



Alternative Certification Model 2020–21: National QA Exercise Key Messages

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| Subject | Chemistry |
| Level | Advanced Higher |

This report provides information on themes emerging from the national quality assurance exercise, which is part of the Alternative Certification Model for National 5, Higher and Advanced Higher courses.

A sample of candidates' assessed work from selected centres was reviewed to determine whether assessment was in line with the national standard. The evidence submitted may have been partial or incomplete and is unlikely to have represented all of the evidence that will be gathered to allow the centre to determine a provisional result.

The centres selected for review in this subject and at this level have been provided with specific feedback on the evidence that they submitted. The comments below highlight key points about the assessment approaches and instruments used and the sampled centres' assessment judgements, for all centres delivering the subject at this level to reflect upon and make any appropriate adjustments.

Section 1: Comments on approach to assessment

Most centres submitted partial evidence. Centre-devised assessment instruments were the most common form of evidence submitted and these ranged from short end-of-topic tests through to full course coverage. The 2021 SQA question paper was submitted by a few of the selected centres. The vast majority of centres were able to submit evidence for five candidates.

Almost all of those centres with partial evidence were intending to use the 2021 SQA paper at a later date. Some centres were intending to modify the paper. It was not clear whether this meant changing the questions or simply splitting the paper so that it could be administered over more than one sitting.

Most of the centre-devised assessment instruments were shorter than the three-hour, 110 marks of a full SQA paper and were commonly split into two or three separate papers. The full course assessment instruments were usually appropriately balanced in terms of course coverage. However, the balance of knowledge and understanding, and skills questions in the assessments, was rarely appropriate with too few skills-based questions. Skills-based questions should account for 30% of the total marks, and many centres failed to include even half of that figure in their assessments. There were often no open-ended questions in shorter assessments that cover part of the course. Additionally, almost all centre-devised question papers had too few grade A marks. Many of the grade A marks in an SQA paper are for skills-based questions, since the unfamiliar nature of these questions tends to increase the level of demand. The lack of skills questions might explain why the centre-devised papers tended to have a low level of demand.

Centre-devised questions papers were most frequently constructed from a range of past paper questions, most of which pre-date the introduction of CfE Advanced Higher. Most were used unmodified and were not in the style of current SQA questions, so command words were not used consistently, units were not included for calculation-based questions, and the number of significant figures was not consistent across the data used in an individual calculation question.

For future reference, it is current practice to start each question with a command word and a list of these command words, along with their usage, can be found in the general marking principles at the beginning of any set of SQA marking instructions. Updating the style of the questions helps familiarise candidates with the format and command words before sitting an official SQA exam. The 2019 Advanced Higher specimen question paper and the SQA 2021 secure assessment resource exemplify the current style of question.

Some centre-devised papers included items that assessed inappropriate content, for example content that is no longer in the Advanced Higher course or content from the Higher course.

Section 2: Comments on assessment judgements

Most of the marking judgements evidenced were in line with national standards.

The most common issues arose with the marking of multi-mark questions involving a calculation or an extended answer. This was due to lack of clarity in the marking instructions, which meant marks were not consistently assigned.

When assigning marks for calculations, many centres appeared to be looking for individual marks, that together would add up to the maximum mark awarded. This is not the current standard. Although working is required in a small number of calculation questions, for all other questions full marks should be awarded for a correct numerical answer, which is given to an appropriate number of significant figures. If a correct numerical answer is not given by the candidate, then the marker should seek to award partial marks. These should be clearly laid out in the marking instructions. Many partial marks found in marking instructions were too specific. It is sometimes better to have operational marks as partial marks. For example, one mark may be awarded for correctly calculating a mass from an incorrect moles of substance. Where a correct numerical answer was given, there were many instances where the marker had failed to notice an inappropriate number of significant figures. The acceptable significant figure range for an answer is one fewer to two more than the raw data. Having all the data in the question to the same number of significant figures is best practice for calculations. In addition, detail was often not included about the marking of units. Questions that have the unit included in the question do not require a unit to be written by the candidate but if a unit is written it must be correct (including lower- and upper-case symbols). There is one question in the SQA 2021 papers that requires a unit to be written in the answer and therefore the unit is not included in the question.

Often the marking instructions for questions requiring an extended answer did not detail the mark allocation. For example, the marking instructions for a two-mark explanation should be clear in what specific words or phrases are required for each mark. Words and phrases that are not specifically required to be included by the candidate should be indicated by using brackets.

A great deal of good practice was evident from the evidence submitted. There was clear evidence of moderation in all submissions, either internally, externally, or both. Changes to marks awarded were clearly annotated and sometimes the justifications for the changes were also provided.

It is recommended that all centres check the content of their assessments against that of the current Advanced Higher Chemistry course specification, which was updated for the session 2019–20.

The Advanced Higher Chemistry question paper brief, located in 'Guidance on Assessments and Gathering Evidence', published on the Understanding Standards website, details the breakdown of a paper meeting the national standard. Centres should check the breakdown of their centre-devised assessments against this brief. If there is only partial course coverage or too few grade A marks then the assessment will not be at an appropriate level of demand and consequently, not at the national standard. Further assessment evidence will be required before provisional grades can be determined for candidates.

When considering amendments to the notional grade boundaries, the centre should only take into account the demand of the assessment, in terms of the balance of grade A and grade C questions and the conditions of assessment, for example, a single paper or a split paper. This balance can also be affected by the centre's interpretation of the marking instructions and any modifications made. Grade boundaries should not be amended based on the circumstances of the candidates. In all cases, national standards should be met. The grade A boundary and grade C boundary should be set independently. The grade B boundary is exactly half way between A and C. The grade D boundary is set at 10% below the grade C boundary. The boundary between upper and lower bands is at the halfway point of each grade. It is worth noting that grade boundaries vary from year to year but usually by only a few marks.