

Contents

Medium-term plan	3
Background notes	6
.....	
Lesson 1	Investigating musical instruments
	Lesson plan 7
	Notes 8
	Resource sheet: sounds familiar 9
	Resource sheet: investigating a musical instrument 10
.....	
Lesson 2	Investigating different ways of making sounds
	Lesson plan 11
	Notes 12
	Resource sheet: shake it all about 13
	Resource sheet: band aid 14
	Resource sheet: beat it 15
	Resource sheet: blow it 16
	Resource sheet: getting into a scrape 17
	Resource sheet: good vibrations 18
.....	
Lesson 3	Covering and decorating containers
	Lesson plan 20
	Notes 21
.....	
Lesson 4	Setting design criteria, generating ideas and planning
	Lesson plan 22
	Notes 23
	Resource sheet: planning sheet 24
.....	
Lesson 5	Designing and making the musical instrument
	Lesson plan 25
	Notes 26
.....	
Lesson 6	Evaluation and performance
	Lesson plan 27
	Notes 27

Lesson plan

This activity could be done as part of work in science.

Learning objectives

Children should learn:

- how the working characteristics of materials relate to the way materials are used;
- how materials can be combined and mixed in order to create more useful properties.

Learning outcomes

Children:

- understand that different types of sounds can be made using different techniques (e.g. shaking, scraping, hitting and plucking);
- understand that the working characteristics of materials affect the sound made.

Vocabulary

investigate	timbre	pitch
structure	high sound	low sound
quiet	loud	

working characteristic of material

Programme of Study Coverage

- 4 Pupils should be taught:
- how the working characteristics of materials affect the ways they are used
 - how materials can be combined and mixed to make more useful properties (e.g. using card triangles on the corners of a wooden framework to strengthen it).
- 5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
- focused practical tasks that develop a range of techniques, skills, processes and knowledge.

Introduction

Remind the children about the investigation they carried out in the last lesson. Explain that they are going to investigate six different ways of making and changing sounds before they go on to design and make their own musical instrument. Introduce the vocabulary they will need (see above).

Demonstrating the skills

Tell the children that they are going to be working in groups, and that they will have about 10 minutes to explore each way of making and changing sounds and explain what signal you will give them to move on to the next. Show them enlarged copies of resource sheet: shake it all about (page 13), resource sheet: band aid (page 14), resource sheet: beat it (page 15), resource sheet: blow it (page 16), resource sheet: getting into a scrape (page 17) and resource sheet: good vibrations (page 18). Explain that these will guide them as they explore each method. Remind them that they should use all the equipment safely and sensibly (e.g. they should not flick rubber bands or use the rulers or beaters to play fight). Divide the class into six mixed-ability groups. Tell them which investigation they are going to do first and write down the order in which they should do the investigations so that the children know where to go at the end of each activity. Choose a child from each group to come and demonstrate carrying out

the first instruction on each sheet to ensure that each group can get started on the activity. Each group should record their findings on a copy of the resource sheet and appoint a reporter to feed back their findings to the rest of the class. Remind the children that they should leave the equipment tidily in the tray ready for the next group. Make sure that they know which activity they are going to move on to.

Activity

Send the children to their first investigation. Move round the classroom, checking that all the groups are working successfully. After the first 10 minutes, give the agreed signal and make sure that the children move on to the next activity. Repeat this procedure until all the children have explored the six ways.

Finishing off

Call the class back together. Ask the reporters to come to the front of the class and tell them which activity you want them to give feedback on. When the reports are finished, ask these questions.

- What are the different ways of making sounds?
- Were you able to change the sounds made and, if so, how did you do it?
- How could you use these ideas to make your own musical instrument?
- Can you think of other ways of making sounds?

As the children respond to these questions, make notes on a large piece of paper and save this sheet for use in lesson 4.

Differentiation

Make sure that more able children support those who need more help. If necessary, help children to read instructions.

Notes

Resources and preparation

You will need:

- resource sheet: shake it all about (page 13), resource sheet: band aid (page 14), resource sheet: beat it (page 15), resource sheet: blow it (page 16), resource sheet: getting into a scrape (page 17) and resource sheet: good vibrations (page 18), all enlarged to A3;
- resource sheet: shake it all about (page 13), resource sheet: band aid (page 14), resource sheet: beat it (page 15), resource sheet: blow it (page 16), resource sheet: getting into a scrape (page 17) and resource sheet: good vibrations (page 18), all photocopied so that there is one copy per pair of children;
- resource sheet: shake it all about (page 13), resource sheet: band aid (page 14), resource sheet: beat it (page 15), resource sheet: blow it (page 16), resource sheet: getting into a scrape (page 17) and resource sheet: good vibrations (page 18), laminated and trimmed to fit equipment trays (you could reduce them to A5 and trim off the heading, just leaving the instructions to save laminating costs);
- six trays for keeping equipment together;
- large sheet of paper and pen for recording children's findings (save for lesson 4);
- yoghurt pot shakers (yoghurt pot with cover made from piece of plastic carrier bag held on with rubber band);
- fillings such as sand, beads, gravel, pulses and beans in pots with lids;
- various containers with lids;
- funnels;
- dowel handles;
- elastic bands;

- plastic tubs with holes made in sides for dowel to go through;
- wood;
- various hollow and solid shapes made from different materials;
- objects to use as beaters (spoons, musical beaters, etc.);
- balloons;
- artstraws (jumbo and standard);
- scrapers made from dowel;
- scissors;
- glasspaper (various grades);
- objects with different textures (e.g. grooved wood, ridged plastic bottle);
- wooden and plastic rulers;
- comb;
- greaseproof paper.

You will need to set up the equipment trays in advance (you will find the list of equipment needed for each tray on the resource sheet). You may feel that it would be better to have two trays for each activity so that every member of the group can be involved with the investigation.

Health and safety

Make sure that paper straws are disposed of after use for hygiene reasons.

Further ideas

The children could write up their findings as part of their literacy work on writing reports of activities.

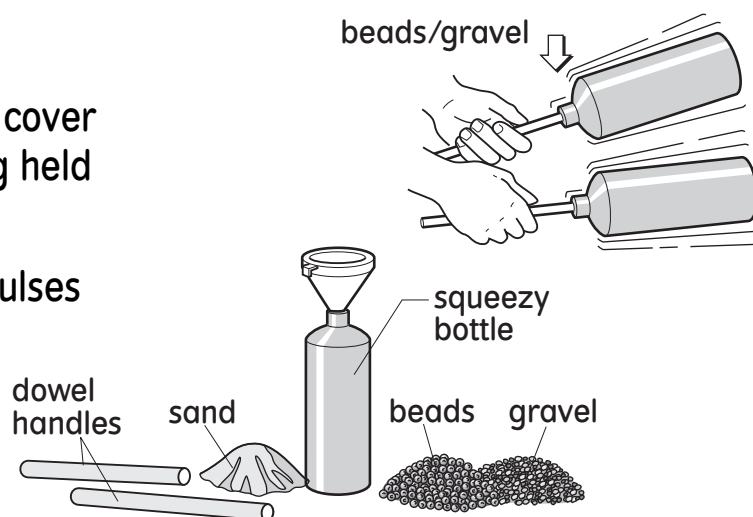
Your evaluation

Resource sheet: shake it all about

Name _____

You will need:

- yoghurt pot shakers (yoghurt pot with cover made from piece of plastic carrier bag held on with rubber band);
- various fillings (sand, beads, gravel, pulses and beans) in pots with lids;
- various containers with lids.



Instructions

- 1 Work with a partner. One of you should fill a yoghurt pot with one of the fillings without your partner seeing which filling is used. Now see whether your partner can guess which filling you used by shaking the pot.

Did you guess the filling just by shaking the pot?

- 2 Try shaking the pot in different ways. Does it make any difference to the sound?

- 3 What happens if you use other fillings?

- 4 Now try using the fillings in different containers. Does changing the container change the sound?

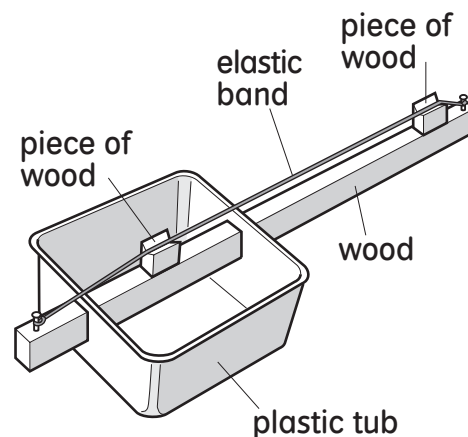
Make sure that you leave the equipment tidily in the tray, with the fillings in the correct pots.

Resource sheet: band aid

Name _____

You will need:

- elastic bands of various thicknesses and lengths;
- plastic tubs with holes in sides;
- wood;
- scissors;
- various containers.



Instructions

- 1 Choose an elastic band. Try to make a sound with it. How can you make a sound with an elastic band?

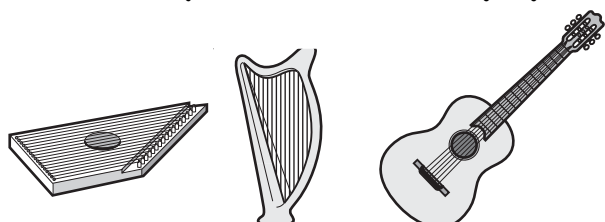
- 2 Use a thicker band. What happens to the sound?

- 3 Make the band tighter. What happens to the sound?

- 4 What can you see happening to the band while it is making a sound?

- 5 How can you make the sound louder? Hint: look at the pictures on this sheet!

Make sure that you leave the equipment tidily in the tray.

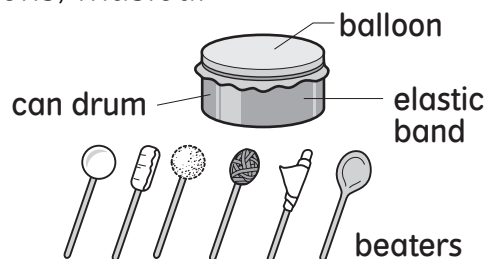


Resource sheet: beat it

Name _____

You will need:

- various hollow and solid shapes made from different materials (wood, plastic, metal);
- objects to use as beaters (spoons, musical beaters, dowel).



Instructions

- 1 Choose a beater. Tap a range of different solid shapes. How does the material the shape is made from affect the sound?

Does it make any difference if you change the way you tap the shape?

Does it make any difference if you choose a different beater?

- 2 Use the same beater. Tap a range of hollow containers. How does the material the container is made from affect the sound?

Does it make any difference if you change the way you tap the container?

Does it make any difference if you choose a different beater?

Make sure that you leave the equipment tidily in the tray.

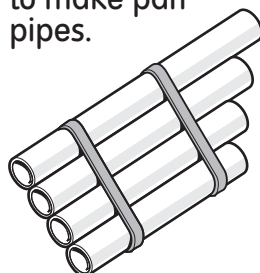
Resource sheet: blow it

Name _____

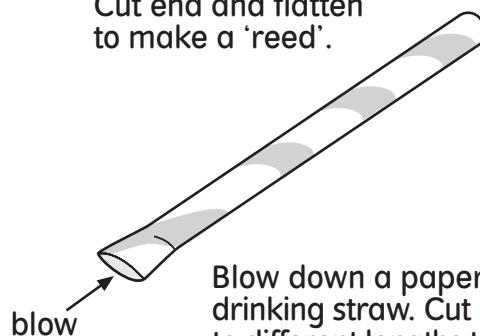
You will need:

- artstraws (jumbo and standard);
- dowel;
- scissors;
- plastic bottle;
- water.

Join straws of different lengths to make pan pipes.



Cut end and flatten to make a 'reed'.



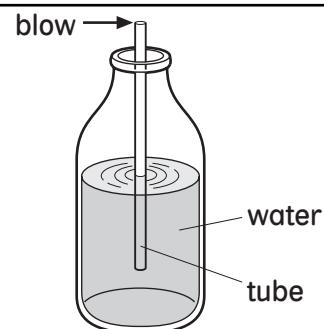
Blow down a paper drinking straw. Cut it to different lengths to see if that alters the sound.

Instructions

- 1 Try to make a sound using the standard artstraws. How did you make the sound? (If you can't make a sound, try the ideas in the pictures.)

- 2 Now try making a sound using the jumbo artstraws. Is the sound different from the one that you made using the standard artstraws?

- 3 Put some water in a plastic bottle (don't fill the bottle completely). Put a straw in the bottle and blow. Describe the sound you make.



- 4 Now change the amount of water in the bottle. How does the sound change?

Throw all used straws away.

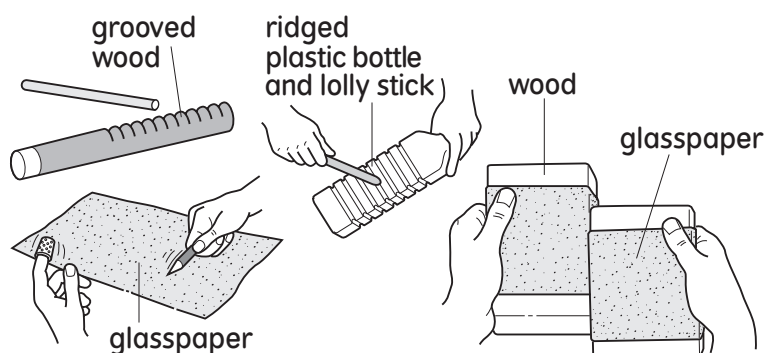
Make sure that you leave the equipment tidily in the tray.

Resource sheet: getting into a scrape

Name _____

You will need:

- objects with different textures (e.g. grooved wood, ridged plastic bottle);
- glasspaper (various grades);
- blocks of wood;
- scrapers made from dowel;
- pencil;
- scissors.



Instructions

- 1 Choose an object. Try to make a sound by scraping it. Describe the sound.

Does the sound change if you hold the scraper in a different way?

Does the sound change if you use a different object to scrape it with (e.g. a pencil)?

- 2 Now choose a different object. Try to make a sound by scraping it. How is the sound different from the sound made by scraping your first object?

Does the sound change if you hold the scraper in a different way?

Does the sound change if you use a different object to scrape it with (e.g. a pencil)?

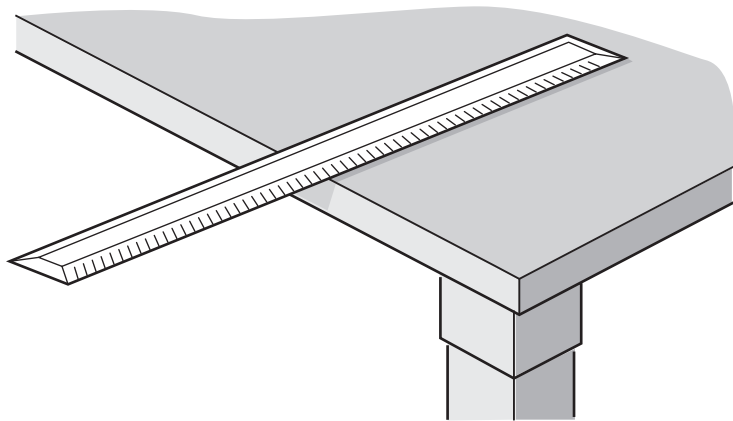
Make sure that you leave the equipment tidily in the tray.

Resource sheet: good vibrations

Name _____

You will need:

- wooden and plastic rulers;
- comb;
- greaseproof paper;
- scissors.



Instructions

- 1 Try to make a sound by twanging a wooden ruler on the edge of the desk. Describe the sound.

How can you change the sound?

- 2 Now try to make a sound by twanging a plastic ruler on the edge of the desk. Describe the sound.

How is this sound different from that made by a wooden ruler?

How can you change the sound?

- 3 How does the sound change if you use a longer length of ruler?

Resource sheet: good vibrations (continued)

4 How does the sound change if you use a shorter length of ruler?

5 How does the sound change if you twang a ruler on a different object?

6 Now try making sounds using a comb and greaseproof paper. What do you have to do to make a sound?

What can you feel?

Throw used greaseproof paper away.

Make sure that you leave the equipment tidily in the tray.



Put tracing paper over a comb
and hum through it.