

National Qualifications 2006

Senior Moderator Report

Subject: Physics

Assessment Panel: Physics

The purpose of this report is to provide feedback to centres on moderation which has taken place within National Qualifications in this subject.

NATIONAL UNITS

TITLES/LEVELS OF NATIONAL UNITS MODERATED

National Units moderated (complete evidence)

D388 13	Physics Investigation (Advanced Higher)	Central Retrospective
D385 13	Mechanics (AH)	Central
D386 13	Electrical Phenomena (AH)	Central
D380 12	Electricity and Electronics (H)	Central
D383 12	Mechanics and Properties of Matter (H)	Central
D381 11	Waves and Optics (Int 2)	Central
D379 11	Mechanics and Heat (Int 2)	Central
D373 10	Telecommunications (Int 1)	Central
D374 10	Practical Electricity (Int 1)	Central
D380 11	Electricity and Electronics (Int 2)	Visiting
D379 11	Mechanics and Heat (Int 2)	Visiting

National Units moderated (incomplete evidence)

D380 12	Electricity and Electronics	Visiting
D383 12	Mechanics and Properties of Matter	Visiting
D379 11	Mechanics and Heat	Visiting

FEEDBACK TO CENTRES

General comments:

The material required for moderation was generally well presented and easily accessible.

At all levels, moderators found clear evidence that the candidates performed well in the theoretical outcomes (O1 and O2). Overall the mark schemes for the NABs were applied well though some centres are still awarding half marks where mark schemes state (1) or (0) thus tending to lenient marking.

However the practical reports for the practical Outcome (3) assessment continued to show weaknesses in graphical work, in developing conclusions from data and in the evaluation of experimental work particularly in Higher and Advanced Higher levels.

The retrospective moderation of the Advanced Higher Investigation unit raised several issues. Still many centres did not understand that the 'daybook' or record of work forms the assessment for this unit and that the evidence for the unit must be marked by the responsible teacher/lecturer and that internal moderation would be desirable if possible.

There was evidence that there was a growing awareness of the need for procedures for the internal moderation of the internal assessment in a centre. Some internal moderation was evident particularly for the NABs.

It was noted that in several centres that were visited, none of the Higher /Intermediate 2 units had a finish date of 31 March. The registration of the one of the units of a course is required to have this finish date.

Advice on good practice and areas for further development:

Generally, centres had conducted the assessments fairly and consistently. There was continued evidence of cross marking/internal moderation in a number of centres. Where cross marking, referral to a Principal Teacher or internal moderator, departmental discussion of standards takes place, assessment across a department is more likely to achieve consistency with national standards.

Candidates performed well in the theory assessments relating to Outcomes 1 and 2 although some centres were lenient in their interpretation of the mark scheme awarding a half mark where the scheme had allowed either (1) or(0). Also occasionally a half mark was awarded for a correct unit following wrong physics. This should not occur- see Physics – General Marking Instructions 1999 statement number 5.

For Outcome 3, many candidates produced a well structured report giving procedural details, diagrams and valid conclusions for an experiment at the appropriate level. However the quality of graphical work was very variable and the evaluation of experimental work at Higher and Advanced level was often poor. Also in some cases there was no indication of the decision as to whether the candidate had passed or failed on the candidate's script.

Centres should:

- refer to the publication – Physics – General Marking Instructions 1999, if queries occur when interpreting the mark schemes of the NABs. This will aid consistency in standards.
- ensure that their marking of practical reports is clear and that, for each candidate, there is a clear indication on the script of the assessment decision of the centre staff.
- ensure that procedures detailed in the report enable another person to carry out the experiment again and that the report is in the candidates own words.
- note that when candidates are graphing information, **the best fit line should not be forced through the origin**. If the line fails to provide evidence of direct proportionality, an appropriate conclusion should be given. Discussions on the possible reasons for the result could be dealt with in the evaluation of the experiment.
- note that if computer drawn graphs are used by candidates, they should be large with appropriate scales and axes – refer to the Excel in Physics HSDU document.
Also care should be taken with significant figures when computer generated data is used.
- ensure that uncertainties are considered particularly at Advanced Higher and that values of uncertainties are reflected on when evaluating the experiment.
- ensure that the conclusion drawn is linked to the aim of the experiment particularly at Advanced Higher.
- ensure that in the Intermediate 1 Telecommunications Outcome 3 assessment candidates are describing the effects the chosen telecommunications system has on society and then giving an advantage and a disadvantage of this system.
- note that a unit cannot be resulted without an Outcome 3 assessment having taken place.

At the retrospective moderation, the evidence for the Advanced Higher Investigation unit provided did not cover the Performance Criteria of the unit in many cases. Centres should:

- ensure that the aims of the Investigation are clearly specified
- ensure that the research and planning of the Investigation is fully documented with recognition of the contributions made by others - for example, the teacher.
- confirm that candidates carried out the Investigation safely and accurately and that it is the work of the candidate
- ensure that relevant measurements are clearly and correctly recorded
- ensure that graphical presentation is included if appropriate
- ensure that the treatment of uncertainties presented is of an appropriate level for Advanced Higher