

Principal Assessor Report 2003

Assessment Panel:

Biology

Qualification area:

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

Biology Standard Grade — General and Credit
levels

Statistical information: update

Number of entries in 2002	
Pre appeal	22734
Post appeal	22735

Number of entries in 2003	
Pre appeal	23159

General comments re entry numbers

It is pleasing to see that the presentation for Standard Grade Biology remains high and has shown a small increase despite potential changes in presentation arrangements by centres.

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

Knowledge and Understanding

Maximum mark

General = 50

Credit = 40

Year	1	2	3	4	5
2002	29 (72.5%)	21 (52.5%)	26 (52%)	20 (40%)	17 (34%)
2003	26 (65%)	18 (45%)	29 (58%)	22 (44%)	19 (38%)

Problem Solving

Maximum mark

General = 50

Credit = 40

Year	1	2	3	4	5
2002	27 (67.5%)	20 (50%)	35 (70%)	28 (56%)	24 (48%)
2003	28 (70%)	22 (44%)	35 (70%)	28 (56%)	25 (50%)

Comments on grade boundaries for each subject area

Standard Grade Biology has a large presentation resulting in a stable candidate population of similar ability each year. The papers are set by an experienced team with good continuity from year to year. Therefore a consistent distribution of awards is expected and only minor variations in the grade boundaries are required in order to achieve this. The grade boundaries set this year are all within three marks of the equivalent boundaries set last year.

Comments on candidate performance

General comments

Overall, the performance of candidates showed a similar pattern to previous years with Problem Solving marks being higher than Knowledge and Understanding marks.

Areas of external assessment in which candidates performed well

Markers have reported the following areas of good performance:

General KU

- Water loss and the control of water balance.
- Starch as a storage carbohydrate in plants.
- Chlorophyll as a requirement for photosynthesis.
- The skeleton and joints.

Credit KU

- The site of saliva production.
- The relative energy values of fat and carbohydrate.

PS

- Graph and chart work continue to be tackled well at both levels.
- Selecting information from a variety of sources is also well done.
- Questions involving experimental procedures produce good responses in most cases.

Areas of external assessment in which candidates had difficulty

Markers have reported the following areas of poor performance:

General KU

- Ecological definitions, particularly 'population' and 'ecosystem'.
- The role of the large intestine in the absorption of water.
- The structure of a leaf and the function of leaf parts.
- Methods of asexual reproduction in plants.
- Details of aerobic respiration and the use of energy by a cell.
- The structure and function of the heart.
- Genetic engineering and its applications.

Credit KU

- Identifying an error in a described sampling procedure.
- The site of bile production.
- Leaf structure and the fate of glucose.
- Limiting factors for photosynthesis.
- Genetics.
- The importance of oxygen in sewage treatment.
- Anaerobic respiration in fungi.

PS

At both levels, candidates were poor at giving explanations or reasons with enough detail or precision to avoid ambiguities and so gain the mark. Many candidates fail to read the question carefully enough with the result that they produce answers that do not fully address the question.

These problems were apparent in the following instances:

General

- Explaining the benefit of one dosage of fluoride compared to two other dosages.
- Predicting the effect of no light on the change in mass of seedlings.

Credit

- Relating high and low tides to the degree of exposure.
- Labelling the axis of a graph with all necessary information.
- Explaining the need for blotting wet samples before weighing.
- Explaining the specific need for a control in an investigation.
- Relating acidity levels to pH.

Recommendations

Feedback to centres

Marks continue to be lost due to a basic lack of knowledge. Centres must continue to emphasise the importance of revision of straightforward facts, definitions and terms.

The value of reading a question thoroughly and thinking it through before forming an answer should be encouraged, especially with questions that include terms such as 'describe' and 'explain'.

Additional Note

The Dairy Council was concerned about the wording of the passage in Q12 of the General paper. The main concern was the reference to traces of antibiotics in milk, which is harmful to the image of milk. The passage was based on the 'Dairy Microbiology' publication by the Dairy Council but this has been updated and replaced by their 'Yogurt Factsheet'. Centres are referred to this latest publication for details and information.