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Design and Technology: Food Technology 45452

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Unit 2: Design and Making Practice

Report on the Examination

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General

GCSE Food Technology controlled assessment continues to develop and the overall standard was very good. The quality of work reflected the hard work and commitment by centres and candidates.

This has been the first year of Teacher Online Standardisation (TOLS) which is available through e-aqa. There are some excellent resources available and the opportunity for all teachers within centres to carry out standardising. The TOLS was an under used resource so hopefully more centres will make use of these materials in 2012/13 as part of continuous professional development. New materials will be uploaded in the Autumn term.

Several areas were identified for improvement last year and still require development. The following indicates good practice and areas for focus in 2012/13.

Criterion 1: Investigating the Design Context

Task analysis

- Evidence was seen of very good understanding of the design contexts.
- Candidates approached the tasks with interest and enthusiasm. The new tasks for 2012-13 are available through e-aqa in the secure materials area.
- A good understanding of tasks and contexts was seen through mind mapping and explanation of key words, with the more able candidates elaborating and discussing the issues.
- Some candidates lost sight of the context; it is important this is referred to throughout the project. This was particularly evident for the Ready-made products context, with candidates failing to consider the eatwell plate.

Research

- Research was more concise, well presented and relevant in the majority of centres as compared to previous years.
- There was good consideration from the initial breakdown of the task as to what research was required.
- Excellent primary research was evident e.g. visiting Farmers' markets, supported with photographic evidence.
- There was some good evidence of making as part of research by lower ability candidates.
- There was more evidence this year that the research had led to the design criteria.
- The main focus of research should be on existing products. This should not always be interpreted as products from supermarkets. Existing products could include examining schools meals, menu analysis etc.
- There was evidence of research being carried out at various stages throughout the project, for example, further research on finishing techniques and properties of ingredients at the development stage.
- There were some excellent product appraisals/analysis; however, it is more appropriate for this to be carried out prior to development and not during initial research. The results can then be used to inform development activities.
- Excellent research analysis was seen, particularly when presented in a table enabling candidates to link their findings to the design criteria.

- Analysis of the research is essential. This is a high level skill and needs to be taught to candidates. Good practice was seen in folders when headings/starter sentences/scaffolds were used.
- The use of text book research was widely used, but often did not relate to the task. The information was usually just copied from a book.
- Discrimination needs to be shown when selecting the research material to use. Several centres did too much research and this impinged upon the 45 hour time limit.
- Candidates would benefit from knowing how to link their research to their chosen task.

Design criteria

- There was very good evidence of design criteria reflecting the research analysis.
- The design criteria must result from the research analysis. The linkage was not always evident.
- When design criteria are not produced it affects candidates' performance for criteria 2 and 4.

Target market

- The quality of work identifying a target market and producing a customer/user profile was varied. When a customer profile had been produced it helped candidates to focus their thinking.
- Most candidates had identified a target group, and improvements were seen in the quality of customer/user profiles. Some candidates had developed these well, but then failed to use the profile throughout the project.
- A target market needs to be identified. To achieve the 7-8 mark band a customer/user profile is required. This should be used when testing and evaluating and then provide the basis for evaluation. This was a weak area again and needs to be developed in the majority of centres. Examples are available via the Teacher Online Standardising system.

Criterion 2: Development of Design Proposals.

Designing

- Imaginative and creative design ideas were generated by many candidates and there were some excellent examples of annotated sketches and images.
- Candidates achieved well when the annotation included reference to: sensory descriptions, ingredients, finishing techniques, implication of a wide range issues and suggestions about how the product offers the opportunity for development. It is also good practice to compare the ideas against design criteria at this point as well as providing good preparation for Unit 1.
- There was evidence of some superb annotation of sketches and images.
- Good use of select and reject charts supported many candidates in justifying their choice of product to be taken forward to develop.
- Several centres failed to produce a page/s of design ideas, before moving on to making in the test kitchen. This is a lost opportunity to achieve marks.
- Imaginative and creative ideas need to be produced and the best way to show this is by annotating sketches or existing images.
- Candidates that find sketching difficult should consider using images of existing products to annotate.
- Producing lists of or the inclusion of recipes does not allow candidates to explore designing and does not show innovation and creativity.
- Candidates scoring 26-32 marks need to show more creativity when designing.

- The implications of a wide range of issues including social, moral, environmental and sustainability issues was poorly addressed. Some candidates failed to make any reference to these issues. It is explicit in the assessment criteria that this area must be addressed throughout the mark bands for Criterion 2. The issues need to be included throughout the designing and development process and not as a bolt on at the end of the project. This can be achieved by considering the ingredients used for each design idea and consideration of the use of ingredients when making the product in the test kitchen.
- There was very little evidence of effective dietary analysis/modelling.
- There was evidence, this year, that some centres had generated the ideas rather than individual candidates. This prevented candidates from showing creativity and resulted in all candidates producing the same products in the test kitchen. This formulaic approach to designing is not in the spirit of the specification.

Product specifications

- There was significant improvement in the quality of product specifications. These are an important element and provide a valuable evaluation tool.
- To achieve the top mark band candidates must justify the product specification. It was pleasing to see many candidates doing this well.
- Although product specifications were given for the chosen product, they often lacked specific details which would have enhanced the level of development work attempted. Some product specifications were just a repetition of the design criteria which encouraged a superficial level of development.

Development

- There was some outstanding development work inclusive of experimental and investigative tasks which is to be commended. The most successful and economical development activities involved using small quantities to test component parts.
- When centres had a clear understanding of development some superb work was seen. Development should be taught throughout the Food Technology specification and applied to the controlled assessment project.
- There was evidence of imaginative and creative development work.
- As part of development candidates carried out testing based on the working properties of ingredients which was encouraging e.g. testing fats in pastry, raising agents in cakes.
- Many centres are carrying out small scale experimental/investigational work.
- When candidates thoroughly understood how to develop, some creative final products were produced.
- It was encouraging to see development work throughout the ability range; there were some excellent development activities produced by lower ability candidates.
- It is expected that lower ability candidates will modify rather than develop and this is reflected in the mark bands.
- It is acceptable to produce some group based development work but it is essential that candidates record their input and evaluate the results independently.
- When recording the development work candidates should be encouraged to include: aims, ingredient lists, photographic evidence, changes made, results, sensory testing, conclusions and nutritional analysis if relevant.
- When an adjustment of marks was required it was often due to Criterion 2 being over rewarded, particularly development of a solution.
- Unfortunately some centres are still over rewarding simple modification, i.e. changing one ingredient at a time and it was therefore difficult to support centre marks.
- Higher ability candidates need to consider a range of development processes such as methods of cooking and different processes for making, use of equipment or detailed

work focussing on a particular working property of an ingredient such as aeration or setting.

- The selection of the product to develop is key. Candidates require guidance as to which products have potential for development. Some candidates selected a product that prevented development opportunities e.g. apple crumble. This was particular evident for the celebrations context. Teacher guidance and intervention is essential at this stage.
- Some centres have still not grasped the concept of development and were rewarding candidates well for simple modifications.
- The concepts of challenge, demand and rigor in development work continue to elude many candidates.
- Where candidates had attempted tasks with a nutritional context, few had actively carried out any on-going nutritional analysis work using ICT programs for this purpose. Where these had been used they were at best print-outs of nutritional information for a trial product with no indication as to how this may be used in subsequent development.
- Due to the formulaic approach to delivering this element, in some centres, similar products were taken to the development stage and thus the development work showed little differentiation.

Working properties of ingredients

- It was pleasing to see candidates addressing the working properties of ingredients throughout the design and development stages. There was some excellent evidence of candidates using technical language and demonstrating their understanding of the working properties of ingredients.
- When candidates had studied the properties of ingredients as part of the teaching of the Specification they were able to recall their knowledge and include this when evaluating.
- There is more emphasis on this area in the new specification and so it was disappointing that some centres failed to address this yet again this year. The working properties must be considered throughout the process and not just for the final product.
- Candidates in the highest mark range need to make more reference to working properties of ingredients such as the gelatinisation of starch for thickening or gluten in flour supporting stretch and structure in yeast mixtures.

Criterion 3: Making

- There was some excellent making throughout the ability range. Candidates had produced some interesting and creative ideas. Centres are to be commended for this.
- An increased volume of making with high levels of demand and quality outcomes was seen this year.
- Making which accompanied the design ideas section was often excellent and showed a good range of technical skills and good quality outcomes.
- The amount of making was correct in the majority of centres and it was pleasing to see lower ability students often scoring proportionately more marks in this section. It was encouraging to see that an appropriate amount of time had been spent on making by the majority of centres.
- There was evidence of lots of making work, which was supported with excellent photographic evidence. Where centres scored highly it was due to a wide variety of skills being shown and the production of creative final products.
- There was evidence of good quality finish and a high standard of presentation. Candidates really did take pride in their completed practical work.

- Centres did very well to complete the practical work to such a high standard of work when challenged with 1 hour lessons.
- The production plans were well done and understood by candidates. This was a strength in many centres.
- Where there was some disagreement with centre marks it was a result of a lack of making or simplistic making being awarded high marks. e.g. fruit salad, all-in-one buns.
- There are still many centres writing methods rather than concentrating on the working properties of ingredients. Candidates need to produce a method/production plan for the final product only inclusive of health and safety and quality control procedures.
- A minority of centres misinterpreted the assessment criteria and awarded the making mark based on the final product only. It is essential that all making carried out throughout the controlled assessment is credited in this section. The making mark was under rewarded in a minority of cases, particularly for lower ability candidates.
- An appropriate choice of products to be made is essential to achieve good making marks. A range of products must be produced inclusive of a variety of skills and processes. When selecting the celebration context there was a tendency to make very similar products with repetitive skills.
- It is important that photographic evidence has the name of the candidate to allow for authenticity.
- There is no requirement to produce packaging or a label for any of the tasks.
- Several centres are still producing a manufacturing specification and considering HACCP, this is not required.

Criterion 4: Testing and Evaluation

- This section was well understood; a wide variety of appropriate testing was evident and was accessed at different levels by students of all abilities.
- There was good evidence of a range evaluation techniques being used throughout the product development process.
- The most successful candidates used a variety of testing/evaluation techniques which incorporated points from the criteria/specification. Candidates explained their methodologies, referred to the product specification, fully discussed the results and used these to inform the next steps.
- Candidates achieved well when they included aims and conclusions in the relevant and key areas to successfully tell the product development story/design process.
- Scaffolds and writing frames used to support less able candidates to organise their thoughts and were well used by many centres.
- Sensory testing was done well however a range of testing methods should be used by higher ability candidates e.g. rating/ranking etc. Many centres use only star profiles to record their results.
- There was evidence of some very good final design solutions ideally this must include: a photograph of the final product, a full list of ingredients for all component parts, a review of the development process including full justification of the choices made, a comprehensive comparison against the product specification, an explanation of how the outcome may need to be modified for commercial production and final sensory testing results inclusive of comments from the target group.
- The design criteria must be used when evaluating ideas, some candidates lost sight of this. If no design criteria are produced then candidates will find it very difficult to score highly for this criterion.
- In some centres, there was limited evidence of linking the generation of ideas to the design criteria and referring back to it as part of evaluation.
- Some centres still use vague characteristics when testing e.g. taste, texture, appearance and therefore gain little information regarding their products.
- There is still a heavy reliance on star profiles which are poorly used.

- The target group must be referred to throughout the design and make process.
- Many centres missed out review of development and final testing against specification when producing the final solution this is essential to achieve marks in the higher bands.
- The explanation of how the product needs to be developed for commercial production was a weak area. This is required to achieve the top mark band. Candidates could refer to production methods, standard components, quality assurance, packaging, use of additives, large scale equipment etc.
- A final evaluation of the controlled assessment process is not required
- Candidates who had chosen to develop products with storage implications e.g. a chilled or frozen products, often failed to carry out any trialling of these methods to check the effects on the product being designed, thereby not addressing a key point of the specification.

Criterion 5: Communication

- Excellent use of ICT and digital photography was used by the majority of centres, and enhanced the quality of work even further this year.
- There were more e.portfolios this year and generally they were of a good standard, with excellent photographic evidence.
- Photographic evidence was used purposefully particularly when linked to production plans.
- The adoption of a more coherent design strategy by candidates, with more evidence of planning ahead is a clear improvement on previous years.
- Candidates achieved good marks when the design folders reflected the product development story.
- The majority of folders were concise and focused.
- Some good use of technical language related to the working properties of ingredients was seen, however this is an area that could be developed further. There was evidence that some centre had a lack of knowledge of the working properties of ingredients.
- To access higher marks candidates must record their decisions throughout the folder to provide a link and coherence that will tell the 'product development story' clearly.
- In a minority of cases higher ability candidates used writing frames which prevented extended commentary, creativity and innovation.

Administration/Assessment

- The detailed commentary on the Candidate Record Forms was appreciated by moderators. This was mainly good and in some centres exemplary.
- The majority of centres were prompt sending the centre marks lists and the sample to the moderator.
- Teacher annotation needs to provide qualitative comments related to the making ability of candidates.
- A list of making must be included on the Candidate Record Form.
- Many centres delayed sending the sample to the moderator after the initial sample was requested which delayed moderation. Centres with 20 or less students must send all the work to the moderator by the deadline date.
- Samples of work need to be sent to the moderator in rank order from the highest to the lowest.
- Disappointingly a few centres are still not making qualitative comments on candidates making skills; in some cases comments are missing or vague. It can be difficult for moderators to validate the centre marks without teacher commentary.
- There was a lack of internal standardisation in several centres, this is essential to maintain the rank order of candidates' work.

Recommendations and focus for 2012/13

- To carry out research throughout the design process to avoid front loading.
- Product analysis should be carried out before development.
- A target group must be selected at the outset and higher ability candidates produce a consumer/user profile. The target must then be referred to throughout the design process.
- Candidates need to generate a range of thoroughly annotated ideas at the design ideas stage.
- Annotation of designs should include reference to: sensory descriptions, reference to specific ingredients, finishing techniques and suggest how the product could be developed. It would be good practice to compare the ideas against the specification at this point.
- The implications of a wide range of issues including: social, moral, environmental and sustainability must be addressed throughout the project. Candidates need to weave references to social, moral, environmental and sustainability issues into the main body of the project
- Encourage more creativity, innovation and risk taking when designing and making and reward candidates for this.
- Candidates must consider the working properties of ingredients. Higher ability candidates need to use specific food technology terminology.
- A product specification must be produced before development and the statements justified.
- Candidates must evaluate the final product against the product specification producing detailed statements to achieve the top mark band.
- Ensure the product selected for development allows for challenging, creative and complex development. This is particularly important for students aiming for the higher marks.
- An investigative and experimental approach is required for students to achieve the top mark bands.
- Consider the working properties of ingredients during product development
- The application of a range of rigorous and challenging strategies for developing the final solution.
- At least half the project time should involve students being engaged in making activities which should be evidenced in the design folder.
- Ensure that practical work is accurately assessed against the assessment criterion.
- Give credit for good quality making – do not under reward candidates at the lower end of the mark range if there is good evidence in the folder.
- Ensure that the list of making stated on the Candidate Record Form corresponds with the work evidenced in the folder.
- Do not over reward simplistic practical work.
- Apply a range of testing techniques, with justifications at the higher ability levels.
- The final solution must include a section explaining how the product would need to modified for commercial production. This should not be copied notes from text books.
- Encourage candidates to evaluate and justify key areas within the project.
- Centres must refer to the guidance materials available online through the Teacher Online Standardisation (TOLS) system accessible through e-aqa, to ensure the requirements of controlled assessment are understood thoroughly and followed and the centre's work is marked against the AQA standard.
- Consider using the support materials as part of centre/departments CPD/INSET.

New support materials will be produced for 2012-13 related to the recommendations above and will be available on TOLS in the autumn term. This information will include more guidance related to the number of development activities required and more guidance related to making activities.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available at www.aqa.org.uk/over/stat.html

The UMS conversion calculator can be found at www.aqa.org.uk/umsconversion