



General Certificate of Secondary Education

Applied Science 4861

APSC3 Developing Scientific Skills

Report on the Examination

2009 examination – January series

Further copies of this Report are available to download from the AQA Website: www.aqa.org.uk

Copyright © 2009 AQA and its licensors. All rights reserved.

COPYRIGHT

AQA retains the copyright on all its publications. However, registered centres for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to centres to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

The Assessment and Qualifications Alliance (AQA) is a company limited by guarantee registered in England and Wales (company number 3644723) and a registered charity (registered charity number 1073334). Registered address: AQA, Devas Street, Manchester M15 6EX
Dr Michael Cresswell Director General.

General comments

Activities

The majority of centres completed a good range of tasks set in interesting vocational contexts. It was nice to see that the vast majority of candidates had a complete portfolio. Where penalties had been applied this was done correctly. There was still evidence of downloaded material being credited throughout both units 3 and 4. Downloaded material (even if sourced) is not creditworthy unless clearly used and rewritten by the candidate. Some centres were still submitting six pieces of work in unit 3, which is perfectly acceptable, but in some cases this needs to be made clearer on the candidate record form.

Assessment

Whilst tick sheets are useful at the front of a piece of work, annotation is also required within the work, it shows the moderator where the evidence can be found, particularly for any section where a certain level of guidance has been given. If the centre has used their own in house tick sheet, they should ensure that it is correct and the marks match those set out by AQA. Centres are reminded of the requirement for internal standardisation where more than one assessor carries out assessment.

Presentation of work to the moderator

Work was generally well presented and centres had adhered to the request not to use bulky folders. It would be helpful if centres punched and tagged work rather than using plastic wallets, staples or paper clips and did not send class work or theory work that was not marked or not part of the candidates assessed work.

One of the main problems in this session was the very late arrival of paperwork and the subsequent late arrival of the sample. It is vital that centres adhere to the AQA deadline of the 10th January for marks to be with AQA and moderator and that the sample is sent within five working days of receiving the request. Please also note that if the centre has less than ten candidates entered, all work should be sent to the moderator by the 10th January together with both the yellow and pink copy of the centre mark form.

Further support

Teachers are encouraged to make the full use of the guidance available. The Teachers' Guide gives more detailed information on portfolio marking and should be used together with the 'Coursework Information for Centres' published each year. The 'Coursework Information for Centres' details general information about entries, notes on each of the units including appropriate tasks, administrative procedures and the role of the portfolio advisor. Centres can also access the Ask AQA Science forum from the website.

Strand A: Planning and Following Instructions

Some centres had marked these very accurately whilst others had annotated and credited stage 3 when there was very little evidence. At all stages the risk assessment should be complete. At stages 2 and 3 it should be comprehensive and include all of the main equipment and/or chemicals. For example where an indicator is missing for the chemical analysis techniques or the bacteria in the living organisms section, the risk assessment is not deemed to be complete since these are vital parts of the experiment.

At stage 3 in addition to being complete and comprehensive, the risk assessment should be completed independently. If the risk assessment has been carried out independently and major parts are missing, a stage 3 mark cannot be awarded.

Strand B: Obtaining Evidence by Experimenting

The marking of skill B was more accurate than in previous sessions however there are still a number of errors. Tables were being awarded the mark for 2B3 when there are headings and units missing. Bar charts are also being credited for 2B3 and in some cases 3B3. Please note for 2B3 and 3B3 the graph needs to be a line graph with an accurate line of best fit.

Where prepared tables are used to help lower ability candidates, 2B3 cannot be awarded since the headings and units have been provided.

For 3B1 all of the decimal places need to be consistent. To award 3B2, teacher annotation is required to show that repeats were carried out independently however this must be accompanied by a student explanation. The explanation should be more than to make it fairer or more reliable.

Strand C: Analysing and Considering Evidence

Most centres were marking accurately at stage 1 although a few were still forgetting that stage 1 requires both calculations and a comment. If either is missing, stage 1 is incomplete and the maximum mark that can be awarded is four with compensation from stage 2.

To award 2C1, the patterns in data should refer to actual results collected by the candidate rather than simple statements or reference to theory. At stage 3, to award 3C1, the data should be quantitative and once again refer to the actual results.

Where candidates have been awarded 3C2, they must provide evidence explaining how they have rearranged an equation such as $V = IR$ or show understanding in a molarity calculation. Simply substituting numbers into a prepared formula will only gain stage 2 credit.

Strand D: Evaluating Evidence

Evaluations are generally improving and are completed well at stages 1 and 2 although sometimes 2D2 is still being awarded without improvements being justified. Most error is occurring at stage 3 where either a bullet pointed list or just a couple of sentences are being credited. The discussion at this stage must be detailed.

Strand E: Vocational Application

There are still occasions where this section is being tagged on at the end of a piece of work rather than the entire investigation being set in a vocational context. Where a scene is set at the beginning, candidates are given a greater opportunity to respond both in this section and in their conclusion where they can relate back to the original problem.

At stage 2, workplaces should be specific named ones rather than a general one such as electricians or doctors. For 3E1 scientific explanation is expected when relating the usefulness of the investigation to a scientific workplace.

For 3E2, candidates should be encouraged to name organisations and include a few sentences rather than copying and pasting addresses off the Internet.

Care should be taken to describe the use of the investigation not for example the use of a microscope in the first stages.

Mark Ranges and Award of Grades

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