

**MARK SCHEME for the May/June 2010 question paper
for the guidance of teachers**

0445 DESIGN AND TECHNOLOGY

0445/13

Paper 13 (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.

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

CIE is publishing the mark schemes for the May/June 2010 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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| Page 2 | Mark Scheme: Teachers' version | Syllabus | |
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- 1 (a) Accept any **four** additional suitable points – accessible, easy to remove books, match surroundings, correct height, closed to keep out dust, transparent doors etc. (1 × 4)
- (b) Accept drawings of any **two** fixing methods – screws through back, brackets underneath, screw plates etc. (2 × 2) [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 Selection and justification. (1 + 1) (0–6) (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 – simple, easy to create movement, all moving parts visible, parts labelled, will not wear out etc. (1 × 2) [2]
- (b) Accept any **two** moving joint methods – stationary rivets, slots, round pegs, folds etc. (2 × 2) [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. Selection and justification. (1 + 1) (0–6) (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 – easy to operate, stable in use, safe for child to use, appealing to child, colourful, hygienic etc. (1 × 4)
- (b) Accept any **two** types of movement or sound – springs, electric motors, cams, gears, sliders, ratchet etc. (2 × 2) [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. Selection and justification. (1 + 1) (0–6) (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]