

Tuesday 11 June 2013 – Afternoon

GCSE DESIGN AND TECHNOLOGY Graphics

A534/01 Technical Aspects of Designing and Making

Candidates answer on the Question Paper.

OCR supplied materials:

None

Other materials required:

None

Duration: 1 hour 15 minutes

MODIFIED LANGUAGE



Candidate
forename

Candidate
surname

Centre number

Candidate number

INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Answer **all** the questions in **Section A** and **Section B**.
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **60**.
- Your Quality of Written Communication will be assessed in questions marked with an asterisk (*).
- This document consists of **20** pages. Any blank pages are indicated.

2
SECTION A

Answer **all** questions.

- 1** Fig. 1 shows a point of sale display for bottles of water. The display is made from card.

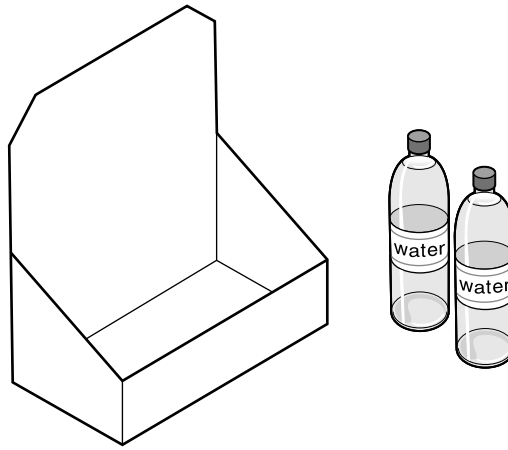
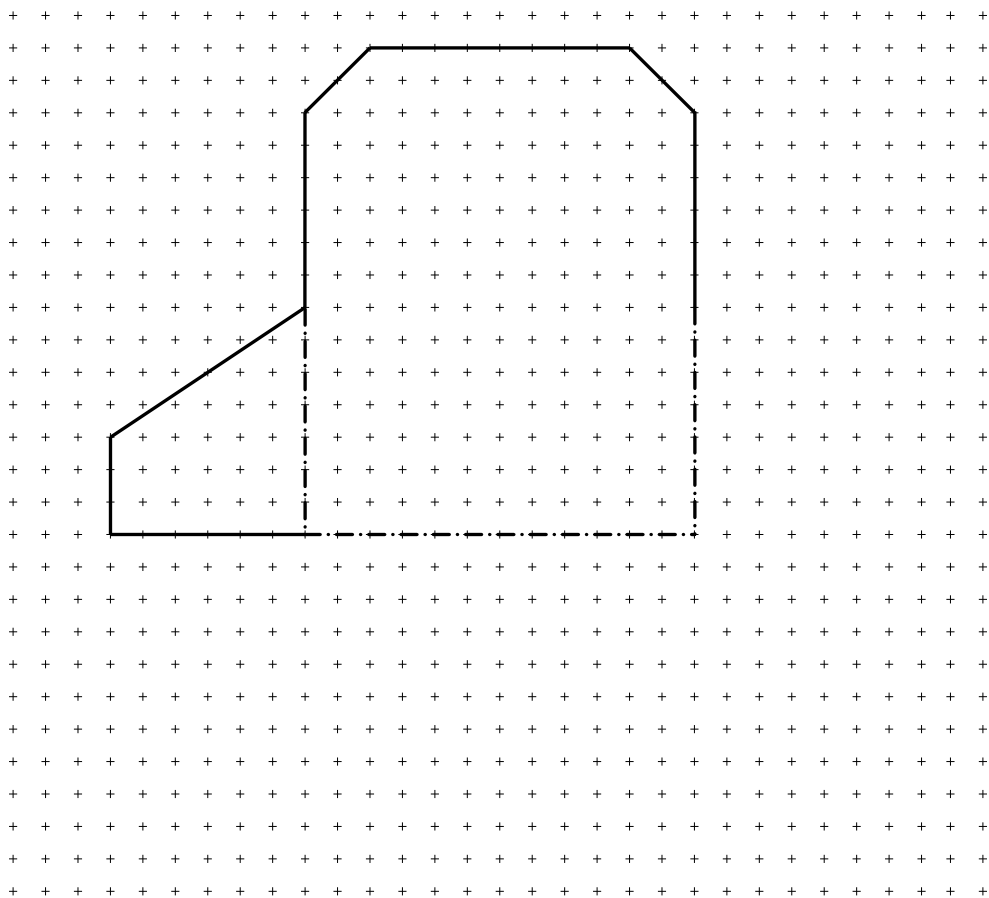


Fig. 1

- (a)** Complete the development (net) below of the point of sale display shown in Fig. 1.



[4]

- (b) The table below shows three quantities of production for the development (net). For each quantity, name the most suitable tool for cutting the development (net) from thin card.

| Quantity | Cutting Tool |
|------------------------|--------------|
| 1 (prototype) | |
| 50 (batch production) | |
| 5000 (mass production) | |

[3]

- (c) Fig. 2 shows a Styrofoam insert. The insert will be placed inside the point of sale display.

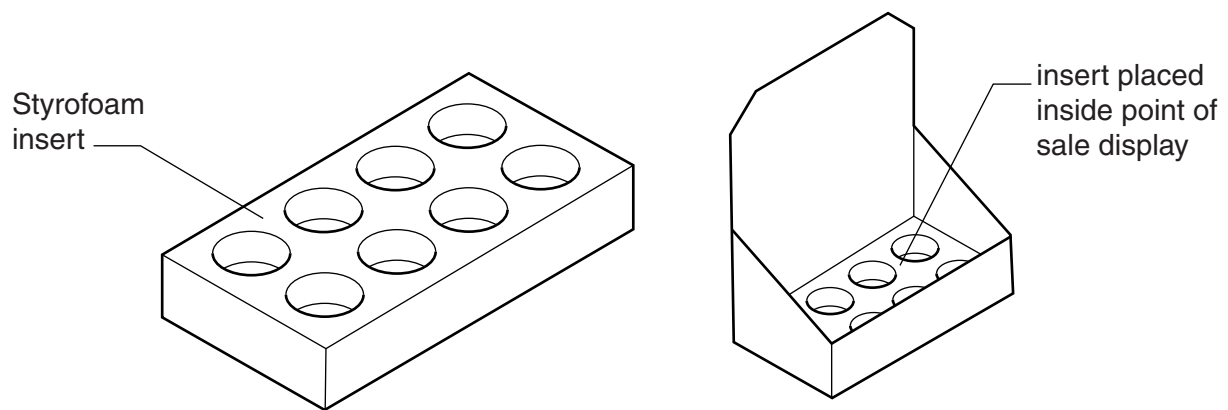


Fig. 2

- (i) State **one** purpose of the insert.

.....
 [1]

- (ii) The Styrofoam insert is to be manufactured using a CNC machine.
 State what the letters CNC stand for.

C **N** **C** [1]

- (d) Fig. 3 shows a different design for an insert for the point of sale display. The insert is vacuum formed from thin plastic sheet.

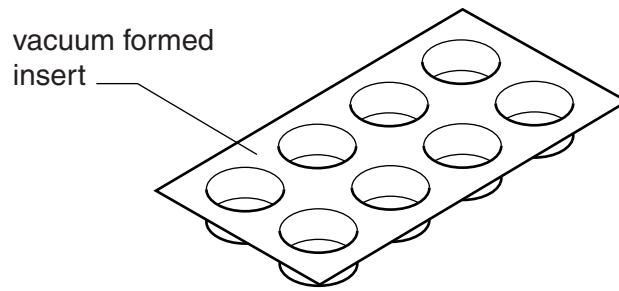


Fig. 3

Name a suitable plastic for the vacuum formed insert.

..... [1]

- (e) Fig. 4 shows a section through a mould. The mould is used to vacuum form the insert shown in Fig. 3.

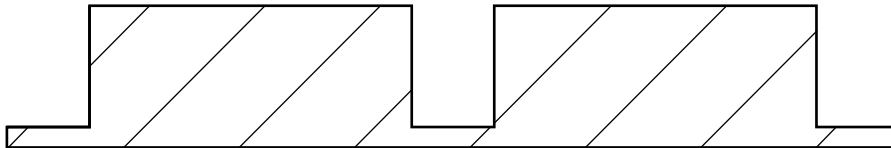


Fig. 4

On Fig. 4, sketch **two** modifications that will make the plastic insert easier to form. [2]

[Total: 12]

- 2 Fig. 5 shows an architectural model of an office block. The model is made from foamboard.

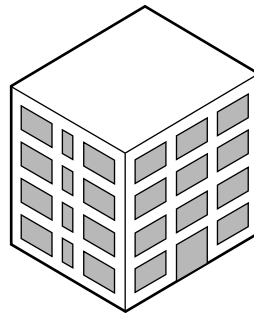


Fig. 5

- (a) State **one** reason for making a model of the office block.

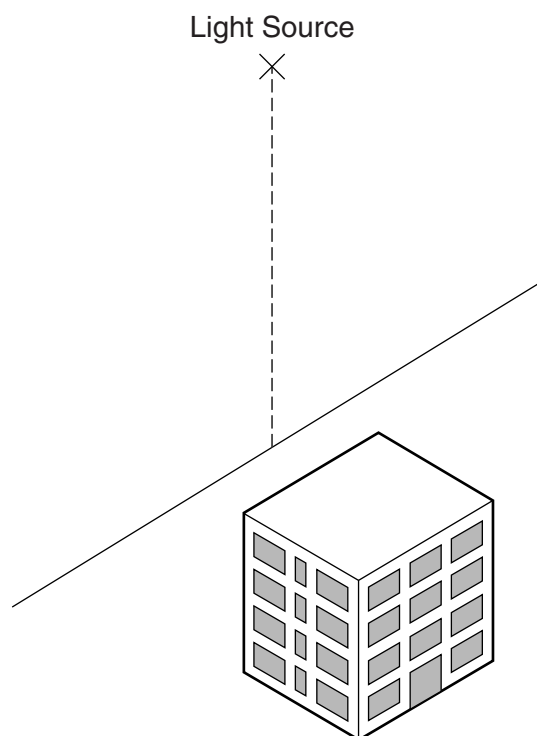
..... [1]

- (b) Give **two** reasons why foamboard is a suitable material for an architectural model.

1

2 [2]

- (c) Add shadowing to the sketch of the office block below.



[2]

- (d) The table below states the two processes used to make the model.
Complete the table below by naming **two** tools or items of equipment for each process.

| Process | Tools/Items of Equipment |
|-------------------------------|--------------------------|
| Draw the shape onto foamboard | 1 |
| | 2 |
| Cut out the shape | 1 |
| | 2 |

[4]

- (e) Fig. 6 shows how five pieces of foamboard will fit together to make the architectural model.
Complete the cutting list below to show the sizes needed for each of the pieces.

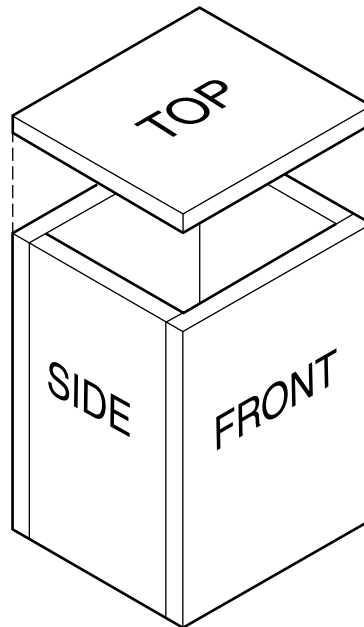


Fig. 6

| Piece | Number Needed | Length | Width | Thickness |
|------------|---------------|--------|--------|-----------|
| Front/Back | 2 | 320 mm | 240 mm | 5 mm |
| Sides | 2 | | 180 mm | 5 mm |
| Top | 1 | | | 5 mm |

[3]

[Total: 12]

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3 Fig. 7 shows orthographic views of a box file. The box is made from corrugated card.

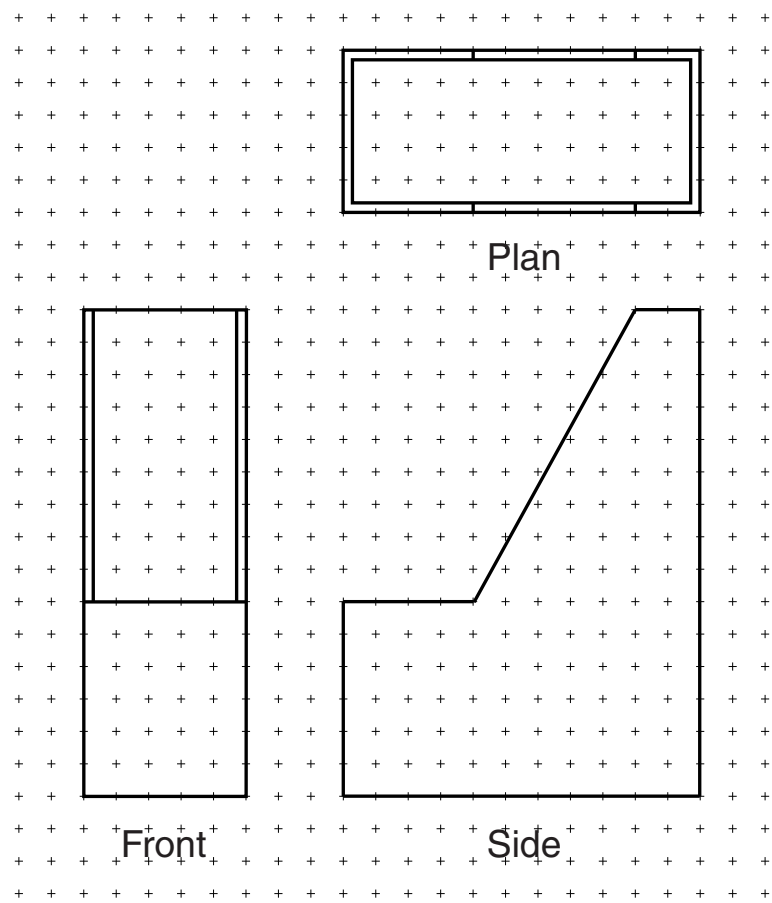
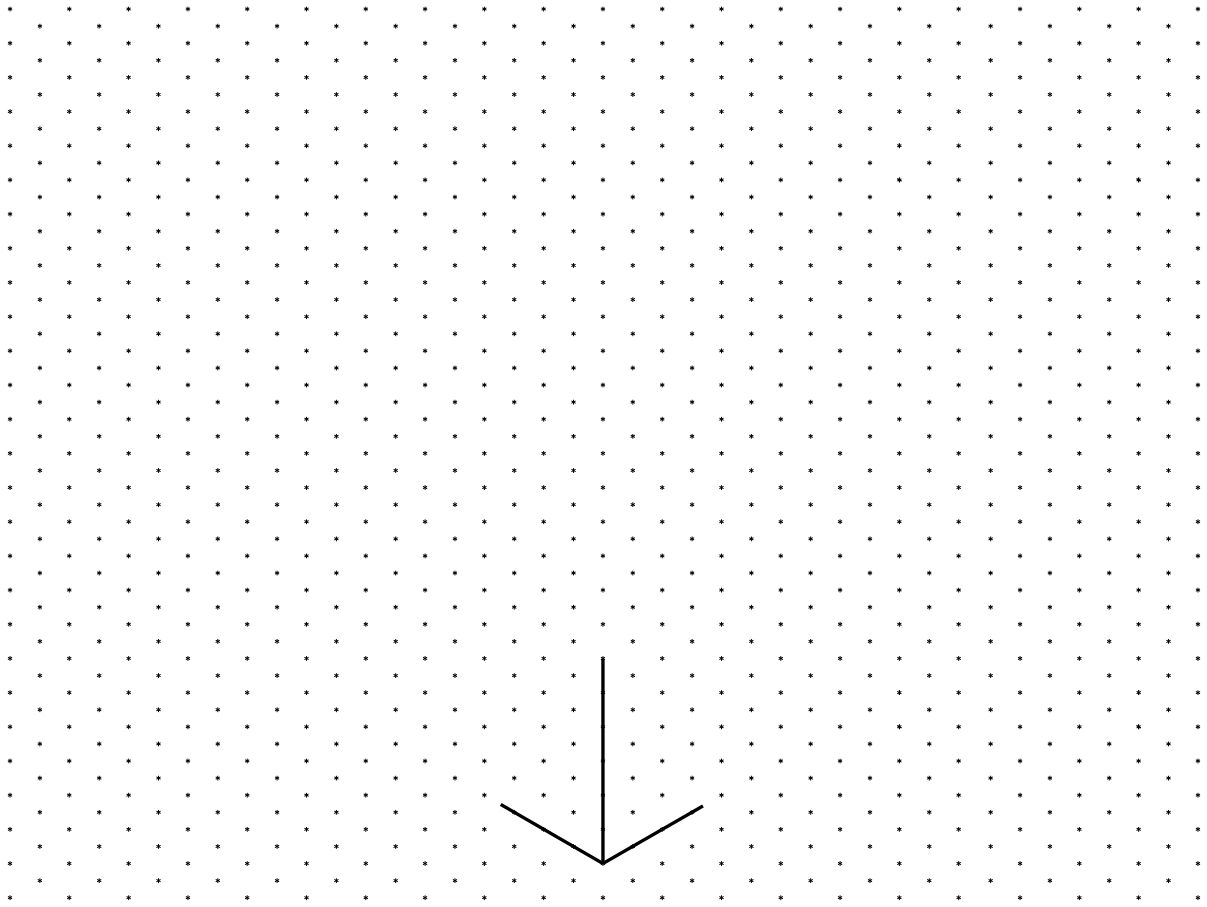


Fig. 7

(a) Complete the isometric view of the box file below:



[4]

- (b) Fig. 8 shows a pull ring. The pull ring is to be fastened to the front of the box file to make the box file easier to use. The pull ring is to be made from 3 mm thick flexible plastic.

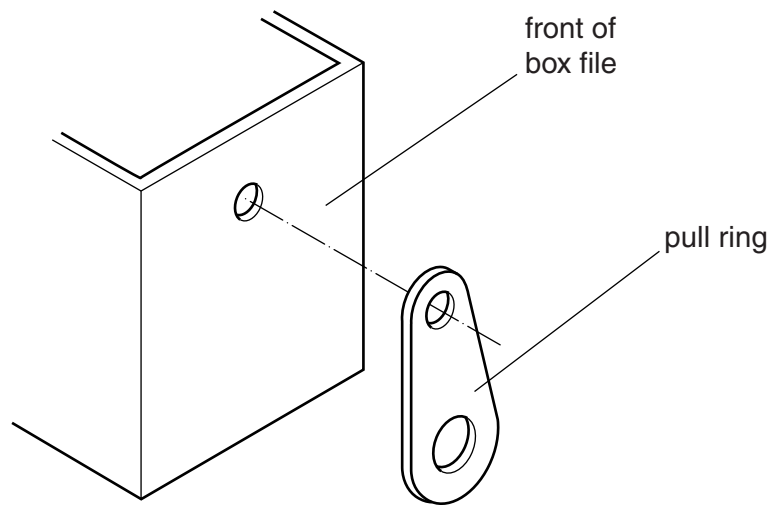


Fig. 8

The table below shows two components that could be used to fasten the pull ring to the front of the box file.

Name each component.

| Component | Name |
|---|------|
| <p>The image shows two components side-by-side. On the left is a flange nut, which has a wide, flat circular base and a central threaded hole. On the right is a flange washer, which has a wide, flat circular base and a central raised cylindrical section with a threaded hole.</p> | |
| <p>The image shows a push button fastener, which consists of a cylindrical base with a threaded hole and a flat, circular button on top.</p> | |

[2]

[6]

Turn over

SECTION B

Answer **all** questions.

- 4 Fig. 9 shows a flag for a school sports day. The flag is made from paper and thin plastic tube.

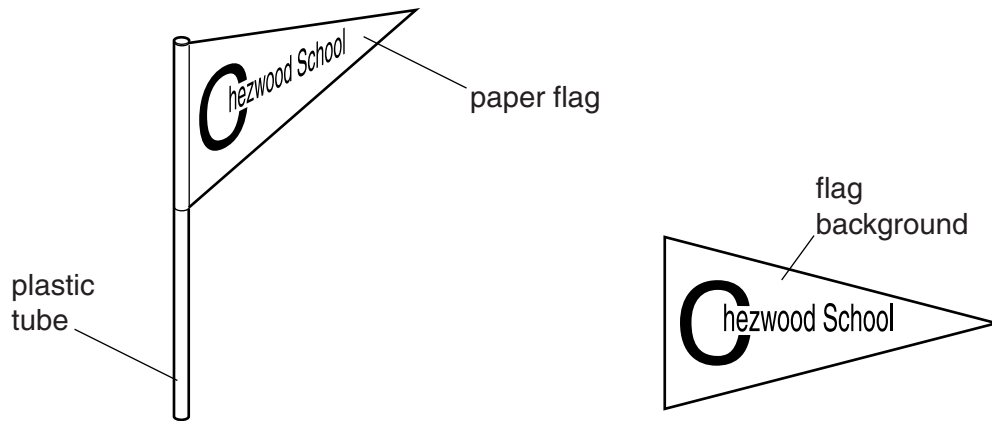
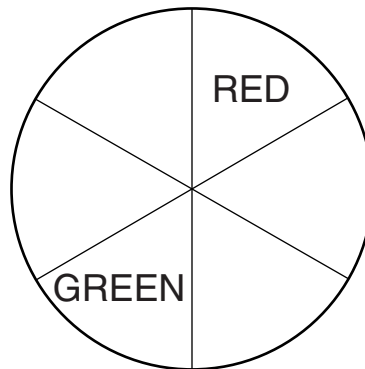


Fig. 9

The flags are to be printed in six different colour combinations. On each flag the 'Chezwood School' text will be the opposite (contrasting) colour to the background of the flag.

- (a) Complete the colour wheel to show which colours are opposite to each other:



[2]

- (b) Translucent tube is to be used for the flags.
State the meaning of the word 'translucent'.

.....
..... [1]

- (c)** Use sketches and notes to show how the paper flag could be attached to the plastic tube.

[3]

Question 4(d) begins on page 14

(d) A display board is needed to show the scores of the six different teams at sports day.

Use sketches and notes to design the display board. The display board must:

- be made from a waterproof graphic material
- be portable
- be about the theme of sports day
- show each team's total points
- be easily updated.

[6]

[Total: 12]



Marks will be awarded for the quality of written communication in your answer.

[6]

(b) Fig. 11 shows the logo to be printed onto the shopping bags.



Fig. 11

The logo is saved as a bitmap image and will need to be made five times larger for printing on the shopping bag.

State **one** disadvantage of scaling the bitmap image and explain how this could be overcome.

Disadvantage

.....

Explanation

.....

.....

[3]

(c) Fig. 12 shows a handle design for a shopping bag.

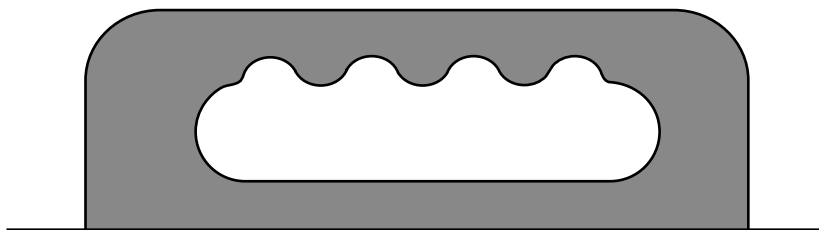


Fig. 12

State **one** piece of anthropometric data that will have been used to design the handle.

..... **[1]**

- (d) State **two** things the shop owner must consider when deciding on the design of a shopping bag.

1

.....

2

.....

[2]

[Total: 12]

END OF QUESTION PAPER

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