



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

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**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.

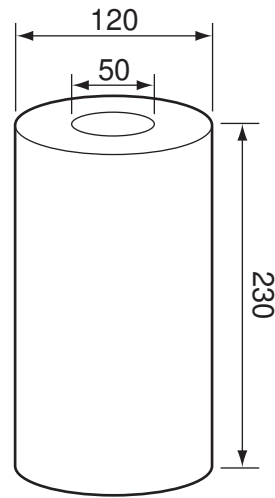
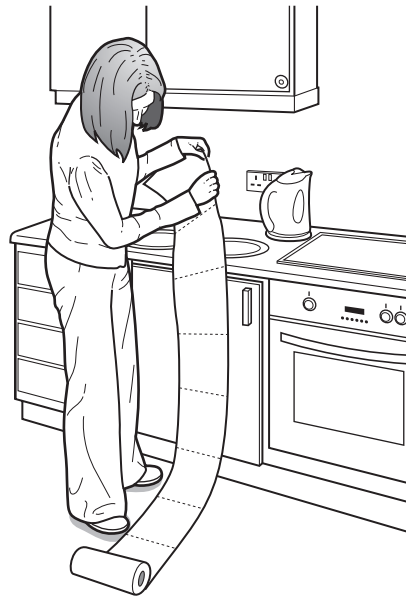
\* 9 4 1 4 3 7 9 1 4 5 \*

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



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

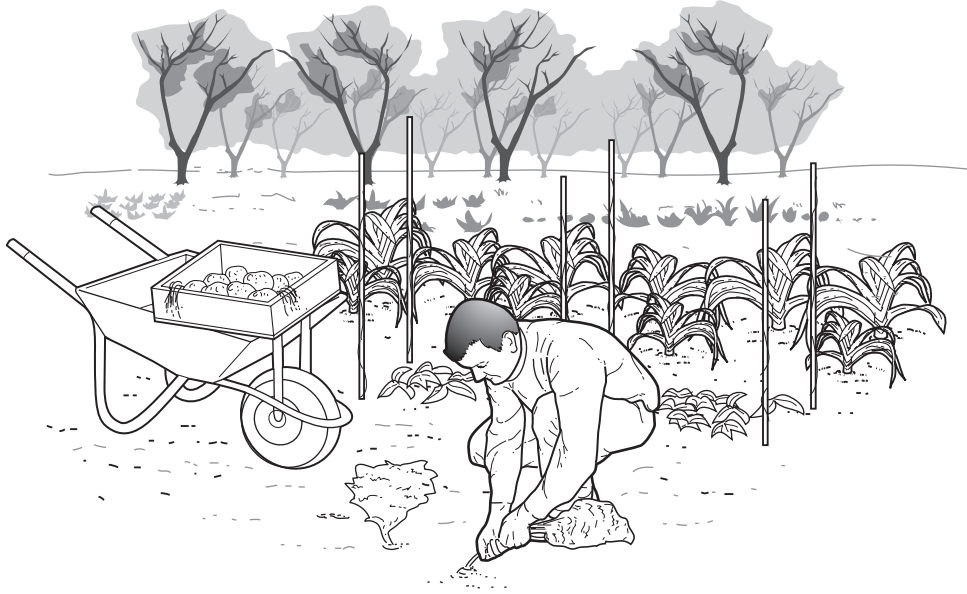
- 1 Many households use paper kitchen rolls for wiping up spilt liquids.



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]

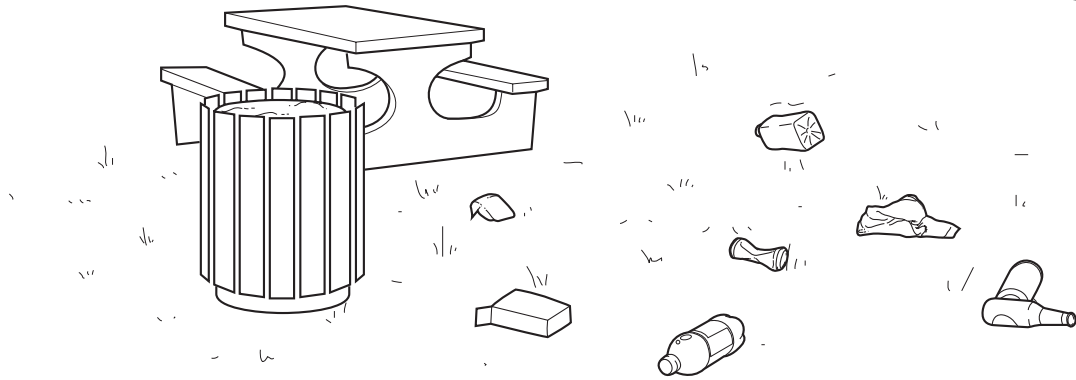
- 2 People are now being encouraged to buy local food produce so that local farmers can keep their business and transport costs kept to a minimum.



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]