



DESIGN AND TECHNOLOGY

0445/13

Paper 1 Product Design

May/June 2018

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 pages and 2 A3 Inserts.

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

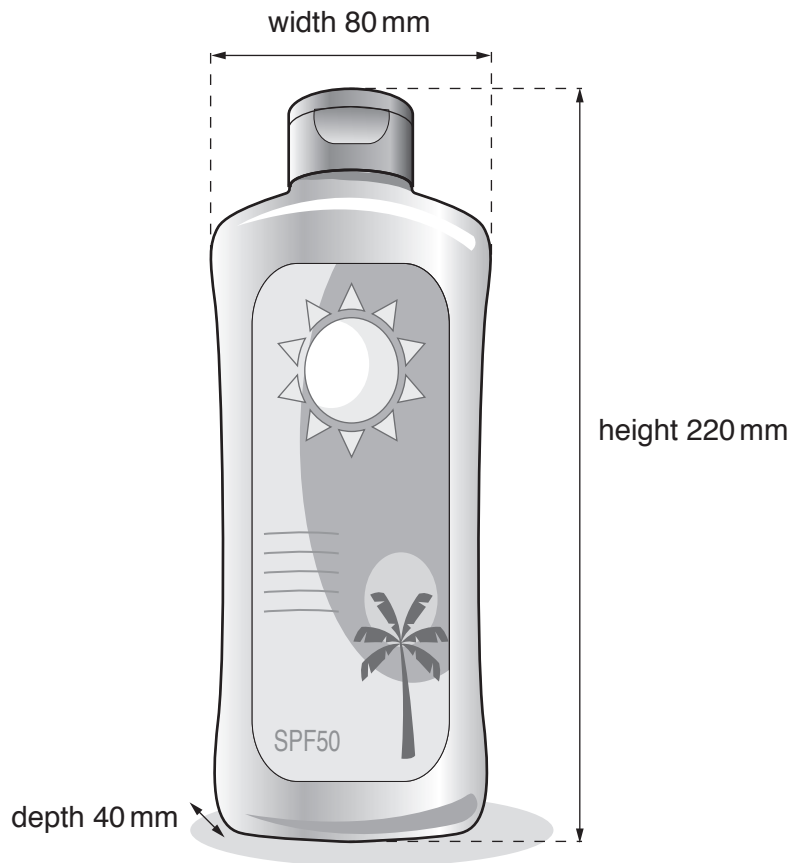
- 1 When lying on a sunbed on a beach there is often nowhere to place a drink and a book.



Design a holder, for a drinks can and a book, that could be attached temporarily to a sunbed.

- (a) List **four** additional points about the function of such a holder that you consider to be important. [4]
- (b) Use sketches and notes to show **two** temporary methods of attachment for such a holder. [4]
- (c) Develop and sketch **three** ideas for the holder. [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]

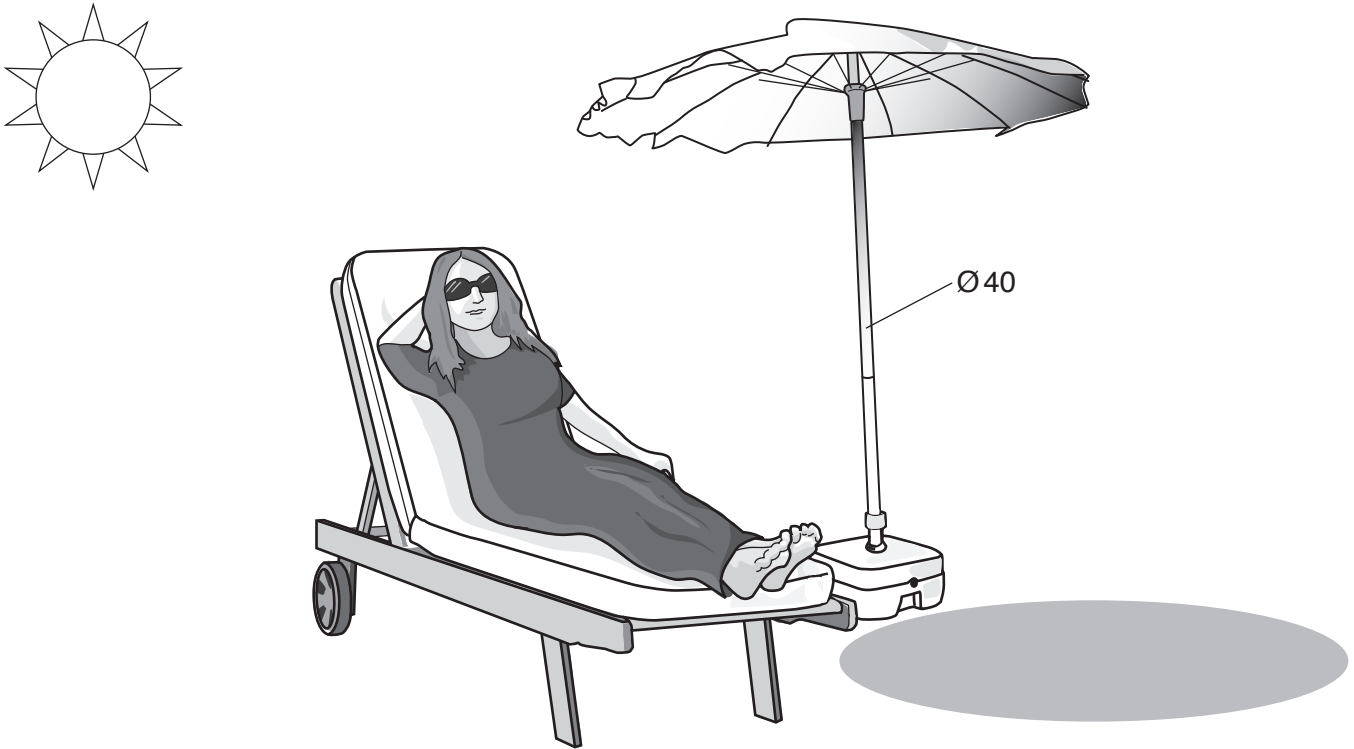
- 2 It is important that people apply sun cream when spending time in the sun.



Design a point of sale display that would inform customers of the importance of using sun cream. The display should hold 20 bottles of sun cream and fold flat for sending to shops.

- (a) List **four** additional points about the function of such a point of sale display that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of strengthening sheet card. [4]
- (c) Develop and sketch **three** different ideas for the point of sale display. [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 It is often difficult to keep in the shadow of a sunshade as the position of the sun moves during the day.



Design a device that would move a sunshade as the position of the sun moves during the day.

- (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 clamping the 40 diameter sunshade pole. [4]
- (c) Develop and sketch **three** ideas for the device. [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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