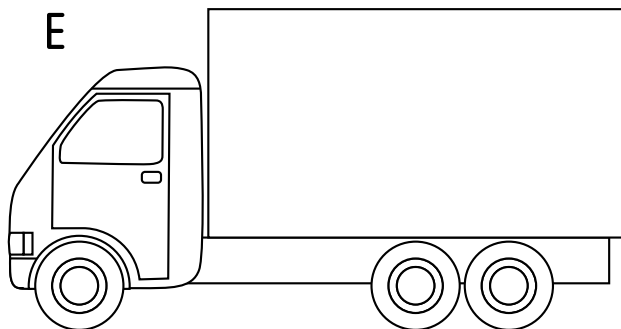
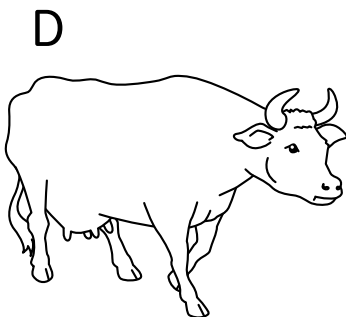
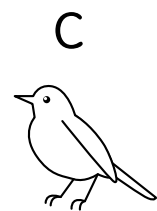
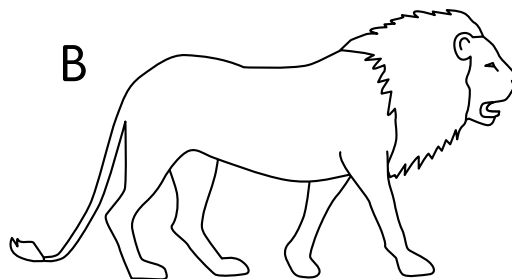
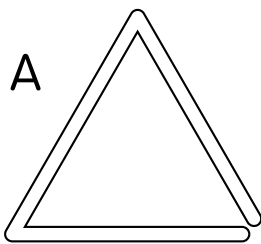




# Assessment

# High and low

1. Which things make low sounds? Colour them blue.
2. Which things make high sounds? Colour them red.



3. Draw something else that makes a low sound.



# Assessment





Name: .....



# Sounds near and far

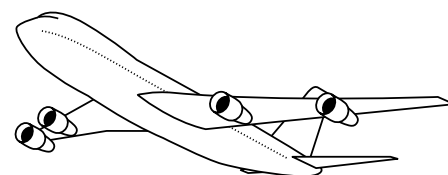
**1. This aeroplane is far away.**

Does it sound loud ☐ or quiet ☐ ?



**2. This aeroplane is near.**

Does it sound loud ☐ or quiet ☐ ?



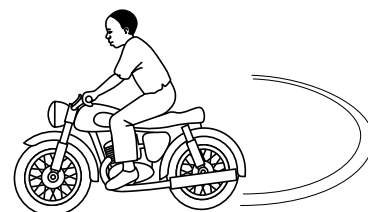
**3. This motorbike is going away.**

Does it sound louder ☐ or quieter ☐ ?



**4. This motorbike is coming near.**

Does it sound louder ☐ or quieter ☐ ?



**5. What sound can you hear near you?**

.....

**6. What sound can you hear that is far away?**

.....