



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

DESIGN AND TECHNOLOGY

0445/13

Paper 1 Design

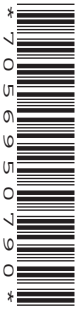
May/June 2011

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 people enjoy taking picnics outside but food can get spoilt and drinks knocked over as people move around.

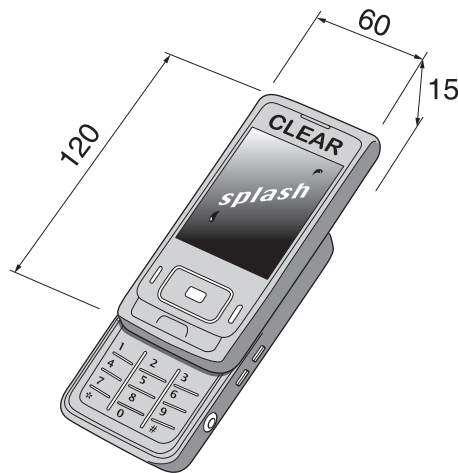


Design a small portable table that would be suitable for picnics.

- (a) List **four** additional points about the function of such a table that you consider to be important. [4]
- (b) Use sketches and notes to show **two** types of construction method that might be suitable for such a table. [4]
- (c) Develop and sketch **three** ideas for the table. [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 the 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]

3

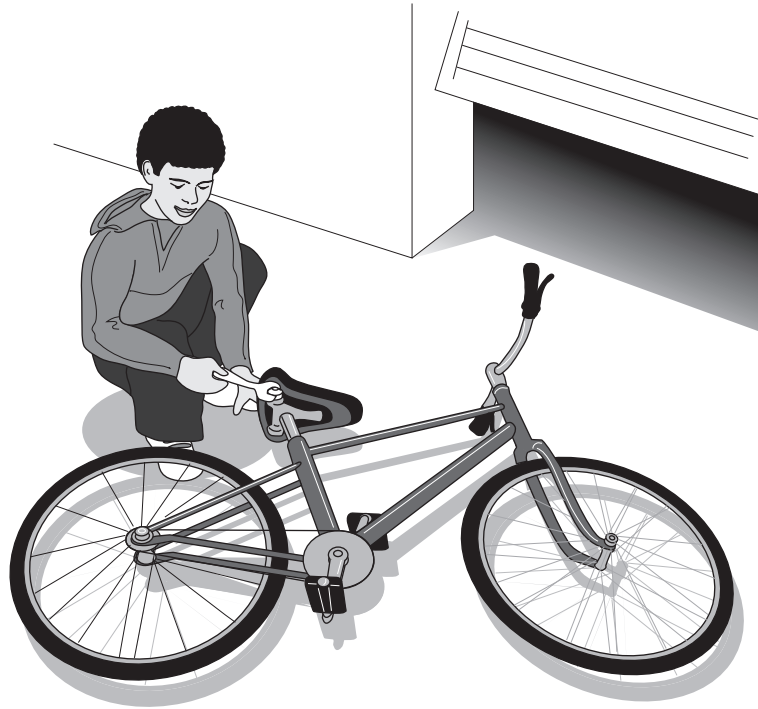
- 2 CLEAR, a manufacturer of mobile phones, wishes to introduce a new lightweight and compact model called *SPLASH*.



Design a folding point of sale display that would be suitable for this new phone.

- (a) List **four** additional points about the function of such a display that you consider to be important. [4]
- (b) Use sketches and notes to show **two** methods by which card or other lightweight materials can be joined temporarily. [4]
- (c) Develop and sketch **three** 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 the 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 display in the school graphics studio. [6]

- 3 Repairs and adjustments need to be made regularly on bicycles.



Design a simple support system that would hold a bicycle so that repairs and adjustments could be carried out. It must be possible to gain access to all parts of the bicycle.

- (a) List **four** additional points about the function of such a support system that you consider to be important. [4]
- (b) Use sketches and notes to show **two** places where a support system might be located in a garage. [4]
- (c) Develop and sketch **three** ideas for the support. [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 the problem. Include construction details and major dimensions. [12]
- (f) Suggest suitable 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]