Nuffield Design & Technology
working in the curriculum

What display will your class share?
six hours work

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The Saxons designed brooches like these. They were made from bronze and semi-precious stones.

A helmet like this was found at Sutton Hoo. It was 1400 years old.
Displays are all around us and children see displays at home, at school and on the street. They all have the same function – to communicate information but there is a tremendous variety. Some displays are almost permanent; the information they contain is changed only infrequently – bus or train timetables. Some are quite temporary; the information is changed as it becomes out of date or redundant – notice boards with post cards or Post-it® notes for example. Some are large as on street hoardings, some are small as in postcards in newsagents. Most are flat (or 2D) whilst others contain real objects such as a point of sale display for sun glasses. Some consist mainly of text but most have images of some kind as well. Some are light hearted whilst some are serious. Some even move as in animated shop window displays. In your classroom there will be displays related to curriculum subjects and project themes. In this unit children will learn to make a robust, flexible, reusable display system utilising flat panels and small shelves. An important focus is visual impact, so that their classroom display compares well with other display products they have seen.

In this unit children will learn:

- about displays and their functions; (Session 1)
- how to make and hang frames; (Session 2)
- how to produce attractive flat display panels; (Session 3)
- how to display objects; (Session 3)
- to work in a team in deciding on the design of the display. (Sessions 5 and 6)
the small tasks

1. Exploring displays  
   40 minutes
2. Making and hanging frames  
   60 minutes
3. Exploring display panel layout  
   60 minutes
4. Exploring the display of objects  
   40 minutes
5. Writing the specification  
   40 minutes

the big task

The big task is to design and produce a classroom display about a current topic in another subject. The children will work in groups and as a whole class. The display should be useful in the classroom, durable, re-usable and look attractive.

60 minutes

The evaluation  
30 minutes

Unit review  
30 minutes

simple decorating, careful assembly and appropriate use of found materials (bottle tops) are the key to producing this bold brooch. The use of simple decorated coloured paper rolls as beads enables the rapid construction of the necklace.
children’s decisions

The teacher in consultation with the class should decide on the overall theme of the display.

The children can decide on the following:

- the number of panels in the display required learning in Session 2, design decision made in Session 5;
- the subject matter of the panels required learning in another area of the curriculum, design decision made in Session 5;
design decisions (continued)

- the types of panel
  required learning in Session 4,
  design decision made in Session 5;

- the panel arrangement in the display
  required learning in Session 5,
  design decision made in Session 5;

- the content of the panels
  required learning in Session 3,
  design decision made in Session 5;

- the appearance of the panels
  required learning in Session 3,
  design decision made in Session 5.
exploring displays

Teacher input

Tell the class that they will be designing and making a new display for the classroom and that to begin with the whole class will talk about displays to find out what makes a good display. Show the class the examples of the following displays as the real display, a photograph or picture from a book:

- bus or train timetable;
- large poster advertising a film (from a video lending library e.g. Blockbusters);
- advert on a bill board for sweets or breakfast cereal;
- shop window display from a clothes shop;
- point of sale display from a department store displaying cosmetics or sunglasses;
- classroom display.
exploring displays (continued)

Use these questions to find out what the class already know about displays and record the answers on the board or on a large flip chart.

- Where do we see displays?
  (At school, in shops, on advertisement hoardings (bill boards), at railway stations, at bus stops)
- What do these displays do?
  (They provide information)
- How do they provide information?
  (Words, numbers, pictures)
- Do they all look the same? (No)
- Why do they look different?
  (The appearance depends on what information they are displaying and what the information will be used for. For example bus time tables look very different to breakfast cereal advertisements.)

Pupil activity

Tell the class that they will work in groups of four and that you will give each group a picture of a display. Explain that they should stick the picture of the display on a large sheet of coloured paper and write answers to these questions around the display.

- What information does it provide (or what is it about)?
- What does it use to do this?
- Who is it for?
- What will they do with the information?
- Is it a successful display?

Resources

**Stimulus:** a range of displays or pictures of displays – bus timetables, posters, shop displays, point of sale displays;

**Consumables:** large sheets of plain paper, PVA glue;

**Tools:** felt tip pens.

**Health and safety check**

Discuss the hazards and risks involved in moving between tables and how the risks can be controlled by the way the children behave. Discuss the hazards and risks involved in working as a group and how these can be controlled by the way the children behave and treat one another. Discuss the hazards and risks involved in using glue and how these can be controlled by being careful and using the correct procedures.
Teacher input

Show the class the large piece of peg board that will be used for the display. It is best if this is painted a neutral colour such as pale grey and already firmly attached to the wall in a suitable place for the display. This is probably a task for the school caretaker. Show the class how to push two small pieces of dowel into the board and then hang a wooden frame onto them. Tell the class that this is the basis for their display system and that their first job task is to learn how to make good frames.

Explain that they can make frames in three sizes according to the size of display panel they will attach to the frame – small (postcard size), medium (A4 paper size), large (A3 paper size).

Show the class how to construct a postcard size frame as follows.

- show the class how to use a postcard to mark out a template on thin card
- show the class how to cut the card carefully using scissors
- show the class how to use a sawing board and a junior hacksaw to cut 10 mm x 10 mm wooden strip to length keeping the line of cut perpendicular to the wood and clean up the ends with abrasive paper
making and hanging frames (continued)

show the class how to mark off a length of the side of the card square. Note that this is the length required for two opposite sides. The length for the other two sides is the length of the side of the card square minus twice the thickness of the wooden strip.

show the class how to use a smear of PVA glue to stick the frame pieces to the card.

Pupil activity
Tell the class that they will work in pairs so that they can help one another with this task. Explain that the frames they make may be used for the display if they are good enough. Allocate the different sizes evenly among the groups. Discuss the resulting frames with the class identifying areas for improvement and put labelled examples on display for future reference.

Resources

Stimulus: large sheet of peg board for display background painted a neutral colour and fixed to the wall, dowel pegs to fit holes in peg board, postcard, A4 and A3 sized frames.

Consumables: quantity of 10mm x 10mm wooden strip plus stiff paper or card in postcard, A4 and A3 sizes, abrasive paper, PVA glue, small lengths of dowel.

Tools: junior hack saws, sawing boards, pencils.

Health and safety check
Discuss the hazards and risks involved in using cutting tools, abrasive paper and glue and how the risks can be controlled by taking care and using the correct procedures.
SECTION 4

teaching the unit

exploring display panel layout

Teacher input

Tell the class that they will be finding out how to arrange words and images to produce an attractive display panel. Explain that they will need to use this new knowledge when they design and make the class display but that this is just a practice session. Tell the class that the theme of this practice display is faces and that each working group will have a picture of a face from a magazine and that they have to decide on a set of labels and captions to go with the face. Explain that they can write the captions by hand or produce them using the computer. Note that whichever way they choose they will need to make decisions about the font, style, size and colour of the writing. Show them examples of different handwritten and computer generated labels. Explain that they may decide to label some of the following features on the face: eyes, nose, mouth, lips, teeth, ears, eye brows, eye lashes and write a short sentence about them. Or they can choose say something quite different about faces in their display. It’s up to them.

Show the class examples of writing arranged into labels and captions.

This label has been computer generated.

faces
Exploring display panel layout (continued)

Pupil activity
Divide the class into groups of four and give each group an A3 size piece of background paper, a picture of a face (approximately A4 size), PVA glue, coloured paper, scissors, ruler, felt tip pens, access to computer with word processing software and printer. Tell the class that each group has to produce a display panel that communicates something about faces by using the picture and suitable words. Encourage the working groups to experiment with different arrangements of captions and labels around the picture before deciding which is best. Discuss the finished display panels with the class noting which ones look attractive.

Ask the class to explain why these are attractive and use their answers to develop an understanding of key points such as:

♦ clear;
♦ easy to read;
♦ uncluttered;
♦ well arranged.

Resources

Stimulus: examples of writing in different styles, sizes and colours: both hand written and computer generated, examples of labels and captions on carefully shaped card – avoid bubble writing;

Consumables: A3 size pieces of background paper, pictures of faces from magazines, coloured paper, PVA glue;

Tools: pencils, felt tip pens, rulers, scissors, access to computer and printer.

Health and safety check
Discuss the hazards and risks involved in using scissors and glue and how the risks can be controlled by taking care and using the correct procedures.
exploring the display of objects

Teacher input

Tell the class that you are going to show them how they might display real objects in the display as opposed to just pictures. Explain that you will show them four ways to do this and that they will then have to draw a quick sketch of each and add labels to show how it supports the object.

Tell them that the first one is the simplest – using short pieces of dowel which can act as hooks to hang things from. Demonstrate how to use one, two and three pieces of dowel to display a simple pendant. Ask the class what they could put behind the pendant to improve the display.

Now show the class how to set up two longer pieces of dowel to hold a simple card tray and use string to prevent the dowels from moving downwards.

Now ask the class what will happen to the card tray if a heavy object is put on it. Responses will include breaking, bending, falling off. Demonstrate what happens – the card tray will bend and may bend so much that it slips through the two dowels. Ask the class what can be done to prevent this. Responses will include using more card, using thicker card, using more string, using more dowels, adding wood to the card.

Demonstrate some of the suggestions if possible and finish by showing them how simple frame attached to the card tray is a big improvement.

Finally show the class how to make a card tray with side pieces that help prevent the dowel moving downwards.
Pupil activity
Divide the class into groups of four and remind them that they should discuss the different ways of displaying objects and draw a quick sketch of each and add labels to show how it supports the object. The children will find this easier if they can have access to the demonstration examples.

At the end of the session discuss the different ways of displaying objects with the class by asking the following questions:

♦ What would you use to display a necklace?
♦ What would you use to display a small card model?
♦ What would you use to display a clay pot?
♦ What would you use to display something that was long and thin but not very heavy?
♦ Ask the children to give reasons for their answers.

Put some of the annotated sketches on display for future reference.

Resources
Stimulus: models of different ways to display objects;
Consumables: paper;
Tools: pencils.

Health and safety check
Revisit the discussion about controlling risks when working in a group. Emphasise the importance of being careful and sharing in a friendly way.
writing the display specification

**Teacher input**

Explain to the class that now you have to decide what the display will be about and what it will be like. Tell the class that they have to write a display specification and that some of the decisions in it will be made by the whole class whilst others will be made by small groups. Explain that each small group will be responsible for a single panel in the overall display. Discuss the following with the whole class:

- the theme of the class display;
- the number of panels in the display;
- the shapes, sizes and types of display panel;
- the arrangement of the panels.

There is a ready to copy sheet ‘Display specification’ which you may wish to use.

**Pupil activity**

When each child has written down the class decisions for the specification divide the class into small groups – one group for each display panel. Explain to the class that each group should make decisions about the following:

- what the panel will be about;
- whether the panel will contain text, images and/or objects;
- what the text will look like;
- what the images will be like;
- what the objects will be like.

They should also note down anything they will do to make their display panel look special. Tell the class that they can use side 2 of the ready-to-copy sheet ‘Display specification’ to help with this.

It is important that the class has access to information about the theme of the class display so that they can use this in researching the content of the display.

**Resources**

**Stimulus:** information sources relevant to the theme of the display;

**Consumables:** ‘Display specification’ sheets, paper;

**Tools:** pencils.

**Health and safety check**

Revisit the discussion about controlling risks when working in a group.
SECTION 4

the big task: designing and making the display

Teacher input
Remind the children about the decisions you have made and recorded in the display specifications – those for the class as a whole and those for individual groups. Explain that now is the time for each group to produce their display panel according to their group specification and that you will help each group put their display panel into the finished display. Remind the members of each group that there will be lots for them to do as …

♦ each flat panel has the following parts:
  a frame, a flat piece of card the correct shape and colour that will be glued to the frame, information in the form of text and images to go on the flat card;
♦ each 3D panel needs to be made so that it will support the object on display;
♦ each object on display will need to be found or made.

Pupil activity
Pupils work in groups to complete their individual panels and with your help fit them into position on the class display.
the big task: designing and making the display

Extension work

Children who finish early or who need an extra challenge could be asked to do the following.

♦ Write a set of questions to accompany the display to find out if children in another class can use the display to obtain information.

♦ Present the set of questions in an attractive way using a computer, printer and simple desktop publishing software.

Resources

Stimulus: display specification sheets from Session 5, examples of 3D display from Session 4, frames from Session 2, information sources relevant to the theme of the display;

Consumables: quantity of 10mm x 10 mm wooden strip, quantity of dowel to fit peg board, stiff paper or card in postcard, A4 and A3 sizes, in variety of colours, abrasive paper, PVA glue, plus any other materials required to make objects to go on display;

Tools: junior hack saws, sawing boards, pencils, felt tip pens, rulers, scissors, access to computer and printer, access to digital camera, access to photocopier, plus any other tools required to make objects to go on display.

Health and safety check

Discuss the hazards and risks involved in using the tools, materials and components available for making the display and how the risks can be controlled by being careful and using the correct procedures. Revisit the discussion about controlling risks when working in a group.
evaluating the final product

Teacher input
Ask the class to look at the finished display. Use the following questions to stimulate discussion.

- Is the display about what we said it would be?
- Does the overall display look attractive or unattractive? Can you explain why?
- Is it clear what the display is about? Can you explain why?
- Does the display communicate the information well? Can you explain why?
- Are there any panels that look particularly attractive? Can you explain why?
- Are there any panels that stand out from the others? Can you explain why?
- Are there any panels that look particularly well made? Can you explain why?
- Are there any panels that look as if they will last well? Can you explain why?

Pupil activity
Now each group should discuss the following questions.

- Was our panel about what we said it would be? If not, why not?
- Did our panel contain the text, images and objects we said it would? If not, why not?
- Were the text, images and objects like we said they would be? If not, why not?

Each child should write a short sentence in response to each of the above questions. There is a ready to copy sheet ‘Display evaluation’ which you may wish to use with some children.

Resources
Stimulus: completed class display;
Consumables: ‘Display evaluation’ sheets, paper;
Tools: pencils.

Health and safety check
Discuss the hazards and risks involved in using the display and how the risks can be controlled.
Teaching the Unit

Session Eight

Unit Review

Teacher Input

Explain to the class that it is important to think about how to get better at design & technology and that they can do this by discussing the following questions:

- What did you enjoy most?
- What did you find easy?
- What did you find difficult?
- What did you get better at?
- Did you help each other?
- What could have been done better?
- How could these be done better?

Pupil Activity

The children should discuss the questions in groups and when they have finished you should ask each group to make a short report to the class. The class should agree a target for improvement based on these reports for their next design & technology unit.

Resources

Stimulus: finished display;
Consumables: paper;
Tools: pencils.

Health and Safety Check

Discuss whether the class used hazard recognition, risk identification and risk control to design and make safely.
### Session 1
- **Stimulus materials:** range of displays or pictures of displays – bus timetables, posters, shop displays, point of sale displays
- **Consumable materials:** large sheet of plain paper, PVA glue
- **Tools:** felt tip pens

### Session 2
- **Stimulus materials:** large sheet of peg board for display background painted a neutral colour and fixed to the wall, dowel pegs to fit holes in peg board, postcard, A4 and A3 sized frames
- **Consumable materials:** quantity of 10 mm x 10 mm wooden strip plus stiff paper or card in postcard A4 and A3 sizes, abrasive paper, PVA glue, small lengths of dowel
- **Tools:** junior hacksaws, sawing boards, pencils

### Session 3
- **Stimulus materials:** examples of writing in different styles, sizes and colours: both hand written and computer generated, examples of labels and captions on carefully shaped card – avoid bubble writing
- **Consumable materials:** A3 size pieces of background paper, pictures of faces from magazines, coloured paper, PVA glue
- **Tools:** pencils, felt tip pens, rulers, scissors, access to computer and printer

### Session 4
- **Stimulus materials:** models of different ways to display objects
- **Consumable materials:** paper
- **Tools:** pencils

### Session 5
- **Stimulus materials:** information sources relevant to the theme of the display
- **Consumable materials:** ‘Display specification’ sheets, paper
- **Tools:** pencils

### Session 6
- **Stimulus materials:** ‘Display specification’ sheets from Session 5, examples of 3D display from Session 4, frames from Session 2, information sources relevant to the theme of the display
- **Consumable materials:** quantity of 10mm x 10 mm wooden strip, quantity of dowel to fit peg board, stiff paper or card in postcard, A4 and A3 sizes, in variety of colours, abrasive paper, PVA glue, plus any other materials required to make objects to go on display
- **Tools:** junior hacksaws, sawing boards, pencils, felt tip pens, rulers, scissors, access to computer and printer and digital camera and photocopier, tools to make objects for display

### Session 7
- **Stimulus materials:** completed display boards
- **Consumable materials:** ‘Display evaluation’ sheets, paper
- **Tools:** pencils

### Session 8
- **Stimulus materials:** finished display
- **Consumable materials:** paper
- **Tools:** pencils

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**Vocabulary**

<table>
<thead>
<tr>
<th>Session 1</th>
<th>Session 2</th>
<th>Session 3</th>
<th>Sessions 4-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>display, information, advertisement, timetable</td>
<td>peg board, frame, dowel</td>
<td>label, caption, font, type style</td>
<td>tray, arrangement</td>
</tr>
</tbody>
</table>
**Literacy**

Work on this unit could easily be integrated into the non-fiction literacy work specified for Year 3 in the Literacy Framework i.e. information texts, non-chronological reports in term 1 and instructions in term 2. Children’s exploration of displays in Session 1 relates closely to these topics as does the development of new texts for their own class display.

**Numeracy**

Careful measurement is required as children make frames in this unit. This links with the work on measures they cover in Numeracy lessons, and gives a real purpose to their measuring.

**ICT**

In preparing text on the computer, children’s work in this unit links well with the QCA ICT scheme of work Unit 3A ‘Combining text and graphics’, especially the technique “alter font type, size and colour for emphasis and effect”. You could extend the computer-based work to include graphics as well as text so that the children use the skills learned in this ICT unit to judge when a piece of text would benefit from illustrations.
# Display specification

**Name**  

**Class**

**Decisions made by our class**

The theme of our class display will be: _________________________________

There will be 1  2  3  4  5  6  7  8 panels in the display. (Circle the number agreed.)

We will use these shapes, sizes and types of display panel:

<table>
<thead>
<tr>
<th>Panel No.</th>
<th>Small</th>
<th>Medium</th>
<th>Large</th>
<th>Square</th>
<th>Rectangle</th>
<th>Circle</th>
<th>Flat</th>
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</tbody>
</table>

We will arrange these panels like this:
Display specification (continued)

Decisions made by our group

These people are in our group: ____________________________________________________________

Our display panel will be about: __________________________________________________________

Our panel will contain the following: text ☐ Yes/No ☐ images ☐ Yes/No ☐ objects ☐ Yes/No ☐

The text in our panel will be handwritten/computer generated on a white/coloured background black/coloured lettering

The images in our panel will be drawings/photocopies/photographs black and white/coloured

The objects in our panel will be things we’ve made, for example: ____________________________

things we’ve found, for example: __________________________________________________________

things we’ve been given, for example: ______________________________________________________

other things, for example: _______________________________________________________________

To make our display special we will _______________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
Display evaluation

These people were in our group: ____________________________

Our display panel will be about: ____________________________

Our display panel was about: ____________________________

Our panel will contain the following:

text  □ Yes/No □
images □ Yes/No □
oobjects □ Yes/No □

We had … panels. There were shape. They were arranged like this

The text in our panel will be:

handwritten/computer generated

on a white/coloured background

black/coloured lettering

The images in our panel will be
drawings/photocopies/photographs

black and white/coloured

The objects in our panel will be things we’ve made, for example:

things we’ve found, for example:

things we’ve been given, for example:

other things, for example:

To make our display special we will

Our panel contained the following:

text  □ Yes/No □
images  □ Yes/No □
oobjects □ Yes/No □

The text in our panel was:

handwritten □ printed from computer □
on a coloured background □
on a white background □
in black lettering □ coloured lettering □

The images in our panel were:
drawings □ photocopies □
photographs □ black & white □
coloured □

The objects in our panel were things:
we made, for example:

things we found, for example:

other things, for example:

We made our display special by:
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