



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.

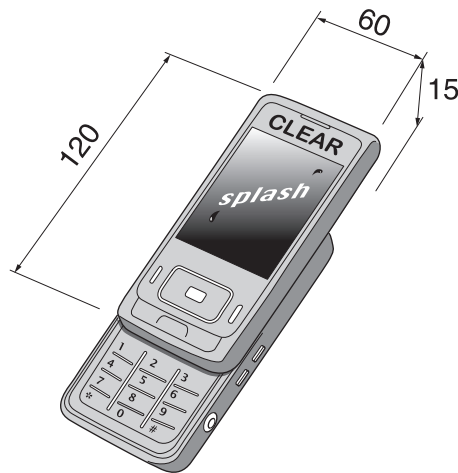
- 1 Many people enjoy taking picnics outside but food can get spoilt and drinks knocked over as people move around.



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]

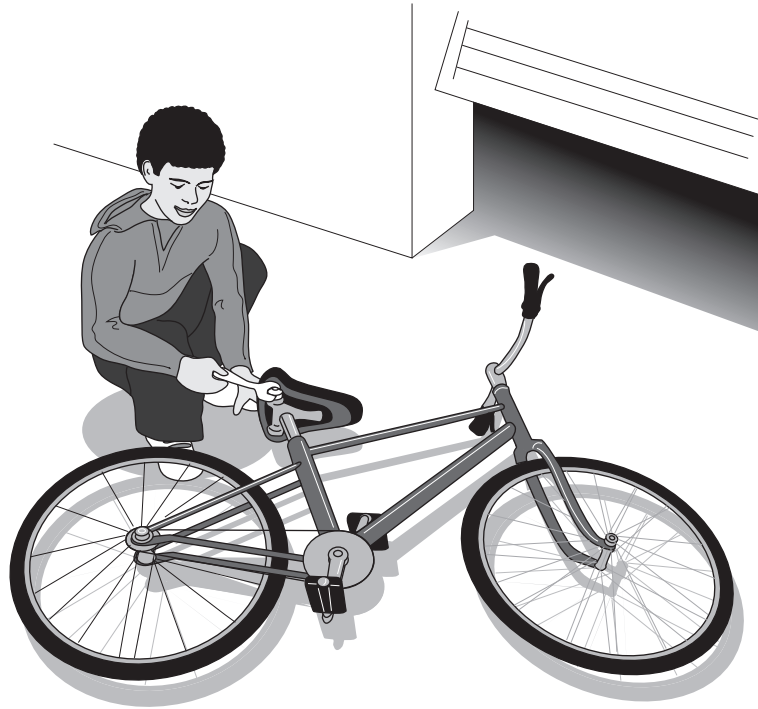
- 2 CLEAR, a manufacturer of mobile phones, wishes to introduce a new lightweight and waterproof model called *SPLASH*.



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]

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.