Principal Assessor Report 2004

Assessment Panel:	**Physics**

Qualification area

Subject(s) and Level(s) Included in this report	**Physics, Intermediate 1**

Statistical information: update

Number of entries in 2003	777

Number of entries in 2004	1,073

General comments re entry numbers

There has been a 38% increase in the uptake in 2004.

The overwhelming majority of entries are from S4, indicating that Intermediate 1 Physics is being offered as an alternative to Standard Grade Science.

Statistical Information: Performance of candidates

Distribution of awards

	Percentage of entries				
Grade	**2000**	**2001**	**2002**	**2003**	**2004**
A	18.2	34.7	18.8	9.2	10.1
B	21.8	19.0	20.9	14.9	18.2
C	30.9	14.3	19.5	23.3	20.9
Total A–C	70.9	68.0	59.2	47.4	49.1
No Award	29.1	32.0	40.8	52.6	50.9

Comments on any significant changes in percentages or distribution of awards

2004 again saw an increase in the number of S4 candidates.

It is encouraging to see that both the pass rate and the mean mark were up on 2003.

This does not hide the fact, however, that there were many scripts seen in which the basic Physics was very weak.

Grade boundaries for each subject area included in the report

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
A	10.1	10.1	108	60 (71%)
B	18.2	28.3	195	51 (61%)
C	20.9	49.1	224	42 (50%)
D	12.1	61.2	130	38 (45%)
No award	38.8	100.0	416	0

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

The grade boundaries are set very close to the notional *a priori* boundaries of 50, 60 and 70%.

The boundaries are one more at each grade than they were in 2003.

Comments on candidate performance

General comments

There continues to be a disappointing lack of knowledge of the basic Physics as set out in the Arrangements Document.

Many candidates also had difficulty with the application of formulae and with problem solving.

Areas of external assessment in which candidates performed well

In general candidates responded well to the multiple-choice questions (except Question 6).

In the written part of the paper, responses were reasonably good in the following questions:

Question 7: telecommunications
Question 9: electrical circuits (except the part on additive parallel currents)
Question 14: oscilloscope traces and comparison of CDs and tapes

Areas of external assessment in which candidates had difficulty

Candidates had particular difficulty with the following questions:

Question 8: the function of TV tube
the meaning of the word fluoresce

Question 10: the correct use of electrical formulae

Question 11: the ray diagrams for short and long sight
the selection of corrective lenses

Question 12: the uses of gamma radiation
the decay of gamma radiation sources

Question 16: the calculation of weight, given mass
The analysis of unbalanced forces

Question 18: the logic of combined gates

Recommendations

Feedback to centres

The responses from a few candidates were good.

Many candidates, however, displayed a lack of the most basic Physics as set out in the Arrangements Document.

This year, it is again recommended that in addition to the basic Knowledge and Understanding, attention should be given to the following:

Units:	There were many wrong or missing units or unacceptable abbreviations such as mps.
Formulae:	There are only five formulae used in Intermediate 1. Many candidates either did not know these formulae, or could not substitute correctly into them. There were also many errors made in the division required by these substitutions.