



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

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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.

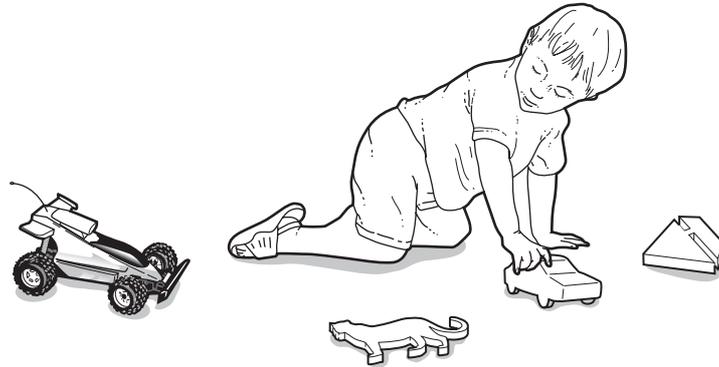
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This document consists of 4 printed A4 pages and an Insert.



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

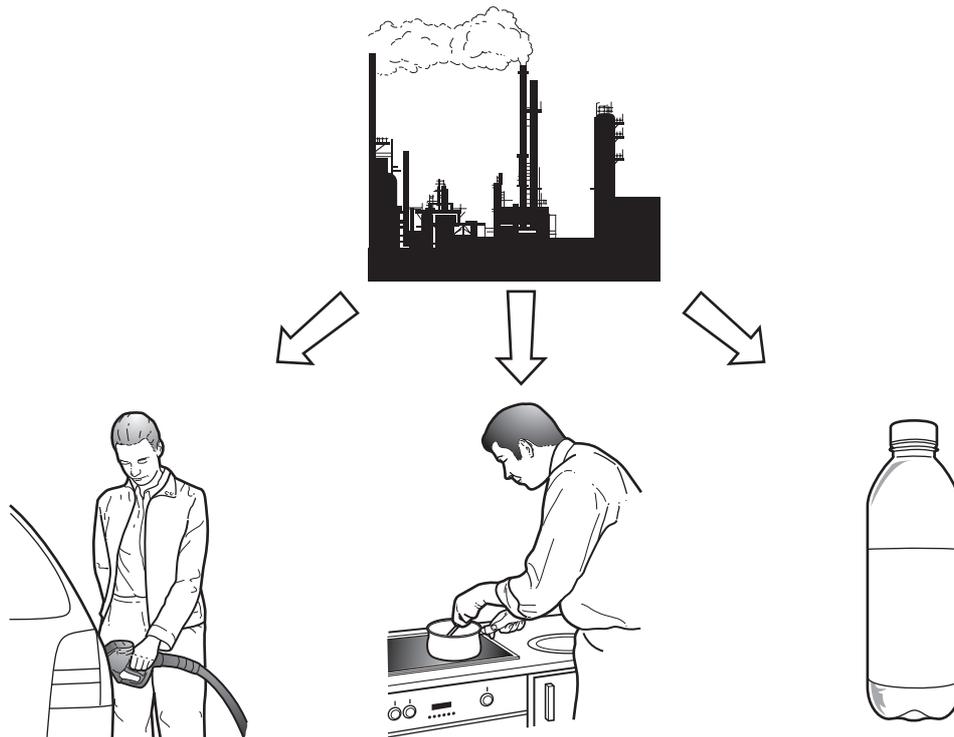
- 1 Children often have lots of toys and nowhere to store them.



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]

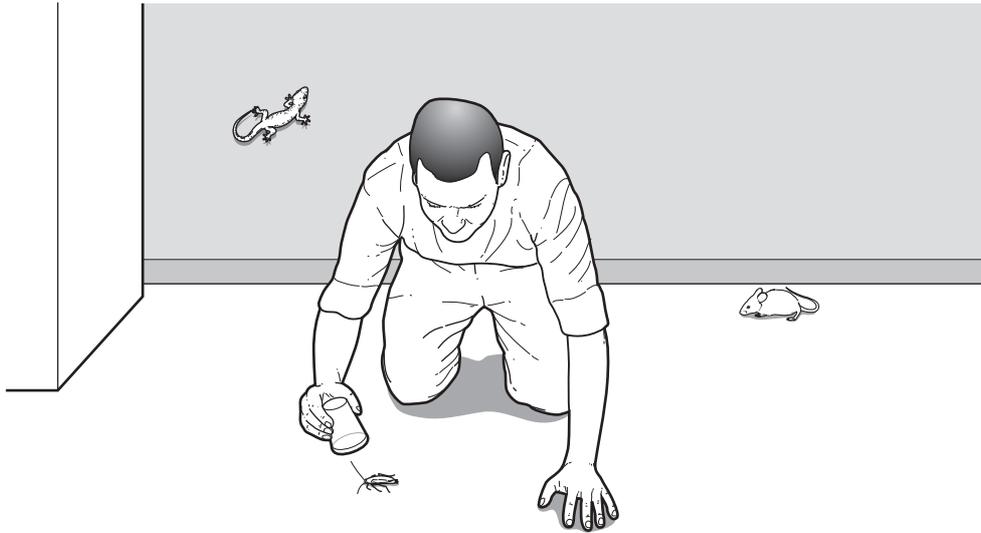
- 2 Oil has many uses including as a source of energy and for the production of plastic. It is a finite source and will eventually run out.



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 harm.



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]