AQA

ASSESSMENT and
QUALIFICATIONS
ALLIANCE

General Certificate of Education

Applied Science 8771/8773/8776/8779

SC04   Food Science and Technology

Report on the Examination

2008 examination - June series

General Comments

The award has continued to grow in terms of number of candidates entered and centres have continued to guide candidates to achieve well at AS level. The A2 award has generated much high quality work from centres. Due credit should be given to both teachers and candidates in making every effort to meet the requirements of the award, producing portfolios, in many areas, of a commendable standard of content, approach and presentation. Centre administration overall has been good. The centre accreditation scheme has allowed 94 centres for AS and 26 centres for A2 the opportunity to be freed from external moderation. Random sampling of these centres overall confirmed the value of and, unfortunately, in a very small number of cases, the necessity for, the process.

Portfolio issues

A number of centres were found to have marked candidates work too leniently and marks had to be reduced. There were a number of reasons for this inflated mark allocation, these are listed below (and explained throughout the report):
- misinterpretation of the requirements of unit
- too much work on non-essential areas and/or too little on required aspects
- failure to fully complete 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
- 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, lack of evidence in portfolios yet marks still allocated
- the inclusion of materials down-loaded from the internet

It is very important that centres guide candidates on portfolio construction, leaving opportunity for candidate flair and individuality. Centres are advised to monitor portfolios during production to see how they are developing. Some centres are continuing to produce unreasonably large portfolios running to over 300 pages per unit. These are really too large and represent an unreasonable amount of candidate effort. It also shows some lack of skill on the part of the candidate in selecting the most appropriate material to include and inappropriate guidance by the centre in allowing the candidate to produce so much work. At the other end of the scale some candidates submitted work that was very poorly organised making moderation difficult and some portfolios were very short containing little of the unit requirements, thus gaining very few marks.

Centres need to consider the assessment and moderation of candidates work during portfolio construction. AQA do not set out any requirements for portfolio construction. In order for assessors and moderators to award marks, it is much easier if the portfolio is structured in such a way that they can work through it and the matching assessment grid simultaneously. It is therefore easier if portfolio structure clearly matches the structure of the unit. Candidates and assessors should ensure that there is evidence in the portfolio for all banner requirements and all areas in the assessment grids. The level of response and the level of understanding, degree of autonomy and practical capability and quality of descriptive accounts shown will allow candidates to be awarded marks from the higher mark bands.

In order to substantiate marks, especially from the higher mark bands, it would be very helpful if assessors could add explanatory comments to the Candidate Record Form, or on any other suitable document, to describe the candidate's level of practical skills, awareness of safety procedures and degree of autonomy, especially in the areas marked # in the assessment grids. Without supporting evidence from the centre, moderators have only the candidates' written responses on which to base a judgement, and it can sometimes prove difficult to justify the centre's marks based on this evidence alone.

Whilst guidance through units is important for candidates, too much guidance, exemplified by all candidates doing the same activity, obtaining the same results and doing the same calculations, suggests over guidance by the teacher.

Allowing candidates to show autonomy in their work does not mean leaving them to do it alone, there is a middle way - helping candidates where they need help, and allowing them freedom – whilst monitoring their work to allow them to gain the higher marks. It is important that tutors ensure unit delivery programmes cover unit specification requirements and that candidates are fully aware of what they should include in portfolios to gain marks.

There are still a significant number of candidates from particular centres who produce portfolios with content that does not match what is required, often including too much material, material that is outside the brief for the unit or targeted at too low a level. Some centres have led candidates through work, which is not required by the specification. This has sometimes been of a good standard and represents considerable candidate effort but it gained no marks. In other cases, candidates included several examples of the same type of activity when only one is required. Where the various examples are of differing quality, this can have the effect of diluting overall standards and reducing marks.

Centres that plan to use published course materials or materials available on the internet must ensure that material chosen for candidate activity matches the AQA GCE Applied Science specification. Centres that follow a course targeted at other specifications or use published materials should establish that they are appropriate, either by checking the AQA specification or by liaising with an AQA portfolio adviser, if there are any concerns. To discover work is inappropriate at moderation is distressing for all concerned and very unfair on hard-working candidates who deserve or who are expected to achieve well.

As stressed at AQA standardising meetings, in communications sent to centres and in last years report, it is imperative that centres make it very clear to candidates that the incorporation of text downloaded from the internet into portfolios is plagiarism and must not be tolerated. Candidates sign their CRF to verify that the work is their own. To include work other than their own will be judged to constitute cheating and action will be taken. The assembly of a portfolio by simply downloading material and cutting and pasting it together is not acceptable. It is expected that candidates will use the internet but they should use it as a resource from which they construct their own portfolios by reading, understanding and re-working what they have found to suit their purpose. Candidates may find it helpful to download and use in their portfolios sets of data, photographs, diagrams and other similar items to support their work and this is not a problem providing it is adequately referenced. The unedited use of downloaded text in portfolios, credited as candidate work, is unacceptable. If centres fail to identify this during monitoring and final assessment, their entry could possibly be referred to the AQA malpractice unit and could have marks significantly reduced or even discredited. Moderators are experienced teachers and read many portfolios; they are aware of web-sites and can recognise text content where changes in style of writing are at variance with candidates own.

It is easy for moderators to identify downloaded text in portfolios and find its source using internet search engines.

In a number of portfolios this year there was clear evidence of candidates copying each others work, this work was also penalised. Centre assessors must work with the same vigilance as a moderator and assume that such work will be identified. A few centres were warned this year that some work was very similar to downloaded material. Moderators next year will be alerted to these centres and if the issue arises again, the centre can expect to suffer significant mark reduction and referral to candidate services for malpractice. This year an increased number of centres were referred to the AQA malpractice unit by moderators and candidate marks were significantly reduced as a result.

It is also worth noting that simple "search and replace" options may change the text or non-key words in places, but where the scientific content remains the same and has clearly not been reworked and applied in candidates' own words, this remains an issue.

Administratively most centres sent mark sheets off (or sets of portfolios if 10 candidates or fewer) in good time. However some centres were very late. A number of centres forgot to include Centre Declaration Sheets and a significant minority forgot to send Candidate Record Forms signed by the candidate; some of these also had the candidate name or number missing, which again makes finding work more difficult, as both are needed for checking.

Some centres still use plastic wallets or poly-pockets. When not secured these are very slippery and removing and replacing material from them is time consuming and frustrating. The best way to submit final portfolio work is to use double or single treasury tags to secure portfolio pages with the Candidate Record Form and any centre assessment documents at the front.

The AS Units – 1, 3, 4 and 6

There are still some centres that have failed to appreciate that Units 1, 3, 4 and 6 are targeted at AS level and have used assignments that are insufficiently challenging for candidates. Activities set at a limited level of challenge can restrict marks from the higher mark bands because candidates find difficulty matching the work to the areas required in the assessment criteria.

Some centres are using assignments that candidates find too challenging. Less able candidates find difficulty in accessing the work.

AS builds on the work candidates are likely to have completed at GCSE. Candidates will be at different levels of competence and understanding. Centres should aim to build on candidate knowledge, capabilities and interests. The most appropriate school and local facilities should be used to extend GCSE work to AS level.

The level of demand of an activity affects the level of response from candidates. It is important to match tasks with candidate capabilities so that candidates can access work and gain marks in an appropriate mark band. There is a balance to be struck between challenge sufficient to be interesting and too challenging, which can create barriers to candidate progress. For some units, it appears that the expectation of the quality or level of outcomes candidates are able to produce is set too low. Many centres get this right, knowing their candidates well, understanding what the specification requires, providing assignments which match both and setting appropriate high expectations of what their candidates are able to produce.

Unit 4 – Food Science and Technology

This unit has 2 parts, the production of a design brief for a product and the production and testing of it. Many candidates complete this unit well but there are several areas where centres still have not fully understood the unit requirements. AO1 is essentially about the identification of a group of individuals with some sort of dietary need. The diet may be specialised or it may just be a well balanced diet. The aim is to show an awareness of general or specific dietary needs and then design a product to meet this need bearing in mind that the product is likely to deteriorate once made.

In many portfolios, the design brief or product specification was hidden amongst an extensive piece of work about diet. It would be a good idea if candidates had a clear section, maybe only one page, that clearly sets out what the candidate is going to make, who it is for, what particular features it should have and how they plan to package and keep it in good condition. The design brief may not necessarily come at the start of the portfolio since candidates may wish to explore ideas and theories before deciding what to do.

Once the product is decided upon then research into ingredients, methods of manufacture and its preparation would follow. Most candidates made their product and used photographic evidence of the stages of production and the final outcome - which is good evidence. Some candidates provided no evidence whatsoever that their product had in fact been made. Where this is the case, the centre should annotate the portfolio accordingly. Fewer candidates selected inappropriate products this year. Some candidates worked in groups on product design, this is acceptable, but the individual contributions should be made very clear so that credit goes to the appropriate person.

Most centres carried out tests on food materials but unfortunately several centres appear to have carried out "class practicals" on food items some of which have no link with the products made. In this case access to marks for carrying out tests on "the product" is impossible. Centres are advised to consider their guidance to candidates about how to test their product as a whole or as its components. This is the area where precise and reliable data can be obtained and calculations carried out. Serial dilutions, colony counts, turbidity or other tests which generate data would be appropriate covering both decay and preservation. Many observations made were low level such as "the product had dried out", or "there was green mould on the banana, but not on the peanut." Some carried out activities of little relevance such as tracking the drying out of soup over time, or checking weight loss of a food samples in a sealed container.

It should be noted that sensory testing, whilst clearly sensible for a food product, is not part of the specification, since this is the case, candidates work in this area should not form a significant component of the study.

It should be noted that 2/3rds (40 out of 60) of the marks for this unit are from the experimental work. It's quality should match this mark distribution. Overall, many centres are still not targeting the required experimental work at a high enough level. This detracts from the marks in several ways, including the inability to suggest and justify a suitable shelf-life and modifications to the product.

Some candidates made very good efforts with packaging ideas and gave good detail of the legal requirements for labelling. This often included current examples of product labels with candidates going on to design their own label for their product, some even making a mock-up package and label.

Most candidates tackled costing of their product but many of these were at a simplistic level. The idea is for candidates to be aware of the cost of ingredients, manufacture, packaging and other on-costs involved in the production of food items and to make a sensible attempt at a cost for their product. Most centres included work on Government agencies such as the Ministry of Agriculture, Fisheries and Food and the Food Standards Agency, the tests they carry out and how this could impact on their product was much less well covered but this area shows some improvement on last year.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the **Results statistics** page of the AQA Website.