



Cambridge Chemistry Challenge Lower 6th

Thank you for entering your students in the 2011 Cambridge Chemistry Challenge.

We were very pleased with the high number of entries in the first year of this new competition – over 2800 scripts were returned. It was a challenging paper, but there were some excellent results: some Year 11 students were amongst the best, and a handful of outstanding Year 12 candidates scored full marks.

We were pleased to receive positive feedback from many schools and are delighted that some are already thinking ahead to next year. A few schools were concerned that some of the material was unfamiliar to their students, but it was a conscious decision to set questions that were interesting, challenging and which tested problem-solving abilities. This can come as a shock to students since it contrasts with the A-level style where greater emphasis is placed on factual recall. However, problem-solving skills are essential for the study of science at university and in industry.

Similarly, some feedback suggested that the paper was too mathematical. This may be because mathematical skills no longer seem to be a prominent part of the A-level science curriculum. However, maths remains an important part of any science degree. The maths in the paper actually required nothing more challenging than the use of Pythagoras' Theorem; the hard part was actually seeing how the maths applied to the particular problem.

We understand some teachers feel that this style of question is beyond the reach of their students, but the results show that excellent students can be found in any school. Our aim is to build up the confidence of teachers and students so that they can progress beyond the comfort zone of A-levels. To help with this we will publish detailed worked solutions to accompany the paper. These will provide the necessary guidance on how these difficult questions may be approached from cold, and additional background material to illustrate the relevance of the chemistry. This material could be used by teachers during lessons, or by the students in private study.

The paper, the mark-scheme, and the examiners' comments will appear on the website soon. We hope you feel taking part in this competition was a worthwhile experience and we would welcome any additional feedback; please email feedback@C3L6.com.

For your interest a summary of the results is included over the page.

Results Summary

Students obtained the complete range of scores from full marks to zero. For this paper, we felt that a good AS student should be able to achieve a mark of at least 20 and that this was a suitable boundary for the beginning of the awards. A mark of 30 or above represented an excellent achievement on this paper and showed the students were able to think their way successfully through unfamiliar material. Almost a quarter of the candidates were of this standard and achieved at least a Silver Award. The top papers were moderated; any mark over 40 was considered outstanding and demonstrated a significant leap beyond A-level. These students were given a Gold Award or higher. The highest award, the Roentgenium, was only given to the top 1% of students: they have been invited to attend a residential course at the University of Cambridge. It was very pleasing to see 24 schools from all sectors of secondary education represented in this group. Of the 200 schools that entered students, only five did not achieve any award.

Award	Mark	Number of Students	Percentage
Roentgenium	53-64	35	1.2%
Gold	40-52	166	5.9%
Silver	30-39	436	15.5%
Copper	20-29	952	33.9%
No Award	0-19	1219	43.4%

