UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

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## 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.

Page 2	Mark Scheme	e: Teachers' version	Syllabus 🔪	~	
	IGCSE –	May/June 2010	0445	Pag	
books	Accept any <b>four</b> additional suitable points – accessible, easy to remove books, match surroundings, correct height, closed to keep out dust, transparent doors etc.			2. Bahacar (1 × 4)	north
	Accept drawings of any <b>two</b> fixing methods – screws through back, brackets underneath, screw plates etc.				
rata if <b>Comn</b> Simple Clear shadir	<ul> <li>Any suitable ideas. At least three different ideas for maximum marks. Pro rata if fewer.</li> <li>Communication</li> <li>Simple drawings displaying a low standard or limited range of techniques Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation etc.</li> <li>High quality drawings using a wide range of techniques with clear annotation</li> </ul>		(0–2) (3–4)		
and de <b>Suital</b> Simpli Rathe	etail. <b>bility</b> stic designs showing ou r more detail, sensible s			(5–6) (0–2) (3–4) (5–6)	[12]
	ation of each of the ideas. At least 3 evaluations up to 2 marks each ion and justification. (1 + 1)			(0–6) (2)	[8]
Poor I Good High s detail <b>Dimer</b> <b>Const</b> A simp Most o annota All cor	Quality of drawing         Poor line quality, proportions, little detail         Good line work, use of colour, proportions, some detail         High standard throughout with a range of techniques that show clearly all detail         Dimensions       2 or 3 overall dimensions only – 1         Additional detail dimensions -2         Construction details         A simplistic approach showing little or no detail of construction to be used         Most constructional detail may be obvious from overall views or with some annotation         All constructional detail will be clear with good annotation and additional detail drawings as necessary.		(1) (2–3) (4) (2) (0–2) (3–4 (5–6)	[12]	
• •	able <b>specific</b> materials stated. ropriate reasons for choice.		(2) (2)	[4]	
	le method stated. detailed description of:	processes		(1) (3)	

IGCSE – May/June 2010       0445         Accept any four additional suitable points – simple, easy to create movement, all moving parts visible, parts labelled, will not wear out etc.	No Co
Accept any <b>four</b> additional suitable points – simple, easy to create movement, all moving parts visible, parts labelled, will not wear out etc.	52
	(1 × 70611
Accept any two moving joint methods – stationary rivets, slots, round pege folds etc.	илли. рана Салын (1 × 1000 5, (2 × 2) [4]
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 Clear drawings displaying a good standard and a range of techniques –	(0–2)
shading/colour/annotation etc High quality drawings using a wide range of techniques with clear annotati and detail.	(3–4) ion (5–6)
Simplistic designs showing outlines only	(0-2)
Rather more detail, sensible solutions that could work Accurate solutions, good fitness for purpose, detailed construction.	(3–4) (5–6) [12]
I) Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each Selection and justification. (1 + 1)	n. (0–6) (2) [8]
<ul> <li>Quality of drawing</li> <li>Poor line quality, proportions, little detail</li> <li>Good line work, use of colour, proportions, some detail</li> </ul>	(1) (2–3)
High standard throughout with a range of techniques that show clearly all detail	(4)
<b>Dimensions</b> 2 or 3 overall dimensions only – 1 Additional detail dimensions – 2	(2)
<b>Construction details</b> 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 All constructional detail will be clear with good annotation and additional	(3–4)
detail drawings as necessary.	(5–6) [12]
Suitable <b>specific</b> materials stated. Appropriate reasons for choice.	(2) (2) [4]
) Suitable method stated. Good detailed description of: processes	(1) (3)
tools.	(2) [6]

nge 4	Mark Scheme: Teachers' version		Syllabus	8	(
	IGCSE –	May/June 2010	0445	Par	
•	-	• • •	erate, stable in use, nic etc.	(1 *	mbride
-	cept any <b>two</b> types of movement or sound – springs, electric motors, ms, gears, sliders, ratchet etc.				
rata if fe	ewer.	ree different ideas for ma	aximum marks. Pro		
Clear d	imple drawings displaying a low standard or limited range of techniques lear drawings displaying a good standard and a range of techniques –				
High qu and def	High quality drawings using a wide range of techniques with clear annotation and detail				
Simplis Rather	tic designs showing ou more detail, sensible s	olutions that could work	onstruction.	(0–2) (3–4) (5–6)	[12]
			up to 2 marks each.	(0–6) (2)	[8]
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	Dimensions2 or 3 overall dimensions only – 1 Additional detail dimensions – 2Construction detailsA simplistic approach showing little or no detail of construction to be used				
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annotat All cons	ation Istructional detail will be clear with good annotation and additional			(3–4)	
detail d	rawings as necessary.			(5–6)	[12]
				(2) (2)	[4]
Suitable	e method stated. etailed description of:	processes		(1) (3)	
Good d		tools.		(2)	[6]
Good d		•			[6]
	Accept safe for Accept cams, g Any sui rata if fe <b>Comm</b> Simple Clear d shading High qu and det <b>Suitabi</b> Simplis Rather Accurat Evaluat Selection <b>Quality</b> Poor lir Good li High st detail <b>Dimens</b> <b>Constr</b> A simpl Most co annotat All cons detail d	IGCSE –         Accept any four additional suisafe for child to use, appealing         Accept any two types of move cams, gears, sliders, ratchet e         Any suitable ideas. At least th rata if fewer.         Communication         Simple drawings displaying a ge shading/colour/annotation etc High quality drawings using a and detail         Suitability         Simplistic designs showing ou Rather more detail, sensible s Accurate solutions, good fitne         Evaluation of each of the idea Selection and justification. (1         Quality of drawing         Poor line quality, proportions, Good line work, use of colour, High standard throughout with detail         Dimensions 2 or 3 overall d Additional deta         Additional detail may annotation         All constructional detail may annotation         All constructional detail will be detail drawings as necessary.	IGCSE – May/June 2010           Accept any four additional suitable points – easy to ope safe for child to use, appealing to child, colourful, hygien           Accept any two types of movement or sound – springs, cams, gears, sliders, ratchet etc.           Any suitable ideas. At least three different ideas for marata if fewer.           Communication           Simple drawings displaying a low standard or limited rate Clear drawings displaying a good standard and a range shading/colour/annotation etc           High quality drawings using a wide range of techniques and detail           Suitability           Simplistic designs showing outlines only           Rather more detail, sensible solutions that could work           Accurate solutions, good fitness for purpose, detailed composed to the ideas. At least 3 evaluations of Selection and justification. (1 + 1)           Quality of drawing           Poor line quality, proportions, little detail           Good line work, use of colour, proportions, some detail           High standard throughout with a range of techniques that detail           Dimensions         2 or 3 overall dimensions only – 1           Additional detail dimensions only – 1           Additional detail dimensions only – 1           Additional detail dimensions from overall of const	Any suitable ideas. At least <b>three different</b> ideas for maximum marks. Pro rata if fewer. <b>Communication</b> Simple drawings displaying a low standard or limited range of techniques Clear drawings displaying a good standard and a range of techniques – shading/colour/annotation etc High quality drawings using a wide range of techniques with clear annotation and detail <b>Suitability</b> Simplistic designs showing outlines only Rather more detail, sensible solutions that could work Accurate solutions, good fitness for purpose, detailed construction. Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each. Selection and justification. (1 + 1) <b>Quality of drawing</b> Poor line quality, proportions, little detail Good line work, use of colour, proportions, some detail High standard throughout with a range of techniques that show clearly all detail <b>Dimensions</b> 2 or 3 overall dimensions only – 1 Additional detail dimensions – 2 <b>Construction details</b> A simplistic approach showing little or no detail of construction to be used Most constructional detail may be obvious from overall views or with some annotation All constructional detail will be clear with good annotation and additional detail drawings as necessary. Suitable <b>specific</b> materials stated.	IGCSE – May/June 2010         0445           Accept any four additional suitable points – easy to operate, stable in use, safe for child to use, appealing to child, colourful, hygienic etc.         (1 ×           Accept any two types of movement or sound – springs, electric motors, cams, gears, sliders, ratchet etc.         (2 × 2)           Any suitable ideas. At least three different ideas for maximum marks. Pro rata if fewer.         (2 × 2)           Communication         (0-2)           Clear drawings displaying a low standard or limited 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)           Sumplistic 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)           Evaluation of each of the ideas. At least 3 evaluations up to 2 marks each.         (0-6)           Selection and justification. (1 + 1)         (1)           Quality of drawing         (4)           Dimensions 2 or 3 overall dimensions only – 1         (4)           Additional detail dimensions - 2         (2)           Construction details         (3-4)           A simplistic approach showing little or no detail of construction to be used         (0-2) <t< td=""></t<>