



**General Certificate of Education (A-level)  
June 2012**

**Science in Society**

**SCIS4**

**(Specification 2400)**

**Unit 4: Case study of a scientific issue**

***Report on the Examination***

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## **General Comments**

In general the standard of scripts was good, with nearly all candidates able and willing to tackle the majority of the questions. There was evidence of sound preparation and study of the preliminary materials by most candidates from most centres.

All marks on the paper were accessed by at least some of the candidates. The paper appeared to be both accessible and discriminating, enabling all to have a go and the most able to shine.

Candidates' attention should be drawn to the instructions on the front of the examination paper. They should be encouraged to "Use your own words, rather than simply repeating those used in the sources, to show your understanding of the points being made." In a number of questions, candidates either quoted extensively, or provided a very close paraphrase of one or more of the sources. In section A, this meant that candidates often wrote more than they needed to and so reduced the amount of time they had to answer other questions.

### **Source A: Q1 and Q2**

In Q1 a number of candidates were unable to suggest how researchers might identify **extra** deaths. Of those candidates who realised that researchers would need a 'usual' death rate to compare the data to, a small number were able to give a suitable comparison period to obtain full marks.

Few candidates talked about the health concerns in Q2, and instead continued to discuss death rates. To score well on this question, candidates needed to have shown an understanding of the need to show a correlation between health effects (as seen for example in increasing GP visits or hospital admissions) and temperature.

### **Source B: Q3 and Q4**

These questions were generally answered well. However, a few candidates did not know what a systematic error was and hazarded a guess that it was an error relating to the computer system running the weather station. Answers of this type were generally not creditworthy.

### **Source C: Q7**

This question was very well answered by the majority of candidates.

### **Source D: Q8**

More able candidates were able to use source D to identify the usefulness of computer modelling and of experiments. However, others provided generalised statements about both which did not draw on either the passage, or the ideas in HSW (specification section 3.5.1D: Modelling). Given that the majority of this topic is to be taught and examined at A2 level this was disappointing.

### **Source E: Q 9 - Q12**

Many candidates had obviously spend time ensuring that they were familiar with the ideas in Source E, and were able to make use of the source to answer the questions associated with it. However, candidates should ensure that they read the questions very carefully. In Q10 a number of candidates stated what was shown on the axis of Figure 3, but did not then say what a positive value represented. Similarly, in Q12, most candidates were able to identify two limitations of the studies, but a number did not then suggest why they might reduce the usefulness of the data in specific terms. Candidates should also be encouraged to avoid using vague terms such as 'more reliable', 'more accurate' in their answers.

### **Source F: Q13 – 15**

The giving of vague answers was also seen in Q15. Some candidates stated that a 'cost-benefit analysis' would be carried out. However, the question was asking candidates to suggest what factors would be taken into account in such a cost-benefit analysis, and to gain marks candidates were expected to identify specific examples.

### **Section B**

In section B candidates are asked 2 longer questions which are marked using a level mark scheme. The questions are designed to demonstrate candidates' ability to construct an appropriate explanation for a given audience, and also to provide an argued opinion on an issue raised by the case study material.

#### **Question 16**

Candidates were asked to explain the heat island effect in language suitable for an AS Science in Society student. In their answers they were expected to refer to the difference between urban and rural areas, and discuss the energy balance which led to the heat island effect.

Candidates who scored in the lower mark bands made extensive use of material taken directly from Source D, or closely paraphrased. Candidates should be taught how to paraphrase source material in their own words and the LSS resource 'Copycat' available from the Nuffield Science in Society website could be a useful resource for this. (<http://www.nuffieldfoundation.org/science-society/activities-ethical-issues-medicine> )

#### **Question 17**

There were some excellent answers to this question. Candidates who scored in the higher mark bands were able to write a supported argument using numerical data taken from the case study sources. The highest scoring candidates were also able to structure their argument in a more 'journalistic' style.

Candidates scoring in the lower mark bands, on the other hand, often focussed more on general statements about global warming, rather than the cooling effect of trees. There is little evidence in the sources to support the former, but plenty to support the latter, and it is a shame that candidates were not able to make more use of the sources.

In the bottom mark band, candidates again paraphrased a single source (usually source F), with little, or no, use of the abundant material in the other sources.

### **Mark Ranges and Award of Grades**

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