



GCSE

Design and Technology: Product Design

Unit **A552**: Designing and making innovation challenge

General Certificate of Secondary Education

Mark Scheme for June 2016

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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

OCR will not enter into any discussion or correspondence in connection with this mark scheme.

© OCR 2016

Development of Design Evolution through making	Initial Thoughts	Limited outline of initial thoughts. Work is predictable/non creative	1	Outlines initial thoughts giving some detail, work shows some potential	1	Clearly outlines initial thoughts giving detail. Ideas show potential /some creative elements.	1	Clearly outlines initial thoughts giving detail. Initial thoughts show creative thinking	1	0
	Brief	Possible briefs are clear	1	Final design brief has scope for creativity	1					
	Use/ clients/ users	Intended user(s) and/or client(s) is identified	1	User requirements are positively reflected within design work	1	1				
	Specification	Specification is vague/generic. Points based upon 'given' information.	1	Specification gives some basic requirements for product	1		Specification is detailed key features of the product are identified.	1		
	Ideas	Very limited / predictable idea/s	1	Range of ideas that respond to the brief/specification	1	Ideas show some detail	1	Ideas show detail of most aspects of the design	1	13
		Some evidence of creative thinking	1	Creative thinking expands ideas	1	Ideas are innovative (inventive, original, novel)	1	Details of construction or materials given	1	1415
	Response to Design Problem	Limited consideration or response to given design problem	1	Design problem considered/addressed	1	Design problem fully considered/addressed	1			
Communicating information through sketches, writing and photographs	Quality of Communication Skills	Use of sketches/images is limited	1	Use of sketches/images is satisfactory	1	Use of sketches/images is good	1	Uses a variety of techniques to enhance design communication e.g. rendering, swatch	1	0
		Written communication (clarity of message) is limited	1	Written communication is satisfactory	1	Written communication is good	1	Written communication is clear and succinct. Technical vocabulary is used	1	1

Materials, Components, Processes, Techniques, and Industrial practice	Material Selection	Choice of materials and components limited	1	Considered choice of materials and components	1	Appropriate joining methods identified/detailed	1			0 1 2
	Use of Material	Use of materials restricted to basic constructions, structures or experiments	1	Some adept use of materials but with inconsistencies.	1	Adept use of materials	1	Making skills demonstrate a range of techniques/ complexity	1	3 4 5 6
	Making Skills	Product modelling attempted - substantially incomplete	1	Model mainly complete. Reasonable standard of making skills evidenced	1	Model mainly complete. Good standard of making skills demonstrating accuracy	1	Model(s) complete with a high standard of making skills	1	7 8 9 10 11
		Model reflects some aspects of the developed design	1	Model accurately reflects most features of the developed design	1	Reviews manufacturing progress, producing clear plans for next stage of making	1			12 13 14
Analysis of ideas, models and prototypes	Analysis and Evaluation	Analysis and evaluation limited	1	Analysis and evaluation satisfactory. Evident throughout design work and in box 17 and 18	1	Analysis and evaluation good. Some justification given. Information given about future product.	1	Justified analysis and evaluation throughout Suggested Improvements identified and/or use of technical terminology.	1	0 1 2 3 4 5
	Peer Evaluation	Limited Plan and recording of feedback for reflect & record activity	1	Clear plan for reflect and record. Records peer feedback and possible modifications	1					6 7 8 9
	Development of ideas	Shows some development of ideas from ' initial thoughts ' Box 1 to 5	1	Shows clear development. Initial thoughts have been expanded. Box 1 to 5	1	Identifies strengths and weaknesses of design or design ideas	1	Explains rejection of ideas in favour of ones that are worthy of further development	1	10 11 12
						Clear evidence of development of ideas. Some design issues unresolved.	1	Fully develops ideas. No outstanding design issues	1	

Reflection	Reflection	Basic comments / observations relating to the product design.	1	Reflection focuses on 'design issues' specific strengths and weaknesses identified	1	Quality analysis/creative design improvements suggested	1	0
				Alterations/refinements to the 'design' are specified/suggested	1			1 2 3 4

OCR (Oxford Cambridge and RSA Examinations)
1 Hills Road
Cambridge
CB1 2EU

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998
Facsimile: 01223 552627
Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

For staff training purposes and as part of our quality assurance programme your call may be recorded or monitored

Oxford Cambridge and RSA Examinations
is a Company Limited by Guarantee
Registered in England
Registered Office: 1 Hills Road, Cambridge, CB1 2EU
Registered Company Number: 3484466
OCR is an exempt Charity

OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553

© OCR 2016

