# GCSE

## Edexcel GCSE

## Design & Technology

## Food Technology (1970, 3970)

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Examiners' Report

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## General Comments

Candidates continue to improve their performance in this examination. Centres still need to be aware of the need to prepare candidates for this exam by ensuring that they have a full understanding of the requirements of different question types e.g. name, state, give, describe and explain. The weaknesses displayed by most candidates come in two areas. Firstly, some candidates find it difficult to "explain" or "describe" in a way that relates each separate marking point in the sub sections of the question. Secondly, the candidates still struggle with technical questions. While the demands of coursework are rigorous it is imperative that candidates are still taught the key areas of the specification.

The paper was well received by candidates. Most were entered at the correct tier of entry and few candidates had to leave sections blank. Candidates should also be encouraged to take the paper seriously and refrain from writing personal or offensive comments on the scripts.


## Foundation Tier (Paper 2F)

The response of candidates to this paper was good with most able to answer in all sections. Marks were scored more evenly across all areas of the paper. Most candidates were entered for the correct tier of entry.


## Question 1

This question was well answered by the majority of candidates. Most candidates were able to correctly identify the equipment or tool used for food preparation in the home or school kitchen. Some candidates muddled the cooling rack with a grill rack. Few candidates failed to correctly identify the foods that could be prepared using the tool or equipment. The industrial equipment caused greater problems with the correct identification, with few candidates giving the correct name eg vat rather than industrial pan/mixer. However, they were generally able to give foods that were prepared with them. Candidates need to read questions carefully as quite a few answered the question about piping *sweet* foods with any foods, including potato. They also made assumptions about cakes, naming the cake rather than the icing or cream on the top. The vast majority of candidates were able to talk knowledgeably about the problems of piping potato, scoring full marks. The advantages of CAM for manufacturing a cook-chill meal were sometimes muddled with CAD applications. However, most candidates were able to give at least one advantage. Where they answered with short sentences they often scored more marks than those who answered with single words. The last part of this question caused the most problems with candidates often able to give the point at which temperature control was important, but failed to justify their answer in order to gain the second mark. It is also important with questions based on industrial practice that the correct terminology is used eg rapid chilling, not just chilling. Once again many candidates failed to read the question properly and wrote about frozen products.

## Question 2

Packaging proved to be an area where candidates had good levels of knowledge. The vast majority of candidates were able to give three good reasons for packaging food. Knowledge of key information such as "use by date", "instructions for use" and "ingredients" was sound. On average candidates were able to gain one mark in each section. Often the justification of each point was muddled or simply repeated the question. Many candidates wrongly assumed that nutritional information and bar codes were a legal requirement. However, most candidates knew that the manufacturer's name and address was a legal requirement. Synthetic flavourings were very poorly answered. Many candidates wrote about additives in general, not flavourings. Few could give more than one reason for their use, concentrating on cost or storage. By comparison many candidates could describe two ways in which CAM helped to produce sauces cheaply. Some candidates wrote about the advantages of CAM in general, missing the key point of the question, which focused on "cheap production". Knowledge of the effects of packaging was excellent with many candidates scoring full marks. It is to be hoped that they apply this knowledge in practice too.

## Question 3

Candidates enjoyed this design question. The standard of drawings was much improved and few candidates failed to think of two design ideas. The coating/icing was often repeated and rough notes before they start to design may well help them to ensure that the second design is different to the first. It would also have been nicer to see a wider variety of shapes within the cake designs eg animal shaped products, slices, rolls, bars. Labelling was more accurate with the better candidates making sure they use the wording on the specification. The weakest parts of the question, and one rarely addressed by the candidates, was the need for a different traditional cake base and the way in which it would keep the cake fresh. Most candidates just gave "sponge", some used "Victoria sandwich" and occasionally "gingerbread". Most simply failed to label the cake. It was rare to find any labels for "stay fresh". Some candidates strayed into packaging, and this question was about cakes. Evaluations were very disappointing. Many candidates just repeated the wording on their labels. The best candidates started the sections by saying "This meets the specification because I have used ….". There were also some very good negative evaluations, which explained why the design failed, especially in relation to the child being able to hold the product well or not get sticky.

## Question 4

This year there was a marked improvement in the ability to write specification points. This may have been due to the product shown. The best answers came from candidates who wrote in short sentences. Single word answers are often open to interpretation and do not always guide the examiner well enough to credit them. Weaker candidates also failed to link their point and reason. Surprisingly there were some poor answers for "safety", with candidates giving general food safety points that did not necessarily relate to the product shown. The better candidates knew that the pasta and chicken were bland and wrote some excellent answers. Weaker candidates just related that the sweet pepper gave a "spicy" flavour or made it feel Mediterranean. A surprising number of candidates were unaware of what standard component parts were. Where this had been taught, candidates spoke knowledgeably about reduced costs, quicker production and consistency

of quality.  It was encouraging to see candidates displaying good knowledge of bacterial growth in relation to freezing of food products.  However, few were able to give other answers, relating to consumer convenience, retention of nutritional content etc.  The question on sensory analysis was poorly answered by the vast majority of candidates.  They used very generic terms, such as "flavour" and "taste".  Some candidates wrote in detail about criteria for fair testing but most candidates failed to score any points at all.  Given that a fair amount of candidates coursework time is spent constructing sensory analysis tests, this is surprising.  Candidates need to be taught that knowledge learnt as part of their coursework is equally transferable to a written paper.  Safety checks usually elicited an answer based on "metal detection".  Few candidates mentioned bacterial checks or the use of food probes on the finished products.  Some candidates had not read the question carefully and gave safety checks appropriate to different stages of the manufacturing process.  Most candidates gave reasons for the specification points given.  Generally candidates picked up on the ability to microwave cook the meal for speed.  Some candidates gave two separate points rather than a linked point and explanation.  Wide appeal caused more difficulty in explaining it thoroughly.  Again many candidates gave several unconnected points rather than one point that they explained.

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Higher Tier (Paper 2H)

Fewer candidates were entered for the incorrect tier. Response to the paper was very positive with the more able candidates showing a wide range of knowledge and the ability to use the correct technical language. The most difficulty was with the technical questions relating to raising agents in question 2. As with the foundation tier many candidates failed to score full points on describe/explain questions as they do not link one answer to a supporting point. Instead they give several unrelated points. This type of question aims to test the understanding of candidates, not just their ability to recall information, so it is more demanding. The design question also posed problems for a large number of candidates, who failed to appreciate that the design was based on an industrial product.

Question 1

This is an overlap question between the two tiers.

This year there was a marked improvement in the ability to write specification points. This may have been due to the product shown. The best answers came from candidates who wrote in short sentences. Single word answers are often open to interpretation and do not always guide the examiner well enough to credit them. Weaker candidates also failed to link their point and reason. Surprisingly there were some poor answers for "safety", with candidates giving general food safety points that did not necessarily relate to the product shown. Most candidates gave answers relating to packaging under "environment", showing good knowledge and understanding. There were also some very well explained answers about GM ingredients. However, many candidates failed to gain the second point for "reason" because they used vague justifications, such as "bad for the environment". The better candidates knew that the pasta and chicken were bland and wrote some excellent answers. Weaker candidates just related that the sweet pepper gave a "spicy" flavour or made it feel Mediterranean. A surprising number of candidates clearly had no idea what standard component parts were. Where this had been taught candidates spoke knowledgeably about reduced costs, quicker production and consistency of quality. It was encouraging to see candidates displaying good knowledge of bacterial growth in relation to freezing of food products. However, few were able to give other answers, relating to consumer convenience, retention of nutritional content etc. There were also incorrect answers given relating to colour and texture. Some candidates also gave answers that were general to ready meals and it is important that they read the question thoroughly in order to see the focus of the question, freezing in this case. The question on sensory analysis was very poorly answered by the vast majority of candidates. Few candidates scored full marks considering it was a simple question. They used very generic terms, such as "flavour" and "taste". Some wrote in detail about criteria for fair testing but most candidates failed to score any points at all. Given that a fair amount of their time in their coursework is spent constructing sensory analysis tests, this is surprising. Candidates need to be taught that knowledge learnt as part of their coursework is equally transferable to a written paper. Safety checks usually elicited an answer based on "metal detection". Few candidates mentioned bacterial checks or the use of food probes on the

finished products.  Some candidates had not read the question carefully and gave safety checks appropriate to different stages of the manufacturing process.  Most candidates gave reasons for the specification points given.  Generally candidates picked up on the ability to microwave cook the meal for speed.  Some candidates give two separate points rather than a linked point and explanation.  Wide appeal caused more difficulty in explaining it thoroughly.  Again many candidates gave several unconnected points rather than one point that they explained.

## Question 2

This question caused many candidates a lot of problems.  The vast majority were able to score full marks for the first part of the microwave question.  The most popular answers were "time" and "temperature", but few candidates knew that power levels and automatic functions, such as weighing, were controlled by computerised programmes.  Answers to the second part of this question were very vague.  Many candidates wrote about points that related to general mobility in relation to preparing foods, rather than how a touch sensitive screen would help a disabled person.  Most concentrated on the easier use of this, as opposed to a system that needed turning.  Where candidates wrote about it in relation to disabilities relating to sight, the answers were more detailed.  Few candidates scored full marks.  The section on raising agents and dextrinisation was very poorly answered.  Many candidates failed to score any points.  Many candidates still believe that microwave ovens "cook from the inside out". Most candidates gave good answers to a natural additive used to colour cakes, with cocoa products being the most popular.  The majority of candidates gained 2-3 marks for the next section, understanding why demand for celebration cakes is low.  Understanding of the use of ICT to gather information was sound.  Most candidates were able to explain the use of websites, inter-active Internet sites and e-mails.  A large number of candidates gave full and detailed explanations to support arguments for the use of "hand finishing" cakes. Most concentrated on "uniqueness/different and individual".  Some andidates also explained the limitations of the use of machinery well.

## Question 3

This question caused a lot of candidates real problems.  They failed to understand that the question was based on industrial processes of cutting, shaping and forming potatoes.  Many just designed potato products such as shepherd's pie and potato pasties.  Where they had grasped the significance of the industrial processes, there were some excellent designs based on shaped faces, rosti style products, potato scotch eggs and potato burgers.  Sketches were better drawn with the best candidates giving more than one view and often adding dimensions.  Some candidates continue to write too much, simple annotation is quite sufficient.  The best candidates use the specification points to label their designs.  Colours often enhance the designs, making clearer the details in the designs.  Evaluations vary in their effectiveness.  Some candidates simply repeat the labels.  The best evaluations occur when the candidates are more critical of their designs, or justify their decisions thoroughly.  Single words or very short sentences do not give enough detail.

Question 4

This question was well received by most candidates and gave them the opportunity to show good subject knowledge. The vast majority of candidates scored highly on the information about dietary guidelines and it was pleasing to see the use of technical language such as "cardio-vascular systems", "coronary heart disease" and "arteriosclerosis". The understanding of the changes in RNI for different groups was well understood, with many candidates scoring full marks. The weakest part was where candidates identified the fact that vegetarians lost a useful source of iron by not eating meat, but then failed to indicate they needed an alternative source. Many candidates gained full marks on the environmental considerations when designing packaging. However, some candidates failed to read the question carefully and wrote instead, about packaging in general. Ethical issues were the most popular answers to the question about vegetarian foods. Some candidates also mentioned the influence of religion. A surprising number wrongly stated that people were allergic to meat. The understanding of the use of biotechnology was weak. Where centres had covered this in their course there were some detailed answers, but even so, few candidates gained full marks. Many candidates wrote about GM foods instead. Benefits and disadvantages were not well thought through, with candidates often making sweeping statements about reduced costs and not having to kill animals. Many candidates recognised that protein foods made using biotechnology enabled manufacturers to widen their target market.

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Unit 1970, Coursework

## General Comments

There has been a steady improvement in the performance of many centres this year and it is pleasing to note that many more centres have marked their candidates in line with Edexcel's set standard.
It was noted by moderators that there was evidence of some centres having read and acted on the 2004 report.

Photographic evidence continues to improve and is now generally very good, all centres supplied photographs with the majority of their candidate's portfolios. The best form of photographic evidence is when centres provide a range of manufacturing photographs, as well as good views of the final product. Photographic evidence is very useful for key features 'select and use' and 'work safely.' Unfortunately some photographic evidence provided did not always support the teachers assessment of the quality of the finished product.

Adherence to the 18-20 page guidance was good. Very few centres allowed candidates to overrun by many pages.

Candidates that used the assessment criteria key features as headings in their coursework tended to address the criteria more fully.

It is of continuing concern that a significant number of centres are still allowing candidates to produce final products more suitable to KS3 work than KS4 work. This should only be allowed if it links with individual candidates abilities, as this will restrict candidate's access to marks, particularly in the criteria for 'Ideas', 'Develop', 'Select and Use' and 'Make Products'. It must be remembered that this course is an assessment of KS4 capability and as a result, KS3 tasks are by their very nature less demanding, consequently not giving full access to some of the assessment criteria.

Work was generally more securely held together this year. Simple hole-punching and treasury tagging is very effective and the majority of centres had successfully adopted this method.

Moderators reported that centres sent the appropriate sample pieces of coursework, ie requested coursework and additional pieces to make up a representative selection from the centre.

Standardisation within centres appeared to have been completed well this year in most centres. Some centres continued to overestimate their candidates' performance in one or more assessment criteria, whilst some centres continue to underestimate their candidates' performance in some assessment criteria.

Annotation of page numbers on the Candidate Mark Record Booklets (CMRB) was completed successfully by most centres this year. However, a disappointing number failed to annotate candidates' work at all. Whilst time consuming, annotating CMRBs does help the teacher examiner to examine and assess candidates' work, throughout the period that candidates are compiling their work, against the assessment criteria. This helps to ensure candidates do address all the assessment criteria.

## Administration

Generally, centres followed Edexcel's administration procedures with few difficulties. Moderators reported that a minority of problems were encountered in the following:

- addition errors in Candidate Mark Record Booklets (CMRBs)
- errors when transferring marks from CMRBs to OPTEMS
- no identification of page numbers in annotation column in CMRBs
- low levels of response marked highly
- no names / centre numbers / candidates numbers on scripts once CMRB's removed
- candidate authentication on CMRBs not signed

## Criterion 1
Identify needs, use information sources to develop detailed specifications and criteria.

## Needs

As last year, many centres gave candidates a board set task or a school set task and the tasks stated were often very suitable. However, unless each candidate had individually analysed and expanded on the given task and gone on to justify the needs for the product to be designed, with some reference to a particular market group, and then produced a detailed brief addressing those needs, **no marks** could be awarded. This point had not been taken on board this year and a significant number of candidates had their marks reduced for this key feature. A given brief with no candidate input is classed as teacher intervention, and to credit these marks would be to the disadvantage those candidates who had carried out this work themselves.

Candidates might find it helpful to brainstorm possible ideas for the D&T task and then choose the avenue they wish to develop within their particular coursework. They should highlight the information they will be seeking and also indicate how they plan to acquire all this information.

Some centres addressed this key feature very successfully, candidates producing detailed and realistic briefs from a broad set task.

## Information

This key feature was done well by the majority of candidates. Some centres need to ensure that some of their candidates are not allowed to spend a disproportional amount of time producing repetitive or excessive amounts of information. Information was generally recorded accurately and concisely.

Information sought could include product analysis, market research, form and function of the proposed product and selective background information on possible materials, components, means of construction and processing techniques.

To gain a high level mark, candidates must evidence selecting, from more than two sources of information and relate it to the identified needs of the task. They should go on to use this information to make informed decisions related to these needs. Sufficient information

should have been acquired to enable the candidate to write a detailed design specification for their proposed product.

Candidates should be encouraged to ensure that any questionnaire they produce actually result in useful information being obtained.

## Specification

Candidates must create the specification points themselves to gain marks. Centre given, and / or generic specification points are teacher intervention and cannot be credited to candidates. Less able candidates may, however, need a guide or help to write suitable specification points but this teacher intervention must be acknowledged. Some centres had still marked their candidate's performance in this key feature generously, but it is an area where improvement was noted by moderators.

Some specifications were also limited in that they often bore little resemblance to the 'needs' of the product or the research findings discovered by the candidate. It should be noted that good specification points usually link directly to this information. Careful analysis of research/ 'information' is needed prior to writing the specification.

To gain a high level mark, candidates must produce a specification that contains descriptions relating to all of the following requirements of the product:

- **form**, eg portion size, type of ingredients, environmental issues, scale of production etc;
- **function**, eg type of product and it's purpose;
- **user requirements**, eg nutritional contribution, shelf life, means of preservation, reheating etc;
- **budgetary (cost) constraints**, eg price range, manufacturing and marketing costs.
- each description must contain more information than a simple statement.

## Criterion 2
Develop ideas from the specification, check, review and modify as necessary to develop a product.

## Ideas

There was an improvement, on the whole, in the quality of work submitted for this criterion. Very few centres allowed candidates to just list a variety of dishes, with no reference to the set task or the identified needs. Unfortunately there was still a tendency for there to be no reference between the proposed ideas and the specification points already identified. Such examples of work could only gain the very lowest marks in the low level band.

To gain high level marks candidates need to present a range of realistic initial ideas. These should address form, function, user requirements and budgetary constraints as detailed in the specification.

At this stage candidates might like to model their ideas and assess their value in regard to the set brief. This modelling of initial ideas, together with any testing, is assessed in ideas and any subsequent development and modelling of one chosen idea later on is then assessed in develop.

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Care should be taken to ensure the range of ideas suggested is diverse in respect of incorporating a variety of ingredients and processes and the dishes require KS4 rigour to make. A disappointing number of centres allowed candidates to suggest ideas more suited to KS3 than KS4, this limits the candidate's access to higher level marks later.

Candidates enjoy modelling their initial design ideas. Many centres provided excellent evidence in their portfolios of modelling and testing their proposed ideas against their design specification points.

Moderators reported again this year that a common mistake made by centres with this criterion was a failure to distinguish fully between this key feature, 'Ideas' and the next, 'Develop'. If candidates do combine 'Ideas' and 'Develop' into one section within their coursework folio, teacher examiners must be careful to annotate CMRBs to explain to moderators which evidence is being assessed for each of the key features.

### Develop

Some excellent work was produced for this key feature. Some centres had guided their candidates carefully and enabled them to access the high level band of marks. Less able candidates had been given proformas to record their development work on and the sub headings used by centres carefully guided the candidates work.

Several centres disadvantaged their candidates in this key feature by allowing them to 'develop' several ideas, rather than concentrating on just one. These candidates tended to have some breadth of study but limited depth of study.

It must be remembered that to access the marks in this section, initial ideas must be **developed**, this means 'changed' or 'moved-on' in the light of the evaluation of those initial ideas. Marks are only available for new information, no marks are available for simply repeating the initial idea or for suggesting, and not actually carrying out development ideas.

This is an area where there is still a lot of scope for many centres to improve their candidates' performance. The key feature states 'develop' as well as 'model' and 'test' and insufficient development of chosen ideas was seen again this year. Areas that should be developed include flavour, colour, texture, nutritional value and cost, as well as other areas related to user needs. It should be noted that high marks cannot be accessed for developing only one specification point, eg flavour.

To access the high category, candidates need to widen their range of development ideas. User needs should be fully considered and where possible, users used to do as much of the testing as possible. Nutritional analysis, calculation of cost, review of time used for preparation and cooking, acceptability of dishes, shelf life concerns etc should also be developed and tested and the resulting evidence should be recorded in the portfolio for use when reviewing ideas before making their design proposal.

It is essential for candidates to clearly identify which developed design is to be their final product. It was surprising how many candidates had failed to make this clear again this year.

The final design proposal should be appropriate to the demands of KS4, some centres had allowed candidates to produce KS3 rigour dishes for their final food product. This may be advisable for less able / practical candidates, but it can be a limiting factor for more able candidates. Details of ingredients / materials / components necessary for making the product, its final form, eg dimensions, colour, weight etc, together with proposed tolerances should be devised and stated by candidates in this area. The details may be expanded within the 'Schedule' and 'Systems and Control' to address industrial manufacturing criteria, helping to address the industrial aspect in criterion 4.

In criterion 5 candidates have 'to make a high quality product that relates fully to the features of the design proposal'. If a detailed product design proposal has been provided, candidates can fully assess their finished product and can hopefully access the higher level mark bands.

### Review

To satisfy the high level of this key feature, 'Ideas' need to be reviewed as they develop against the previously identified needs and design specification points. All reasoning must be explained when reducing the range of initial ideas down to a more selective group.
Initial ideas may be modelled to help in the reduction process or modelling need not commence until the 'Develop' stage.
Candidate observation / opinion can be used as evidence and justification, but high marks cannot be awarded solely on the review of this limited evidence. Thorough testing against other specification points is needed, eg nutritional analysis, calculation of cost, review of time needed for preparation, user views on general acceptability of dishes, shelf life concerns etc, to access the higher level mark band.

### Criterion 3
Use written and graphical techniques including ICT and CAD where appropriate to generate, develop, model and communicate.

This criterion was generally well marked. Some centres marked written communication too highly, whilst some centres tended to mark too harshly. This trend tended to be true for 'Other Media' and 'ICT' too.
Candidates should aim throughout their coursework to 'tell the story' of how their final product developed and evolved from the initial design and make task to the finished end product. Each assessment criterion and key feature is interlinked to the next and if candidates are encouraged to appreciate this, their coursework will 'flow' more easily producing sufficient reasoning and justification as a natural outcome.

### Written Communication

Many candidates communicated information clearly and in a logical and well-organised manner. The use of specialist vocabulary was not always evident again this year.
An area where candidates can easily incorporate technical language is in describing the function of ingredients used in products, or when detailing the manufacturing processes relating to their product, especially in an industrial situation.

### Other Media

The differentiation in this key feature lies within the skilfulness and accuracy shown by the candidate when presenting information. Candidates displayed suitable means of recording information, such as photographs, cut and paste items, tables, pie charts, bar charts, flow charts, brainstorming bubbles etc but to gain the top level mark it is important the candidate aims to clearly and accurately communicate necessary information.

ICT

Some excellent ICT was seen from many centres. Less able candidates seem to produce more creditworthy work when they word process it and / or when they use ICT graphics to present results. The use of nutritional analysis computer programmes produced valuable information as well as helping to address this particular key feature. The use of digital images of modelled food products was fairly common this year and the quality of such images has improved considerably. Candidates and teachers are becoming more adept at taking 'photographs' of food products and the use of more specialised printing paper has improved the detail visible in the image.

Centres who use ICT to present the whole portfolio often underestimated their candidate's performance in this key feature.

To satisfy the high category, candidates must use more than one form of ICT, each appropriate to its task, to generate, develop, model or communicate information or ideas relevant to the product. Forms of ICT include word processing, computer generated graphics and nutritional / packaging computer programmes.

Criterion 4

Produce and use detailed working schedules, which include a range of industrial applications as well as the concepts of systems and control. Simulate production and assembly lines using appropriate ICT.

Marks allocated in criteria 4, 5 and 6 refer to work related to the final finished product only and not previous work.

Systems and Control

Candidates had generally addressed this criterion more successfully this year, but there was still evidence of some centres failing to ensure candidates addressed this key feature at all. Some centres had again misunderstood the requirements of this assessment criterion and had wrongly credited marks for general information that did not reference input, process or output systems and / or did not relate to the specific manufacture of the proposed product, eg general industrial manufacture flow charts or product recipes.

The centres that did correctly address this criterion generally did so in the form of a table or flowchart. Either method is suitable. Candidates should be encouraged to think in the form of input, process, output and feedback. A recipe and method for manufacture of the final product can be written out in table form incorporating each of these headings. (Timings, HACCP and quality control points can be added and the table can be used for a schedule also.) Alternatively, a flow chart can be used preferably incorporating the generally recognised symbols for input, process and output, and feedback. It is essential for candidates to provide a key for the symbols they use for input, process, output and feedback.

If candidates failed to mention feedback in their systems and control diagram, only a low level mark could be awarded, as the assessment criterion requires an explanation of feedback to gain the medium level mark. This was a particular stumbling point again this year.

To achieve a high level mark candidates must produce an outline plan, systems and control diagram / table for the manufacture of the final product that explains the input(s), the process(es), the output(s) and feedback of that activity and show where the feedback will be used to trigger performance / quality control check(s).

## Schedule

This key feature was generally very well done. Many less able candidates found it easy to gain marks when centres had required candidates to write out the details for making the final product in the form of a time plan, prior to doing the final 'make'. Centres should encourage candidates to do this, and not leave them to rely on the information given in the ideas and development section, as it was not always obvious which recipes and methods / schedules were being used. It must also be remembered that candidates can only be credited for appropriate evidence once.

To gain the high level mark candidates need to produce a time plan relating to production / manufacture of the product that includes consideration of some of the making processes, materials (functions of), time projections and of where / when quality control will be applied.

Time is an integral part of a schedule and must be included for any marks to be awarded in this key feature.

## Industrial Application

Some excellent work was seen in this key feature.

It should be noted that a good HACCP chart / table relating to the making of their own product guarantees a high level mark and candidates do not need to produce copious quantities of other related industrial applications.

A common problem in this key feature is that candidates often produce very generic HACCP charts and manufacturing production plans rather than carrying out research and applying information to their chosen design idea.

## Criterion 5

Select and use tools, equipment and processes effectively and safely to make single products and products in quantity. Use CAM appropriately.

This criterion has the highest weighting of marks and it is important that the necessary quantity and quality of evidence to support the marks awarded is provided in the folio.

## Select and Use

Many candidates produced excellent evidence of 'select and 'use' this year. However, some centres candidates have failed to include much evidence in their portfolios.

To satisfy the high category, candidates were required to provide explicit evidence of their ability to 'select' and 'use skilfully', tools, equipment and processes whilst manufacturing their product. Products must be appropriate to meet the demands of KS4 to access the medium to higher mark levels.

Evidence for 'select' was successfully presented by some candidates through 'systems and control', or the 'schedule'. Photographs and detailed teacher annotation was also provided by a few centres. In order to satisfy the high category, candidates must include in their design folios the kind of explicit evidence already described, and teacher annotation,

where offered, must be both detailed and as a support to that already included by the candidate.

Some centres produced tables indicating equipment and methods chosen for use, together with the reason for choice and then any particular safety points that needed to be borne in mind, ready for addressing the third key feature in this criterion.

Evidence for 'use skilfully' was presented by many candidates in the form of good quality photographs which showed evidence of the skill and accuracy with which the range of tools, processes and equipment have been used to make the product.

## Make Products

This key feature was enthusiastically addressed by candidates, and while an increasing number of centres are marking accurately a large number of centres are still over marking candidates finished products.

As expressed earlier in the report, and in previous reports, many candidates had not identified their final product. To avoid penalising candidate's, moderators referenced the photograph on the CMRBs to ascertain which of the early product options was to be the final product. Centres **must** ensure candidates adequately document their final developed product design in their portfolio.

Another concern that was highlighted by moderators was that chosen product designs were not always creditworthy of the rigour expected at KS4 but were more suitable for KS3 tasks. Care should be taken to guide candidates in their final choice of product to ensure they have the opportunity to demonstrate their competency at KS4, failure to do so will limit their access to marks.

Lack of suitably developed design proposals to make and test the products against was also a problem in some centres. The assessment criteria state that candidates must "make a high quality product which relates fully to the features of the design proposal" to achieve the highest band of marks. This means that candidates must evidence the making of a product that meets most of the quality requirements of their final design proposal, ie sizes, tolerances, finish, function and relates fully to the features of their final design proposal (which may include modifications made in light of experience gained during the making process) ie it matches the details of materials, constructions and form. Failure to have detailed the product design proposal in advance of the "Make Products" will result in limited access to marks in this key feature.

It should be noted that many centres successfully marked this key feature, and candidates produced well finished rigorous practical work.

## Work Safely

Candidates are required to provide evidence of having observed safe working practices for themselves and others during the manufacture of their product. Only the low criteria can be awarded for teacher supervision alone. If this is to be credited the CMRB must be annotated with sufficient detail by the teacher.

Many centres had over marked this key feature and in a lot of cases had given full marks even when there was no mention of the safety of others in the candidates work.

To access the high level mark candidates must detail most of the safety precautions, which relate to both themselves and to others with respect to specific materials, tools, equipment or processes to be used when making their product. Written / tabulated

evidence contained within the 'Schedule' by adding simple risk assessments, annotated photographic evidence may also be used.

NB Safety relates to physical safety and well being, not bacterial / food poisoning safety aspects. This was a common mistake made by candidates.

## Criterion 6

Devise and apply tests to check the quality of candidate's work at critical control points. Ensure that candidate's products are of suitable quality for the intended use. Suggest modifications that would improve candidate's performance.

All three key features in this criterion relate to work associated with the final product only. Centres are not always clear on this point.

## Tests and checks

Some excellent testing and checking of final products was undertaken in some centres, but some centres failed to ensure their candidates addressed this key feature fully. When this was the case centres tended to mark accordingly, but it appears some candidates are not encouraged to fully investigate this area.

Some centres had again allocated marks for 'testing and checking' that had been undertaken at the 'ideas' and 'development' stages rather than at the completion of the design process at the end of the portfolio. Marks can only be awarded for testing and checking of the **final product**. Testing and checking recorded earlier in the portfolio will have been marked already and cannot be credited again. Centres must ensure they do not double credit work.

Many candidates used taste tests as their sole form of testing and checking. To access the high level mark candidates need to develop and use appropriate testing techniques to check the product against all aspects of the specification. To do this, candidates need to devise tests to suit the needs of their product and carry out these tests on the product, whilst they are making it, to check it's quality against the measurable points of the specification. (The importance of a detailed design proposal / product specification evolving from the criterion 2 cannot be emphasised too strongly.)

User views are an important factor when tests and checks are undertaken, where possible, users should be employed to do the testing.

**Evaluate**

There was some excellent evaluation of products by some centres. Accurate marking of candidates' standards was noted in these same centres.

As with tests and checks some centres had mistakenly credited marks for evaluative comments made in 'Ideas', 'Develop' and 'Review' sections in criterion 2. The assessment criterion states that candidates must evaluate the final product using evidence from the test results and considering user views. Evidence of the candidates using their test results and the views of a user to evaluate the product must be presented and the evaluation should relate to measurable points of the specification. Evaluative comments must be objective and statements should be supported with evidence from tests and checks.

**Modification**

Again this key feature was addressed well by some centres but as with the previous key features some centres had credited modifications previously marked in the 'Ideas' and 'Develop' sections. This key feature demands that candidates use the results from evaluating the **final product** to suggest and justify modifications to the product. To access the high level mark candidates need to present more than one modification, each arising from a different evaluation point. Each modification should contain sufficient detail to show how it would improve the performance / quality of the product and include reasoning to justify the proposal.

GCSE Design and Technology: Food Technology
Principal Examiner's Report
Unit 3970, Foundation Tier


General Comments.

Many of the comments relating to the full course hold true for the short course.  Centres still have a tendency to enter too many candidates for the higher tier when they would perform better on the foundation tier.  As with the full course centres need to spend time on exam technique, raising awareness of how to tackle questions that ask for descriptions or explanations so that their candidates score full marks more often.  Finally it is essential that time is allocated within the course structure to teach the specification formally.   Not all knowledge can be gained by concentrating on the coursework element.


Question 1

This question was well answered by the majority of candidates.  Most candidates were able to correctly identify the equipment or tool used for food preparation in the home or school kitchen.  Some candidates muddled the cooling rack with a grill rack.  Few candidates failed to correctly identify the foods that could be prepared using the tool or equipment. Candidates need to read questions carefully as quite a few answered the question about piping *sweet* foods with any foods, including potato.  They also made assumptions about cakes, just naming them rather than the icing or cream on the top.  The vast majority of candidates were able to talk knowledgeably about the problems of piping potato, scoring full marks.


Question 2

Packaging proved to be an area where candidates had good levels of knowledge.  The vast majority of candidates were able to give three good reasons for packaging food. Knowledge of key information such as "use by date", "instructions for use" and "ingredients" was sound.  On average candidates were able to gain one mark in each section. Often the justification of each point was muddled or simply repeated the question.  Many candidates wrongly assumed that nutritional information and bar codes were a legal requirement. However, most candidates knew that the manufacturer's name and address was a legal requirement.


Question 3

This year there was a marked improvement in the ability to write specification points. This may have been due to the product shown.  The best answers came from candidates who wrote in short sentences.  Single word answers are often open to interpretation and do not always guide the examiner well enough to credit them.  Weaker candidates also failed to link their point and reason.  Surprisingly there were some poor answers for "safety", with candidates giving general food safety points that did not necessarily relate to the product shown.  The better candidates knew that the pasta and chicken were bland

and wrote some excellent answers.  Weaker candidates just related that the sweet pepper gave a "spicy" flavour or made it feel Mediterranean.  A number of candidates knew little of what standard component parts were.  Where this had been taught candidates spoke knowledgeably about reduced costs, quicker production and consistency of quality.  It was encouraging to see candidates displaying good knowledge of bacterial growth in relation to freezing of food products.  However, few were able to give other answers relating to consumer convenience, retention of nutritional content etc.   The question on sensory analysis was very poorly answered by the vast majority of candidates.  They used very generic terms, such as "flavour" and "taste".  Some wrote in detail about criteria for fair testing but most candidates failed to score any points at all.  Given that a fair amount of their time in their coursework is spent constructing sensory analysis tests this is surprising.  Candidates need to be taught that knowledge learnt as part of their coursework is equally transferable to a written paper.  Safety checks usually elicited an answer based on "metal detection".  Few candidates mentioned bacterial checks or the use of food probes on the finished products.  Some candidates had not read the question carefully and gave safety checks appropriate to different stages of the manufacturing process.  Most candidates gave reasons for the specification points given.  Generally candidates picked up on the ability to microwave cook the meal for speed.  Some candidates gave two separate points rather than a linked point and explanation.  Wide appeal caused more difficulty in explaining it thoroughly.  Again many candidates gave several unconnected points rather than one point that they explained.

GCSE Design and Technology: Food Technology
Principal Examiner's Report
Unit 3970, Higher Tier


Question 1


This is an overlap question between the two tiers.


This year there was a marked improvement in the ability to write specification points. This may have been due to the product shown. The best answers came from candidates who wrote in short sentences. Single word answers are often open to interpretation and do not always guide the examiner well enough to credit them. Weaker candidates also failed to link their point and reason. Surprisingly there were some poor answers for "safety", with candidates giving general food safety points that did not necessarily relate to the product shown. Most candidates gave answers relating to packaging under "environment", showing good knowledge and understanding. There were also some very well explained answers about GM ingredients. However many candidates failed to gain the second point for "reason" because they used vague justifications, such as "bad for the environment". The better candidates knew that the pasta and chicken were bland and wrote some excellent answers. Weaker candidates just related that the sweet pepper gave a "spicy" flavour or made it feel Mediterranean. A surprising number of candidates clearly had no idea what standard component parts were. Where this had been taught candidates spoke knowledgeably about reduced costs, quicker production and consistency of quality. It was encouraging to see candidates displaying good knowledge of bacterial growth in relation to freezing of food products. However, few were able to give other answers, relating to consumer convenience, retention of nutritional content etc. There were also incorrect answers given relating to colour and texture. Some candidates also gave answers that were general to ready meals and it is important that they read the question thoroughly in order to see the focus of the question, freezing in this case. The question on sensory analysis was very poorly answered by the vast majority of candidates. Few candidates scored full marks considering it was a simple question. They used very generic terms, such as "flavour" and "taste". Some wrote in detail about criteria for fair testing but most candidates failed to score any points at all. Given that a fair amount of their time in their coursework is spent constructing sensory analysis tests this is surprising. Candidates need to be taught that knowledge learnt as part of their coursework is equally transferable to a written paper. Safety checks usually elicited an answer based on "metal detection". Few candidates mentioned bacterial checks or the use of food probes on the finished products. Some candidates had not read the question carefully and gave safety checks appropriate to different stages of the manufacturing process. Most candidates gave reasons for the specification points given. Generally candidates picked up on the ability to microwave cook the meal for speed. Some candidates gave two separate points rather than a linked point and explanation. Wide appeal caused more difficulty in explaining it thoroughly. Again many candidates gave several unconnected points rather than one point that they explained.

## Question 2

This question caused many candidates a lot of problems. The vast majority were able to score full marks for the first part of the microwave question. The most popular answers were "time" and "temperature", but quite few candidates knew that power levels and automatic functions, such as weighing, were controlled by computerised programmes. Answers to the second part of this question were very vague. Many candidates wrote about points that related to general mobility in relation to preparing foods, rather than how a touch sensitive screen would help a disabled person. Most concentrated on the easier use of this, as opposed to a system that needed turning. Where candidates wrote about it in relation to disabilities related to sight the answers were more detailed. Few candidates scored full marks. The section on raising agents and dextrinisation was very poorly answered. Many candidates failed to score any points. Many candidates still believe that microwave ovens "cook from the inside out". Most candidates gave good answers to a natural additive used to colour cakes, with cocoa products being the most popular.

## Question 3

This question was well received by most candidates and gave them the opportunity to show good subject knowledge. The vast majority of candidates scored highly on the information about dietary guidelines and it was pleasing to see the use of technical language such as "cardio-vascular systems", "coronary heart disease" and "arteriosclerosis". The understanding of the changes in RNI for different groups was well understood with many candidates scoring full marks. The weakest part was where candidates identified the fact that vegetarians lost a useful source of iron by not eating meat, but then failed to indicate they needed an alternative source.

**GCSE Design and Technology: Food Technology**
**Principal Moderator's Report**
**Unit 3970, Coursework**

**General Comments**

There were a pleasing number of centres entered for the Short Course in Food Technology this year.

As last year a lot of Short Course portfolio work was of excellent quality, and would have scored well, had it been entered for the Full Course.

A lot of work was excellently presented in a concise and detailed form. Centres are to be congratulated on their candidates' performance.

The Edexcel approved Task Sheets proved to be a success, as they tended to give candidates a better focus and helped them structure their folios.

The detailed comments included in the Full Course report are pertinent to the Short Course too, and it is recommended that the Full Course report is read in conjunction with these brief statements.

**GCSE Design & Technology: Food Technology**
**(Full Course: 1970)**

Grade Boundaries – Summer 2005

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2005 examinations.

*(Foundation Tier out of 100)*

| C | D | E | F | G |
|---|---|---|---|---|
| 51 | 41 | 31 | 22 | 13 |

*(Higher Tier out of 100)*

| A* | A | B | C | D | E |
|----|---|---|---|---|---|
| 80 | 70 | 60 | 50 | 40 | 35 |

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2005 examination.

*(Coursework 01 out of 102)*

| A* | A | B | C | D | E | F | G |
|----|---|---|---|---|---|---|---|
| 92 | 80 | 68 | 56 | 45 | 34 | 23 | 12 |

*(Paper 2F out of 88)*

| C | D | E | F | G |
|---|---|---|---|---|
| 43 | 36 | 29 | 22 | 15 |

*(Paper 2H out of 88)*

| A* | A | B | C | D | E |
|----|---|---|---|---|---|
| 60 | 52 | 44 | 37 | 29 | 25 |

**GCSE Design & Technology: Food Technology
(Short Course: 3970)**

Grade Boundaries – Summer 2005

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2005 examinations.

*(Foundation Tier out of 100)*

| C | D | E | F | G |
|---|---|---|---|---|
| 51 | 41 | 32 | 23 | 14 |

*(Higher Tier out of 100)*

| A* | A | B | C | D | E |
|---|---|---|---|---|---|
| 81 | 70 | 59 | 49 | 40 | 35 |

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2005 examination.

*(Coursework 01 out of 84)*

| A* | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 76 | 66 | 56 | 46 | 37 | 28 | 19 | 10 |

*(Paper 2F out of 44)*

| C | D | E | F | G |
|---|---|---|---|---|
| 21 | 17 | 13 | 10 | 7 |

*(Paper 2H out of 44)*

| A* | A | B | C | D | E |
|---|---|---|---|---|---|
| 29 | 25 | 21 | 18 | 15 | 13 |

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