



# Cambridge IGCSE®

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## DESIGN & TECHNOLOGY

0445/01

Paper 1 Product Design

For examination from 2020

SPECIMEN PAPER

1 hour 15 minutes



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

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

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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 [ ].

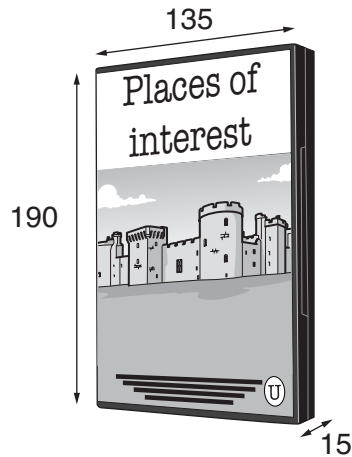
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This document has 4 pages. Blank pages are indicated.

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

**1 Problem:**

A general store is going to sell a DVD that shows interesting places to visit in the area.



Design a unit that would hold 20 of the DVDs shown and display one to help advertise the DVD. The unit can be positioned anywhere in the general store.

- (a) List **four** additional points about the function of such a unit that you consider to be important. [4]
- (b) Use sketches and notes to show **two** types of corner joint that could be used on a carcass (box) construction. [4]
- (c) Develop and sketch **three** separate ideas for the unit. [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) Describe 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 Problem:

A small general store is losing sales to large supermarkets and needs to make people aware of the range of products it sells.



Design a promotional card which includes a feature that attracts attention. The card will be distributed to local homes.

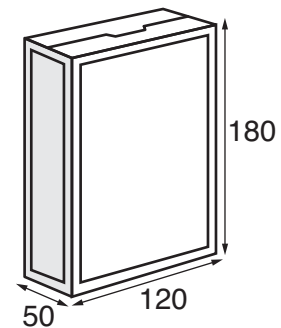
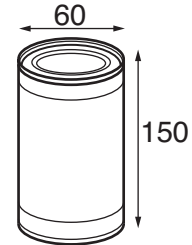
- (a) List **four** additional points about the function of such a card that you consider to be important. [4]
- (b) Use sketches and notes to show **two** types of feature that would attract attention on such a card. [4]
- (c) Develop and sketch **three** separate ideas for the card. [12]
- (d) Evaluate 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) Describe 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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### 3 Problem:

Shops often store some of their products on high shelves that are difficult to reach.



Design a device that would help the shopkeeper to reach the top shelves and remove cans and packets of the types shown.

- (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** mechanisms that could be used to grip or hold items. [4]
- (c) Develop and sketch **three** separate ideas for the device. [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) Describe 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]