

Principal Assessor Report 2003

Assessment Panel:

Biology

Qualification area:

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

Higher Biology

Statistical information: update

Number of entries in 2002	
Pre appeal	9266
Post appeal	9274

Number of entries in 2003	
Pre appeal	8915

General comments re entry numbers

There was a small decrease in the number of candidates compared with 2002. The mark distribution curve suggests this decrease is due to a loss of candidates from the lower ability range. This may reflect a more appropriate matching of candidates to courses with some candidates being entered for Intermediate 2 instead of Higher.

Grade boundaries at C, B and A for each subject area included in the report

Maximum mark = 130

Grade boundaries expressed as percentage of mark in brackets.

Year	Upper A	A	B	C
2002	110 (84.6%)	98 (75.4%)	80 (61.5%)	63 (48.5%)
2003	108 (83.1%)	96 (73.8%)	79 (60.8%)	63 (48.5%)

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 syllabuses evolve and change

Comments on grade boundaries for each subject area

Feedback from setters and markers suggested there were fewer candidates at the lower end of the ability range. At the top end of the ability range, more candidates were performing at a better standard.

The cut-off at a mark of 63 for a C award is similar to previous years giving a similar number of candidates achieving an A–C award.

The cut-off at a mark of 96 for a Grade A award is slightly lower than that of previous years. This reflects the increase in demands set by the marking scheme applied to A type questions in Section B of the paper and also to the extended response questions in Section C.

Comments on candidate performance

General comments

The overall impression of the setting and marking teams was that the examination had good coverage of the course with all questions being accessible. Candidates were scoring well and there were fewer scripts where candidates were clearly out of their depth. There were very few scripts where candidates had left questions unattempted.

Statistical data available showed a clear improvement in candidate performance in Section A (Multiple choice).

Areas of external assessment in which candidates performed well

- Structure and function of cell organelles
- Lymphocytes and antibody production
- Respiration
- Sex linkage
- Adaptive radiation
- Avoidance behaviour, habituation and their advantages
- Selecting and presenting information from graphs
- Percentage calculations
- Osmoregulation in fish
- Adaptations of a desert mammal
- Plant meristems
- Ion uptake in relation to oxygen availability.

Areas of external assessment in which candidates had difficulty

- Evaluation of experimental design
- Sun and shade plants
- Accuracy in labelling graph axes, plotting points and drawing a line graph
- Stages of viral multiplication
- Characteristics of homologous chromosomes
- Explanation of locust growth pattern
- Distinguishing between accuracy, reliability and validity in experimental situations
- The difference between gene mutations and chromosome mutations
- How gene mutations affect amino acid sequences
- The effect of light on flowering in plants and on the timing of breeding in animals.

Recommendations

Feedback to centres

When devising questions, examination setters pay very close attention to the course content, the vocabulary and the terminology as shown in the Arrangements document.

Candidates should be advised to look for and act on key words and phrases in questions such as 'explain', 'describe', 'use values from the graph'.

Candidates should be encouraged to develop their Practical Ability skills and in particular their concept of experimental controls and variables. When applied to experimentation, the difference between 'accuracy', 'reliability' and 'validity' should be emphasised.

The generally poor candidate performance in extended response questions is mainly due to an inability to (a) state factual information clearly and simply and (b) organise the information into a logical sequence.

Candidates would benefit from a greater awareness of the requirements which are necessary to meet the criteria for the Coherence and Relevance marks in the extended response questions.