

## Principal Assessor Report 2004

**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 2003</b>	
<b>Pre appeal</b>	11,470

<b>Number of entries in 2004</b>	
<b>Pre appeal</b>	8,322

### **General comments re entry numbers**

Once again there has been a significant decrease in the number of candidates presented for this examination.

This is likely to reflect the fact that some schools have continued to offer Access and Intermediate 1 courses in the discrete sciences and removed Standard Grade Science from their curriculum.

With the lack of National Qualifications Courses in Science at an appropriate level, this trend may continue.

## Statistical Information: Performance of candidates

### Distribution of awards

#### Knowledge and Understanding

Grade 1: 1.1%  
Grade 2: 3.2%  
Grade 3: 10.5%  
Grade 4: 22.2%  
Grade 5: 28.1%  
Grade 6: 18.3%  
Grade 7: 6.6%

#### Problem Solving

Grade 1: 1.6%  
Grade 2: 3.4%  
Grade 3: 18.4%  
Grade 4: 28.8%  
Grade 5: 18.9%  
Grade 6: 13.3%  
Grade 7: 5.7%

#### Overall Grade

Grade 1: 1.3%  
Grade 2: 3.5%  
Grade 3: 21.0%  
Grade 4: 31.7%  
Grade 5: 22.8%  
Grade 6: 8.6%  
Grade 7: 0.7%

### Comments on any significant changes in percentages or distribution of awards

#### Knowledge and Understanding

There was a slight decrease in the percentage of candidates achieving both Grade 1 and Grade 2 at Credit Level, resulting in an overall decrease of Credit Level awards (4.3% compared with 4.7% in 2003). At General Level there was a decrease in the percentage of candidates achieving both Grade 3 and Grade 4, compared with 2003, although the figures were more in keeping with 2002.

#### Problem Solving

Candidates continue to perform better at Grades 1 – 4 in Problem Solving than in Knowledge and Understanding.

There was a minimal decrease in the percentage of candidates achieving Grade 1 compared to 2003 and a very slight increase in the percentage of candidates achieving Grade 2 at Credit Level. There was a decrease in the percentage of candidates achieving Grade 3 at General Level, although the percentage of candidates achieving Grade 4 increased.

There was a decrease in the percentage of candidates achieving both Grade 5 and Grade 6, although this was marginal for Grade 6.

However, there is also a continuing reduction in the percentage of candidates being awarded Grade 7 in this element.

## Grade boundaries for each subject area included in the report

### Standard Grade Assessable Element – Knowledge and Understanding

Grade	Maximum Mark	Minimum Mark for Grade	% Mark
1	40	27	67.5
2	40	21	52.5
3	40	27	67.5
4	40	23	57.5
5	30	18	60.0
6	30	13	43.3

### Standard Grade Assessable Element – Problem Solving

Grade	Maximum Mark	Minimum Mark for Grade	% Mark
1	40	31	77.5
2	40	26	65.0
3	40	28	70.0
4	40	21	52.5
5	30	20	66.7
6	30	14	46.7

## Comments on grade boundaries for each subject area

### Knowledge and Understanding

It is difficult to make direct comparisons with previous grade boundaries as the total marks for the examinations are now 40 for Credit and General levels and 30 for Foundation level. The percentage grade boundaries can, however, be compared.

The grade boundaries at Grade 1 and Grade 2 were slightly lower than in 2003.  
The grade boundaries at Grade 3 and Grade 4 were slightly higher than in 2003.  
The grade boundaries at Grade 5 and Grade 6 were roughly in line with 2003.

### Problem Solving

The grade boundaries at Grade 1 and Grade 2 were in line with 2003.  
The grade boundaries at Grade 3 and Grade 4 were slightly lower than 2003.  
The grade boundaries at Grade 5 and Grade 6 were much lower than in 2003 but closer to the 70%, 50% a priori than in previous years.

## Comments on candidate performance

### General comments

#### Foundation level

The overall response of candidates was extremely good with few candidates achieving very low scores and most candidates attempting all of the questions in the paper. The candidates' performance in the Knowledge and Understanding element continues to improve, although performance in Problem Solving is still generally much better.

#### General Level

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

#### Credit Level

The performance of candidates was generally very good with many candidates achieving half marks in at least one element.

## **Areas of external assessment in which candidates performed well**

### Foundation level

Problem solving was very well done

Q1-information from an index

Q7-pollution

Q15-labelling diagrams

Q17-table and bar graph

Most calculations were well done.

### General Level

Q1-information from a key

Q5(c)-properties of materials

Q8-types of fire extinguisher

Q19-bar graphs

Q25-basic needs

Calculations and drawing conclusions were also well done.

### Credit Level

Q6-properties of materials

Q8-information from a graph

Q11-information from more than one source

Problem solving, calculations and drawing conclusions were generally well done.

## Areas of external assessment in which candidates had difficulty

### Foundation level

Q3-wiring plug –many candidates got the correct colours but mixed them up and lost 2 marks as a result

Q5(b)- conservation

Q13(a)-alloy

Q16(b)-effect of shivering on body temperature

Q19-insulation

Q21-conclusion – candidates distracted by layout

Q23(b)-few candidates achieved 3 marks

Q24(a)-power rating of appliances

### General Level

Q9- anodising

Q18(c)-rock formations

Q21-properties of steel

### Credit Level

Q3(d)-heart muscle starved of food and oxygen

Q4- improvements to experiment (too many candidates still giving fairness factors instead of improvements)

Q12- methods of protection of materials

Q19(c)-insulation due to trapped layer of air

Units in graphs were often missed out.

## **Recommendations**

### **Feedback to centres**

- Centres should continue to encourage and provide support for pupils to revise Knowledge and Understanding.
- Centres should encourage candidates to practise Problem Solving.
- Past papers should be used to help prepare candidates for the examination.
- Attention should be paid to those areas of the Arrangements which are not well done and are highlighted in this report.
- Centre estimates for candidates at Credit level, Grade 1, tend to be too conservative.
- School evidence for Absentees and Appeals is often much shorter than the national examination, with limited coverage of Knowledge and Understanding and Problems Solving.