



## External Assessment Report 2013

Subject(s)	Biology
Level(s)	Intermediate 1

The statistics used in this report are pre-appeal.

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the examination.

# Comments on candidate performance

## General comments

The number of presentations at Intermediate 1 was slightly lower than last year, but above the previous two years. As in all previous years, most candidates were in S4 with the number of presentations from candidates in other year groups and from FE colleges remaining relatively low.

The 2013 paper was very similar in format to recent years in terms of question types and it assessed candidates' knowledge and understanding and problem solving/practical abilities cross all Units.

Overall, there was a slight reduction in the average candidate performance in this year's examination as a result of both the mean mark for Section A and Section B being slightly lower; the Grade Boundaries were adjusted accordingly.

Performance in questions requiring knowledge and understanding continued to be challenging for many candidates. In both Section A and Section B, significant numbers of candidates performed less well in questions requiring knowledge and understanding of course content.

The recent trend of fewer candidates leaving questions unanswered was sustained.

Feedback suggests that this year's Intermediate 1 question paper was fair, balanced and accessible to all candidates. This was borne out by few candidates scoring very poorly, suggesting that almost all candidates had undertaken an appropriate level of course.

## Areas in which candidates performed well

Candidates performed well in response to the following questions.

### Section A

- Q5 Knowledge of the effect of alcohol on reaction time and muscle control.
- Q6 Interpreting diagram of branching key relating to diagnosis of asthma.
- Q20 Interpreting data and information relating to resazurin and milk quality.
- Q22 Identification of variable altered in investigation of stain removal.
- Q25 Knowledge about resistance of antibiotics due to overuse.

### Section B

- Q2b) Conclusion on fitness from investigation data and course knowledge.
- Q5a)i),ii) and iii) Identification and extraction of relevant information from passage.

- Q5d) Naming of photosynthesis as the process by which plants produce food in sunlight.
- Q6a)i) Identification of relevant information from table.
- Q7a)i) Identification of relevant information from information about investigation.
- Q8c) Knowledge of example of fungal infection in humans.
- Q9a)i) Identification of relevant information from line graph.

## **Areas which candidates found demanding**

### **Section A**

- Q17 Knowledge of thickening of milk to make yoghurt caused by bacteria converting milk sugar into acid.
- Q21 Identification of valid comparison in investigation into stain removal.
- Q24 Calculation involving two steps.

### **Section B**

- Q1a)i) Knowledge of name of structure in diagram of lungs – bronchiole.
- Q3a)ii) Suggestion of reason why all energy in food was not transferred to the water in investigation.
- Q3a)iii) Identification of variables to be kept constant in investigation.
- Q5c) Knowledge of name of a type of food storage organ other than tuber.
- Q6c) Knowledge of a method of sowing small, fine seeds other than mixing with silver sand.
- Q8a)ii) Calculation related to investigation data.
- Q10a)iv) Knowledge of name of non-gas substance produced during fermentation.
- Q10b) Knowledge of yeast as a fungus.

## **Advice to centres for preparation of future candidates**

Centres should be encouraged by the performance of those candidates who achieved well in this year's examination. As in most previous years, centres have presented candidates appropriately, with their skills and abilities being well suited to this course. There is also evidence that the learning activities undertaken by candidates have met the requirements of the course.

Knowledge and Understanding continues to be an area where some candidates do not perform well, despite many being awarded good marks in Problem Solving questions.

For many candidates, questions involving arithmetical calculations continue to be challenging. Centres may wish to consider further development of liaison between staff

delivering this course and colleagues responsible for related areas of the curriculum, such as Mathematics and numeracy across the curriculum.

Questions requiring Problem Solving skills and those in a context of Practical Abilities continued to be generally well answered. Improvement in the standard of presentation of data, such as in drawing bar graphs and pie charts has been sustained, but the overall standard of drawing line graphs continues to be variable. Centres should focus on maintaining high expectations with respect to accuracy in plotting points and emphasising the importance of the inclusion of units, where appropriate, when labelling axes.

The drawing of appropriate conclusions from information provided was also variable. Centres should emphasise to candidates that a conclusion has to be drawn from the available data. SQA past examination papers and marking instructions should assist in this process.

The identification of variables to be controlled in experimental contexts was again demanding for a significant number of candidates. Centres should emphasise that all independent variables must be controlled, except for the one under investigation.

Centres should work with candidates to ensure that they are well prepared for the external examination. In particular, centres are advised to encourage both staff and candidates to use information on SQA's website, including past examination papers and marking instructions, to assist in this preparation.

## Statistical information: update on Courses

### Intermediate 1

Number of resulted entries in 2012	6358
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Number of resulted entries in 2013	6109
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## Statistical information: Performance of candidates

### Distribution of Course awards including grade boundaries

Distribution of Course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark 75				
A	23.2%	23.2%	1416	50
B	23.3%	46.5%	1425	42
C	23.6%	70.1%	1442	34
D	9.9%	80.0%	602	30
No award	20.0%	100.0%	1224	-

## General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year, SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry, this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related, as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.