Cambridge Assessment International Education

Cambridge O Level

DESIGN & TECHNOLOGY **6043/12**

Paper 1 Product Design **October/November 2024**

1 hour 15 minutes

2512842557

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.

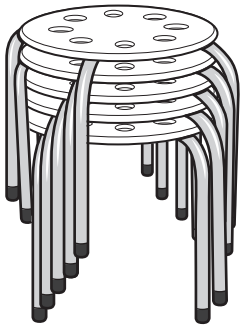
INFORMATION

- 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]

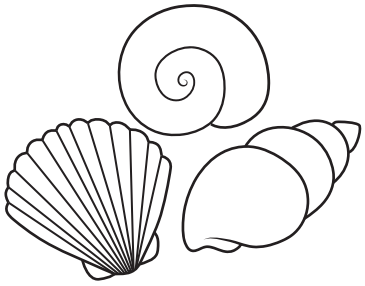
(d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]

(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.



shells

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]

[Turn over

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]