

General Certificate of Education
Summer 2003
Advanced Subsidiary Level Examination



**DESIGN & TECHNOLOGY: PRODUCT DESIGN
(3D DESIGN)
Unit 1 Materials and Components (PD1D)**

5551

Tuesday 3 June 2003 Morning Session

In addition to this paper you will require:

- an unlined answer book (7024) which is provided separately;
- normal writing and drawing instruments;
- a colour Insert Sheet (enclosed).

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Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen. Pencil and coloured pencils should only be used for drawing.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. *The Paper Reference* is PD1D.
- Answer Question 1 and any **two** of Questions 2 to 4.
- Use the Insert Sheet included to help you answer **Question 1(a)**.

Information

- The maximum mark for this paper is 100.
- 40 marks are allocated to Question 1, 28 to each of Questions 2 to 4 and 4 marks overall are for quality of written communication.
- Mark allocations are shown in brackets.
- This paper carries 30 per cent of the total marks for AS and 15 per cent for A Level.
- You are reminded of the need for good English and clear presentation. The quality of your written communication will be assessed across all questions.

Advice

- Your answers should be illustrated with sketches and/or diagrams wherever you feel it is appropriate.

Answer Question 1 and any **two** of Questions 2 to 4.

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The full copy of this paper can be obtained by ordering PD1D□
from AQA Publications□
Tel: 0161 953 1170□

1 (a) Study the Insert Sheet provided.

Choose **two** products from the list below and answer the following questions.

- Chopping board
- Washing up bowl
- Bread bin
- Soap dispenser

(i) **State the chosen products** and name suitable specific materials used in their manufacture.
(2 x 1 mark)

(ii) Explain what properties make these materials suitable for the products.
(2 x 6 marks)

(iii) Using notes and diagrams, explain how the products are manufactured.
(2 x 9 marks)

(b) Sketch a product you have made for your coursework, state the specific materials you used and justify their selection.
(8 marks)

2 Knock-Down (KD) fittings are now common components in modern day furniture.

(a) With the aid of sketches, describe how **two** different KD fittings function. Explain how **each** fitting can be used in the manufacture of furniture.
(2 x 8 marks)

(b) Explain what advantages KD fittings give to:

(i) the manufacturer;

(ii) the consumer.
(2 x 6 marks)

3 (a) Name a common application for **each** of the following materials.

- (i) Layout paper;
- (ii) Acrylic sheet;
- (iii) Self adhesive vinyl;
- (iv) Corrugated polypropylene board (Correx).

(4 x 1 mark)

(b) Explain why **each** material is suitable for that application.

(4 x 6 marks)

4 (a) Explain why the following materials are used in the manufacture of the products listed below.

Material	Product
(i) ABS	Vacuum cleaners
(ii) Hardwood	Window frames
(iii) Polycarbonate	Mobile phone screens

(3 x 6 marks)

(b) (i) For **one** of the products listed in part (a), suggest an alternative material that could be used in its manufacture.

(1 mark)

(ii) Explain why that material would be suitable.

(6 marks)

(iii) For the material chosen, list the health and safety precautions that should be taken when manufacturing.

(3 marks)

END OF QUESTIONS