



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

---

**DESIGN AND TECHNOLOGY**

**0445/01**

Paper 1 Design

**May/June 2009**

**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.

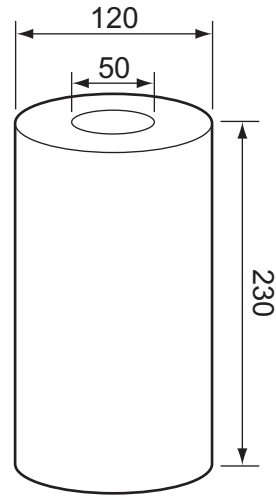
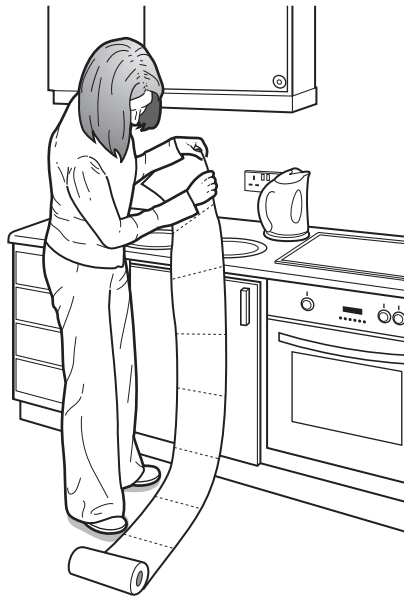
---

This document consists of 4 printed A4 pages and an Insert.



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

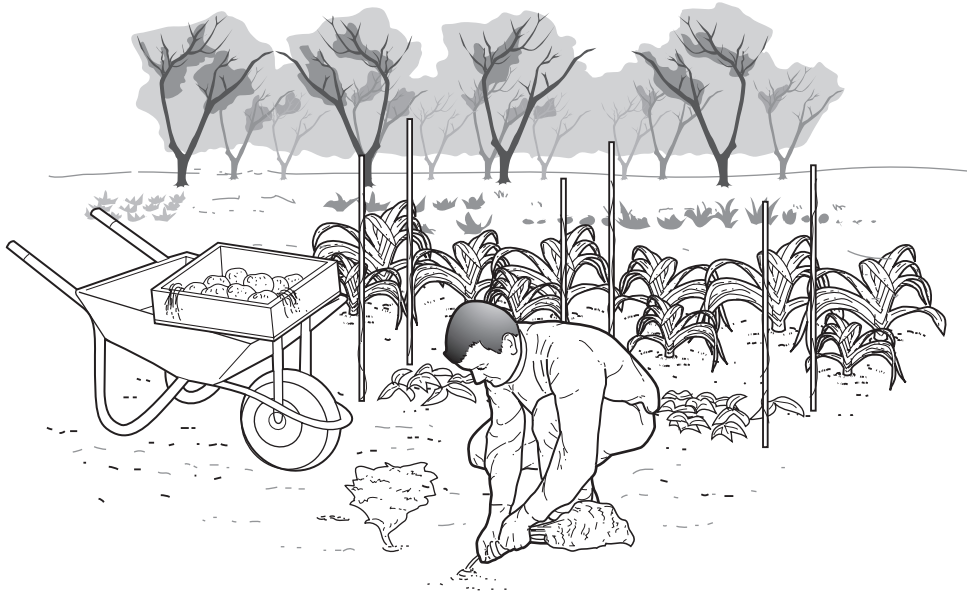
- 1 Many households use paper kitchen rolls for wiping up spilt liquids.



A device that would store one kitchen roll and allow sheets to be torn off would be very helpful.

- (a) List **four** additional points about the function of such a device that you consider to be important. [4]
- (b) Identify and draw **two** places in a kitchen where a device of this type might be positioned. [4]
- (c) Develop and sketch ideas for the storage 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 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]

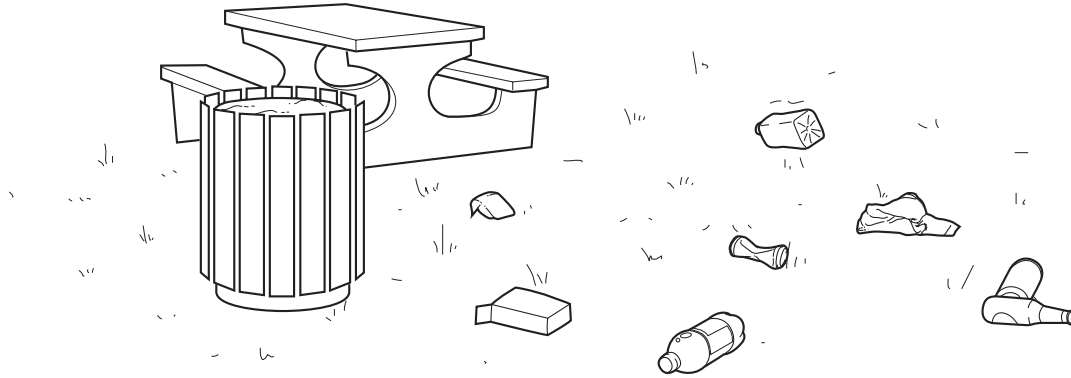
- 2 People are now being encouraged to buy local food produce so that local farmers can be kept in business and transport costs kept to a minimum.



You have been asked to design a lightweight shop display, that includes movement, to advertise local produce.

- (a) List **four** additional points about the function of such a shop display that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods that could provide movement in such a display. [4]
- (c) Develop and sketch ideas for the display. [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 suitable specific materials for your solution and give reasons for your choice. [4]
- (g) Outline a method of producing a prototype of the shop display in the school graphics studio. [6]

3 Litter thrown on the ground is both unhealthy and untidy.



Design a portable device that would allow someone to pick up litter from the ground so that it could be placed in a collecting bag.

- (a) List **four** additional points about the function of such a device that you consider to be important. [4]
- (b) Draw any **two** joints that allow movement between metal or wooden parts. [4]
- (c) Develop and sketch 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 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]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included the publisher will be pleased to make amends at the earliest possible opportunity.

University of Cambridge International Examinations is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.