



General Certificate of Education

*Design and Technology:
Food Technology 1541 and 2541*

Report on the Examination

2010 examination – June series

*FOOD2: Learning Through Designing and
Making*

FOOD4: Design and Making Practice

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FOOD2

The standard of work from many centres shows the hard work and commitment of both the teaching staff and the candidates. Many candidates had produced a high standard work and most showed a real understanding of the design process. The communication in many folders was excellent with the use of a wide range of ICT skills. It was clear that centres had listened carefully to the advice given in 2009 and had improved both the candidates' work and their marking of it, as a result.

Many centres addressed all of the assessment criteria with care, allowing their candidates to achieve their potential and succeed. However, where the assessment criteria were not adhered to closely, candidates under-performed, often because some sections were overlooked.

A clear consumer should be identified at the start of the work. It is not necessary to show research on a range of consumers and then select a starting point. A trend should also be identified to illustrate that there is a genuine gap in the market for a product. Similarly a use: i.e. an occasion when the dish could be served, would help candidates to focus their work e.g. a packed lunch for a child aged 5 - 7 or a dessert to serve at a restaurant for an inactive lady who is concerned about her fat intake or a main course dish for an ovo-lacto vegetarian boy aged 15 - 18 to eat after a football match.

Centres demonstrated a wide range of research skills, but the analysis of this information should show the key findings rather than how successful the process has been. When the design specification includes fully explained points and where measurable criteria have been included, candidates found it easier to develop a new product (for example, the product will provide 150 mg calcium which is a quarter of the daily needs of a child: this still allows the complete meal to provide more than a third of the daily requirements because of the vegetables and dessert which will be served alongside the dish).

If there is a statement such as 'the product will be low fat', the candidate must explain what is meant. They should also consider issues such as: how can they measure this to prove the product is low fat? Why do people require low fat diets?

Any information that is included in the design specification should be found in the research and then the analysis.

With a detailed design specification with clear objectives, the ideas and developments can be tested against the individual criteria. It is necessary to show this testing, rather than just having a tick chart. Nutritional tables should be reviewed with care and the number of kilocalories/kilojoules considered before deciding whether the product meets the criteria for other nutrients. Individual products with 2000kcal do not meet the portion size for the RDA for the majority of the population.

Many candidates produced a wide range of ideas and these usually met the criteria, but there were many occasions when the ideas produced did not meet the criteria; for example, the specification stated that the product will contain at least one portion fruit from the 5 a day and then the ideas had no fresh fruit in them or they included a little dried fruit or glace cherries or jam, or that the product would be a low fat dessert and the ideas included lots of different pastry dishes or high proportion of cream or cheese.

Many ideas were tested against the design specification and there is evidence of an increasing number of centres who are using the design specification as the basis of their testing. It is essential that this is not just a tick sheet – there must be evidence of how the product meets the requirements of the design specification. Development work usually showed understanding of the different ingredients and their function but evidence of different methods of production and

proportions of ingredients was frequently missing. Testing different pieces of equipment will illustrate the different methods of production and then provide the opportunity to work out quality controls such as time, speed etcetera. The proportions can be achieved by calculating specific amounts of an ingredient, e.g. a flavour or the addition of an extra ingredient and finding the exact amount which gives the best flavour without compromising the cost or the nutritional content.

The final products should have time plans with clear production times and methodology supported by pictures of the process. Those seen sometimes showed quality controls but it is vital that specific controls are recorded e.g. thickness, size, shape, time speed, viscosity etcetera.

The assessment criteria do not request candidates to spend time writing a plan for making each practical activity, nor is there any need to include equipment lists or issues related to industrial practice. There are no marks for this work and it uses time which could be used to focus on other issues.

Check list for teaching coursework

- Share the assessment criteria with the candidates
- Decide whether to approach the work with one design activity or a portfolio – i.e. a series of activities which cover all the assessment criteria, but do not repeat tasks
- Make sure starting points are based on a consumer and apply the appropriate nutrition to their needs, also include a trend to show the need for a product
- Use a range of techniques to gather information, analyse the findings and then write a fully explained design specification with measurable criteria
- Produce a range of relevant ideas, with most of them being cooked to find out how well they meet the specification
- Screen the ideas and select one to develop – this should be based on the design specification and showing an understanding of the ingredients, proportions method of production and construction
- Produce a plan for making the final idea, including times, methodology, quality and safety controls. Photographs of the different stages of making can be taken afterwards and used to provide a story board of the work and support the teacher assessment of this section of the folder
- The final product should be reviewed to show how well it meets the specification

FOOD4

This has been the first year of A2 and there has been a most promising start. Teachers and candidates have built on their success with Unit 2 and shown a determination to succeed.

Candidates who had identified a clear context and set objectives produced folders of a high standard. In these cases the context was set by identifying a trend to show that there was a gap in the market for developing a new product or candidates used an article from a newspaper or magazine which similarly indicated the need for product development. This information was then explained and justified before clear objectives were set. This provided the basis for research for both design and manufacturing issues. When a design brief had been used, there were often no evidence of opportunities for developing a new product and the chosen starting point was not explained; as a consequence the candidates seemed unsure of what they needed to find out and therefore the objectives were minimal. Sometimes the objectives had been written as the design process i.e. the types of research that is going to be used. It would help candidates if they identified a clear consumer for whom they could design and produce a product. They must understand their needs, identify the occasion at which the product will be sold and then point of sale.

The plan for work was often written as a Gantt chart or set out as a diary; it should show specific work to complete, i.e. the objectives that candidates had set and also the changes which were made to the original plan. High level plans also showed time allocations which were realistic. Research had been analysed, but this should include key findings and not explain the ease or difficulty of obtaining information. Research information should form the basis of the design specification; many of those seen included general points rather than specific points which have measurable criteria. Often very general points were included, such as 'it will be low in fat' – this is difficult to judge a product against, because what is low fat? If the consumer was a gentleman aged 45 to 60 who was recovering from a heart attack and advised to eat a low fat diet; the research analysis should show the amount of fat recommended per day and then this can be applied to a product e.g. a maximum of 10g fat for a main course dish.

It is difficult to design a product for a whole family because each person has different needs and this also increases the cost of the product to produce. Design specifications should be clear about the cost; questions should be asked – is this the cost of the ingredients, or is it the selling price? Because the product is being designed to show industrial issues, ideally the selling price should be used and candidates will need to consider how they can compare their costs with the price of products in the supermarket. The portion size of a product can provide another measurable criterion – this could be weight, although this can result in products with a very high kilocalorie or kilojoule content. It is more satisfactory to decide on a consumer and then identify their kilocalorie or kilojoule needs and calculate the amount required for the specific type of product, e.g. main course dish or snack or dessert.

Some candidates considered the point of sale and the use of the product in the domestic kitchen; how it would be stored, reheated and by which method and then how long it would take to reheat.

For the future it is essential that candidates have detailed realistic points in their specification. This should include the consumer, e.g. a male adult aged 20 – 30 who plays a specific sport. The type of product should have been identified during the research e.g. a dessert – it is impossible to produce ideas which are for a range of products and then meet other points in the specification. The nutritional needs of the consumer can be investigated and then a selection of nutritional needs can be selected. It can be constraining to include too many nutritional needs, but three or four dependent on the candidate could be considered. These must then be proportioned to suit the product to be made. The kilocalorie or kilojoule content could also be added to the specification this is preferable to the weight, and hopefully this will encourage

candidates to analyse nutritional tables with greater care. Some single portions seen were of over 3000 kilocalories! Other measurable criteria could be the selling price and information about reheating.

There is no need to send any of the research when the work is sent for moderation; the analysis of the information should providing all the information the moderator requires to check the work is meeting the assessment criteria.

A wide range of ideas should have been proposed (sometimes as drawing other times as images, both are acceptable provided they are annotated and meet the design specification).

Most centres tested a wide range of ideas, which allowed candidates to test products for suitability as well as demonstrate a range of culinary skills. It is necessary to prove the points on the design specification and explain from analysing the information to draw a conclusion.

After screening the ideas, one idea is selected for development. There has been some outstanding development work seen this year. In these cases the candidates used the design specification to guide the work as well as considering proportion of ingredients, the functions of ingredients, methods of production and construction. Other candidates produced little work and only changed an ingredient which is modification rather than development. In this section computer modelling of the nutritional content or cost of the product could be included.

Plans for manufacture should have been included; to achieve top level marks the work should be very detailed with times, methodology, specific quality controls and health and safety issues. A third person should be able to use the information and produce a carbon copy of the product. Many centres have included a picture explanation of the final outcome showing the stages, quality controls some health and safety issues and the final outcome. This really does help the process of moderation.

Industrial issues have been considered; care needs to be taken not to include generic notes. Industrial information should be applied to the situation i.e. this could be the type of production and why it would be suitable or the type of packaging again with reasons.

To complete the design folder the design process should be evaluated as well as the final product. To achieve top marks both of these must have been reviewed explaining both successes and improvements which could have been considered. The product should be compared to the original design specification and there should be proof of how well each point has been achieved. Finally it is essential to discuss how the product could be extended.

Check list for teaching

- Share the assessment criteria with the candidates
- Allow the candidates to identify a starting point and prove that there is a gap in the market for a new product.
- The context should be explained, justified and then design and manufacturing objectives set
- The plan of action should show the time allocation for the work to be completed and the changes to the plan. There should be evidence of 60 hours work of which approximately 30 hours should be spent on practical activity
- Candidates should collect their research but this should not be placed in the design folder
- Analysis of the research is explaining the key facts many of which will form the basis of the design specification. Analysis is not an explanation of how the information was found but an explanation of the findings including factual information
- The design specification should have measurable criteria – consumer, nutrition, specific meal, portion size, cost etc.
- Ideas can be drawn or be images but they must fit the design specification, they should be clearly annotated
- A range of ideas need to be tested against the design specification

- One of the ideas or a combination of ideas should be developed to produce one final outcome, which is based on the design specification
- A plan of action for making the final outcome will include times, methodology, quality controls and health and safety issues and is written in advance of producing the final outcome
- The final product should be produced in a format that it is suitable for selling, not in a domestic bowl / dish
- A review of the design process should be considered explaining how the final outcome was achieved and then how well this product meets the design specification
- Industrial issues must be applied to the product; this could be the method of production, type of packaging, a manufacturing specification etc.
- Finally it is necessary to consider ways of extending the product
- Teachers must make sure that they mark to the criteria included in the specification.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.