

GCSE

Design and Technology

Short Course

Paper 1
Mark scheme

45751
June 2013

Version: Final Mark Scheme

Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available from aqa.org.uk

COMPONENT NUMBER: 45751

**COMPONENT NAME:
GCSE Design and Technology (Short Course)**

FOR EXAMINERS – PLEASE NOTE THAT IF YOU ARE UNSURE HOW TO AWARD A RESPONSE FROM A CANDIDATE, PLEASE SEEK CLARIFICATION OR ADVICE FROM YOUR TEAM LEADER OR THE PRINCIPAL EXAMINER.

Question	Part	Sub Part	Marking Guidance	Marks								
1	a		<table border="1"> <tr> <td>Wool yarn</td> <td>Weaving</td> </tr> <tr> <td>Wheat flour</td> <td>Sieving</td> </tr> <tr> <td>Rough sawn timber or MDF sheet</td> <td>Planing</td> </tr> <tr> <td>Sheet steel</td> <td>Galvanising</td> </tr> </table> <p>If two or more materials have been matched to a process do not award a mark. If both rough sawn timber and MDF sheet have been matched to planing, award one mark only. Do not award a mark for the acrylic tube to extruding example.</p>	Wool yarn	Weaving	Wheat flour	Sieving	Rough sawn timber or MDF sheet	Planing	Sheet steel	Galvanising	(4x1) mark <i>Total (4 marks)</i>
			Wool yarn	Weaving								
Wheat flour	Sieving											
Rough sawn timber or MDF sheet	Planing											
Sheet steel	Galvanising											
1	b	(i)	Minerals	1 mark								
1	b	(ii)	An example of a material from a mineral source e.g. metals or any metal name, coal, plastics or any plastic name from a mineral source e.g. acrylic. Do not accept finished products e.g. vinyl matt paint	1 mark								
			An explanation that the materials will run out. E.g. because of the length of time it takes for them to form i.e. millions of years, because there is a finite amount of resources available	1 mark								
			Further qualification e.g. oil made from tiny sea creatures, coal made from plant matter/ trees/ rate of extraction (using more quickly than it can be produced)/ importance of recycling to preserve natural resources so they last longer	1 mark								
				<i>Total (3 marks)</i>								

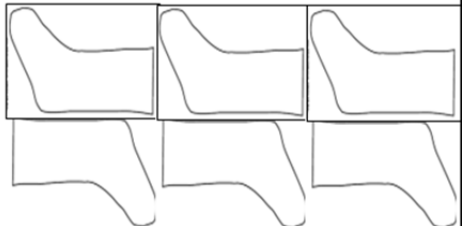
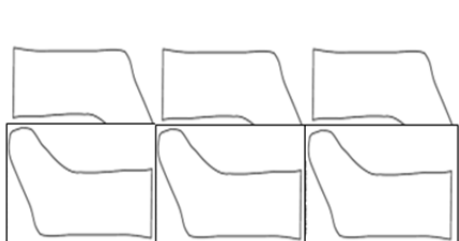
Question	Part	Sub Part	Marking Guidance	Marks
1	c		<p>This question tests QWC</p> <p>Responses might include: Oil non-renewable, this will eventually run out Bio plastics renewable, so if used, non-renewable sources will last longer These products are disposable (designed to be used once). This is not a good use for finite resources. Once thrown away, disposable forks end up in landfill or litter. Plastic forks will not biodegrade. Bio plastics do degrade</p> <p>3+ separate points made qualified with examples Response well-structured with good use of appropriate design and technology and showing a good grasp of grammar, punctuation and spelling.</p> <p>2+ points made with some explanation Response reasonably well structured with some use of design and technology terminology with some errors in grammar, punctuation and spelling.</p> <p>Simplistic response Response poorly structured with little or no use of design and technology terminology and with numerous errors in grammar, punctuation and spelling.</p>	<p>5 - 6 marks</p> <p>3 - 4 marks</p> <p>1 – 2 marks</p> <p><i>Total</i> (6 marks)</p>
2	a		<p>Feasible and effective idea, well drawn, stylised use of source material and clearly annotated with a variety of information which is more than descriptive e.g. explains / justifies / evaluates.</p> <p>Feasible idea drawn. Some changes made to source imagery to fit the product idea. Some of the labelling is more than descriptive e.g. explains / justifies / evaluates</p> <p>An idea drawn with some creativity, labelling is superficial e.g. it is pink, it is heart shaped etc</p> <p>Crude idea drawn with some simple labelling evident. Images likely to be direct copies from source</p> <p>Redrawn idea from the question with no changes, no labelling – award no marks</p>	<p>6 marks</p> <p>4 – 5 marks</p> <p>2 – 3 marks</p> <p>1 mark</p> <p><i>Total</i> (6 marks)</p>

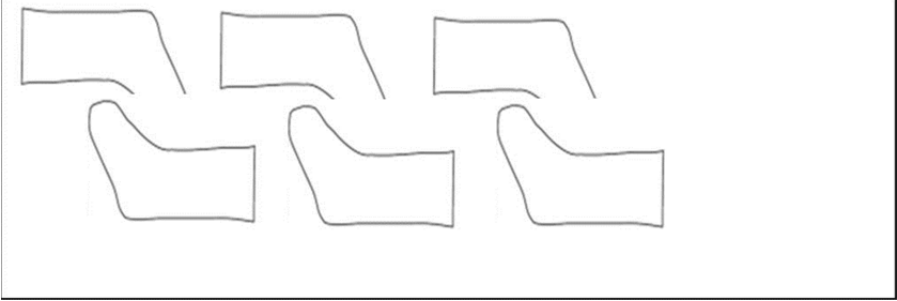
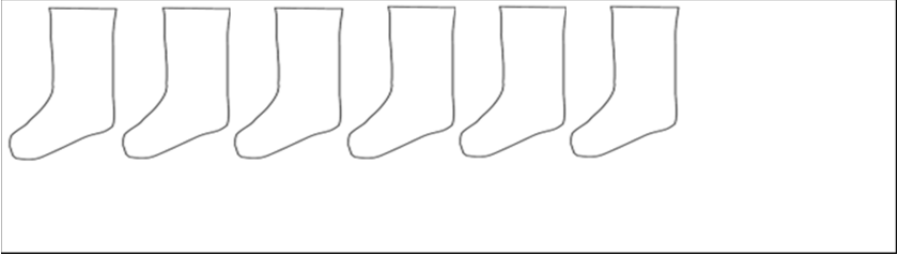
Question	Part	Sub Part	Marking Guidance	Marks
2	b		<p>Dimensions/ sizes/ weights provided with units (e.g. g, mm etc) – these are appropriate for the product designed</p> <p>Dimensions/ sizes/ weights provided with units, some may not be realistic for the product designed</p> <p>Measurements unclear/ units not provided</p> <p>Specific material/ ingredient names provided, these are appropriate for the product designed</p> <p>Specific material/ ingredient names provided, some may be inappropriate for the product considering function or chosen manufacturing processes</p> <p>Generic material names provided e.g. wood, metal, plastic, fabric, pastry</p> <p>Stages for making explained in sufficient detail for 3rd party manufacture. Appropriate processes described.</p> <p>Description of making suggests a good understanding of the processes described. Appropriate processes described</p> <p>Processes selected are well described, but inappropriate for the product or processes are appropriate but some points missing</p> <p>Correct processes stated and ordered, but no additional detail provided, superficial response</p> <p>A suitable process for making part of the product identified</p> <p>No suitable processes named or described</p> <p>Appropriate tools/ machinery listed</p>	<p>2 marks</p> <p>1 mark</p> <p>0 marks</p> <p><i>Maximum marks: 2</i></p> <p>2 marks</p> <p>1 mark</p> <p>0 marks</p> <p><i>Maximum marks: 2</i></p> <p>6 marks</p> <p>4 – 5 marks</p> <p>3 marks</p> <p>2 marks</p> <p>1 mark</p> <p>0 marks</p> <p><i>Maximum marks: 6</i></p> <p>3x1 mark</p> <p><i>Maximum marks: 3</i></p> <p><i>Total (13 marks)</i></p>

Question	Part	Sub Part	Marking Guidance	Marks												
2	c		Full answer provided which considers how the testing/ evaluation strategy would be conducted and what sort of information this would give you	3 marks												
			Reasonable explanation given – e.g. target market questioned/ Examples of questions that could be asked or analysis of sales figures/ sensory analysis test for food product	2 marks												
			Simplistic response i.e. Method of evaluation named e.g. questionnaire	1 mark												
			Inappropriate evaluation method named	0 marks												
			<i>Total (3 marks)</i>													
3	a		Simplistic answer: award 1 mark													
			Response includes additional detail/ explanation: award 2 marks													
			For example:													
			<table border="1"> <tr> <td>Bar Code</td> <td>Used to scan items at the till</td> <td>1 mark</td> </tr> <tr> <td></td> <td>Identifies products, part of a computerised system that monitors sales, stock to replenish shelves are automatically ordered and enables shops to analyse sales figures</td> <td>2 marks</td> </tr> <tr> <td>Ingredients list</td> <td>So customers know what is in the food</td> <td>1 mark</td> </tr> <tr> <td></td> <td>In case of allergies (e.g. nuts) or special diets (e.g. vegetarian/ halal to check for the presence of gelatin)</td> <td>2 marks</td> </tr> </table>	Bar Code	Used to scan items at the till	1 mark		Identifies products, part of a computerised system that monitors sales, stock to replenish shelves are automatically ordered and enables shops to analyse sales figures	2 marks	Ingredients list	So customers know what is in the food	1 mark		In case of allergies (e.g. nuts) or special diets (e.g. vegetarian/ halal to check for the presence of gelatin)	2 marks	
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<i>Total (4 marks)</i>																

Question	Part	Sub Part	Marking Guidance	Marks
3	b		<p>Any two of the following:</p> <p>Logo, image of product, name and address of the manufacturer, product weight, description, product name, nutritional information, allergy advice, recycling information, storage instructions.</p> <p>Also 'best before' or 'sell by' date for 1 mark (do not award twice for date information).</p> <p>Do not accept PRICE.</p>	<p>2x1 mark</p> <p><i>Total (2 marks)</i></p>
3	c		<p>Identifies purpose of symbols is for recycling</p> <p>Explains that these symbols make consumers aware that the packaging materials can be recycled/ helps to sort packaging into material types so the packaging can be recycled</p> <p>Additional mark for identifying the material that one of the symbols relates to – Steel / Plastics</p>	<p>1 mark</p> <p>2 marks</p> <p>1 mark</p> <p><i>Total (3 marks)</i></p>
4	a		<p>1 mark for correctly naming the tool. A specific name required. Do not accept knife, scissors, saw</p> <p>Tool a – Chef's knife/ vegetable knife/ Kitchen knife/ Cooks knife</p> <p>Tool b – Fabric scissors/ fabric shears/ paper scissors</p> <p>Tool c – Tenon saw</p>	<p><i>1 mark</i></p>

Question	Part	Sub Part	Marking Guidance	Marks																														
4	b		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Knife</th> <th>Fabric Scissors</th> <th>Tenon saw</th> </tr> </thead> <tbody> <tr> <td>Used to chop/ cut fruit and vegetables/ meat</td> <td>Used to cut fabric only – cutting paper blunts fabric scissors</td> <td>Used to cut in straight lines in wood</td> </tr> <tr> <td>Hold by handle and point blade to the floor to carry</td> <td>Accept used to cut paper and card if stated paper scissors in part a.</td> <td>As it is a solid blade, it is unsuitable for cutting curves</td> </tr> <tr> <td>Use a claw or bridge hold to cut to avoid cutting fingers</td> <td>Carry/ pass scissors holding the blades closed</td> <td>Work should be clamped or a bench hook should be used to ensure the work is held securely</td> </tr> <tr> <td>Always chop on a chopping board (correct colour)</td> <td>Rest the flat base of fabric scissors on the table for better control</td> <td>The teeth cut on a forward motion</td> </tr> <tr> <td>Sharpen regularly – cutting with a blunt knife is dangerous</td> <td>Cut with the full length of the scissor blade</td> <td>Keep the saw vertical/straight</td> </tr> <tr> <td>Always cut away from yourself when using.</td> <td>Avoid cutting pins as this damages the blade</td> <td>Always cut to the waste side of the material</td> </tr> <tr> <td></td> <td>Avoid cutting material that is too thick. Difficult to cut accurately and may break the scissors</td> <td>Draw back the saw a few times to make a divot to guide the saw</td> </tr> <tr> <td></td> <td>Keep fingers away from the blade.</td> <td></td> </tr> <tr> <td></td> <td>Always cut away from yourself when using.</td> <td></td> </tr> </tbody> </table> <p>1 mark for each point made to a maximum of 3</p>	Knife	Fabric Scissors	Tenon saw	Used to chop/ cut fruit and vegetables/ meat	Used to cut fabric only – cutting paper blunts fabric scissors	Used to cut in straight lines in wood	Hold by handle and point blade to the floor to carry	Accept used to cut paper and card if stated paper scissors in part a.	As it is a solid blade, it is unsuitable for cutting curves	Use a claw or bridge hold to cut to avoid cutting fingers	Carry/ pass scissors holding the blades closed	Work should be clamped or a bench hook should be used to ensure the work is held securely	Always chop on a chopping board (correct colour)	Rest the flat base of fabric scissors on the table for better control	The teeth cut on a forward motion	Sharpen regularly – cutting with a blunt knife is dangerous	Cut with the full length of the scissor blade	Keep the saw vertical/straight	Always cut away from yourself when using.	Avoid cutting pins as this damages the blade	Always cut to the waste side of the material		Avoid cutting material that is too thick. Difficult to cut accurately and may break the scissors	Draw back the saw a few times to make a divot to guide the saw		Keep fingers away from the blade.			Always cut away from yourself when using.		<p><i>Total (3 marks)</i></p>
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Question	Part	Sub Part	Marking Guidance	Marks
4	c		<p>One mark for each cutting tool named. Do not accept non-specific names. Do not accept other tools illustrated in part a.</p> <p>e.g. of other cutting tools – hack saw, junior hack saw, coping saw, food scissors, circular saw, mitre saw, jig saw, food processor, laser cutter, bow saw, scroll/fret/hegner saw, Stanley knife, chisel, plane, rotary cutter, scalpel, pastry or biscuit cutter, vinyl cutter or any other correct response.</p>	<p>2 x 1 mark</p> <p><i>Total (2 marks)</i></p>
4	d	(i)	<p>If the candidate does not transpose all SIX shapes, award no marks.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  </div> <p>Or</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;">  </div> <p>Shapes rotated and tessellated to minimise the amount of material used and to make it possible to cut out parts of several shapes with a single cut</p> <p>Continues overleaf</p>	<p>3 marks</p>

			 <p>Shapes rotated and tessellated to minimise the amount of material used</p>  <p>Shapes moved closer together to use less material</p>	<p>2 marks</p> <p>1 mark</p> <p><i>Total</i> <i>(3 marks)</i></p>
4	d	(ii)	<p>Simplistic response e.g. uses less space/ material</p> <p>Further explanation e.g. reduces waste/ cost</p> <p>Further explanation which demonstrates an understanding of lay planning beyond economy, e.g. save time by making cutting out process more efficient</p>	<p>1 mark</p> <p>2 marks</p> <p>3 marks</p> <p><i>Total</i> <i>(3 marks)</i></p>
4	e		<p>Responses might include:</p> <p>Use of a tool to increase accuracy e.g. cutter, specific CAM machine e.g. laser cutter</p> <p>Use of a template to mark out shapes</p> <p>Stacking sheet material to cut out several at once</p> <p>Checking shapes against the original to make sure they are the same and rejecting those that are not</p>	<p>3x1 mark</p> <p><i>Total</i> <i>(3 marks)</i></p>