

GCSE  
**Design & Technology**  
**Short Course**

45751

Version: V1 Final Mark Scheme

**June 2015**

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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.

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**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		Flour	Wheat	(5 x 1) mark
			Pine	trees	
			Leather	animals	
			Fleece material	Recycled plastic bottles, PET, polyester, crude oil Wool, sheep	
			Iron	Iron ore, ore,	
			Any other suitable response (check with your team leader if unsure)		
1	b	i	Bolognese sauce:- Pasta bake, spaghetti bolognese, lasagne, ravioli	1 mark	
			Lip and hook (Velcro) Clothes, soft furnishings, curtains, cushions, shoes, bag	or 1 mark	
			Screw hook Cupboard, cabinet, door, wardrobe, jewellery storage unit, key cupboard. Coat hook, coat rack, key rack.	or 1 mark	
			Any other suitable product. Consult with team leader if unsure.	<b>Total (1 mark)</b>	
1	b	ii	Pasta bake:- pasta shapes e.g. tagliatelle etc spaghetti bolognese:- spaghetti lasagne:- bechamel sauce, lasagne sheets	1 mark for suitable answer	
			Clothes, soft furnishings, curtains, cushion:- buttons, hooks, zip, hook and eye, press stud, shoe laces		
			Cupboard, cabinet, door, :- hinge, lock, handle Double Roller Catch, Double Ball Catch, Spring Catch	<b>Total (1 mark)</b>	

<b>1</b>	<b>c</b>	<p>Advantages Quicker, easier to use, consistent, always the same, can be bulk purchased, cheaper to buy in bulk, readily available, easy to replace, standard components all look the same</p> <p>Disadvantages Likely to cost more, may use lower quality ingredients/materials, reliant on an external supplier, over which you have no direct control, standard components all look the same</p> <p>One mark for each point made to a maximum of 4</p> <p>Please seek advice from your team leader if you are unsure of a response.</p>	<b>Total (4 marks)</b>
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Question	Part	Sub Part	Marking Guidance	Marks
<b>2</b>	<b>a</b>		<p>Creative, feasible and effective idea, well drawn and clearly annotated with a variety of information which is more than descriptive e.g. explains / justifies / evaluates / clearly describes how the product reflects the USA theme. Excellent use of the mood board, with images adapted and used very creatively.</p> <p>Feasible idea presented. Some of the labelling is more than descriptive e.g. explains / justifies / evaluates. Creative use of the mood board with any placement of images effective and stylised rather than directly copied. Links to USA theme explained.</p> <p>Idea presented that is mostly feasible, but may have some aspects that are unrealistic or simple e.g. surface shape/decoration, labelling is superficial e.g. it is red, it has stars and stripes etc Use of the mood board likely to be more literal with imagery from the mood board being crudely added. Limited explanation of how image is linked to USA theme.</p> <p>Idea redrawn but some simple labelling evident or idea redrawn with one small change, no labelling.</p> <p>Redrawn idea from the question with no changes, no labelling – award no marks.</p>	<p>7 - 8 marks</p> <p>5 - 6 marks</p> <p>3 - 4 marks</p> <p>1 -2 marks</p> <p><i>No marks</i></p> <p><b>Total (8 marks)</b></p>

2	b	i	<p><b>Dimensions, size or quantities</b>                  Dimensions are stated with a metric unit of measurement e.g. mm, g, ml The dimensions stated appear reasonable for the item designed                  Dimensions stated with a metric unit of measurement but the sizes given are inappropriate                  Dimensions without units of measurement</p> <p><b>Materials or ingredients</b>                  Specific material/ ingredient names provided, these are appropriate for the product designed                  Specific material/ ingredient names provided, some may be inappropriate for the product considering function or chosen manufacturing processes                  Generic material names provided e.g. wood, metal, plastic, fabric, pastry</p> <p><b>Processes for making, assembly and finishing</b>                  Stages for making explained in sufficient detail for 3<sup>rd</sup> party manufacture. Appropriate processes described.                  Description of making suggests a good understanding of the processes described. Appropriate processes described                  Processes selected are well described, but inappropriate for the product or processes are appropriate but some points missing                  Correct processes stated and ordered, but no additional detail provided, superficial response                  A suitable process for making part of the product identified                  No suitable processes named or described</p> <p><b>Names of tools and equipment used</b>                  Appropriate tools/ machinery listed</p> <p><b>Quality control checks to ensure consistency and accuracy</b>                  Parts measured twice to double check before cutting.                  Ingredients use by/best before dates checked                  Ingredients from a reliable source                  Weighing equipment checked to see that it is set to zero before starting.                  Assembled components checked dry before glueing.                  Corners checked to make sure they are at the correct angle.                  Oven temperatures checked.                  Any other suitable answer</p>	<p>2 marks</p> <p>1 mark</p> <p>0 marks <b>(2 marks)</b></p> <p>2 marks</p> <p>1 mark</p> <p>0 marks <b>(2 marks)</b></p> <p>6 marks</p> <p>4 – 5 marks</p> <p>3 marks</p> <p>2 marks 1 mark 0 marks <b>(6 marks)</b></p> <p>3x1 mark <b>(3 marks)</b></p> <p>1 mark for each correct answer. <b>(2 marks)</b></p> <p><b>Total (15 marks)</b></p>
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2	b	ii	<p>No response or invalid points made                  A weaker evaluation relying on obvious descriptive points.                  An objective well-reasoned evaluation</p>	<p>0 marks                  1 mark                  2 marks</p> <p><b>Total                  (2 marks)</b></p>
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Question	Part	Sub Part	Marking Guidance	Marks
3	a		<p>1 mark for each danger identified.</p> <p>Risk of electrocution, if the socket is not turned off before plugging in or hands are wet.                  Risk of cutting/tangling cable, if it is not arranged tidily                  Risk of tripping over cable, if it is not arranged tidily                  Risk of body being pierced, cut or entrapped, if hands are not kept clear of the needle/blades/drill bit                  Risk of injury if the drill is started with the chuck key left in.</p>	<p>2 x 1 mark</p> <p><b>Total                  (2 marks)</b></p>

<p><b>3</b></p>	<p><b>b</b></p>	<p>This question tests QWC</p> <p>Tie back long hair                  Roll up loose sleeves.                  Put an apron on.                  Make sure the socket is turned off before setting up the machine (threading the needle, installing the blades, fitting the drill bit)                  Put goggles on for using the corded power drill                  Put dust mask on for using corded power drill.                  Ensure the drill bit is centralised before using the power drill                  Ensure the chuck key is removed before using the power drill                  Make sure the work area is clean, tidy                  Make sure the work area is dry to avoid the risk of electrocution                  Make sure work is held firmly e.g. in a vice or with a g clamp if using the corded power drill                  Stand with legs slightly apart for better balance                  Do not lift the mixer out of the bowl with the blades running                  Keep hands clear of moving parts (needle, blades, drill bit and chuck)</p> <p>Other appropriate answers, check with team leader if unsure.</p> <p>3+ separate points made, qualified with explanations                  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><b>Total (6 marks)</b></p>
<p><b>3</b></p>	<p><b>c</b></p>	<p>Equipment could be battery powered to avoid the potential dangers of mains electricity                  The equipment could have guards fitted around the moving parts to protect hands                  Sensors could automatically stop the machine if your fingers go near the blades or needle</p>	<p>1 mark for each idea                  2 marks for one idea explained in more detail</p> <p><b>Total (2 marks)</b></p>

3	d		Automarked, correct answer is electrical hazard	<b>Total</b> <b>(1 mark)</b>
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Question	Part	Sub Part	Marking Guidance	Marks
4	a		<p>Stainless steel, ABS, injection moulded plastic, HIPS, High Impact Polystyrene, vacuum forming plastic, beech, pine, acrylic, oak, aluminium, any other suitable material, check with your team leader if unsure.</p> <p>Do not accept generic terms e.g. wood, metal plastic, steel on its own.</p>	<p>1 mark for each Max (3 marks)</p> <p><b>Total</b> <b>(3 marks)</b></p>
4	b		<p>Accept pupil choosing either as working better providing they give reasons.</p> <p>A Blue handled peeler Quicker to use than the other Easier to use on more on a wider range of fruit and veg More hygienic handle Has hole to hang it up Blade can rotate in the handle, so it follows the contours of the fruit or veg</p> <p>B Wooden handled peeler More sustainable as wood is a renewable material More comfortable to hold in your hand You can grip the peeler in your fingers and put your thumb on the fruit, to pull the blade along More robust than the other one Takes up less space than the other.</p> <p>Accept other suitable answers; check with team leader if unsure.</p> <p>No answer worthy of credit.</p> <p>The candidate has a basic answer or does not have a clear idea of what s/he is writing about.</p> <p>The candidate has some knowledge but there will be less clarity of understanding. A small range of simplistic, correct answers and/or some extended correct answers may be given. This candidate knows what s/he is writing about but is confused in part.</p> <p>The candidate has a thorough understanding and has provided a range of, relevant answers to support the knowledge shown. Some answers may be extended and show greater detail</p> <p>Do not credit fully if an advantage of A is repeated as an disadvantage for B, or vice versa.</p>	<p>0 marks</p> <p>1 mark</p> <p>2 to 3 marks</p> <p>4 marks</p> <p><b>Total</b> <b>(4 marks)</b></p>



4	c	<p>By measuring people's hands</p> <p>By consulting anthropometric data</p>	<p>1 mark</p> <p>2 mark</p> <p><b>Total</b> <b>(2 marks)</b></p>
4	d	<p>What sorts of fruit and vegetables it might be used on</p> <p>Where it might be stored</p> <p>Who would use the peeler</p> <p>Hygiene</p> <p>How to make the blade safe</p> <p>What colour it needs to be</p> <p>Where it would be sold</p> <p>Is the user left or right handed</p> <p>Grip on the handle, so it doesn't slip out of the hand</p> <p>Case or guard for the blade</p> <p>Length of the blade for effective use.</p> <p>Any other suitable answer</p>	<p>1 mark per point, 2 marks if explained in more detail</p> <p><b>Total</b> <b>(4 marks)</b></p>