

## **DESIGN AND TECHNOLOGY**

Paper 1 Product Design SPECIMEN PAPER 0445/01 For Examination from 2015

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.

Answer **one** question. Write/draw your answers in the spaces provided on the Answer Sheets. You may use a calculator.

The total of the marks for this paper is 50.

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.



**1** Barbecues are popular in many countries but seating is often not available.



Design a folding seat that could be used for this purpose.

(a)	List <b>four</b> points about the function of such a seat that you consider to be important.	[4]
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(b)	Use sketches and notes to show two different types of pivot or sliding mechanism th	at could
	be used in such seats.	[4]

- (c) Develop and sketch three ideas for the seat. [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 your problem. Include construction details and major dimensions. [12]
- (f) Suggest two suitable 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** Design and Technology projects include the production of design drawing sheets.



Design a lightweight carrier for drawing sheets and drawing equipment so that they can be taken to school easily.

(	a)	List four	points	about t	the function	of such a	carrier that v	you consider to	be importan	nt. [4]
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- (b) Use sketches and notes to show two different types of handle for such a carrier. [4]
- (c) Develop and sketch three ideas for the carrier. [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 your problem. Include construction details and major 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** Birds can be a nuisance as they often destroy crops.



Design a device that will not harm the birds but will scare them away.

- (a) List four points about the function of such a device that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods of providing power to such a device in a field. [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 your problem. Include construction details and major 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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