

# NQ Verification 2014–15

## Key Messages Round 1

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### Section 1: Verification group information

Verification group name:	Chemistry
Verification event/visiting information	Event and visiting
Date published:	March 2015

#### National Courses/Units verified:

Chemistry (National 3, National 4, National 5 and new Higher) Unit assessments

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### Section 2: Comments on assessment

#### Assessment approaches

Most centres are using the Unit assessment support packs produced by SQA and a few are using prior-verified assessments. A small number of centres are using centre-devised assessments. Centres are reminded that SQA offers a prior verification service where assessments can be approved before being used. Some centres are not using the most recent Unit assessment support packs. The most recent Unit assessment support packs should be used and are available from [SQA's secure site](#).

Outcome 1 involves applying skills of scientific inquiry and drawing on knowledge and understanding of key areas of this Unit to carry out a practical investigation. Centres should ensure that the practical work relates to a key area of the Course at the correct level. At Higher level the plan at Assessment Standard 1.1 should include a hypothesis, while for Assessment Standard 1.6 the evaluation should be supported by justifications and the candidate should provide at least two possible improvements for the experiment.

For Higher and National 5, centres should ensure they are selecting investigations that have a dependent and an independent variable. For some investigations/experiments it was very difficult to determine what these were, which put candidates at a disadvantage, and in some cases an experiment had been chosen that did not have a dependent variable. Centres are reminded that candidates do not have to name the dependent and independent variable as long

as the description of the procedure clearly identifies what is being varied and how, and what is being measured and how.

For Assessment Standard 2.1, when making minor changes to a Unit assessment support pack, centres should ensure that the level of demand is not increased inappropriately, ie by asking for extra information to be awarded the same correct response.

When assessors accept answers other than those in the marking scheme they should annotate the marking guidance to reflect the additional correct answers. This can then be used in all future assessments by all assessors so they are all assessing to the same standard.

Centres should ensure assessment instruments used for re-assessment are not too similar to those in the first attempt. When questions are used in the re-assessment that are similar to those used in the first attempt these questions are not equivalent in demand to the questions in the first attempt as the candidates would be familiar with the questions.

For Assessment Standard 2.2/2.3 at National 3, 4 and 5, candidates should produce a short report on an application of chemistry from a key area of the Unit, which they have investigated. The candidate should describe the use of the application and consider the effect of this application on the environment/society. This report must show a knowledge and understanding of chemistry at a depth appropriate to the level of Unit. Chemical formulae, balanced equations and names of relevant reactions would be expected at National 5 level where appropriate.

## **Assessment judgements**

To aid verification, assessors and internal verifiers should be encouraged to identify on candidate materials where a particular Assessment Standard has been achieved — as illustrated in the exemplar in the Course and Unit Support Notes.

### **Outcome 1**

#### **Assessment Standard 1.1**

To achieve Assessment Standard 1.1, candidates are required to state key variables to be kept constant. In order to achieve 1.1, candidates must include a clear and detailed description of how the experiment should be carried out including safety considerations.

#### **Assessment Standard 1.2**

To achieve Assessment Standard 1.2, candidates are required to follow procedures safely. An observation checklist can be used to record that procedures have been followed safely.

#### **Assessment Standard 1.3**

To achieve Assessment Standard 1.3, measurements should be repeated and averages calculated where appropriate. The raw data must be collated in a relevant form and units must be given.

#### **Assessment Standard 1.4**

To achieve Assessment Standard 1.4, candidates should use SI units and standard abbreviations where appropriate.

#### **Assessment Standard 1.5**

To achieve Assessment Standard 1.5, the conclusion should refer to the aim of the experiment and be consistent with the candidate's experimental results.

#### **Assessment Standard 1.6**

To achieve Assessment Standard 1.6, the response should be appropriate for the experiment. 'Supported by reasons' means that there needs to be justification or reasoning included in the evaluation.

#### **Assessment Standards 2.1/2.4**

For Assessment Standards 2.1/2.4, any incorrect assessor judgements were mainly caused by assessors not following the marking guidance accurately and awarding a correct response when the candidate's answer was incorrect and not marking candidates' responses as correct when, according to the marking guidance, the response was correct. On a few occasions this resulted in candidates being wrongly awarded a pass for these Assessments Standards, or on other occasions, candidates being awarded a fail for Assessment Standards they had given enough correct responses to pass. Addition errors when totalling the number of correct responses resulted in a few instances of candidates being wrongly assessed as having passed or having failed.

For Assessment Standard 2.1, at least half of a candidate's responses must be correct across each Unit to achieve a pass. Candidates are **not** required to achieve at least half correct responses within each key area. Candidates may be weaker on some key areas and stronger on others and still achieve a pass for the Unit. This applies whether the centre is following the Unit-by-Unit approach, the portfolio approach or the combined approach. There is clear marking guidance in each Unit assessment support pack, along with a grid that identifies the question type and the key area, that indicate what is classed as an opportunity to make a statement. For example, in a question asking candidates about nuclide notation, both the number of protons and the number of neutrons must be correct — this would count as one opportunity to make an accurate statement.

If centres decide to allocate marks to Unit assessment they should be very careful how they do so. The example given above would be counted as one accurate statement and not broken down into two 'marks'. Under no circumstances should half marks be used. The use of  $\frac{1}{2}$  marks has been discontinued in CfE qualifications. For problem solving questions, marks should not be allocated for intermediate stages; the response is either correct or incorrect.

For Outcomes 2.2/2.3, if centres require to re-submit these Assessment Standards they do not necessarily need to get candidates to redraft the original piece of evidence, they can submit another example of a 2.2/2.3 report from these candidates that is of the correct standard. As a rule of thumb for National 5

standard, the short reports would be expected to contain formulae, (structural where appropriate) and balanced equations.

If a candidate needs to be re-assessed for 2.1 then there are two possible approaches to re-assessment: the candidate could be given another test covering all of the key areas within a Unit and if they get 50% or more of the responses correct they would pass 2.1; or the centre could analyse the candidate's performance in each key area in the first test and then re-assess the candidate on those key areas in which the candidate performed poorly (taken to be less than half the opportunities correct). In the second example, the candidate would pass if they scored 50% or more of this re-assessment. You would not add the original assessment and the re-assessment together and apply a 50% threshold.

To illustrate this second point, suppose a test for 2.1 covered a Unit with four key areas and the number of questions in each key area was 1, 4, 4, and 3 respectively. In the test, the candidate scored 1/1, 1/4, 2/4 and 1/3, so they scored 5/12 and therefore hadn't passed 2.1 for the Unit. The centre could then choose to re-assess this candidate on the second and fourth key areas. If the centre re-assessment for this candidate consisted of, for example, three questions on each of these two key areas and the candidate scored 3/6 in this re-assessment; they have passed Assessment Standard 2.1.

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## Section 3: General comments

For one centre, evidence submitted for verification was photocopies of the candidates' original scripts. All evidence should be the original documentation.

Centres are reminded that as part of the SQA processes for a centre to be authorised to present candidates for a Course, an effective internal verification process must be in place. This allows the centre to check that each candidate is given the same opportunities and that the standards being applied by one member of staff are the same as other staff in that centre. For external verification purposes, it is important that evidence is supplied to demonstrate this internal verification process, not only in the provision of a school/department policy but on the effective use of the policy on the candidates' work.

When a centre is selected for external verification it should only submit one Unit for each level being verified, eg if National 4 and National 5 are being sent then one Unit for the candidates at National 4 and one for the candidates at National 5 should be submitted for verification. Centres should only submit evidence for a candidate at the level they indicate on the Verification Sample Form. For example, if a centre is submitting evidence for a candidate they are entering for National 4 they should not submit failed National 5 evidence for this candidate or evidence marked as a pass at National 3.