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March 2008

To: Directors of Education
Head teachers
SQA Co-ordinators
Customer Support Managers
Principal teachers of Science
Principal teachers of Physics

**For the attention of all staff responsible for
the delivery of National Qualifications in Physics**

Action by Recipient
Response required
✓ Note and pass on
Note — update/information only

Contact: Andrew Shield at Glasgow
Direct line: 0845 213 5510
E-mail: andrew.shield@sqa.org.uk

Dear Colleague

National Qualifications update — Physics

This letter provides centres with information on developments in National Qualifications in Physics.

1. Principal Assessor reports

Centres are reminded that the Principal Assessor reports for the 2007 examination diet are available on the NQ Physics subject-specific page of SQA's website (www.sqa.org.uk).

The Principal Assessor reports contain important information on candidate performance, statistical information on candidate entries and grade boundaries, as well as advice to centres for preparing future candidates.

It is recommended that centres download these reports as the information they contain may be used to inform teaching and learning.

2. Senior Verifier reports

Centres are reminded that the Senior Verifier reports for 2007 verification events are available on the NQ Physics subject-specific page of SQA's website.

The Senior Verifier reports contain important information on issues regarding internal assessment for the following areas:

- ◆ Standard Grade Physics
- ◆ National Units in Physics

It is recommended that centres download these reports.

3. **Marking instructions**

The detailed marking instructions for the 2007 Physics examinations (Standard Grade, Intermediate 1, Intermediate 2, Higher and Advanced Higher) are available on the NQ Physics subject-specific page of SQA's website.

It is recommended that centres download these.

I have received a number of requests from centres seeking permission to use these or to issue them to students. Since the documents are readily available on SQA's website and available for students to access them, it is not necessary for centres to seek permission in this way.

I have also received a number of requests for a copy of the Advanced Higher Physics Investigation marking instructions. Please note there is **not** a separate marking instruction document for Physics in the same way that there is for Chemistry. Physics Advanced Higher Investigation Markers use the *Course Guidance for Candidates* and *Course Guidance for Teachers/Lecturers* documents as marking instructions.

The Principal Assessor report also contains more information on the marking of the Investigations.

4. **Advanced Higher Physics Investigation Guidance**

Centres are reminded that revised *Investigation Guidance for Candidates* is available on the NQ Physics subject-specific page of SQA's website. The Guidance has been expanded considerably and gives more advice on the 'daybook' and planning as well as the final report. Initial feedback from centres and students has been very positive.

A number of proforma have also been made available on the same web page, to help centres with monitoring and internal assessment. Centres should make sure that candidates have access to this documentation.

Please note that the submission date for the Advanced Higher Investigation reports is 24 April 2008. (Information on submission dates and deadlines can be found via the Operational Help Centre on SQA's website.)

5. **Guide to Assessment in the Sciences**

A binder titled *Guide to Assessment in the Sciences* has been issued to all centres. The binder draws together appropriate information on assessment from the Arrangements documents, NABs and update letters for Biology, Human Biology, Biotechnology, Chemistry, Physics and Science. The binder **does not** replace the Arrangements documents and should be used alongside these. It is intended to provide an easy access point for information on assessment and will be particularly useful to faculty heads, newly qualified teachers (NQTs) and teachers presenting more than one Science. Each centre has received three copies. The Guide is also available to

download from SQA's website. Any future updates to the Guide will be made electronically.

A limited number of additional copies are available for purchase at £15 plus p&p by contacting SQA's Customer Contact Centre.

6. Professional Development Workshop

A Professional Development Workshop on the standards applied to the marking of the 2007 Higher Physics question paper took place on 3 November 2007 at Napier University in Edinburgh. Feedback from the teachers attending was very positive and SQA wishes to thank the Principal Assessor and the Higher Physics examiners involved in preparing the materials and delivering a highly successful event.

7. Appeals

A number of issues arising from appeals are worth highlighting.

Firstly, centres are reminded that they should be referring to the detailed guidance contained in the binder *Estimates, Absentees and Assessment Appeals* and the supplementary advice on Standard Grade Appeals which has already been issued to SQA Co-ordinators.

Common failings continue to be:

No evidence from the latter part of the course — centres are reminded that, at all levels including Standard Grade, there must be evidence covering all Units. This applies to absentee as well as appeals cases. Appeals for Grades A and B must include evidence for the latter part of the Course beyond the level of demand of the NAB.

Cut-off scores set too low for the standard set in the assessment instrument(s) — it is the centre's responsibility to make sure cut-offs are set appropriately. If the assessment instrument is less demanding, for example there are insufficient A Grade problem solving questions, insufficient questions asking candidates to describe, explain and justify, or the assessment instruments are split so that they test parts of the Course, then the cut-offs used should be raised. Setting the cut-off scores too low often gives unrealistic estimates and when the examiners judge the evidence they find it is not compelling.

Retention: insufficient tasks/questions requiring knowledge to be retained over an extended period of time — the various models or types of evidence that could be used are given in the Guidance document. Including questions/integration of work from earlier Units in later assessments would often help strengthen the case for an appeal.

The commercially produced paper, used in its entirety, is not the current year's — it was disappointing to see a number of centres not adhering to the guidance on use of commercial papers. Centres are also reminded that SQA do not validate commercially produced papers. It is the responsibility of the centre to check that the assessment instrument sufficiently replicates the Course assessment, is of an appropriate level of demand, balance, etc and that the marking instructions mirror SQA marking standards/mark allocations, etc.

The local authority/consortium paper, used in its entirety, is not the current year's — local authority/consortium papers are subject to the same rules as commercial papers.

A set of questions has been lifted en bloc from a past paper — past paper includes both SQA and commercial sources. Whilst most centres used a minimum of three sources as required, and mix and matched questions (making alterations where possible), there were some who used blocks of questions, eg all/most of the multiple choice questions from one paper, the mini-prelim/additional evidence all from one paper.

Too much of the assessment instrument used is in the public domain — using questions/tasks without modification that candidates are likely to have seen makes the estimate and evidence less reliable (see pages 23 and 25 of the Guidance document). If a proportion of the questions are 'in the public domain' then cut-off scores would need to be raised significantly to account for this. When centres are compiling their information on sources of questions, to submit as part of the appeals evidence, they should include information on where they have modified questions.

Aggregated evidence, in this case, does not justify an upgrade — examiners encountered a number of cases where the centre had not aggregated the evidence submitted, eg prelim and mini-prelim. When the evidence was aggregated the overall level of attainment did not support the grade being appealed for.

Further information on common failings is included in the Guidance document.

8. Access 3/Intermediate 1

As notified previously to SQA Co-ordinators, a system for automatically crediting candidates with an Access 3 Course award when they pass all Units at Intermediate 1 but fail the Intermediate 1 exam was introduced last year. Centres no longer need to submit dual entries for candidates in this position to ensure a Course award.

Centres are reminded that where candidates fail to achieve Units at Intermediate 1 level but pass at Access 3, the entry level should be amended for those Units passed at Access 3 (Units passed at Intermediate 1 level should be left at that level). Centres are also reminded that candidates who achieve Units either entirely at Access 3 level or with a mix of Access 3 and Intermediate 1 passes cannot achieve an Intermediate 1 Course award. In this case it is recommended that the Course entry level is altered to Access 3 so that candidates receive a Course award.

9. Qualification Development Team update

As many of you will be aware, a Qualification Development Team (QDT) has been working for some time on producing proposals for updating SQA's Higher and Advanced Higher Physics Courses as part of the 3-18 developments. Whilst there are still many questions to be considered and answered, the proposals continue to take shape. In order to gather some initial feedback on the ideas and proposals, a small number of focus group meetings have been held with different interest groups, including two groups of teachers, Higher Education representatives and The Institute of Physics. Feedback from these groups will help develop and inform the work of the QDT before the proposals are made more widely available.

In broadest terms, the proposals include a mix of both traditional and topical Units, with an increased focus on the development of skills and aim to create time for more in depth study and more practical work. The work of the QDT will also cover areas such as assessment.

No timescales are set as yet, but as information becomes available it will be communicated to centres via the usual channels.

10. Multiple-choice question writing

Each year SQA holds multiple-choice question writing events, where teachers are invited to attend a weekend training event (Saturdays), after which they are asked to produce a set number of questions for possible inclusion in the Physics Item Bank, from which the examination questions are selected.

Participants are paid for attending the training events and writing the questions. I am seeking to extend the pool of writers we use, so if any Physics teacher is interested in becoming involved they should complete the application form in Appendix 3 of the April 2007 update letter (available to download from SQA's website) and return it to me. I would ask that applicants give full details of teaching experience including levels taught and the years in which these were taught. Please avoid generalisations such as 'All levels — 1990 onwards'.

You do not need to have worked for SQA as a Marker, Examiner, etc, and new or recent recruits to Physics teaching are as welcome to apply as established teachers. I cannot guarantee that everyone who applies will be selected but we will hold your details for events in the future.

11. Markers

The reserve lists for marking Physics examination papers are quite lengthy and unfortunately this can mean it is quite some time between applying to become a Marker and actually joining a marking team.

We will, however, be looking for Markers for the Investigation report at Advanced Higher in the future. Anyone interested in being considered for marking the Investigation report should complete a Marker application form. Markers should have three years recent experience of presenting candidates at the appropriate level.

If you have previously applied to become a Marker with SQA your details will already be held on file, but if you had not indicated that you would like to be considered as a marker for the Investigation reports then you should contact the marker helpline or complete one of the reserve marker updates which are sent out periodically.

If you are interested in becoming a Marker, please contact our Marker Helpline on 0131-561 6825 or e-mail: markers@sqa.org.uk

I trust that the contents of this letter are helpful to you. Please do not hesitate to contact me if you require further clarification.

Yours sincerely,

Andrew Shield

A handwritten signature in black ink, appearing to read 'AS', with a stylized flourish extending from the end.

Qualifications Manager
NQ Directorate