

## Principal Assessor Report 2003

**Assessment Panel:**

Science

**Qualification area:**

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

Science Standard Grade Foundation Level  
Science Standard Grade General Level  
Science Standard Grade Credit Level

## Statistical information: update

<b>Number of entries in 2002</b>	
<b>Pre appeal</b>	14129

<b>Number of entries in 2003</b>	
<b>Pre appeal</b>	11623

### General comments re entry numbers

There has been a decrease in the number of candidates presented for this examination.

This is likely to reflect the fact that some schools have introduced Access and Intermediate 1 courses in the discrete sciences and removed Standard Grade Science from their curriculum. There has been a commensurate increase in the number of candidates taking Access 3 courses. It is therefore reasonable to assume that candidates are moving to discrete science subjects.

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

### Knowledge and Understanding

Grade 1: 27/38 (71.0%)  
Grade 2: 22/38 (57.9%)  
Grade 3: 25/38 (65.8%)  
Grade 4: 20/38 (52.6%)  
Grade 5: 17/28 (60.7%)  
Grade 6: 12/28 (42.8%)

### Problem Solving

Grade 1: 30/38 (78.9%)  
Grade 2: 25/38 (65.8%)  
Grade 3: 28/38 (73.7%)  
Grade 4: 22/38 (57.9%)  
Grade 5: 22/28 (78.6%)  
Grade 6: 18/28 (64.3%)

## Comments on grade boundaries for each subject area

### Knowledge and Understanding

The grade boundaries at grade 1 and grade 2 were in line with 2002.  
The grade boundaries at grade 3 and grade 4 both increased by 1 mark.  
The grade boundaries at grade 5 and grade 6 were in line with 2002.

### Problem Solving

The grade boundaries at grade 1 and grade 2 were in line with 2002.  
The grade boundaries at grade 3 and grade 4 were in line with 2002.  
The grade boundaries at grade 5 and grade 6 both increased; however these were in line with teacher estimates.

## Comments on candidate performance

### General comments

#### Foundation Level

There was a general improvement in candidate performance with very few candidates achieving very low scores. Most candidates attempted all of the questions in the paper. The candidates' performance in the Knowledge and Understanding element continues to improve, however performance in Problem Solving is still generally much better.

#### General Level

Candidates continue to perform better in Problem Solving than in Knowledge and Understanding. Most candidates made a good attempt at this paper and the answers from the genuine General Level candidates were of high quality.

#### Credit Level

The performance of candidates was generally very good.

## Areas of external assessment in which candidates performed well

### Foundation Level

In general, problem solving was very well done.

- Question 1 – information from an index
- Question 3 – completing a key
- Question 5 – balanced diets
- Question 6 – labelling a diagram
- Question 7 – information from a passage
- Question 10 – food chains and food webs
- Question 11 (a) – electricity meter readings (subtraction)
- Question 14 – fairness factors
- Question 17 (b) – completing a table and bar graph
- Question 22 – conclusions from a table

### General Level

- Question 1 – information from a key
- Question 2 (a) – breathing system
- Question 9 – table of data
- Question 10 – information from 2 sources
- Question 13 (a) – calculating averages
- Question 13 (b) – recycling
- Question 14 – drawing a bar graph
- Question 22 – information from 2 sources
- Question 26 – drawing a line graph
- Question 28 – body temperature and hypothermia
- Question 29 – calculation

Calculations and drawing conclusions were also well done.

### Credit Level

- Question 2 – incomplete combustion and acid rain
- Question 6 – information from a passage
- Question 8 (a), (b) – food webs
- Question 11 – operation of a thermostat
- Question 13 – bar graph
- Question 18 – types of oil survey
- Question 23 – calculation and rearrangement

Drawing conclusions were also well done.

## Areas of external assessment in which candidates had difficulty

### Foundation Level

- Question 4 (b) (ii) – pie charts
- Question 9 (a) – environmental factors
- Question 11 (b) – multiplication
- Question 13 (c) – predictions
- Question 15 – wires in an electric plug
- Question 16 (a) – flame-proofing
- Question 18 – protection of materials
- Question 20 (b) – products from crude oil
- Question 21 – water and air pollution

### General Level

- Question 2 (c) – breathing
- Question 3 – electroplating
- Question 6 – blood vessels
- Question 12 – shapes for strength
- Question 16 (b) – constructing a food web
- Question 18 – steel additives
- Question 20 – oil in rock formations
- Question 21 (a) – fairness factors
- Question 24 (c) – storing of nuclear waste
- Question 27 – burning plastics and toxic gases

### Credit Level

- Question 5 (c) – gas exchange
- Question 7 (a) – fuse rating
- Question 8 (c) – accumulation
- Question 17 (b), (c) – heart
- Question 19 (a) – half-life
- Question 25 – toxic gases from burning plastics
- Question 26 (c) – information from a graph

## Recommendations

### Feedback to centres

- Centres should make reference to published marking schemes to help prepare candidates for the examination.
- Centres should continue to encourage and provide support for pupils to revise Knowledge and Understanding.
- Centres should encourage pupils to practice Problem Solving.
- Past papers should be used to help prepare pupils for the examination.
- Attention should be paid to those areas of the arrangements which are not well done and are highlighted in this report.
- School evidence for absentees and appeals is often much shorter than the national examination, with limited coverage of knowledge and understanding and problem solving.