

Principal Assessor Report 2005

Assessment Panel:

Biology

Qualification area

**Subject(s) and Level(s)
Included in this report**

Biology Intermediate 1

Statistical information: update

Number of resulted entries in 2004	2,809
------------------------------------	-------

Number of resulted entries in 2005	3,293
------------------------------------	-------

General comments re resulted entry numbers

The increase in numbers in 2005 is again the result of more centres offering the Intermediate 1 course to candidates in S3 and S4. Although there has been a slight increase in presentations in S5 and S6 this year, these candidates account for only 6.5% of the total presentations. It is most likely that centres are presenting pupils for Intermediate 1 courses in Biology, Chemistry and Physics instead of Standard Grade Science.

Statistical Information: Performance of candidates

Distribution of awards including grade boundaries

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark- 75	-	-	-	-
A	14.3	14.3	471	52
B	24.6	38.9	809	44
C	25.1	63.9	825	37
D	10.8	74.7	355	33
No award	25.3	100.0	833	-

General commentary on passmarks and grade boundaries

- While SQA aims to set examinations and create mark schemes which will allow a competent candidate to score a minimum 50% of the available marks (notional passmark) and a very well-prepared, very competent candidate to score at least 70%, it is almost impossible to get the standard absolutely on target every year, in every subject and level
- Each year we therefore hold a passmark meeting for each subject at each level where we bring together all the information available (statistical and judgmental). 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 senior management team at SQA
- We adjust the passmark downwards if there is evidence that we have set a slightly more demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- We adjust the passmark upwards if there is evidence that we have set a slightly less demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- Where the standard appears to be very similar to previous years, we maintain similar grade boundaries
- 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 are different. This is also the case for exams set in centres. And just because SQA has altered a boundary in a particular year in say Higher Chemistry 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
- Our main aim is to be fair to candidates across all subjects and all levels and maintain standards across the years, even as arrangements evolve and change.

Comments on any significant changes in distribution of awards/grade boundaries

There has been an increase in the percentage of candidates achieving awards at all levels. The percentage of no awards has fallen again this year. This was probably due to a number of factors including the following:

- ◆ Centres being more familiar with the course
- ◆ More candidates being presented at Access 3 level

It is hoped that the percentage of no awards continues to fall as centres present more candidates at a level appropriate to their ability.

Comments on candidate performance

General comments

In 2005 there was an increase in candidates that were better prepared for the examination. This resulted in a higher percentage of candidates achieving grades A and B. Fewer candidates left questions unanswered and this contributed to a decrease in the number of no awards.

Areas of external assessment in which candidates performed well

Based on statistics candidates performed well in the following areas of Section A:

- ◆ Recognising the health triangle
- ◆ The effect of diet and exercise on blood pressure
- ◆ *Extracting information from details of an experiment*
- ◆ Identifying the food store in a seed
- ◆ Stating the function of a labelled part of a seed
- ◆ *Extracting information from a graph*

Based on the comments made in the markers reports and on statistics candidates performed well in the following areas of Section B

- ◆ *Selecting information from a passage and using it to answer questions*
- ◆ *Completing a pie chart*
- ◆ *Selecting information from a table*
- ◆ Matching physiological measurements to the correct instrument
- ◆ Naming a high tech instrument
- ◆ Stating that water is supplied by an irrigation system
- ◆ *Identifying variables that should be kept the same when setting up an experiment*

As in previous years candidates achieved more success in questions from Unit 1 Health and Technology. In Section B candidates performed better in Problem Solving questions.

Areas of external assessment in which candidates had difficulty

Section A

Based on the statistics candidates found difficulty in the following areas:

- ◆ Naming sugar as the substance that is converted into acid during yoghurt making
- ◆ Stating sources of rennet
- ◆ Methods of controlling aphids
- ◆ *Identifying a suitable control*

Candidates performed better this year in the calculations in Section A.

Section B

In this section candidates did not perform well in questions which involved recall of knowledge. Therefore questions which should have been relatively easy caused problems as candidates had difficulty recalling facts.

Candidates had difficulty in the following areas:

- ◆ *Calculating a percentage*
- ◆ *Drawing a conclusion from information*
- ◆ *Calculating ratios*
- ◆ *Validity*
- ◆ *Reliability*
- ◆ Naming the type of vessel in which antibiotics are produced commercially
- ◆ Naming immobilisation as the technique used to trap yeast and enzyme in a jelly bead
- ◆ Completing a summary of fermentation
- ◆ Disposal of the waste produced in brewing
- ◆ Naming plant propagation structures
- ◆ Naming layering as a method of artificial propagation
- ◆ Stating an advantage of layering

Recommendations

Feedback to centres

In Section B many candidates are still struggling with calculations, in particular percentages and ratios. When asked questions on experimental procedures, many candidates confuse validity and reliability.

Candidates must improve their recall of knowledge particularly in Unit 2 and Unit 3. As in previous years candidates have better recall of knowledge in Unit 1 Health and Technology.

Centres should include additional evidence of course questions (beyond NAB level) covering content not assessed in the 'prelim' for appeals or absentee awards for A or B grades. A high scoring performance in a NAB (or equivalent) covering content not assessed in the 'prelim' is required for appeals or absentee awards for grade C.