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Introduction

ABOUT THE SERIES

Developing Literacy Skills Through Design & Technology is a series of books aimed at developing key literacy skills through a range of DT projects, for Key Stage 1 and 2.

It offers a structured approach, providing detailed lessons plans to teach specific literacy and DT skills. A unique feature of the series is the provision of differentiated activities aimed at reducing teacher preparation time. Suggestions for follow-up activities for both literacy and DT ensure maximum use of this resource.

ABOUT THIS BOOK

This book is for teachers of children at Key Stage 2.
It aims to:

- Develop children's literacy and DT skills through a series of stimulating and engaging projects, with supportive and challenging differentiated activities
- Support teachers by providing practical teaching approaches, based on whole class, group, paired and individual teaching
- Encourage the development and planning of creative ideas, as well as building on key skills of evaluation and communication

CHAPTER CONTENT

Literacy objectives

These outline the aims for the literacy activities suggested in the teaching unit

DT objectives

These outline the aims of the DT objectives covered in the teaching unit

Resources

This lists the resources needed to teach the unit

Starting point: Whole class

This provides ideas and some key questions with which to get the unit started

Group activities

This explains how to use the differentiated sheets once the children have split into group work

Plenary session

This suggests whole class activities to aid the discussion of learning outcomes and future work

Follow-up ideas for literacy

This suggests further literacy activities related to the teaching unit, to be taught in separate lessons

Follow up ideas for DT

This contains suggestions for further DT activities which could be taught separately

Useful Websites

- www.curriculum.qcda.gov.uk/
  The National Curriculum programmes of study and attainment targets for key stages 1 - 4

- www.data.org.uk
  The Design and Technology Association which represents those involved in design and technology education

- www.ngflnorthumberland.co.uk
  Free online resources and curriculum materials for teachers

- www.nuffieldfoundation.org/teachers
  Useful educational links for primary design and technology

- www.nationalschoolspartnership.com
- A website providing educational and teacher resources

- www.techitoutuk.com
  Links, materials and design and technology projects

- www.mechanical-toys.com
  Website detailing the history of mechanical toys, how to make them and how the mechanisms work

- www.cabaret.co.uk
  Museum of automata, with numerous models to make and inspire

- www.robertsabuda.com
  Ideas and templates for pop-up books

- www.footwearhistory.com
  Website detailing the history of shoe design and construction

- www.mechanicalmonkey.co.uk
  Source of different mechanisms and kits

- www.bakerross.co.uk
  General all-purpose class kits for all areas of the curriculum

- www.tts-group.co.uk
  Class resource kits for design and technology projects

- www.spartacus.schoolnet.co.uk
  A website providing free access to a wide range of design and technology materials, resources and software for students to use as they engage in design and technology activities as part of the UK National Curriculum.

- www.teachable.net
  Teacher-developed resources that are adaptable and easy to use

Chapter 1

Making Music

Aim

To design and make a musical instrument that works well and looks attractive

Time Allocation

5 x 60 minute sessions

Literacy objectives

- To read a story from a different culture and compare it with their own experiences
- To give succinct oral presentations, including offering and accepting constructive feedback on design ideas
- To research and retrieve information on product design, and use it to develop their own ideas

DT objectives

- To generate ideas for their instrument, thinking about what it will be used for and its visual appeal
- To select appropriate materials for their instrument and to assemble it, join it securely and decorate it attractively
- To reflect on their progress and the finished product, in particular how it could be improved

Resources

- Examples of different types of gourd instruments - books, CDs, posters, IWB images
- Balloons, old newspaper, paste, dried pasta etc., with which to build the instruments
- Paints, brushes, etc., with which to construct and decorate their instrument

Starting point: Whole class

Ask the children to silently read the short story from Africa, about the old woman and the gourds, underlining any words or phrases they don't understand. Now check understanding by reading it together and asking differentiated questions to the class to draw out their responses to the story. Consider the differences between life in her village and their own.
Ask if anyone knows what a gourd is/looks like. Have they ever eaten one? What else can they be used for? Use books, pictures, the IWB or real examples to show the children a variety of gourds – different shapes, different decorated styles. Lead the questioning towards getting the children to think about gourds being used as musical instruments – What is inside the gourd? How would different contents make different sounds? Can the outside also be used in such a way as to provide opportunities for making other sounds (e.g. scraping up and down ridges)? Then prompt the children to think about the importance of the appearance of the gourd, to make it an attractive object to use – colour, pattern, design etc.

Introduce the children to a gourd made previously (see Teachers' Notes) and describe the stages of its construction, asking questions along the way. Why is it important to have a smooth surface? Why should the pieces of newspaper not be too big?

Using the Activity sheets

Activity sheets 1: This is aimed at children who need support in making their design choices and who can produce simple annotated design sketches.

Activity sheets 2: This is aimed at children who are starting to independently make design choices and can produce simple annotated design sketches.

Activity sheets 3: This is aimed at children who can confidently and independently make design choices, select appropriate materials for a task and produce annotated design sketches.

Developing their designs

During the latter stages of their Activity sheets, encourage the children to independently study text, pictures and photographs of existing gourds and use their observations to develop/improve their own design ideas. Remind them to keep their own specific design specifications in mind and to consider/calculate how their design will meet these criteria. Once a final design is decided upon, ask the children to neatly and carefully sketch it out using the Design Idea worksheet, and to annotate their diagram with labels, demonstrating how the design is meeting the design specifications.
Remind the children of the work done in previous tasks, and points they wanted to remember in order to help them improve in their work.

Making Music

Using the Materials worksheet, ask the children to list all the resources they will need with which to make their gourds. Ask them to consider any Health and Safety issues at this point that may arise with the tools or materials being used.

Using ICT, ask the children to produce a flow diagram, detailing their order of working. They will need to build in at least one quality control point and highlight areas of possible Health and Safety risk.

Peer evaluation

In groups, ask the children to lay out their design sketches, flow diagrams and completed Materials sheets. In turn, each give a short presentation to the others in the group, explaining their design ideas and how they intend to make their gourd instrument. Members of the group then spend a few minutes giving constructive feedback to all in the group, with time then allowed for making design modifications if required.

Constructing their Gourds

Be on hand to advise with construction methods, aid problem-solving tasks and pose open-ended questions to encourage the children to develop their designs in to reality. Time deadlines will also be needed to be made clear, to support the children towards finishing their task in a steady, focussed manner.

Plenary session

Start with peer evaluation first. Within the class, make 3-4 groups. Asking children to work on a different table to their own piece, remind the class on the design specification points. Get each group to then arrange the work on that table into some kind of collaborative line, with 'upper' designs at one end and 'lower' at the other. Once they are settled on an order, discuss the positions of the designs on the table. Could some be moved up or down the line? Why? What made the better designs more successful than some of the others? Can suggestions be made to improve on the designs that haven't fared so well? The children need to be able to justify their choices in concrete terms.

Then do self-evaluation, using the Evaluation sheets. Pupils will have picked up on some points from the class plenary, and should be encouraged to give full and considered answers. Once finished, each group should prepare a short report to the class, and then an agreed class statement should be decided upon to help improvement in their next DT task.

Follow-up ideas for Literacy

- Creative writing: children write their own fictional stories which feature their gourds in some way, e.g The Magic Gourd
- Using ICT, children produce their own labels for a class display of their gourds, with descriptions of how they were made, lists of possible materials to be used inside, creating a storyboard of the story from Africa etc.
- Revise skimming and scanning techniques with information-finding questions about the story

Follow-up ideas for DT

- Research how different instruments all over the world are made using different materials and traditions, and how this is reflected in the music of each region
- Challenge the children to examine musical gourds that have beaded shakers attached on the outside, and to see if they can produce a replica design
- To plan an evaluative test for the different materials to be used inside

Name _____

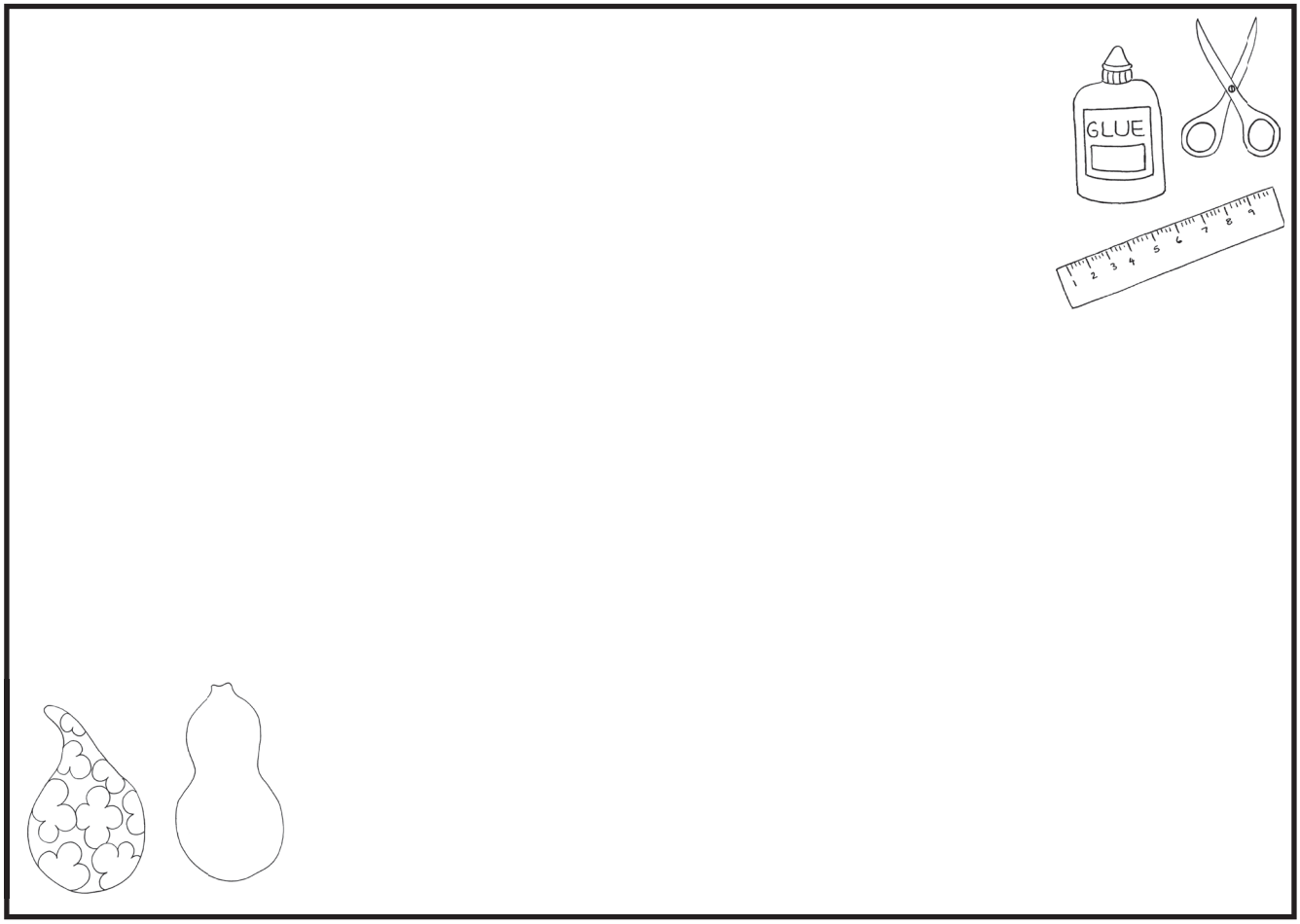
Design Idea

✦ **Below, draw and label a sketch of your design, explaining how its features fulfil your design criteria.**

Name _____

Design Idea

✦ **Make a list of all the materials you will need to make your gourd.**



✦ **Note here any Health and Safety issues to bear in mind.**

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Name _____

Evaluation

✦ **Now that you have made your gourd it is important to think about your design decisions. Answer the following questions.**

✦ **Did your gourd turn out as you had hoped? Why/why not?**

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✦ **Was your gourd easy to make? Why/why not?**

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✦ **How did you make sure your gourd joined together well?**

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✦ **What part was the most difficult and why?**

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✦ **Were your chosen materials suitable to this task? Why/why not?**

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✦ **Look at some of the other designs. Choose 1 example of a design you think is successful and say why this is.**

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Choose 1 example of a design you think can be improved and say why this is.

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