UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the May/June 2012 question paper

for the guidance of teachers

0445 DESIGN AND TECHNOLOGY

0445/12 Paper 1 (Design), maximum raw mark 50

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2012 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

1 (a) Accept any **four** additional suitable points – easy to clean, resists water, appropriate height/position, items easy to access/remove, matches bathroom, etc. (1x4) [4]

(b) Accept drawings of any **two** suitable places – on shelf, on wall, on window ledge, in drawer, etc. (2x2) [4]

(c) Any suitable ideas. At least **three different** ideas for maximum marks. Pro rata if fewer.

Communication

Simple drawings displaying a low standard or limited range of techniques (0-2)

Clear drawings displaying a good standard and a range of techniques – shading /colour/annotation etc (3-4)

High quality drawings using a wide range of techniques with clear annotation and detail (5-6)

Suitability

Simplistic designs showing outlines only (0-2)

Rather more detail, sensible solutions that could work (3-4)

Accurate solutions, good fitness for purpose, detailed construction (5-6) [12]

(d) Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each (0-6)

Selection and justification. (1+1) (2) [8]

(e) **Quality of drawing**

Poor line quality, proportions, little detail (1)

Good line work, use of colour, proportions, some detail (2-3)

High standard throughout with a range of techniques that show clearly all detail (4)

Dimensions 2 or 3 overall dimensions only - 1

Additional detail dimensions - 2 (2)

Construction details

A simplistic approach showing little or no detail of construction to be used (0-2)

Most constructional detail may be obvious from overall views or with some annotation (3-4)

All constructional detail will be clear with good annotation and additional detail drawings as necessary (5-6) [12]

(f) Suitable **specific** materials stated. (2)

Appropriate reasons for choice. (2) [4]

(g) Suitable method stated. (1)

Good detailed description of: processes (3)

tools. (2) [6]

[Total: 50]

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2 (a) Accept any **four** additional suitable points – appealing to children, simple instructions, reflect issue, can be folded, easily assembled, sturdy for children's play, etc. (1x4) [4]

(b) Accept any **four** environmental issues – water conservation, wasting energy, loss of forests, pollution, use of finite reserves, carbon footprint, etc. (2x2) [4]

(c) Any suitable ideas. At least **three different** ideas for maximum marks. Pro rata if fewer.

Communication

Simple drawings displaying a low standard or limited range of techniques (0-2)

Clear drawings displaying a good standard and a range of techniques – shading /colour/annotation etc (3-4)

High quality drawings using a wide range of techniques with clear annotation and detail (5-6)

Suitability

Simplistic designs showing outlines only (0-2)

Rather more detail, sensible solutions that could work (3-4)

Accurate solutions, good fitness for purpose, detailed construction (5-6) [12]

(d) Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each (0-6)

Selection and justification. (1+1) (2) [8]

(e) **Quality of drawing**

Poor line quality, proportions, little detail (1)

Good line work, use of colour, proportions, some detail (2-3)

High standard throughout with a range of techniques that show clearly all detail (4)

Dimensions 2 or 3 overall dimensions only - 1

Additional detail dimensions - 2 (2)

Construction details

A simplistic approach showing little or no detail of construction to be used (0-2)

Most constructional detail may be obvious from overall views or with some annotation (3-4)

All constructional detail will be clear with good annotation and additional detail drawings as necessary (5-6) [12]

(f) Suitable **specific** materials stated. (2)

Appropriate reasons for choice. (2) [4]

(g) Suitable method stated. (1)

Good detailed description of: processes (3)

tools. (2) [6]

[Total: 50]

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3 (a) Accept any **four** additional suitable points – will not tip over, revolving, easy to clean, hygienic, adjustable, food easily accessible, handle keeps cool, etc. (1x4) [4]

(b) Accept any **two** mechanisms – clockwork, electric motors, offset/wheel turning handle, vertical/horizontal rotating spit, etc. (2x2) [4]

(c) Any suitable ideas. At least **three different** ideas for maximum marks. Pro rata if fewer.

Communication

Simple drawings displaying a low standard or limited range of techniques (0-2)

Clear drawings displaying a good standard and a range of techniques – shading /colour/annotation etc (3-4)

High quality drawings using a wide range of techniques with clear annotation and detail (5-6)

Suitability

Simplistic designs showing outlines only (0-2)

Rather more detail, sensible solutions that could work (3-4)

Accurate solutions, good fitness for purpose, detailed construction (5-6) [12]

(d) Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each (0-6)

Selection and justification. (1+1) (2) [8]

(e) **Quality of drawing**

Poor line quality, proportions, little detail (1)

Good line work, use of colour, proportions, some detail (2-3)

High standard throughout with a range of techniques that show clearly all detail (4)

Dimensions 2 or 3 overall dimensions only - 1
Additional detail dimensions - 2 (2)

Construction details

A simplistic approach showing little or no detail of construction to be used (0-2)

Most constructional detail may be obvious from overall views or with some annotation (3-4)

All constructional detail will be clear with good annotation and additional detail drawings as necessary (5-6) [12]

(f) Suitable **specific** materials stated. (2)

Appropriate reasons for choice. (2) [4]

(g) Suitable method stated. (1)

Good detailed description of: processes (3)
tools. (2) [6]

[Total: 50]

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