



Cambridge IGCSE™

DESIGN & TECHNOLOGY

0445/11

Paper 1 Product Design

May/June 2022

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

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.

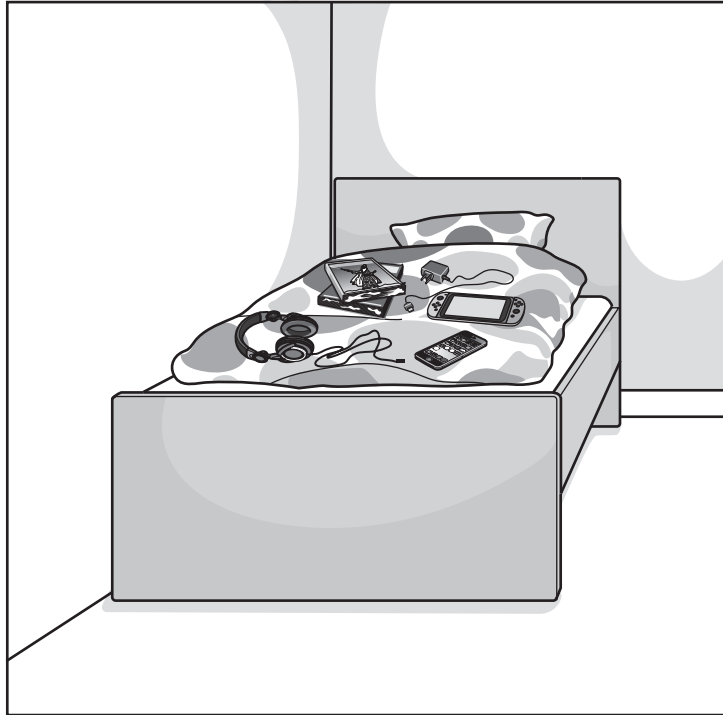
INFORMATION

- 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.

This document has **4** pages.

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

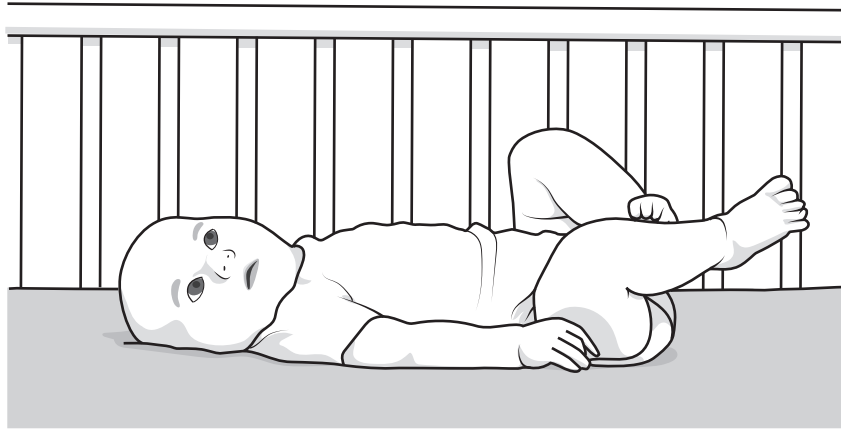
- 1 Space for storage of personal items can be limited in small bedrooms.



Design a wall or floor-mounted unit which will provide storage for personal items.

- (a) List **four** additional points about the function of such a wall or floor-mounted unit that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods that could be used to make valuable personal items secure from theft in such a wall or floor-mounted unit. [4]
- (c) Develop and sketch **three** separate ideas for the wall or floor-mounted 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) 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]

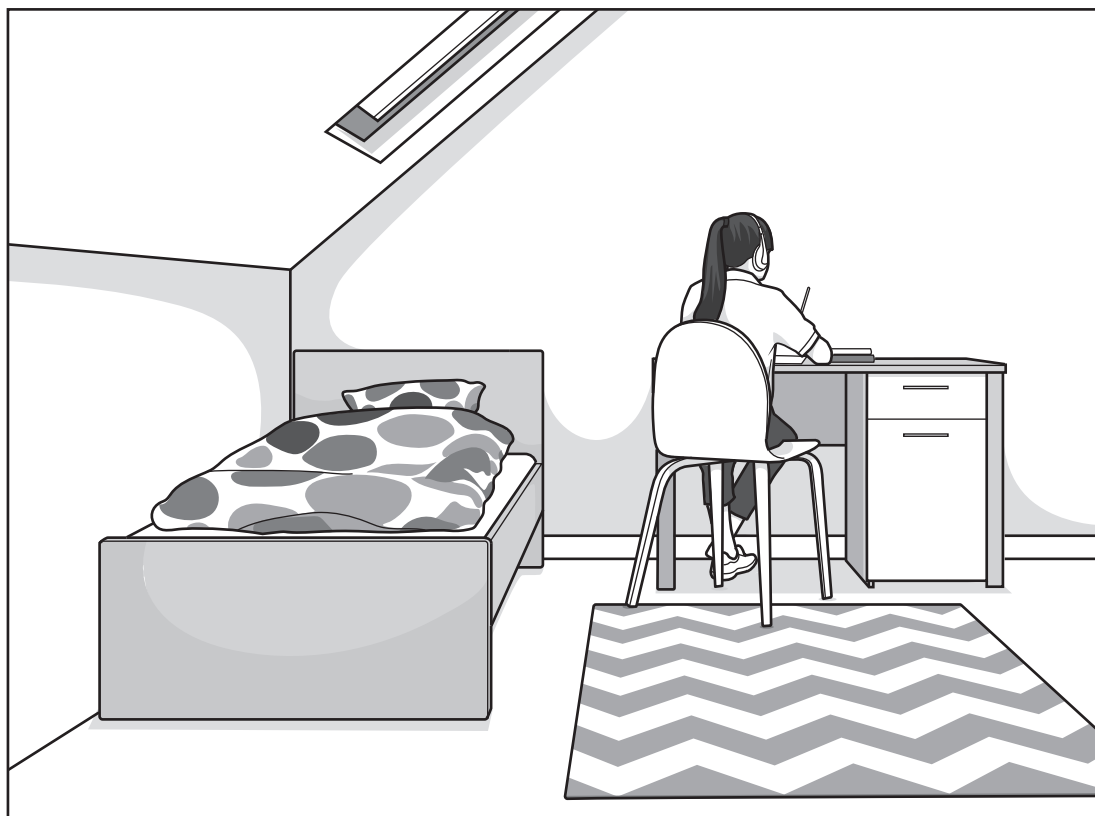
- 2 Babies sometimes need entertaining when they are awake in their cot.



Design, using lightweight materials, an artefact which uses colour and shapes to interest a baby lying in a cot. Your solution must be out of reach from the baby.

- (a) List **four** additional points about the function of such an artefact that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods that can be used to join lightweight materials. [4]
- (c) Develop and sketch **three** separate ideas for the artefact. [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 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 Young people often complete homework in their bedroom.



Design a desk or wall-mounted light which can be adjusted to different positions to suit the young person working at the desk.

- (a) List **four** additional points about the function of such a light that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods which could be used to allow the position of the light to be adjusted. [4]
- (c) Develop and sketch **three** separate ideas for the light. [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 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]

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.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

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