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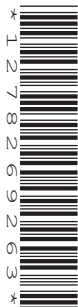
DESIGN & TECHNOLOGY

0445/11

Paper 1 Product Design

October/November 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 Children are often given money by friends and family but have nowhere safe to keep it at home.



Design a storage unit for money. The unit should be in the shape of a building which is familiar to a child.

- (a) List **four** additional points about the function of such a storage unit that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of inserting coins into a building shaped storage unit. [4]
- (c) Develop and sketch **three** separate ideas for the storage 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 Banks wish to encourage children to open savings accounts so that they continue as customers when they get older.



Design an advertising display that could be placed on the pavement outside a bank. The advertising display should encourage children to become savers with the bank.

- (a) List **four** additional points about the function of such an advertising display that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of attracting children's attention to an advertising display. [4]
- (c) Develop and sketch **three** separate ideas for the advertising display. [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]

- 3 Children would be encouraged to save money if they received some form of response when they placed coins in a savings box.



Design a system that produces some form of response when coins are placed into a savings box.

- (a) List **four** additional points about the function of such a system that you consider to be important. [4]
- (b) Use sketches and notes to show **two** forms of response that would be suitable for this purpose. [4]
- (c) Develop and sketch **three** separate ideas for the system. [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]

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