

Design Technology

Teachers' notes

Aimed at key stage	2 (but can be adapted for other key stages)
Year	6
Schemes of work unit	Unit 6B, section 1: Investigative, disassembly and evaluative activities
Objectives	● To learn how a product is designed for an intended purpose ● Evaluate a product considering its appearance, function, cost and safety

Resources

In this pack:

1. Facsimile of extract from the instructions to artists for the design of the new definitive stamp (the process that eventually produced the Machin stamp) (Facsimile 4)
2. Facsimile of first ever commemorative stamp – 1924 British Empire exhibition (Facsimile 7)
3. Facsimile of 1965 Churchill commemoration issue (Facsimile 8)
4. Facsimile of 1966 Battle of Hastings commemoration issue (Facsimile 9)
5. Facsimile of 1967 Sir Francis Chichester's voyage issue (Facsimile 10)
6. Fact File

Available online at

www.postalheritage.org.uk/firstclass/designtechnology:

1. Sound file of David Gentleman talking about his experiences of designing stamps
2. Images of various commemorative stamps (including those featured on the facsimiles)
3. Image of 4d carmine stamp, first stamp to use surface printing
4. Editable Microsoft Word versions of the Fact File for teachers to adapt for their own purposes

Other resources:

1. Polystyrene tiles
2. Rollers and trays
3. Paints/water based ink
4. Charcoal
5. Paper

Key vocabulary

Before beginning this exercise, you may want to ensure that your class is familiar with the following term:

- **Perforations** – series of holes punched between the stamps on sheets to enable separation. The earliest Victorian stamps had to be cut from sheets by Post Office staff using scissors
- **Design specification**



Lesson plan

The main outcome of the activity will be that children **design and create their own commemorative stamp** to mark a special event.

On our website you will find a selection of images of commemorative stamps. Some of these have also been produced as Facsimiles (see **Facsimiles 7, 8, 9 and 10**). If you have worked on the History 1 activity with your class they will already have come across some other commemorative stamps.

If you have done the Citizenship activity in this pack then your class will be familiar with the ideas about Queen Elizabeth II's head as a symbol of Britain, and will have discussed possible alternatives.

In groups or as a class, discuss what makes these stamps effective as stamps. Discuss how the stamp has been put together:

- What they can see in it
- What colours are used
- The perforations around the edges (what do they think they are for?)
- What message it is intended to convey etc

Listen to the sound file of the stamp designer David Gentleman explaining what he finds difficult about designing stamps. David Gentleman designed (or helped design) the following stamps (among many others) that have been included in this pack :

- 1965 Churchill Commemoration issue (**Facsimile 8**)
- 1966 900th anniversary of the Battle of Hastings issue (**Facsimile 9**)
- 1969 First Flight of Concorde issue (see page 26)

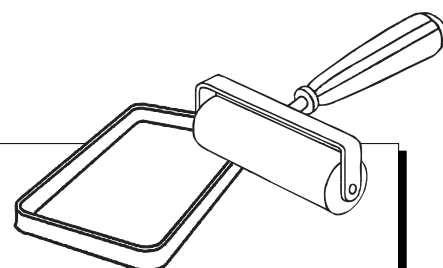
Get the children to think of the five most important points in a **design specification** that a designer might have worked to when creating a

particular stamp. Use **Facsimile 4** as an example of the sort of instructions Royal Mail might give for the design of a stamp (NB however that these are instructions for the design of a definitive rather than a commemorative or special stamp.)

Discuss whether certain types of image work well for certain types of stamp. Discuss how bolder images may work better than very detailed ones on a small stamp.

You could then get the children to create their own stamp using **polystyrene tile printing**. This is similar to the surface printing method that was first used in 1855 by the printer De La Rue (use the Fact File to talk to them about different types of printing). An example of a surface-printed 4d carmine stamp is available on our website.

Polystyrene Tile Printing



1. Discuss the type of image that would be effective in a print, such as bold outlines and patterns
2. Develop a rough design and then draw it on a larger piece of paper, using charcoal
3. Place the paper with the charcoal design face down on the polystyrene tile and use a clean roller to transfer the charcoal outline to the tile
4. Use a sharp pencil or biro to etch out the charcoal design on the tile
5. Use a roller to cover the tile with paint/ink
6. Place the tile face down onto the paper and use a clean roller to press the tile firmly onto the paper

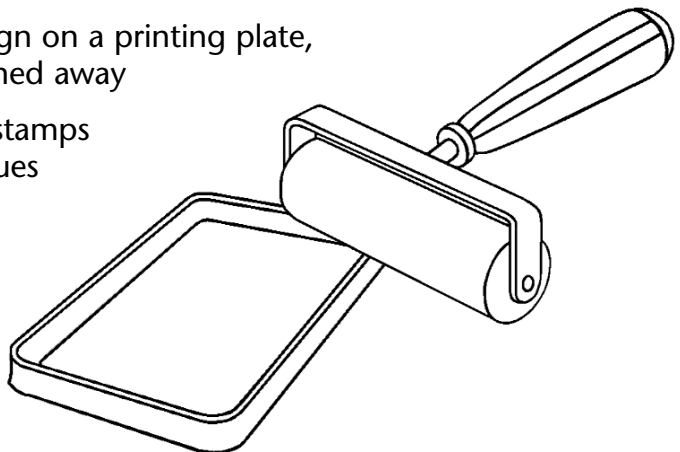
Different methods of printing British stamps

Recess printing

- Until 1855 most stamps were printed by recess printing
- This is also called intaglio printing or line engraving
- The Penny Black was printed using this method
- Lines were cut by hand into a die which was then transferred many times onto a metal plate using a roller
- Ink was put into the engraved lines on the plate
- The surface of the plate was then wiped clean
- The paper was pressed into the lines to take up the ink
- Once the sheets were dry they were gummed and the individual stamps were cut by hand which took a long time
- As the sheets dried the paper shrank which made it difficult to find a way of perforating stamps by machine
- Even so, all stamps up to the value of 2d (two pence) continued to be printed in this way until 1880

Surface printing

- In 1855 the printers, De La Rue, introduced surface printing
- The first surface printed stamp was the 4d carmine stamp
- Surface printing was also known as letterpress printing
- It was a flat, dry form of printing which made it possible to use with the perforating machines
- The stamp was printed from a raised design on a printing plate, created by the rest of the plate being etched away
- Surface printing became widely used for stamps until 1934, although at first the lower values were still printed using recess printing
- Surface printing has been used more recently, but is not a common process for printing stamps nowadays



Gravure

- Since 1934 one of the major stamp printing processes has been gravure
- Inks are held in tiny cells on a printing cylinder to make up a picture
- The excess ink is removed from the surface of the cylinder with a blade
- The cylinder is rolled over the paper, producing the picture
- This process is also known as photogravure because the cylinder used to be made using a photographic process
- The cylinder is now more likely to be computer-generated
- Gravure is a good printing process for long print runs

Lithography

- Some modern stamps are also printed lithographically
- Water and ink are applied to a printing plate
- Because the ink is oil-based it stays separate from the water and does not stick to the non-image parts of the plate
- The image is then transferred to a rubber cylinder
- The image goes onto the paper as it passes between this cylinder and another cylinder
- Lithography is a good method of printing for short print runs



**FACT
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