



---

# **GCSE MARKING SCHEME**

---

**SUMMER 2016**

**DESIGN & TECHNOLOGY – FOOD TECHNOLOGY  
4091/01**

## **INTRODUCTION**

This marking scheme was used by WJEC for the 2016 examination. It was finalised after detailed discussion at examiners' conferences by all the examiners involved in the assessment. The conference was held shortly after the paper was taken so that reference could be made to the full range of candidates' responses, with photocopied scripts forming the basis of discussion. The aim of the conference was to ensure that the marking scheme was interpreted and applied in the same way by all examiners.

It is hoped that this information will be of assistance to centres but it is recognised at the same time that, without the benefit of participation in the examiners' conference, teachers may have different views on certain matters of detail or interpretation.

WJEC regrets that it cannot enter into any discussion or correspondence about this marking scheme.

**GCSE DESIGN & TECHNOLOGY  
FOOD TECHNOLOGY**

**SUMMER 2016 MARK SCHEME**

**Section A**

				On paper	Question Totals	Running Total
1	(a)	No answer or the answer does not give the correct amount of calories provided.	0	1		
		Correct amount of calories stated: 174	1			
	(b)	No answer or the answer does not relate to why the salmon and potato bake has been sold in a foil tray.	0	2		
		Correct one mark responses for this question could include; To provide a sturdy/strong container. To be able to cook the meal in the oven. It looks more aesthetically pleasing/attractive/appetising. To protect the meal from get squashed easily.	1			
		Developed response; It looks more aesthetically pleasing being sold in a foil tray compared to a white plastic tray. You can cook the bake in the foil tray which means the food will not get damaged swapping it to an oven proof dish. The customer can cook the meal in the foil tray and then eat from the foil tray- saves washing up.	2			
	(c)	No answer or the answer does not identify a target group who would find the salmon and potato bake appealing.	0	1		
		Correct responses for this question could include; Adults who are on a calorie controlled diet. Growing teenagers who are looking for a satisfying nutritious meal. Adults who are dieting and careful about the foods they eat.	1			
		No answer or the answer does not relate to why the target group identified would find the product appealing.	0	2		



					On paper	Question Totals	Running Total
1	(e)	(i)	No answer or the answer does not relate to the aesthetical appeal of the product.	0	2		
			Correct one mark responses; The meal has a good mix of colours. The meal is layered which keeps it neat/appetising. The meal is topped with potato slices and herbs.	1			
			A developed response for two marks; The meal has a good mix of colours which gives it an attractive appearance. The meal has been assembled in a layered manner which makes it look neat/appetising and not messy. The meal has got yellow potato slices on the top which contrast well with the red sauce and green herbs.	2			
		(ii)	No answer or the answer does not relate to the function of the product.	0	2		
			Correct one mark responses; The meal provides a set number of calories. The meal provides protein and balanced carbohydrates.	1			
			A developed response for two marks: The meal provides an exact number of calories and would not need any additional foods/extras to be served with it/ it is a complete meal. The meal provides high amounts of protein and carbohydrates which will fill you up for a longer period of time/provide sustained satisfaction over a longer period of time/ provide energy for a longer period of time.	2			
	(f)	(i)	No answer or the answer does not relate to the month with the lowest number of sales.	0	1		
			Correct response. December	1			
		(ii)	No answer or the answer does not refer to the average sales per month for the period Jun-Sep.	0	2		
			Award correct amount of sales = 625 No workings shown. OR Correct workings shown, incorrect average sales figure.	1			
			Correct workings and correct figure for average sales. $600+700+800+400= 2500$ $2500\div 4= 625$	2			
						15	15

					On paper	Question Totals	Running total
2	(a)	(i)	No answer or incorrect responses.	0	2		
			False True	1 1			
	(b)	(i)	No answer or the answer does not refer to why an ingredients list must be included on the packaging.	0	1		
			Award a correct response. So customers know what is in the product. Allergic to/allergies. What the food product contains. What is used to make the product?	1			
		(ii)	No answer or the answer does not relate to how the ingredients must be presented on the packaging.	0	2		
			Correct one mark response to this question;  Largest/highest amount of ingredients listed first.	1			
			Developed response: Largest amount of ingredients listed in descending order of weight.	2			
	(c)		No answer or answer does not relate to how rethink could apply when purchasing this type of product.	0	2		
			Award basic response Rethink about the buying of the product due to high fat/salt content.	1			
			Award response with detail. Rethink the buying of the product due to the high fat/salt content and consider buying a lower/reduced fat/salt alternative.	2			
	(d)		No answer or the answer does not relate to the meaning of the term food miles.	0	3		
			Award a basic response; The distance food travels food transported across the world.	1			
			Award a response with some detail; The distance food travels from field/country grown in to plate.	2			
			Award a response with full detail; The distance food travels from field/country to plate and a way of indicating the environmental impact on the food we eat.	3			
						10	25

					On paper	Question Totals	Running total
3	(a)	(i)	No answer or incorrect response.	0	2		
			Heston Blumenthal	1			
		(ii)	No answer or incorrect response.	0			
			Jamie Oliver	1			
	(b)		No answer or answer does not describe the style of the work of and the influence Heston Blumenthal or Jamie Oliver has had on peoples eating habits.	0	8		
			<p><b>Heston Blumenthal</b></p> <ul style="list-style-type: none"> <li>• Style is out of the ordinary.</li> <li>• Has a very scientific approach to cooking</li> <li>• Very modern cooking – molecular gastronomist.</li> <li>• Often in pursuit of perfection.</li> <li>• His style of cooking is multi-sensory – to engage all or our senses.</li> <li>• Uses techniques like vacuum jars to increase expansion of bubbles during preparation – then used in dishes like aerated chocolate soufflé.</li> <li>• Experiments with amplification to enhance sounds of foods – crunch.</li> <li>• Pioneered the use of sound as part of the dining experience- sound of the sea dish.</li> <li>• Uses British history in his dishes and television work.</li> <li>• Is a believer in ultra-slow cooking at low temperature/ sous –vide technique.</li> <li>• Targets lacklustre food served in various industries and aims to upgrade it.</li> <li>• Does encourage people at home to cook like him – TV show how to cook like Heston.</li> <li>• Signature dishes/influence on other people – snail porridge, bacon and egg ice-cream, mock turtle soup- so encourages people to try/eat foods which are very different/out of the ordinary.</li> </ul>				

				On paper	Question Totals	Running total
3	(b)	<p><b>Jamie Oliver</b></p> <ul style="list-style-type: none"> <li>• Rustic style</li> <li>• Not always a 'traditionalist' more of a throw it all in person.</li> <li>• Not always a strong believer in measuring all ingredients accurately –often just a splosh.</li> <li>• Big believer in promoting flavour of foods in dishes.</li> <li>• Promotes the use of labour saving equipment – food processors/blenders.</li> <li>• Promotes the use of energy saving equipment through his 15 minute meals- steaming in layers.</li> <li>• Believes good food can be produced in a short period of time – 30 minute meals is an example of this.</li> <li>• Programs on TV show you how good food can be produced at home.</li> <li>• He will often promote through the style of his dishes cooked you need to be organised and willing to use shortcuts sometimes if cooking in a short period of time.</li> <li>• Encourages the putting together of home cooked meals using simple techniques rather than 'chefy'.</li> <li>• Strong advocate for cooking meals from scratch and using local organic produce influenced many people to think this way.</li> <li>• Uses fresh ingredients grown in his garden and encourages others to grow their own to use in recipes.</li> <li>• Changing school meals linked to government funding.</li> </ul> <p>No answer or no relevant description of the designer:</p> <p>Some simple description of the work of Heston Blumenthal or Jamie Oliver. Little, if any, understanding of its main features</p> <ul style="list-style-type: none"> <li>• QWC is limited, presenting material with limited coherence, many errors of grammar, punctuation and spelling.</li> </ul> <p>Award 1 or 2 marks</p> <p>Description of the work of Heston Blumenthal or Jamie Oliver. Some understanding of its main features.</p> <ul style="list-style-type: none"> <li>• QWC is basic, presenting occasionally appropriate material with some coherence, some errors of grammar, punctuation and spelling.</li> </ul> <p>Award 3 or 4 marks</p>	0			

					On paper	Question Totals	Running total
3	(b)		<p>Description of the work of Heston or Jamie. Understanding shown of its main features.</p> <ul style="list-style-type: none"> <li>•QWC is good presenting mainly appropriate material in a coherent manner, few errors of grammar, punctuation and spelling.</li> </ul> <p>Award 5 or 6 marks</p> <p>Description of the work of Heston or Jamie. Clear understanding shown of its main features.</p> <ul style="list-style-type: none"> <li>•QWC is excellent, presenting wholly appropriate material in a coherent and logical manner, hardly any errors of grammar, punctuation and spelling.</li> </ul> <p>Award 7 or 8 marks</p>			10	35

					On paper	Question Total	Running Total
4	(a)		No answer or incorrect responses.	0	3		
			Award each correct response. Secondary research- information collected by other people. Brief – a clear statement of design intention flowchart – a step by step plan for making a product.	1 1 1			
	(b)		No answer or the answer does not identify a reason why a designer would use a questionnaire.	0	1		
			Award correct response: To find out peoples preferences/likes/dislikes. To find out the qualities people would like to see in a new product. To find out how much people are willing to pay for a product. To find out how often people would buy a particular type of product.	1			
	(c)		No answer or the answer does not address the importance of producing a design specification.	0	3		
			Award a basic response:  To identify what features the product must have. To explain what the product must do. To explain what the product will be.  Award a response with some detail: To provide details which describe the desired characteristics of a product.  Award a fully developed response: To give a clear statement of the general criteria of the product to be developed. It is also a checklist for evaluation throughout the development of the new product.	1   2   3			

				On paper	Question Total	Running Total
4	(d)		No answer or the answer is not a design that satisfies the brief.	0	3	
		(i)	The design shows the product is a one meal item. Suitable for serving hot – no meals like salad, suitable for eating hot – the style of meal e.g. chilli con carne/spaghetti bolognaise.	1 1 1		
		(ii)	The meal does not include any protein, carbohydrates and vitamin C.	0	3	
			The meal identifies foods that contain protein – meat/fish/eggs/cheese/beans/quorn/tofu/soya. The meal identifies foods that contain carbohydrates- pasta, rice, couscous, potatoes, bread. The meal identifies foods that contain vitamin C – green peppers/cabbage/cauliflower/potatoes/sweetpotato/tomatoes/courgettes/broccoli/Brussels sprouts.	1 1 1		
		(iii)	The meal does not include layers.  One layer included e.g.- potato top. Two layers included e.g. potato slices base, vegetable slices layer/ breadcrumbs and grated cheese layer on top.  The meal does not include flavoursome foods.  The meal includes some flavoursome foods – cheese and broccoli. The meal includes a range of flavoursome foods – chilli, tomatoes, beef and onion.  The meal does not provide a range of textures.  The meal provides some textures – crunchy vegetables, moist sauce. The meal provides a range of textures – moist sauce, crunchy vegetables, crispy potatoes top.	0 1 2 0 1 2 0 1 2	6	
		(iv)	The meal does not include any interesting vegetables.  The meal includes some interesting vegetables – courgettes, chestnut mushrooms/mushrooms. The meal includes a range of interesting vegetables- chestnut mushrooms, leek slices, baby sweetcorn, green beans.	0 1 2	2	

				<b>On paper</b>	<b>Question Total</b>	<b>Running Total</b>
		(v)	No answer or the answer cannot be understood, no annotation.	0	4	
			Poor response- drawing with no colour/labelling.	1		
			Adequate drawing/colouring, limited labelling/annotation.	2		
			Good standard of drawing/colouring/labelling with good annotation.	3		
			Excellent standard of drawing/colouring/labelling with detailed comments/annotation.	4		
					25	60

					On paper	Question Total	Running Total
5	(a)		No answer or the answer does not relate to manufacturing methods used.	0	2		
			Award each correct response one mark each. One off production Mass production Continuous flow production Bench top production	1 + 1			
	(b)	(i)	No answer or the answer is incorrect.	0	2		
			Basic response award one mark: To stop any hair falling/getting into the food.  Detailed response award two marks: To stop any hair falling/getting into the food and contaminating the meals.  To stop any hair falling/getting into the food and making the meal unfit for selling/human consumption.	1  2			
		(ii)	No answer or the answer is not related to why the meals are being plated by hand by workers.	0	2		
			Award a basic response: The different foods can be placed in the exact position. The different foods can be placed the same every time. Machines could deposit the foods unevenly. It enables workers to make visual checks as they work. The ingredients can be checked for weight.  Award a response with detail:  The different foods can be placed in the exact position every time this can make the plate look neat/attractive/appetising. Machines can deposit foods unevenly which could make the appearance of the plate look messy. It enables workers to make visual checks as they work and make changes when the need arises. The ingredients can be weight checked this ensures consistency for each plate.	1  2			
	(c)		No answer or incorrect response.	0	2		

				On paper	Question Total	Running Total
			Award a basic response: The putting together of a product.	1		
			Award developed response: The component parts of a product being put together.	2		
	(d)		No answer or the answer does not relate to why batch production is the most suitable scale of production.	0	2	
			Award simple response: Only a small number/batch is to be made- limited edition product. The product can be tested to see if it sells first. Can produce identical products. Only a small number of people would be involved. Production costs can be kept to a reasonable amount/reduced.	1		
			Award developed response: Only a small batch can be made which can reduce wastage of products. Only a small batch is made to reduce money wasted on excess ingredients. Only a small batch is made so that it can be trailed for sales before bigger batches are produced. Identical products can be produced as some machinery is used this gives consistency. Only a small number of people would be involved as machinery is used this could reduce labour costs. Production costs can be reduced as more products can be made in the same time it takes to make the bread one at a time.	2		
					10	70



					On paper	Question Total	Running Total
6	(d)	(ii)	No answer or an incorrect response.	0	2		
			Award correct basic response The sugar is used in high concentration/heavy syrup. Very strong solutions of sugar in water large amounts of sugar are cooked down.	1			
			Award developed response. The high concentration of sugar helps to prevent the growth of micro-organisms. The high concentration of sugar means organisms that spoil food cannot live in the intense sugary conditions.	2			
	(e)	(i)	No answer or incorrect answer.	0	1		
			Correct type of structure given – foam (mixture of gas(air) and liquid(egg white).	1			
		(ii)	No answer or answer does not relate to the achieving of the structure in the food product.	0	3		
			Award basic response: The egg whites are whisked.	1			
			Award some detail in response: The egg whites are whisked – the protein (albumin) is stretched.	2			
			Award fully developed response: The egg whites are whisked the protein is stretched, this traps air (aeration) the addition of sugar helps the foam to remain stable (which is set when heated).	3			
						15	85

				On paper	Question Total	Running total
7	(a)		No answer or the answer does not correctly name the equipment pieces or give the correct use.	0	6	
			States the correct equipment piece 1 mark and the correct use 1 mark.			
			Pastry brush – used to brush egg/milk on top of a product- pastry/bread/ to grease a tin.	1 + 1		
			Ravioli cutter/pasta cutter- used to cut pasta shapes to make ravioli.	1 + 1		
			Rolling pin – used to smooth out/flatten out dough to make thinner	1 + 1		
	(b)	(i)	No answer or incorrect response.	0	6	
			Award each correct word in correct place: Flour Crumb Floured Moisten Seal Decorate	1 + 1 + 1 + 1 + 1 + 1		
		(ii)	No answer or the answer does not relate to tips on how to be successful when making pastry.	0	2	
			Award each correct response: Keep ingredients as cool as possible. Keep equipment/utensils as cool as possible. Handle the dough as little as possible. Add the liquid a little at a time. Do not let the fat go soft can give tough/hard pastry. Use hard/block fat.	1 + 1		

7	(b)	(iii)	No answer or the answer does not relate to developments that could be made to the chicken pie.	0	2		
			Award one mark each correct development. Correct responses could include: Add flavouring to the pastry- herbs, cheese. Change the type of flour used to make the pastry- wholemeal. Add additional vegetables to the filling- potatoes, mushrooms, leeks. Change the shape of the pie to square/heart. Change the decoration on the top to lattice/ letters/animals. Glaze the top of the pie and scatter dried herbs on top.	1 + 1			
	(c)		No answer or the answer does not relate to the differences in methods used.	0	4		
			Award each simple response 1 mark: All in one – all ingredients place in bowl and mixed together. Creaming – fat and sugar creamed together until light/fluffy.	1 + 1			
			Award more developed responses 2 marks each:  All in one- all ingredients creamed/mixed together until smooth and creamy/extra raising agent added. Creaming – fat and sugar creamed together, eggs added slowly and beaten, flour sieved/folded in.  NB comparisons to both methods must be made to achieve full marks.	2 + 2			
						20	105

					On paper	Question Total	Running Total
8	(a)		No answer or incorrect answer.	0	2		
			Award each correct response; False True	1 1			
	(b)		No answer or incorrect answer.	0	3		
			Award each correct stage of a production system. Input Process Output	1 1 1			
	(c)	(i)	No response or the answer does not relate to the benefits of using CAD to find out the nutritional value of a product.	0	2		
			Award basic response: Gives you an accurate calculation of the nutrients. It calculates the nutritional profile for you.  Award a developed response: It gives you an accurate calculation of the nutritional value which allows you to model ideas without making them. Gives you a nutritional profile of a product which allows you to adapt the fat/protein content to fit a target group.	1  2			
	(c)	(ii)	No answer or answer does not relate to the benefits of using cad to produce sketches of new food products.	0	2		
			Award a basic response: Allows you to make changes easily Allows you to produce sketches in a shorter period of time. Different colours of foods ingredients can be swapped. Designs/sketches can be sent by email. Gives a professional finish to work. Award a developed response: Colours of ingredients can be tested out without making the product. Changes can be made to design proposals without having to waste money/time on testing the idea first. Designs can be emailed around to other people/departments and feedback can be given immediately. Gives a professional finish to the design work produced.	1  2			

				On paper	Question Total	Running Total
8	(d)	No answer or the answer does not relate to additional pieces of information included on a flow chart.	0	2		
		Award each correct response; Timings Quality checks Temperatures Decisions Feedback Weight Equipment	1 + 1			
	(e)	No answer or the answer does not relate to how CAM can increase productivity and save the manufacturer time.	0	4		
		Basic responses; More products can be made with speed. Repetitive tasks can be carried out quickly. Machines can work faster than workers. Machines do not need to stop for breaks. Machines can be more accurate than workers. Less human error.	1			
		Slightly developed response; More products can be made with speed which can result in more batches being produced. Repetitive tasks can be carried out quickly rather than being done one by one. Machines can work faster than people which increases the amount of stages in making being completed faster.	2			
		More detailed developed response; Machines can work 24/7 which can speed up productivity and the volume of goods produced unlike workers who must have breaks.	3			
		Full detailed developed response; Machines can be more accurate than workers this avoids human error, this can save the manufacturer time because if the workers are not consistent in the production process it can lead to wastage of foods and the need to reproduce better quality outcomes.	4			
					15	120