

# Unit 5A Musical instruments

## Focus – structures

### ABOUT THE UNIT

Children learn about the construction of a range of musical instruments, including those from different times and cultures, and how different sounds can be created and altered to make different notes. They learn to use this knowledge and understanding to design and make a working musical instrument using a combination of materials.

The appearance of the finished product is an additional aspect and the use of techniques to illustrate visual elements could provide a strong link with art. When completed, the instruments could be used by the children *eg to perform a musical composition*.

This unit offers strong links with music in that it provides children with opportunities to investigate, use and listen to a range of musical instruments. It also links to Science Unit 5F 'Changing sounds'.

This unit can be adapted by using an alternative context *eg mechanically operated instruments or musical boxes*.

### PRIOR LEARNING

It is helpful if the children have:

- learnt ways of showing their design ideas on paper
- joined and cut paper, card, wood, plastic in different ways
- learnt different finishing techniques *eg painting, varnishing*

This unit builds on Units 3A 'Packaging', 4D 'Alarms', 4E 'Lighting it up', designing skills and knowledge of joining methods in previous units.

It also builds on Science Units 1C 'Sorting and using materials', 1F 'Sound and hearing', 2D 'Grouping and changing materials' and 3C 'Characteristics of materials'.

### VOCABULARY

In this unit, children will use words and phrases relating to:

- designing *eg investigate, survey, plan, research, texture, intention, structure, outcome*
- making *eg mouldable material, mould, moulding, adhesives, polyvinyl acetate (PVA) wood glue, shaping, cutting*
- knowledge and understanding *eg sound, note, pitch, duration, dynamics, tempo, timbre, range of sounds (eg high, low, quiet)*
  - the names of instruments available *eg drum, tambourine* and their component parts *eg skin, bridge*
  - strengthen, reinforce

### RESOURCES

- a collection of simple musical instruments or pictures including (if possible) some from other times and cultures *eg Horniman Museum*
- margarine pots, plastic bottles with ridges, food containers, biscuit tins, carrier bags, rice, sand, gravel, glasspaper
- paper, coloured card, clear adhesive tape, masking tape, PVA glue, string, rubber bands
- stripwood (assorted sections and sizes), dowel rod
- range of basic tools for cutting and shaping paper, card and wood
- paints and brushes
- mouldable materials *eg clay, papier mâché*

### EXPECTATIONS

#### at the end of this unit

*most children will:*

have recognised that sounds can be created in many different ways; have gathered and used information to generate a number of ideas and selected one design for their musical instrument; have modelled parts of their design as appropriate and/or produced annotated diagrams; have made suggestions about how they plan to make their instrument; have measured, marked out, cut and assembled their instrument with accuracy; have continually evaluated their work, including a final evaluation against the original criteria; have used ICT for researching and designing; have an understanding of how to strengthen materials

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

have required more support to design their instruments for the given purpose; have used a more restricted range of materials, techniques, tools and finishing techniques; possibly have needed a structure for the final evaluation

*some children will have progressed further and will:*

have produced annotated diagrams showing several alternative musical instrument ideas; have set out a detailed step-by-step approach to how their instrument will be made and listed tools and materials to be used; have understood how the choice of materials and the accuracy with which an instrument is made will affect the quality of the finished product; have modified their instrument, where necessary, as they went along; have identified what is and what is not working well with their chosen instrument designs and final outcome, and appreciated how important high-quality making is to an instrument

## LEARNING OBJECTIVES

## POSSIBLE TEACHING ACTIVITIES

CHILDREN SHOULD LEARN

### INVESTIGATIVE, DISASSEMBLY AND EVALUATIVE ACTIVITIES (IDEAs)

- to investigate, disassemble and evaluate a range of musical instruments in order to learn how they function
  - to relate the way things work to their intended purpose, how materials and components have been used, people's needs, and what users say about them
- Gather a collection of simple musical instruments for the children to investigate. Make sure that they become aware of how to use each instrument correctly, and to identify the parts using the correct terminology. *What materials are used to make the instrument? What is the structure of the instrument? Is it solid or hollow? Does it have a box, arm, stem, board? What parts have to be strong? What part makes the noise? How do you make different notes?*
  - Ask the children to research more information from different sources eg books, CD-ROM, Internet.
  - Discuss why musical instruments are so important in every culture. *Is it important that traditional methods of making musical instruments continue? What materials are used in different cultures to make their musical instruments and why? Why are people prepared to pay such high prices for hand-made instruments?*
  - Play the children pieces of music that demonstrate specific instruments in use.

### FOCUSED PRACTICAL TASKS (FPTs)

- how the working characteristics of materials relate to the ways materials are used
  - how materials can be combined and mixed in order to create more useful properties
  - to join and combine materials and components accurately in temporary ways
  - to investigate a range of materials
- Set out some activities which allow the children to experiment with making sounds. Use easily available resources to make eg
    - shakers (margarine pots with rice, gravel or sand)
    - scrapers (plastic bottles with ridges, dowel rods, glasspaper)
    - drums (food containers, biscuit tins, material to stretch over the top of the containers)
    - string instruments (food containers, elastic bands, string).
  - Investigate the strengths of different materials and how and where they could be strengthened.

### DESIGN AND MAKE ASSIGNMENT (DMA)

#### Design and make a musical instrument to accompany a performance

- to identify a purpose for their instrument
  - to use information sources, including ICT, to help in their designing
  - to develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail
  - to select appropriate materials, tools and techniques
  - to evaluate their design ideas as these develop, bearing in mind the users and the purposes for which the product is intended, and indicating ways of improving their ideas
- ★ Explain to the children that the task is to design and make a musical instrument for a particular purpose eg *sound effects for a puppet play*.
  - ★ Explain which aspects of the design are set (eg *due to available resources*) and which aspects they are free to choose.
  - ★ Allow time for the children to consider their design ideas. Further use of information sources eg books, CD-ROM and Internet could be encouraged.
  - ★ Allow time for the children to discuss their ideas in pairs or small groups. *What sound are we going to make? How loud? What could we use?*
  - ★ Encourage them to put their ideas on paper in a way which others will understand, to list materials and other resources, and to set out a proposed sequence of work. *What materials work well? What could you use? How much will you need? How will you make this?*
  - ★ Refer back to their investigations – compare how sounds can be made using everyday items. Encourage them to think of easier ways of making an instrument eg *reducing the number of notes it makes, making it a different shape*.
  - ★ Emphasise to the children that the instruments must be made to a high standard and that accuracy of making is very important to creating the right sounds. *How well is it working? What could you do to make it better?*
  - ★ Encourage the children to test and evaluate their work in a positive manner, and to make changes to their designs, where necessary.

- essential activities
- ★ assignment stages (all are essential)
- optional activities

## LEARNING OUTCOMES

### CHILDREN

- recognise and identify a wide range of musical instruments, understand the basic concept of how each instrument works, the sound it produces and investigate what the instruments are used for
- use a variety of information sources *eg books, CD-ROM and the Internet* to research the instruments
- identify the different parts, materials used and methods of assembly used in the instruments

- understand that different types of sounds can be made using different techniques *eg shaking, scraping, hitting and plucking*
- understand that the working characteristics of materials affect the sound made
- assemble materials in temporary ways
- understand how different materials can be reinforced for specific purposes

- apply what they have learnt through IDEAs/FPTs in their designing and making
- consider design needs and show their design ideas using annotated diagrams, and use appropriate ICT for designing and/or presenting ideas
- produce a quality musical instrument that will produce a series of controllable sounds when played
- evaluate their own work and that of others, suggesting future improvements

## POINTS TO NOTE

### Links to this unit

**Design and technology:** Unit 6A 'Shelters'

**Science:** Unit 5F 'Changing sounds', Unit 3C 'Characteristics of materials'

**Information technology:** Units 4A 'Writing for different audiences', 4D 'Collecting and presenting information: questionnaires and pie charts', 5B 'Analysing data and asking questions: using complex searches'

**Mathematics:** Handling data (classify, set, subset, create a database)

**Literacy:** Revise strategies related to non-fiction reading *eg posing questions to be answered, scanning a text to find specific sections, identifying key words for use with an information technology text*. Focus on note making: ensure that children understand the purpose and teach conventions *eg to abbreviate, highlight or link sections, noting key points*. Note making is a repeated objective throughout year 5 in *The National Literacy Strategy: Framework for teaching*

**Music:** Investigating and listening to musical instruments from other times and cultures; controlling sounds made by instruments; composing; communicating musical ideas

### Content

- The complexity of the design task could be reduced if simple instruments are shown to children *eg shakers, scrapers, drums*.
- A simple recording sheet or booklet may be useful for children to record notes and drawings made during their investigations. This could also include space for making lists of resources required, a proposed sequence of work and evaluation comments.
- Papier mâché could be used to make simple instruments if there is sufficient time.

### Class management

- Many of the IDEAs and FPTs could be carried out as group activities, enabling the children to work together to investigate and discuss findings.
- Group presentations would allow the children to share their findings with each other.
- Different groups could carry out different activities at the same time, thus cutting down on the number of resources needed at any one time.

### Health and safety

When carrying out a risk assessment for this activity, teachers will need to consider the materials, tools and equipment being used.

In addition, the following point should be noted:

- for hygiene reasons, it may be advisable to avoid instruments that are used by mouth. Any that are used should be carefully sterilised between use

### Out-of-school activities and homework

Children could listen to music *eg on the radio, CDs, records, concert in a park* and to keep a record of which musical instruments and pieces they have heard.

