

MARK SCHEME for the May/June 2014 series

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 should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2014 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

Page 2	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2014	0445	12

- 1 (a) Accept any **four** additional suitable points – waterproof, digital or analogue format, access to batteries/mechanism, suit garden environment, easy to clean, etc. (1 × 4) [4]
- (b) Accept drawings of any **two** suitable methods – keyhole plate, batten system, hooks, wire/cord and screw/nail, 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 (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 (1 + 1) (2)
- Appropriate reasons for choice (1 + 1) (2) [4]
- (g) Suitable method stated (1)
- Good detailed description of: processes (3)
- tools (2) [6]

[Total: 50]

Page 3	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2014	0445	12

- 2 (a) Accept any **four** additional suitable points – suitable size for handling by child, interesting, theme, colour, hours/minutes/seconds feature, safe for child use, etc. (1 × 4) [4]
- (b) Accept drawings of any **two** methods – nut and bolt, spigot, screw, rivet, 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 (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 (1 + 1) (2)
- Appropriate reasons for choice (1 + 1) (2) [4]

- (g) Suitable method stated (1)
- Good detailed description of: processes (3)
- tools (2) [6]

[Total: 50]

Page 4	Mark Scheme	Syllabus	Paper
	IGCSE – May/June 2014	0445	12

- 3 (a) Accept any **four** additional suitable points – eye catching, interesting to view, safe for public, fenced off, correct height, move on hour, etc. (1 × 4) [4]
- (b) Accept any **two** methods – crank/slider, cam/follower, rack/pinion, 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 (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 (1 + 1) (2)
- Appropriate reasons for choice (1 + 1) (2) [4]
- (g) Suitable method stated (1)
- Good detailed description of: processes (3)
- tools (2) [6]

[Total: 50]