



**General Certificate of Secondary Education
March 2012**

**Science B
(Specification 4500)**

SCB3HP

Unit 3: Making My World a Better Place

Report on the Examination

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GCSE Science Specification B

SCB3HP

General Comments

This report is based on an extremely small cohort, who sat this exam in the March 2012 series. However, the importance of practicing writing continuous prose responses to scientific questions cannot be overemphasised.

Question 1 (Standard demand)

- (a) There were no issues with this question.
- (b) There were no issues with this question.

Question 2 (Standard demand)

- (a) Incorrect answers to this question stated 'respiration' and 'digestion' as ways that pathogens can enter the human body. Schools / colleges need to reinforce with candidates the need for more precise language in order to access the full range of marks.
- (b) (i) There were no issues with this question.
- (b) (ii) Responses correctly identified that the antibiotics would destroy the non-resistant strains of bacteria. However, vague use of language meant that the candidate failed to communicate the idea that the resistant strains would survive to reproduce.

Question 3 ((a) Standard demand / (b)(c) High demand)

- (a) (i) There were no issues with this question. It is worth teachers reinforcing with candidates the idea that a line of best fit can be a curve or a straight line.
- (a) (ii) It is important for candidates to have practice at identifying and describing the changing rates of incline or decline in a graph in order to gain full credit in this type of question.
- (b) (i) There were no issues with this question.
- (b) (ii) Correct responses identified that the reduction in methane emissions from non-agricultural sources has been more successful than from agricultural sources. Candidates needed to make a further comparison to gain full credit and consider that in this case the reduction was over three times better.
- (c) (i) There were no issues with this question.
- (c) (ii) There were no issues with this question.

Question 4 ((a)(c) Standard demand / (b) High demand)

- (a) A Level 3 response required candidates to give a clear and detailed account of the process of electroplating, and to communicate their ideas in very good English. This question was well answered on the Higher paper.
- (b) There were no issues with this question.
- (c) There were no issues with this question.

Question 5 (High demand)

- (a) For a radiation film badge, candidates need to be clear about how the badge can monitor or indicate the presence of alpha, beta or gamma radiation. For example, the amount of lead in the badge will not prevent all of the gamma radiation reaching the photographic film.
- (b) The first two marking points for this question were correctly gained. Candidates need to be clear on the effect of the X-rays on the photographic film to gain full marks.

Question 6 (High demand)

- (a) There were no issues with this question.
- (b) Incorrect responses failed to explain the method of degradation of oxo-degradable plastics, and did not clearly communicate that an additive causes the plastic to crumble into small pieces and allow access by microorganisms to break the plastic down further.

Question 7 (High demand)

- (a) (i) Surprisingly, U-values were not correctly defined as a measurement of the rate of heat loss through a material.
- (a) (ii) Candidates appreciated that the triple glazing was twice as efficient as single glazing but failed to link this to the reduction in U-value by half.
- (b) (i) There were no issues with this question.
- (b) (ii) There were no issues with this question.

Question 8 ((a)(i) Standard demand / High demand)

- (a) There was a lack of precision in written language in the response to this question, which meant that not all marks could be awarded.
- (b) There were no issues with this question.

Mark Ranges and Award of Grades

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

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