



# Cambridge IGCSE™

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## DESIGN & TECHNOLOGY

0445/11

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

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### 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

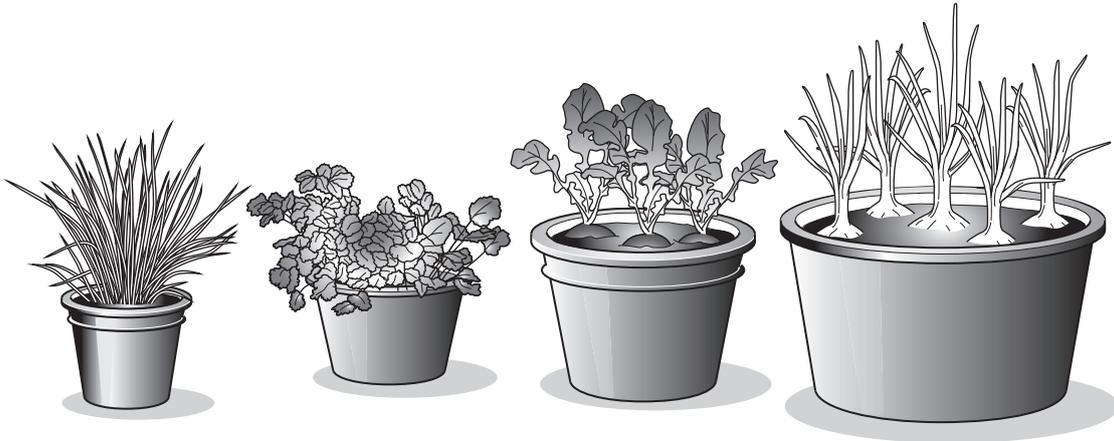
- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [ ].
- All dimensions are in millimetres unless otherwise stated.

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This document has 4 pages.

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

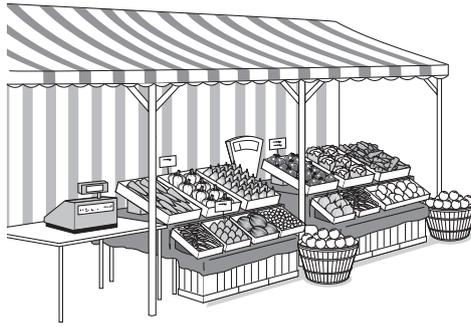
- 1 Growing different vegetables or herbs can be difficult for people with limited space.



Design a device to allow someone to grow vegetables or herbs within a limited space. The device should allow at least three different types of vegetable or herb to be grown and should be able to attach to a wall.

- (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** methods of making woods and metals resistant to moisture. [4]
- (c) Develop and sketch **three** separate ideas for the device to allow someone to grow vegetables or herbs within a limited space. [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]

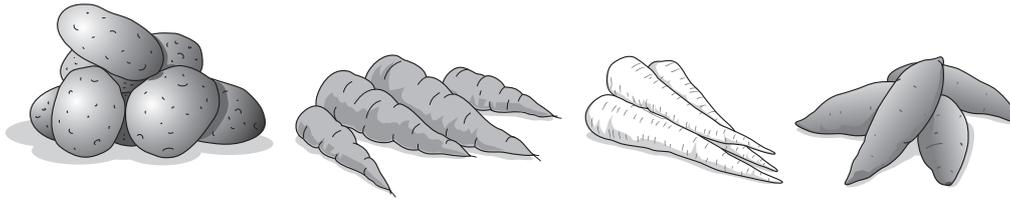
- 2 Encouraging children to eat more healthy foods is important for their health and wellbeing.



Design a shop display to encourage children to eat more vegetables. The shop display is to be made from thin lightweight materials and will be flat-packed for assembly by the shop workers.

- (a) List **four** additional points about the function of such a shop display that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of making a temporary joint from thin lightweight materials. [4]
- (c) Develop and sketch **three** separate ideas for the shop display to encourage children to eat more vegetables. [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 Peeling vegetables can be difficult for people with limited strength and mobility in their hands.



Design a device for people who have limited strength and mobility in their hands that will enable them to safely peel the skin of vegetables. The device must hold different sizes and types of vegetables and be able to secure to a kitchen worktop while in use.

- (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** methods of removing the skin of a vegetable. [4]
- (c) Develop and sketch **three** separate ideas for the device to safely peel the skin of vegetables. [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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