



NQ Verification 2013–14

Key Message Reports

Verification group name:	Computing Science
Levels	N3 to N5
Date published:	July 2014

This Report combines all Verification Key Messages for the academic session 2013-14.



NQ Verification 2013–14

Key Messages Round 1

01

Section 1: Verification group information

Verification group name:	Computing Science
Verification event/visiting information	Event
Date published:	January 2014

National Courses/Units/Awards verified:

H21X 73: National 3 Building Digital Solutions

H222 73: National 3 Information Solutions

H223 74: National 4 Software Design and Development

H226 74: National 4 Information System Design and Development

H223 75: National 5 Software Design and Development

H226 75: National 5 Information System Design and Development

02

Section 2: Comments on assessment

Assessment approaches

Some centres created interesting and innovative approaches to assessment.

Where centres have devised their own assessments, it is advised that they are prior verified by SQA before being used. This is a free service and will help ensure that the approach to assessment is in line with national standards and covers all Assessment Standards.

Prelim-type exams are not usually acceptable as forms of assessment that meet all of the Assessment Standards of the Units. The *Unit Assessment Support* packs are a good reference point for approaches to assessment, although there are other valid approaches.

Although a group approach to an assessment task is possible, each piece of assessed candidate evidence must be clearly attributed to one candidate to show that the candidate has met the Assessment Standard.

Within *Software Design and Development* (National 4 and National 5) it is important to remember that programming languages such as Scratch are software development environments and **not** contemporary software-based applications.

Assessment judgements

Some centres provided excellent assessment judgement tables which showed which answers were acceptable. These were usually accompanied by Assessment Standard checklists for each candidate.

Some centres either marked the question or the answer with the Assessment Standard. This made it easy for the Verifier and Internal Verifier to check that all the Assessment Standards had been met.

Some centres gave excellent commentary on why they had accepted particular answers. This was an example of good practice.

03

Section 3: General comments

Internal verification is an extremely useful method of ensuring that Assessment Standards have not been accidentally omitted from the assessment and that the assessment judgements are valid.

The centres which provided:

- ◆ candidate evidence flyleaves
- ◆ the assessment with the Assessment Standards highlighted
- ◆ the assessment judgements tables
- ◆ assessor commentary

made it very easy for the evidence to be verified.

The document entitled *Evidence required for external verification of Units* available at

www.sqa.org.uk/sqa/files_ccc/Evidence_required_for_verificationevents.pdf is a valuable resource that should be viewed by all assessors.

Finally, if a centre uses an assessment of its own devising, we strongly recommend that they submit this for prior verification — this will ensure that the instrument of assessment used is a valid approach to assessment. The prior verification service is free of charge and full details (along with appropriate forms for submission) can be found at <http://www.sqa.org.uk/sqa/63004.html>.



NQ Verification 2013–14

Key Messages Round 2

01

Section 1: Verification group information

Verification group name:	Computing Science
Verification event/visiting information	Event
Date published:	March 2014

National Courses/Units verified:

H21X 73: National 3 Building Digital Solutions
H222 73: National 3 Information Solutions
H223 74: National 4 Software Design and Development
H226 74: National 4 Information System Design and Development
H223 75: National 5 Software Design and Development
H226 75: National 5 Information System Design and Development

02

Section 2: Comments on assessment

Assessment approaches

The majority of centres are using the SQA-provided Unit Assessment Support packs, or variations of these.

Centres are encouraged to create their own assessment approach as this is liable to more closely match the learning and teaching. However, it is strongly recommended that they submit this for prior verification — this will ensure that the instrument of assessment used is a valid approach to assessment. The prior verification service is free of charge and full details (along with appropriate forms for submission) can be found at www.sqa.org.uk/sqa/63004.html.

Assessment judgements

Centres are encouraged to create their own marking schemes to show acceptable answers. The exemplars provided with the Unit assessment support packs are not definitive marking instructions and centres should not feel constrained by the answers they contain. If an answer meets the assessment standard as defined in the 'judging evidence tables' within the Unit assessment support packs then it is an acceptable answer.

Centres must ensure that evidence of achieving assessment standards is not simply measured against the task. For example, the three programming tasks exemplified at National 4 Software Design and Development Outcome 2 can be successfully achieved without the use of iteration. Yet Assessment Standard 2.1 states that iteration is a required construct. It is important that centres use the checklists to ensure that the candidate evidence achieves the range of assessment standards.

Assessment Standards can be met across a range of tasks and do not need to be met in every task. For example, if a candidate undertaking National 4 Software Design and Development Outcome 2 only correctly tests one of the programs that they have been given, then they have met Assessment Standard 2.3.

Many of the Outcomes say 'describe', eg National 5 Information Systems Design and Development Outcome 1 says, 'Consider the factors involved in the design and implementation of an information system by **describing** its:...' Despite this, a number of centres are — incorrectly — accepting lists as correct, rather than descriptions, from candidates.

Some centres either marked the question or the answer with the Assessment Standard. This made it easy for the Verifier and Internal Verifier to check that all the Assessment Standards had been met on the candidate checklist. Some centres gave excellent commentary on why they had accepted particular answers. This is an example of good practice.

03

Section 3: General comments

Internal verification is an extremely useful method of ensuring that Assessment Standards have not been accidentally omitted from the assessment and that the assessment judgements are valid.

Evidence of internal verification must be provided, as should a detailed description of how this has been carried out by the centre. Cross-marking should be clearly shown in a different colour to the original marking, as should the signature of the cross-marker. Clear guidance exists on SQA's website regarding internal verification:

www.sqa.org.uk/files_ccc/InternalVerificationGuideforSQAcentres.pdf

If a candidate has been assessed orally on any aspect, then a record of the questions asked and the candidate's responses should be provided to allow both internal and external verification of the assessment decision(s).

If the candidate's evidence does not satisfy all of the Outcomes and Assessment Standards, or is incomplete for an individual Outcome, the candidate only needs to be re-assessed on the specific Outcome(s) or Assessment Standard(s) that have not been met.



NQ Verification 2013–14

Key Messages Round 3

01

Section 1: Verification group information

Verification group name:	Computing Science
Verification event/visiting information	IACCA Event
Date published:	June 2014

National Courses/Units verified:

National 5 Computing Science Assignment

02

Section 2: Comments on assessment

Assessment approaches

All centres used the four available SQA-produced assignments.

It is important to note that candidates should only be given the assignment as published. Centres must **not** create a more structured version which leads the candidates through the task. One of the main features of the assignment is to assess that the candidates can problem solve.

Assessment judgements

The vast majority of centres made an excellent attempt at marking the assignments with only 7% of all centres in Scotland being outwith the tolerances of +6 to –6. The assessors have to be congratulated on the efforts that they made to understand the method of marking, which was different to the one to which they previously had been accustomed.

There are a number of areas that require clarification that should be helpful in the future.

Stage 1 Analysis

This stage must encompass the whole assignment and should be completed before any other stage is attempted. The marking instructions for analysis states:

'This stage should be marked before the candidate progresses to the build stage of each part of the task to ensure authenticity of work.' However, the candidate can revise this stage at any point due to the holistic nature of this stage.

Stage 2(a)(i) Building a solution (data structure): design and development

A design is something that is done before implementation so a database printed in design view cannot be part of a design as the database has to be implemented before it. Many centres used a data dictionary, which is acceptable although other design notations are also available.

It is important to mention that the design of the database and the design for the user interface are two separate items.

Use of a database documenter or equivalent screenshots sufficient to show the necessary table/field properties are good examples of providing evidence of the database build.

Stage 2(a)(ii) Building a solution (data structure): testing and refinement

Candidates should carry out the relevant queries or validate relevant fields in their database. This is showing evidence of testing and if errors are spotted and then changed, this would be refinement. A complete and correct database is evidence of this.

Stage 2(b)(i) Building a solution (program): design and development

Many candidates did not create a design of the user interface; a sketch is more than adequate.

Evidence of on-going testing can be as simple as a mention in a candidate's log/diary, or even an observation from the assessor.

Stage 2(b)(ii) Building a solution (program): testing and refinement

Candidates must show evidence of testing the program with normal, extreme and exceptional data. A test table with corresponding test results (screenshots or otherwise) would suffice.

Candidates do not have to print out **all** changes/edits to their program to evidence refinement.

Stage 3 Reporting on the solution

The record of progress includes hard copy evidence of a number of items and does not relate just to the report. A list of items that is required for this stage is clearly shown in stage 3 of the relevant pages of the marking instructions and appendix 1: instructions for candidates.

Only one security or legal implication is required for the report; it is not necessary for candidates to produce more than one.

Section 3: General comments

Overall, the vast majority of the assignments were of a high quality and were a testament to the hard work of both the candidates and the assessors.

It is appreciated that the marking of the assignments used a very different approach to that which assessors have used in the past. It is also appreciated that some of the band descriptors were not always as clear and unambiguous as they might have been. Regardless, it is important that centres **do not** create their own marking schemes but use the band descriptors that are given.

Comments made by the assessors are vitally important to the verification process. The verifiers use the evidence provided and the comments given to understand the marks given by the assessor. An example of this would be a verifier who looks at a candidate's evidence of analysis and sees an excellent piece of work, but the assessor has only given 6 marks and there are no comments to explain why. The verifier can only assume that since the assessor has made no comments that the candidate has been harshly marked. Unknown to the verifier the candidate has received significant advice and guidance from the assessor. If the assessor had stated this in the comments then the verifier would have understood the reduction in the marks and agreed with the assessor.

It is always disappointing that so much effort has been made in the marking of the assignments that arithmetic/clerical errors can bring confusion as to what mark the assessor assigned a candidate.

Assessors should feel free to make comments throughout the candidates' work as this can help the verifiers understand the assessor's marking.