



Cambridge IGCSE®

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

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

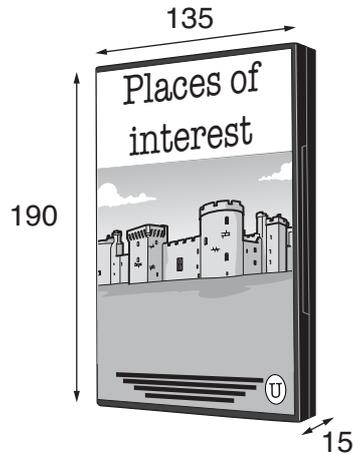
- The total mark for this paper is 50.
- The number of marks for each question or part question is shown in brackets [].

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.

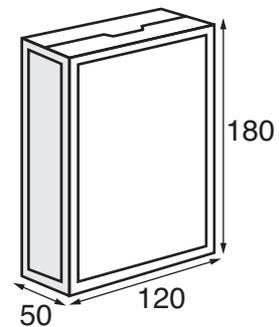
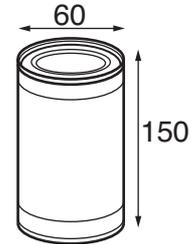
- (a) List **four** additional points about the function of such a card that you consider to be important. [4]
- (b) Use sketches and notes to show **two** types of feature that would attract attention on such a card. [4]
- (c) Develop and sketch **three** separate ideas for the card. [12]
- (d) Evaluate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

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.

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]