Version 1.0: 0707

ASSESSMENT and QUALIFICATIONS ALLIANCE

General Certificate of Education

Applied Science 8771/8773/8776/8779

SC07 Planning and Carrying out a Scientific Investigation

Report on the Examination

2007 examination - June series

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

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 – June 2007 Series

The A2 Units – SC07, SC09, SC10, SC12, SC13, SC15 and SC16

The entry for the specification has continued to grow and centres have continued to successfully guide candidates to achieve, this first cohort for the A2 award has generated much high quality work from centres. Due credit should be given to both teachers and students in making every effort to meet the requirements of a new specification, producing portfolios, in many areas, of a commendable standard of content, approach and presentation. Centre administration overall has been good. However a number of centres were very late in sending initial documentation to moderators and in sending off requested samples. A number of centres failed to fully complete candidate record forms, missing candidate names and numbers makes recognition of work very difficult and leads to frustration and the potential for mis-allocation of marks.

Unit 7 – Planning and Carrying out a Scientific investigation

Whilst many centres produced quality work in this unit, making good use of local companies and realistic investigations, a significant number did not address this unit well. The chief problems identified in candidates and centre approaches are outlined below.

- Centres setting investigatory activities that are little beyond GCSE standard work.
- Investigations based on unrealistic client requests, such as a personal trainer wishing to know about polyphenol oxidase activity in peppers, which is an unlikely request.
- Candidates carrying out practically based investigations using apparatus and techniques that do not produce precise, accurate and reliable results.
- Little evidence of realistic and useful trialling of experimental procedures.
- Candidates failing to produce a presentation for the client which outlines findings and provides an "answer" to the initial science based query or problem.
- Candidates making little reference to how the investigatory topic can be related to an area of study in the specification. This should not be seen as a barrier to work with an investigatory topic, more an opportunity for candidates to seek matches in an investigatory activity to some aspect of the GCE Applied Science specification.

The key points to consider in completing this unit are:

1. A client should be identified who has made a *realistic* request for information about a topic. (These requests could come from a local science based company or could be sourced through the local authority Education Business Partnership links).
2. A plan of approach to the activity should be set out, outlining research opportunities, possible routes of investigation to follow, places to visit, items to obtain, investigatory activities, drawing of conclusions and preparation of client report. Some ideas of target times should be included.
3. Trials or dummy-runs should be evidenced, even if they fail to work, the aim of their trail is to find out whether the proposed method will work. Evidence of research into the methods chosen should be included and associated risk assessments should be there as should the modification of the suggested standard procedures, based on the trial results.
4. The level of autonomy demonstrated by candidates is important. This should not be seen as a barrier to helping students or a way of restricting marks. Assessors should be aware that to lead students through activities (this could be the school teacher acting as the lead or a university demonstrator or post graduate student) constrains candidates opportunities to show individuality and flair, and could limit marks. However to abandon students and not help them when they need help because they, "have to work autonomously" is also unfair. It is better to give help and guidance where needed and allow students to progress on appropriate lines and gain appropriate marks rather than leave them alone to get it wrong and gain very few marks.
5. When the investigatory work is completed, appropriate conclusions should be drawn, related to the initial problem set. Findings should be displayed in the most appropriate way to allow conclusions to be drawn.
6. A clear, concise report should be prepared for the client, this can be in any form the candidate and client judge to be the most appropriate. Good examples of PowerPoint presentations and leaflets incorporating text and images were in evidence this year.

Mark Ranges and Award of Grades

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