



DESIGN AND TECHNOLOGY

0445/12

Paper 1 Product Design

May/June 2016

1 hour 15 minutes

Candidates answer on the pre-printed A3 Answer Sheets.

Additional Materials: Standard drawing equipment and coloured pencils.

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 an HB pencil for any diagrams, graphs or rough working.

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

DO NOT WRITE IN ANY BARCODES.

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.

The total of the marks for this paper is 50.

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

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

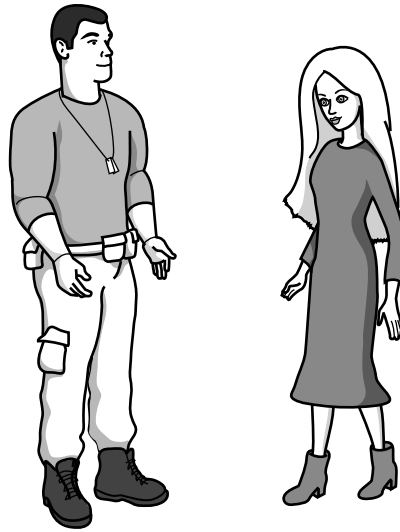
- 1 Young babies have to learn to walk.



Design a device that will help to support a baby while learning to walk.

- (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** different methods that could be used to attach wheels to a frame. [4]
- (c) Develop and sketch **three** ideas for the device. [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 important dimensions. [12]
- (f) Suggest **two** 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. [6]

2 Products need to be packaged for point of sale displays.



Design a package for **two** dolls. Your design must allow the dolls to be visible within the packaging.

- (a) List **four** additional points about the function of such a package that you consider to be important. [4]
- (b) Use sketches and notes to show **two** different methods that could be used to provide a carrying handle for such a package. [4]
- (c) Develop and sketch **three** ideas for the package. [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 important dimensions. [12]
- (f) Suggest **two** 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. [6]

3 Children enjoy riding on sit-on toys.



Design a sit-on toy that can be propelled and steered by a child.

- (a) List **four** additional points about the function of such a sit-on toy that you consider to be important. [4]
- (b) Use sketches and notes to show **two** different mechanisms by which a sit-on toy could be propelled. [4]
- (c) Develop and sketch **three** ideas for the sit-on toy. [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 important dimensions. [12]
- (f) Suggest **two** 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. [6]

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