



**National Qualifications  
Internal Assessment Report 2012**

**Skills for Work: Laboratory  
Science**

The purpose of this report is to provide feedback to centres on verification in National Qualifications in this subject.

# National Qualifications (NQ) Awards

Titles/levels of NQ Awards verified:

Skills for Work Laboratory Science Intermediate 2, consisting of:

Laboratory Science: Careers using Laboratory Science F86K 11 SCQF level 5

Laboratory Science: Working in a Laboratory F86L 11 SCQF level 5

Laboratory Science: Practical Skills F86M 11 SCQF level 5

Laboratory Science: Practical Investigation F86N 11 SCQF level 5

## General comments

Centres generally have a clear and accurate understanding of the requirements of the national standards. However, it should be noted that this award is at SCQF level 5 and the recommended entry indicates that candidates should have attained, or be studying, a Science subject and Mathematics at SCQF level 4 or 5 (see Arrangements document).

## Course Arrangements, Unit specifications, instruments of assessment and exemplification materials

Generally, assessors and Internal Verifiers were familiar with the Course Arrangements document and the Unit specifications. National Assessment Bank materials were being used by all centres, although some centres had amended the checklist sheets to aid the centre's record-keeping strategy. SQA support materials were being used to aid the learning process in all centres.

## Evidence Requirements

The material provided for verification indicated that, in general, centres clearly understood the Evidence Requirements for the Course and the Units. However, some centres had omitted some elements of a performance criterion, eg O3 pc(d) of Working in a Laboratory – the four types of calculation, and O2 pc(b) Practical Skills. At the time of external verification, very few centres had completed the delivery and assessment of the Practical Investigation Unit and the last review for O3 of the Careers Using Laboratory Science Unit.

## Administration of assessments

The Working in a Laboratory Unit and the Practical Skills Unit were being assessed to national standards. When candidates failed to meet these standards in the first instance, feedback was given to enable the required standard to be achieved. Not all centres had documented evidence of internal verification both in the written and the practical assessment. On discussion with several centres it was noted that internal verification had taken place in an informal manner.

The Careers Using Laboratory Science Unit was being assessed to an appropriate level. However, the evidence for Outcome 3 – the candidate reviews – was limited in the feedback to candidates in some instances and, at times, little progression in employability skills was evidenced. Internal verification had not always been documented.

Very few centres had completed the assessment of the Practical Investigation Unit at the time of external verification. However, those centres that had were assessing to the appropriate level. Again, internal verification was not always evident.

## **Areas of good practice**

Assessment materials in centres were well organised and easily accessible for the external verification visit. Class record sheets as available in the National Assessment Bank materials were used by some centres. These provide a useful means of tracking the achievement of a candidate and the class as a whole.

Integrated assessment across the Working in a Laboratory Unit and the Practical Skills Unit was being used by two centres. However, there should be a clear indication in records as to where the achievement of the performance criteria can be located in the candidate's evidence.

Internal verification procedures had been developed in several centres.

- ◆ One centre had developed an assessment policy which gave clear details of how the assessment of each Unit was to be verified. Minutes of departmental meetings indicated that assessors and verifiers had discussed the Course, how to assess and the verification outcomes that were to be employed.
- ◆ One centre had arranged the timetable to enable the Internal Verifier to be available to verify practical work during one of the three periods each week.

In several centres, the quality of feedback by teachers was clearly visible and relevant to each candidate. In certain instances in the Careers Using Laboratory Science Unit, the candidates' review sheets 1 and 2 indicated progression in employability skills was taking place within the Course.

In several centres the links with external agencies were varied and stimulating for candidates, giving them a wide view of the type of employment available in laboratory science. In two cases this has led to employment for the candidate.

In one case, SQA support packs had been customised to enable the centre to deliver a course suitable for the cohort.

## Specific areas for improvement

Centres should:

- ◆ Carry out and record internal verification by sampling both written work and practical skills for each Unit. Internal verification of practical work should be carried out during the practical assessment. This procedure should be signed off by the Internal Verifier with a signature and a date on the appropriate record sheet on the day of the practical assessment. It is recommended that a written internal verification plan/policy is developed to ensure consistency of decision-making among staff.
- ◆ Note the expected accuracy of measurements that are to be recorded by candidates on the centre's equipment. This will aid consistency in judgements of the candidate's competence in taking measurements.
- ◆ Consider the use of the appendix sheets provided in the National Assessment Bank materials to record class assessment outcomes. This will enable assessors, Internal Verifiers and External Verifiers to view clearly the Outcomes achieved by each candidate.
- ◆ Ensure that all bullet points in performance criteria Evidence Requirements are completed. For example, for the Working in a Laboratory Unit candidates have the opportunity to tackle all four types of calculation for O3pc(d).
- ◆ Ensure that all calculations such as averages are correct to the same number of decimal places as the raw data.
- ◆ Provide clear signposting when using integrated assessment. There should be a clear indication in records as to where the achievement of the performance criteria can be located in the candidate's evidence. For example, where calculations or measurements in one Unit are used as evidence for a different Unit, this should be noted on the candidate's assessed material for verification purposes.
- ◆ Note that Practical Skills O1 requires candidates to pour agar plates and subculture organisms. Dishes should be checked and dated before and after incubation to show that there was no contamination.
- ◆ Ensure that candidates work in small groups for Practical Investigation to fulfil the requirements of Outcomes 1 and 4.
- ◆ Ensure that the marking of the practical report for Practical Investigation is clear and that, for each candidate, there is a clear indication on the script as to where the candidates have achieved the performance criteria bullet points.
- ◆ Ensure contact with industry by visits to industrial science laboratories, speakers from industry and possibly work placements during the Course. Visits to Further and Higher Education centres are recommended to enable candidates to gain knowledge of possible progression from the school sector.