



Cambridge O Level

DESIGN & TECHNOLOGY

6043/12

Paper 1 Product Design

October/November 2024

1 hour 15 minutes



You must answer on the two pre-printed A3 answer sheets

You will need: Two A3 pre-printed answer sheets (enclosed)
Standard drawing equipment
Coloured pencils

INSTRUCTIONS

- Answer **one** question.
- Use an HB pencil for any drawings and a black or dark blue pen for any writing.
- Write your name, centre number and candidate number in the space on **both** pre-printed answer sheets.
- Answer in the space provided on the answer sheets.
- Do **not** use an erasable pen, staples, paper clips, glue or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You may use standard drawing equipment, including coloured pencils.
- At the end of the examination, hand in your named A3 answer sheets. Do **not** fasten them together and do **not** punch holes in the sheets or tie with string.

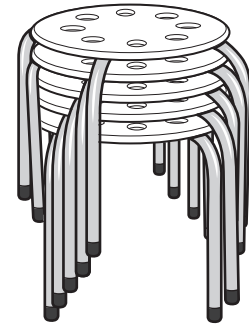
INFORMATION

- The total mark for this paper is 50.
- 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 4 pages.

Answer **one** question only on the A3 pre-printed answer sheets provided.

- 1 Families like to eat outdoors when the weather is nice.



stacking stools
400 high × 280 diameter

Design a table that could be used outdoors with the stacking stools shown. When not in use, the table must take up as little space as possible and have a handle for carrying.

- (a) List **four** additional points about the function of such a table that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of making a product smaller, to take up less space, when not in use. [4]
- (c) Develop and sketch **three** separate ideas for the table. [12]
- (d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]
- (e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for the solution you have drawn in part (e) and give reasons for your choice. [4]
- (g) Outline a method that could be used to manufacture **one** part of your solution drawn in part (e). Include the names of the tools used. [6]

2 Children often collect shells when they visit a beach.



Design a container that a child could use to collect shells. The container must be made from a single piece of thin sheet material, have three compartments and have a handle for carrying.

- (a) List **four** additional points about the function of such a container that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of joining thin sheet material. [4]
- (c) Develop and sketch **three** separate ideas for the container. [12]
- (d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]
- (e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for the solution you have drawn in part (e) and give reasons for your choice. [4]
- (g) Outline a method that could be used to manufacture **one** part of your solution drawn in part (e). Include the names of the tools used. [6]

3 Outdoor play equipment for children is provided in parks and public places.



Design a device that will add sound to outdoor play equipment. The device must be powered and activated by the movement of the children and **not** use any additional power sources.

- (a) List **four** additional points about the function of such a device that you consider to be important. [4]
- (b) Use sketches and notes to show **two** ways of using movement to produce a sound. [4]
- (c) Develop and sketch **three** separate ideas for a device that will add sound to outdoor play equipment. [12]
- (d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]
- (e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]
- (f) Suggest **two** suitable specific materials for the solution you have drawn in part (e) and give reasons for your choice. [4]
- (g) Outline a method that could be used to manufacture **one** part of your solution drawn in part (e). Include the names of the tools used. [6]

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