

9782589871

## **DESIGN AND TECHNOLOGY**

Paper 1 Product Design

0445/12 October/November 2016 1 hour 15 minutes

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment and coloured pencils.

## READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces on **both** printed Answer Sheets.Write in dark blue or black pen.You may use an HB pencil for any diagrams, graphs or rough working.Do not use staples, paper clips, glue or correction fluid.DO **NOT** WRITE IN ANY BARCODES.

Answer **one** question. Write/draw your answers in the spaces provided on the Answer Sheets. You may use a calculator.

At the end of the examination, fasten all your work securely together. The number of marks is given in brackets [ ] at the end of each question or part question. The total of the marks for this paper is 50.

This document consists of 4 printed A4 pages and 2 A3 Inserts.



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

1 A number of food items need to be stored and carried when camping.



Design a unit that will allow food items to be stored and carried.

- (a) List **four** additional points about the function of such a unit that you consider to be important. [4]
- (b) Select two different sheet materials and, for each, use sketches and notes to show a method of joining them at right angles. [4]
- (c) Develop and sketch three ideas for the unit. [12]
- (d) Evaluate your ideas and justify why you have chosen one idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest two suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

2 Food items need to be protected from insects and small animals when camping.



Design a disposable, flat-pack cover for such a situation. The cover should allow the food items to be viewed when in use.

- (a) List **four** additional points about the function of such a cover that you consider to be important. [4]
- (b) Use sketches and notes to show two different methods of making cardboard waterproof. [4]
- (c) Develop and sketch three ideas for the cover. [12]
- (d) Evaluate your ideas and justify why you have chosen one idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest two suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

**3** Temporary shelving is useful when camping.



Design a collapsible shelving unit that has a quick assembly feature.

- (a) List four additional points about the function of such a shelving unit that you consider to be important.
  [4]
- (b) Use sketches and notes to show two different methods by which such a shelving unit could be used on uneven ground. [4]
- (c) Develop and sketch three ideas for the shelving unit. [12]
- (d) Evaluate your ideas and justify why you have chosen one idea to develop more fully. [8]
- (e) Draw, using a method of your own choice, a full solution to the problem. Include construction details and important dimensions. [12]
- (f) Suggest two suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution. [6]

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