



**General Certificate of Secondary Education**

**Applied Science 4861**

**APSC4 Using Scientific Skills for the  
Benefit of Society**

**Report on the Examination**

*2008 examination – January series*

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## General comments

### **Activities**

Most centres completed a good range of tasks set in interesting vocational contexts.

A lot of downloaded material was being credited throughout: downloaded material (even if sourced) is not creditworthy unless it has clearly been used and rewritten by the candidate.

Very few centres entered for this unit in January. Of those seen, the main area for improvement is the inclusion of a risk assessment for all strands. It is a requirement of the course, and shows that candidates have completed tasks safely. Penalties have not been applied in the first instances, but may be applied in future.

### **Assessment**

Generosity in marking was mainly due to misinterpretation of the specification requirements or lack of annotation. It is imperative that teacher annotation clearly supports the marks awarded, shows how much guidance was given and how independently the candidate had completed a task.

Whilst tick sheets are useful at the front of a piece of work, annotation within the work is also needed to show the moderator where the evidence can be found.

### **Presentation of work to the moderator**

Most of the work submitted was generally presented in good order, with the necessary paperwork included. Most 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 or paper clips. Centres should not submit classwork or theory work that was marked or part of the candidate's assessed work.

A number of the Candidate Record Forms seen were incomplete or incorrect, as were the centre mark forms. Centres should check that the mark on the Centre Mark Form matches that on the Candidate Record Form. It is also helpful to the moderator if work is put in the order set out on the Candidate Record Form and the best marks have been identified.

Unfortunately, quite a few centres took a long time to send in the samples requested. It is important that deadlines are adhered to and paperwork is completed and checked carefully so that moderation can run as smoothly as possible.

### **Further support**

Teachers are encouraged to make full use of the guidance available from AQA:

- The Teachers' Guide for the specification gives details on marking portfolios
- The Student Guide to Assessment
- Coursework Information for Centres 2007/2008 (sent out by the Subject Department at the beginning of each academic year) gives general information on entries, specific notes on marking of each unit (including appropriate tasks), administration procedures and the role of the Portfolio Adviser
- Portfolio Advisers
- Teacher Support Network
- Ask AQA for Teachers

## Strand A: Monitoring A Living Organism

Some nice examples of investigations were seen. Generally this was done well, although some candidates are still writing their 'plans' in the past tense. A plan is an intention to carry out an experiment and, therefore, **must** be written in the future tense to gain credit. Annotation of the guidance given with both the plan and monitoring of the organism is essential.

## Strand B: Making a Useful Product

Annotation of the amount of guidance given in making the product and writing the word equation is essential.

To award 2B.6, the factors that affect the rate of reaction must be related to the product made and should be appropriate (for example, few of the reactions seen would be affected by pressure).

At Stage 3, the chemical equation must be correctly balanced; sometimes credit was given for an equation that was incorrect or that had been corrected by the teacher. The equation should also be accompanied by an explanation of the type of reaction. The equation alone should not be given credit.

Centres should note the difference between 'give', 'describe' and 'explain' a use for the product, and at Stage 3 the impact of the product on society should also be discussed.

## Strand C: Assembling an Electronic/Electrical Device

Once again, annotation to indicate the amount of guidance provided to the candidate is crucial. There must be evidence from the candidate that the device has been tested – a teacher comment alone is not sufficient. For instance, candidates could include a table of results and/or a comment about whether their device worked.

For 2C.4, the evaluation must be of the device, **not** of how well the candidate made it. Quite a few centres are awarding this mark to candidates who have not discussed how good or bad the device was at carrying out its intended function.

Very little work covering 3C.2 and 3C.3 was seen.

## Strand D: Using Machines

An example of a machine and its use in the workplace must be provided in order for candidates to achieve more than 1 mark.

Generally, 2D.1 was completed well but work on friction still lacked detail. Candidates should be applying their knowledge to machines and discussing how friction causes energy loss and reduction of efficiency in addition to its usefulness in certain machines.

Most candidates had completed an experiment to gain credit for 3D.1 and had carried out calculations. It was not always clear, however, that candidates understood these calculations: the use of Excel (or a similar spreadsheet) to carry out calculations where candidates simply type in their data is not acceptable. The candidate needs to show understanding of what they are doing, and should include at least one worked example for each type of calculation.

It is recommended, for continuity, that the experiment relates to the type of machine studied at stages 1 and 2, although an independent series of laboratory based investigations is equally acceptable.

## Mark Ranges and Award of Grades

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