



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

0445/01

Paper 1 Design

October/November 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.

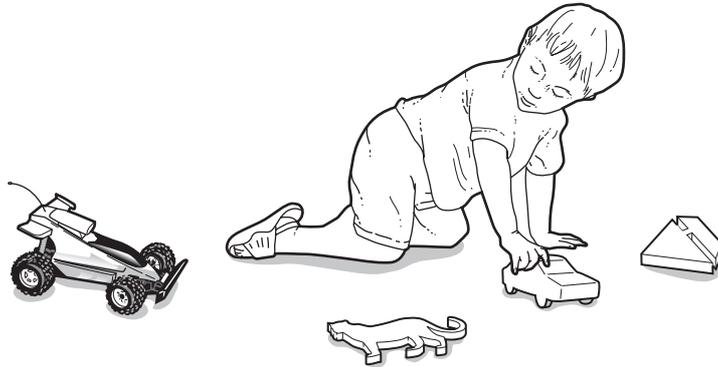
The number of marks is given in brackets [] at the end of each question or part question.

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



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

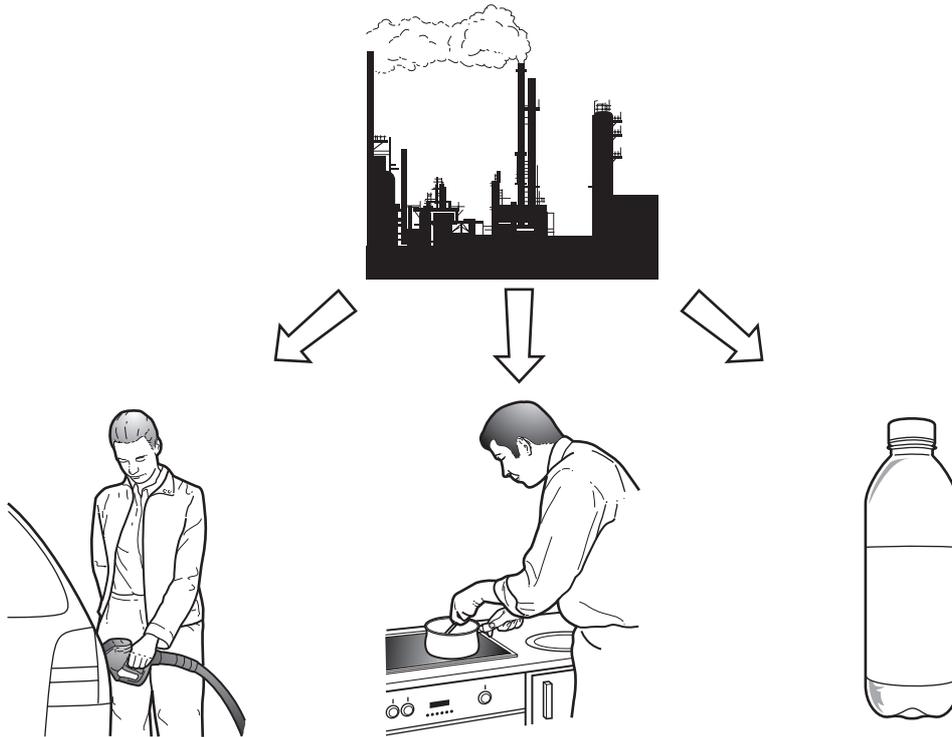
- 1 Children often have lots of toys and nowhere to store them.



A storage unit that would hold a range of toys would be helpful. The unit should have some kind of novelty theme to it so that the child is encouraged to replace toys after use.

- (a) List **four** additional points about the function of such a unit that you consider to be important. [4]
- (b) Draw **two** different joints that could be used when making box constructions. [4]
- (c) Develop and sketch ideas for the novelty storage unit. [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]

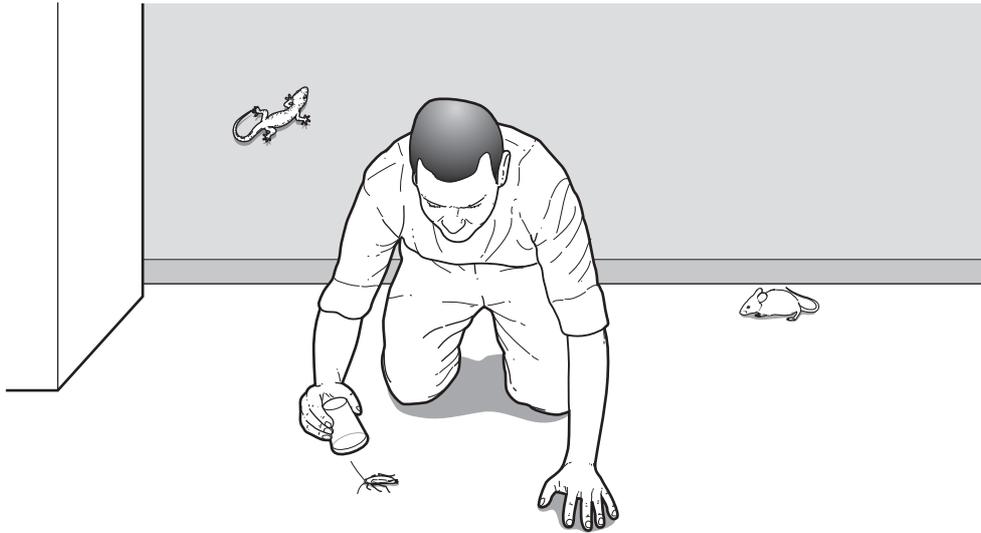
- 2 Oil has many uses including as a source of energy and for the production of plastic products. It is a finite source and will eventually run out.



Design a portable free-standing display unit, to be used in a shopping centre, that will be used to raise awareness of this issue. The display must include a holder for leaflets to be given away.

- (a) List **four** additional points about the function of such a portable display that you consider to be important. [4]
- (b) Draw **two** joining methods that could be used in portable displays. [4]
- (c) Develop and sketch ideas for the portable 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 the method of producing a prototype of the portable display in the school graphics studio. [6]

- 3 Insects and small animals are a nuisance in the home although many cause no real problems.



A humane collecting device that would pick up or catch different types of insect and/or small animals, so that they can be released, unharmed, away from the home, would be very useful.

- (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 describe **two** remote control systems. [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.