



Cambridge International AS & A Level

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DESIGN & TECHNOLOGY

9705/13

Paper 1 AS Level Written Paper

October/November 2025

2 hours 15 minutes

You must answer on the question paper.

You will need: Standard drawing equipment
Coloured pencils
Calculator

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a pencil or coloured pencils for any sketches, drawings or rough working.

INFORMATION

- The total mark for this paper is 100.
- The number of marks for each question or part question is shown in brackets [].
- All dimensions are in millimetres, unless otherwise stated.

This document has **20** pages. Any blank pages are indicated.

Answer **all** questions.

- 1 Fig. 1.1 shows details of a wall unit.

290 mm × 100 mm × 6 mm
medium density fibreboard
(MDF) shelf

Ø600 mm frame
made from
Ø6 mm ferrous metal

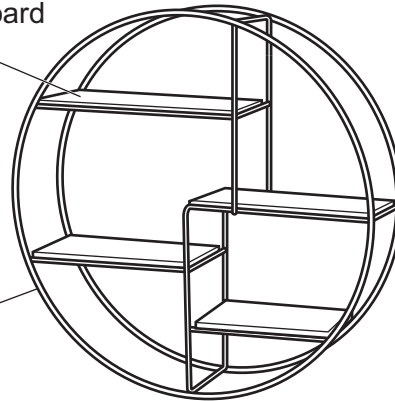


Fig. 1.1

- (a) (i) Name **one** ferrous metal that could be used to make the frame of the wall unit.

..... [1]

- (ii) Name **one** method of permanently joining the ferrous metal parts to make the frame of the wall unit.

..... [1]

- (iii) Describe **one** property of medium density fibreboard (MDF) that makes it suitable for the shelf of the wall unit.

.....
.....
..... [2]

- (b) (i) Explain **one** reason for providing packaging for the wall unit.

.....
.....
..... [2]

- (ii) Explain **one** way of making packaging sustainable.

.....
.....
..... [2]



2 Designers use different graphical techniques to communicate design proposals.

(a) (i) Identify the presentation technique shown in Fig. 2.1.

..... [1]

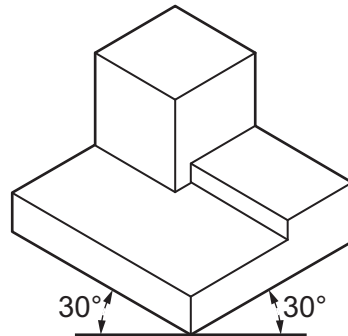


Fig. 2.1

(ii) Name **one** other presentation technique that could be used by a designer.

Explain why this presentation technique would be used by a designer.

presentation technique

explanation

.....
.....
.....

[3]

(b) Explain **two** advantages of using symbols and conventions on orthographic working drawings that are given to a manufacturer.

1
.....
.....
.....

2
.....
.....
.....

[4]



3 Fig. 3.1 shows a picture frame and stand.

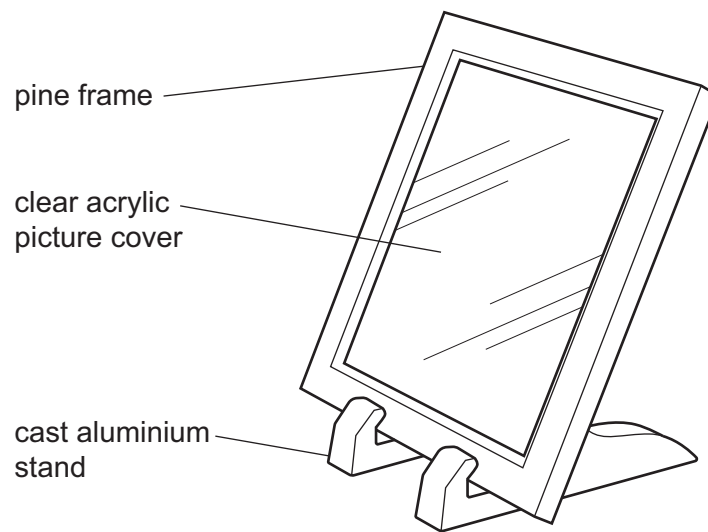


Fig. 3.1

(a) Explain **two** reasons why clear acrylic has been chosen for the picture cover rather than glass.

- 1
- 2

[4]



(b) Use sketches and notes to show:

(i) a method of joining a corner of the pine frame

[4]

(ii) a method of fixing the clear acrylic picture cover in the pine frame.

[4]





(c) Identify a suitable finish for the pine frame. Justify your choice of finish.

finish

justification

.....

.....

.....

.....

.....

.....

.....

[4]

(d) Describe **two** safe working practices that should be followed when casting the aluminium stands.

1

.....

.....

.....

2

.....

.....

.....

[4]





Question 4 starts on page 8.



4 Fig. 4.1 shows details of a display stand.

size of display stand

height: 700

width: 400

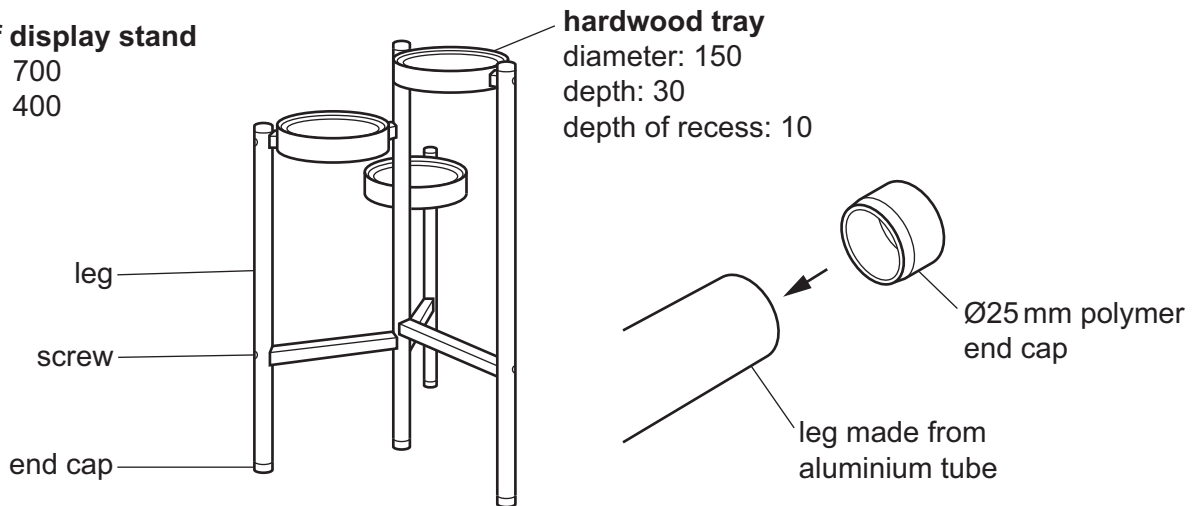


Fig. 4.1

(a) Give **two** reasons why the display stand was designed to be assembled by the customer.

1

.....

.....

2

.....

.....

[2]

(b) Explain **one** reason why the manufacturer has used standardised components for the display stand.

.....

.....

.....

..... [2]



- (c) (i) Use sketches and notes to describe a method of making in a school workshop **one** hardwood tray for the display stand.

In your response, you should give details of any tools, equipment and processes involved and the safety precautions undertaken.





- (ii) Use sketches and notes to describe a method of making in a school workshop **one** polymer end cap for a leg of the display stand.

In your response, you should give details of any tools, equipment and processes involved and the safety precautions undertaken.





Question 5 starts on page 12.



5 Fig. 5.1 shows a lawnmower that is powered by a rechargeable battery.

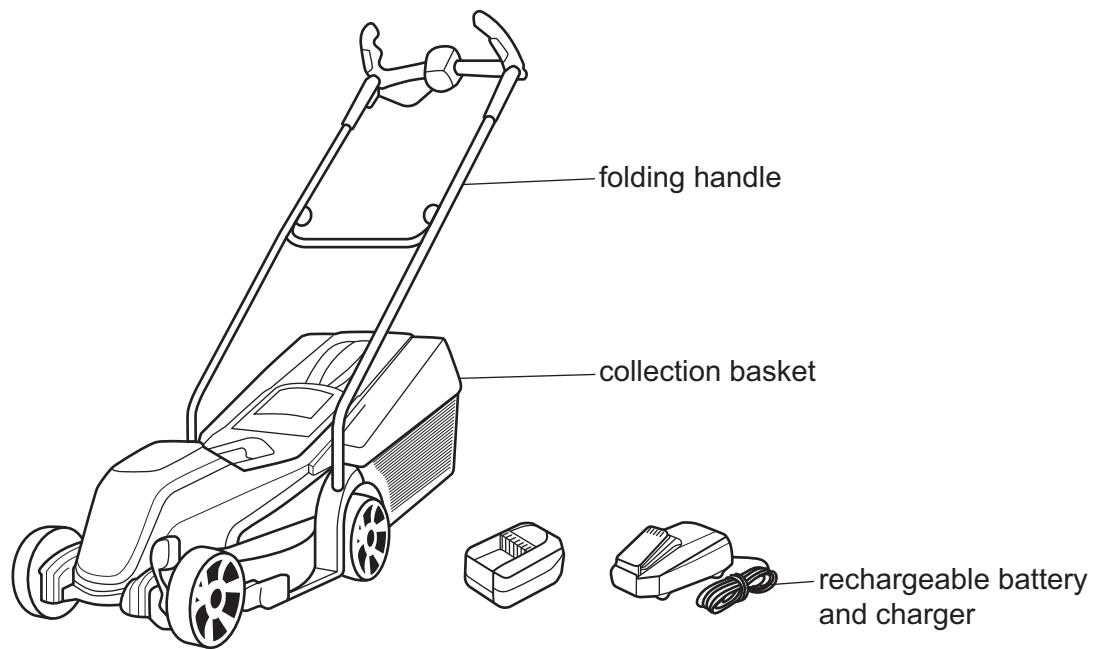


Fig. 5.1

(a) Explain why the lawnmower:

(i) might have parts that are different colours

.....

.....

..... [2]

(ii) has a collection basket that is made of plastic rather than metal

.....

.....

..... [2]

(iii) has a handle that folds down.

.....

.....

..... [2]



(b) Fig. 5.2 shows the rechargeable battery and charging unit for the lawnmower.

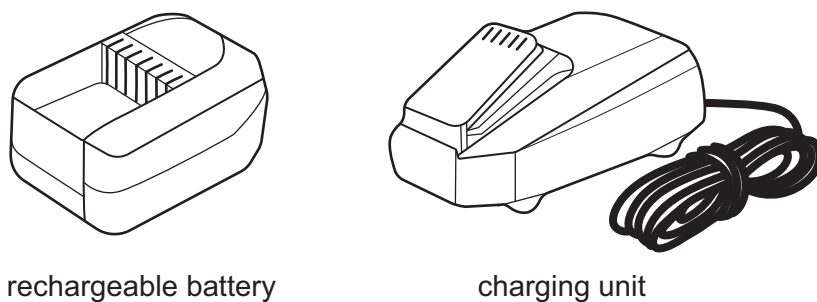


Fig. 5.2

- (i) Explain **one** disadvantage of using a lawnmower that is powered by a rechargeable battery.

.....

.....

.....

..... [2]

- (ii) Name **one** other method of powering a lawnmower and give a reason for your choice.

method

reason

.....

..... [2]





(c) Fig. 5.3 shows a polymer watering can that is to be used in a garden.

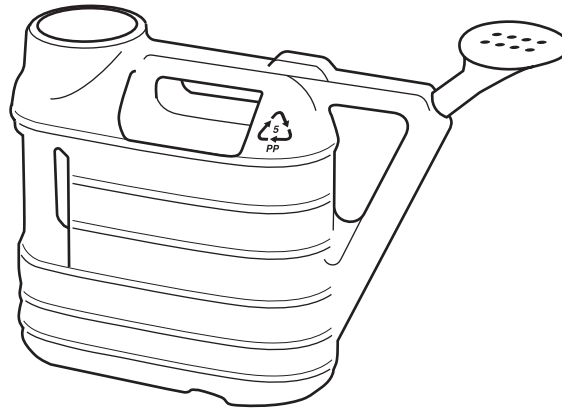


Fig. 5.3

Use sketches and notes to show how the following have been considered in the design of the watering can.

(i) rigidity

(ii) recycling of materials

[3]

[3]





(d) Describe **two** advantages of using a system that automatically waters a garden.

1

.....

.....

.....

2

.....

.....

.....

[4]



6 Fig. 6.1 shows a bowl and cutlery set that have been designed to be used by young children.

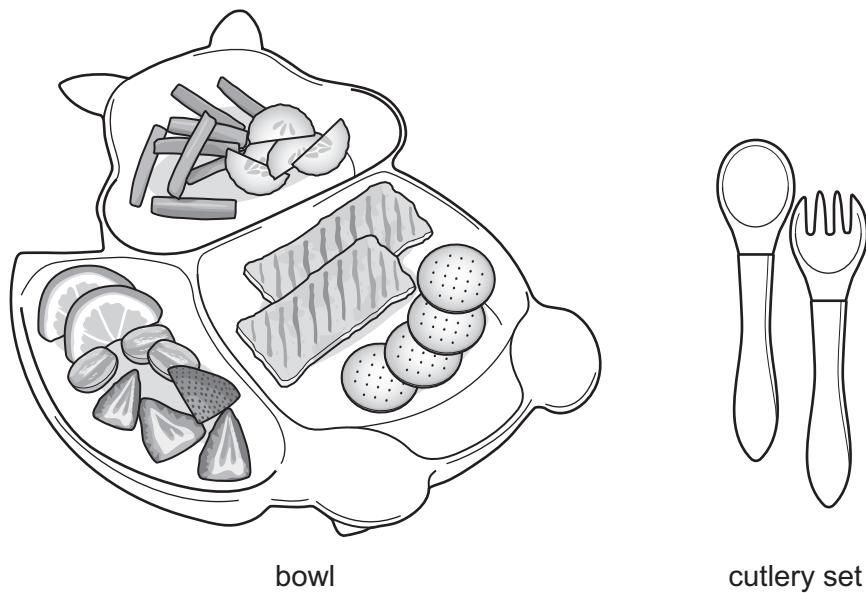


Fig. 6.1

Use sketches and notes to show how the design of **one other product** could be modified to be more inclusive, allowing it to be used by young children.

Your answer should:

- identify the product you propose to modify
- use sketches and notes, including appropriate conventions and specialist vocabulary, to show how you propose to modify the product to be more inclusive
- include an analysis of how the modification meets the needs of young children.

You may use the space on the next page for more sketches.





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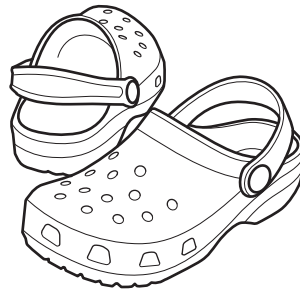
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7 Fig. 7.1 shows three examples of products made in different quantities.



individual piece
of jewellery



batch of sandals of a
specific size and colour



mass produced
mobile phone

Fig. 7.1

Discuss how the scale of production impacts on the selection of production processes.

Your answer should:

- include examples of products
- evaluate the impact of the scale of production on the production processes
- discuss the impact of the scale of production on the wider issues in design and technology (including cultural, economic, environmental and social factors).

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



[12]





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