



DESIGN AND TECHNOLOGY

0445/12

Paper 1 Design

October/November 2013

1 hour 15 minutes

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment

To be taken together with the optional paper for which you have been entered in one session of 2 hours and 15 minutes.

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 a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

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.



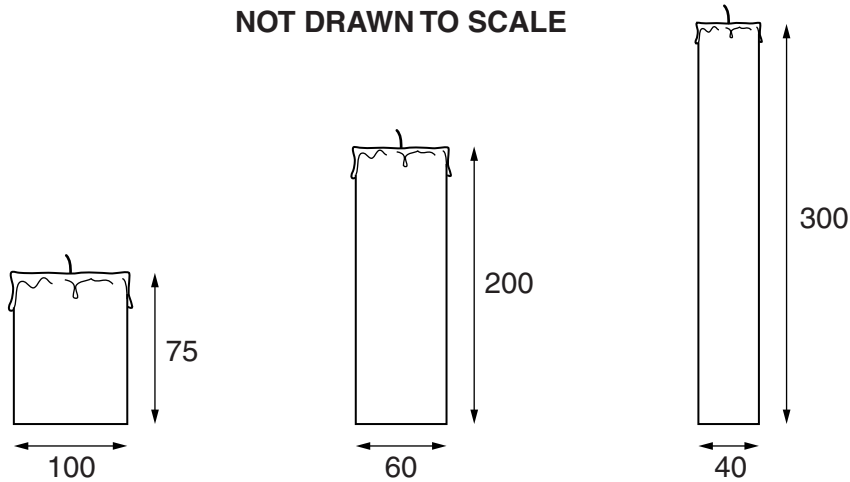
This document consists of 4 printed A4 pages and 2 A3 Inserts.



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

- 1 Candles are popular methods of providing soft lighting in a room.

NOT DRAWN TO SCALE



Design a holder to take at least three candles. The candles can be of just one size or a combination of the above sizes.

- (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** ways by which candles could be held in place. [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 major dimensions. [12]
- (f) Suggest 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 in the school workshop. [6]

- 2 Young children enjoy playing together in 'pretend' situations.



Design a lightweight play house, for children of 3–6 years, that can be easily stored.

- (a) List **four** additional points about the function of such a play house that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods by which card and other lightweight materials can be hinged. [4]
- (c) Develop and sketch **three** ideas for the play house. [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 major dimensions. [12]
- (f) Suggest suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method of producing a prototype of your solution in the school graphics studio. [6]

- 3 Many gardens have some form of centre piece to add interest and attract attention.



Design a garden feature that uses water to provide some form of movement.

- (a) List **four** additional points about the function of such a garden feature that you consider to be important. [4]
- (b) Use sketches and notes to show **two** ways by which movement could be created by using water. [4]
- (c) Develop and sketch **three** ideas for the garden feature. [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 major dimensions. [12]
- (f) Suggest suitable materials for your solution and give reasons for your choice. [4]
- (g) Outline a method used to manufacture **one** part of your solution in the school workshop. [6]

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