



General Certificate of Education

Applied Science

8771/8773/8776/8777/8779

SC04 Food Science and Technology

Report on the Examination

2010 examination - June series

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General Comments

The number of candidates entered has again increased this year *for many units* and many centres have continued to guide candidates to achieve well. The award has generated much high quality work from centres. Credit should be given to both teachers and candidates in making every effort to meet the requirements of the award, producing portfolios, many of which demonstrated a commendable standard of content, approach and presentation. The centre accreditation scheme currently numbers 94 centres at AS and 26 centres at A2 level and random sampling of these centres has again confirmed the value of the process – with centre marking being confirmed as in line with AQA standards in the vast majority of cases, but with a small number showing some “slippage” with marks going out of tolerance leading to loss of accreditation.

Portfolio issues

Portfolio construction remains a concern for some candidates, and it is evident that better centre guidance is required in some cases. However, it is very important that centres provide the opportunity for candidates to demonstrate flair and individuality. It is easier for moderation if portfolio structure matches the structure of the unit. Centres are also advised to monitor portfolios during production to identify “cut and paste” styles of working early and to ensure approaches are appropriate. Some centres correctly down-marked candidates’ final portfolio marks due to inappropriately including cut and paste or copied work – but early identification and correction of such work could have avoided these final mark reductions. Other centres missed the inclusion of un-reworded downloads and these were dealt with appropriately by moderators, with most instances resulting in portfolio marks falling out of tolerance, a situation which unfortunately affects the entire entry for that unit. It is essential that these situations are dealt with at centre level before submission of marks in order that all candidates are treated fairly.

Some candidates continue to produce unreasonably large portfolios and it is rare for such portfolios not to include irrelevant material or be repetitive or, indeed, to have omitted some areas that would benefit from additional time and consideration.

For some units, it appears that the levels of expectation of the quality of portfolio content and/or the outcomes that candidates are allowed to produce are set too low. A number of centres are still judged to have marked candidates work too generously and where this was the case, marks were reduced and fell out of tolerance.

Some of the causes of over-generous marking included:

- Misinterpretation of the requirements of unit
- Too much work on non-essential areas and/or too little on required aspects
- Failure to fully complete fundamental aspects of the unit as required in the “Banner”
- Over-lenient interpretation of the assessment grids
- Failure to appreciate that high scores are likely to equate to “A” grade which means very good work in all areas of a unit – marks allocated to students should be matched to the track record and overall ability of students to ensure they are justified. Weak students gaining uncharacteristically high grades could indicate lenient marking.
- Lack of rigour in marking/assessment of work – incorrect science accepted, incorrect calculations marked as correct, incorrect statements accepted, praise for work which is of poor quality, marks allocated for work for which there is no evidence – or no supporting teacher comment (# in the assessment grids).

- The inclusion of materials directly down-loaded from the internet – such work should be awarded NO MARKS as original student work.
- Weak candidate skills in practical activities leading to a lack of precision and unreliability as evidenced in results, but high marks awarded.
- A lack of description by the centre assessor of each candidate's level of practical skills, their awareness of safety procedures and degree of autonomy (marked # in the assessment grids) and resulting inconsistencies between the marks awarded and the portfolio evidence.
- Many units require the use of risk assessments, and whilst many candidates include these, centre assessors are frequently over-generous in their allocation of marks in this area. The following are examples of where candidates are insufficiently accurate or specific and where marking is lenient.
 - Where solutions are used, the concentration is important and this can significantly affect the hazard and subsequent risk factors.
 - Where compounds or solutions are used, it is inappropriate simply to refer to and use the elemental form of the cation component of a compound – sodium has quite a different hazard rating to sodium chloride!
 - Common sense and an understanding of science should be applied when judging risk. Candidates should consider what are the real and sensible hazards and risks and then relate these to the actual compounds used at the concentrations involved as appropriate.

2010 was the first year for Quality of Written Communication (QWC) to feature in all portfolio units. The criteria appear in AO1 of Sc01 and AO3(ii) for all other units. Whilst appearing in particular assessment objectives, the intention is for the QWC statements to be applied across the entire portfolio. As explained at teacher standardising meetings, the intention was that QWC would consist of a cluster of criteria within each mark band and would generally be in line with other criteria at the level in question. As such there would be little change to existing standards. This has proved to be the case and only in a minority of instances did marks move up or down due to QWC alone. It was generally clear that centres had taken into consideration the QWC elements in their assessments. Unfortunately a minority of centres have continued to use the older criteria where QWC statements are not included and all centres are advised that they should be using the correct assessment grids.

Centres are reminded that many issues and points of guidance made in the 2008 and 2009 examination reports are still valid and these remain valuable sources of information.

SC04

This unit has 2 parts:

- The generation of a design brief for product for a particular a client group with a specific dietary need.
- The production and testing of the product.

Many centres made excellent efforts with this unit and met unit requirements well. Some centres visit catering colleges or similar for this unit. Where this is the case, the providers should be made fully aware of specification requirements and take care not to compromise student opportunities to gain marks by the use of project leaders who provide too much “help”.

There are a number of areas where centres have not fully understood the unit requirements:

- The design brief or product specification is frequently not clearly identified – limiting marks in AO1 and possibly even gaining no credit for this aspect of the mark band.
- there should be a section that clearly sets out what the candidate is going to make, who it is for, what particular features it should have and how it is planned to package and keep the product in good condition. This would allow for marks to be gained in higher marks bands in AO1.
- Research into recipes, ingredients, and methods of preparation should follow, again allowing access to higher marks in AO1.
- Some candidates chose to make inappropriate products (for example a protein shake – protein powder added to milk or water) which are inadequate to meet specification requirements since research into preparatory methods is virtually nil. Some appear to plan 3 course meals which are too much – only one product is required – and some appear to switch products during their work for the unit, thus restricting marks to mark band 2 in AO1.
- Some candidates provided no evidence whatsoever that a product had been made making mark allocation in AO3(i) more problematic.
- Individual contributions to group activities should be made very clear so that credit goes to the appropriate person. Autonomy and skill are a component of AO3(i) and should be awarded on an appropriate individual basis supported by teacher comment (#).
- Tests on foods which have no link to the products made, as exemplified on page 61 of the specification, meaning access to marks is limited in AO3(i).
- In many portfolios, much practical work gave only qualitative results based on low level observational work on food decay. Serial dilutions, colony counts, turbidity or other tests which generate numerical data would be appropriate covering both decay and preservation in **separate** experimental procedures.
- Some candidates carried out activities of little relevance such as tracking the drying out of soup over time, or checking weight loss of food samples in sealed containers. The inclusion of experimental work which produces accurate numerical data makes award of mark in AO3(ii) more easily justified.
- A shelf life for the product based on the results of experimental work was often missing. Sometimes it was total guesswork or inappropriate and not based on the evidence available. Such omissions restrict marks to marks bands 1 or 2 for this aspect.

- Costing of the product was often simplistic and frequently generated wildly optimistic levels of income from projected sales of the product. Marks for skills of calculation are awarded in AO2 and simple addition of costs of ingredients will limit marks to mark bands 1 or 2. If calculations include a range of appropriate additional (possibly estimated) cost factors in production of the product or are extended by calculations related to practical work then marks may be available from higher mark bands.
- Work on Government Agencies such as the Ministry of Agriculture, Fisheries and Food, the Food Standards Agency, the local authority inspectorate and the tests they carry out related to their product is an area being investigated by some centres but still in need of development in many others. Omissions in this aspect will restrict marks in AO3(ii).

Mark Ranges and Award of Grades

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