



NQ Verification 2015–16 Key Message Reports

Verification group name:	Design and Manufacture
Levels	N4 – Advanced Higher
Date published:	October 2016

This Report combines all Verification Key Messages for the academic session 2015-2016.



NQ Verification 2015–16 Key Messages Round 1

01

Section 1: Verification group information

Verification group name:	Design and Manufacture
Verification event/visiting information	Event and Visiting
Date published:	March 2016

National Courses/Units verified:

H22T 74	National 4	Design
H22V 74	National 4	Materials and Manufacturing
H22T 75	National 5	Design
H22V 75	National 5	Materials and Manufacturing
H22T 76	Higher	Design
H22V 76	Higher	Materials and Manufacturing

02

Section 2: Comments on assessment

Assessment approaches

The majority of centres had used the combined approach and submitted partial evidence which had been generated from a wide range of activities.

Assessment judgements

All levels

Materials and Manufacturing Unit

This Unit was verified by visiting verifiers and almost all judgements were reliable. There were minor issues with the finish on some models and the assembly of others. Candidates at National 5 must produce models which allow them the opportunity to display their assembly and finishing skills: very simple models may not be appropriate.

Candidates at Higher must produce models or prototypes which allow them to demonstrate the practical skill required in this Unit. The development type models used in the Design Unit may not allow the candidates to demonstrate practical skill at an appropriate level.

Design Unit

The judgements made for Higher, Outcome 3, Product Evaluation were generally reliable and reports produced by candidates at all levels were appropriate to the time available and detail required.

The majority of judgements made by centres for the other Outcomes were reliable. However, a number of judgements raised issues at N4, N5 and Higher:

Producing a specification: Specifications should become more detailed/specific as candidates progress through the levels of the Course. Many candidates produced 'specifications' which were too vague/generic for N5 and Higher.

Research: Candidates should be aware of the purpose of the research, ie to produce a design specification which details the requirements of the proposal. Many candidates carried out inappropriate research which resulted in weak specifications (AS 1.4).

Idea generation: There was continued improvement in this area. However, it should be noted that techniques should be used to generate ideas which address the brief/specification, eg use of SAM to simply generate a range of shapes does not demonstrate appropriate use of an idea generation technique.

Exploring and refining: The weak specifications generated in AS1.4 made it difficult for a number of candidates to carry out the exploration and refinement required at this level.

Graphic and modelling techniques: Techniques must be applied effectively to explore and refine ideas. Simply producing a range of models and graphics will not satisfy the Assessment Standards; they must be used to develop the proposal.

03

Section 3: General comments

Centres are reminded of the following:

- ◆ Graphics and models must be appropriate to the level of the Course.
- ◆ Higher candidates are required to justify their selection of factors and research techniques (AS1.1/1.2/3.1).

Centres are advised not to generate evidence for Outcomes 1 and 3 with the same activity. Although the skills used by candidates are the same for both Outcomes they are used in a different context and attempting to do both with the

same task often leads to candidates being confused, ie they mix up an existing product with the analysis of a brief.

Centres are reminded of the importance of the specification. Candidates must be made aware that it is the focus of Outcome 1. Candidates must also have developed, or have been given, a detailed enough specification to allow them to carry out suitable development of a design proposal (Outcome 2).



NQ Verification 2015–16 Key Messages Round 2

01

Section 1: Verification group information

Verification group name:	Design and Manufacture
Verification event/visiting information	N5, Higher and Advanced Higher — Visiting N4 — Event
Date published:	June 2016

National Courses/Units verified:

C719	Advanced Higher	Course assessment task
C719	Higher	Course assessment task
C719	National 5	Course assessment task
H22W	National 4	Added value unit

02

Section 2: Comments on assessment

Assessment approaches

All centres used tasks provided by SQA.

Higher

It should be noted that centres must not give candidates any additional information, such as research material or a detailed specification.

Candidates are required to complete the Design Information Record to identify key requirements of their proposal. The Design Information Record has been included as it helps candidates with the development of their proposal, allowing them to apply knowledge during their exploration and refinement and, therefore, giving them opportunity to gain higher marks. Centres should not provide a specification or additional information as this is a national test. Providing candidates with further information may potentially restrict a candidate's scope for exploration and have a negative impact on the marks awarded.

National 5

A few centres used the previously published marking instructions, which were revised for diet 2016. Updated course assessment tasks were issued in

September 2015. Centres should check that they are using the most up to date documents before candidates start the task.

Assessment judgements

The majority of centres made assessment judgements that were in line with the national standard.

03

Section 3: General comments

National 4

Verification was carried out at a central event.

It should be noted that the evidence requirements at N4 are different from those at N5. Centres must check that candidates who are moved from N5 to N4 have generated evidence to cover all assessment standards. In particular, they are required to carry out research to meet assessment standard 1.1

National 5

Verification was carried out by visiting verifiers. The majority of centres made reliable judgements. However, a significant number of centres were lenient in their judgements.

Design Skills

Section 1: Marks awarded for *Ideas* were generally in line with national standard.

Section 2: Marks awarded by a number of centres for *Development* were very lenient. A number of candidates had been awarded marks in the top bands when there was very limited evidence of exploration, knowledge of materials and manufacturing, application of knowledge of design issues or ongoing review of ideas. For exploration, simply changing shapes and rounding corners will not allow candidates to access marks in the top band. Simplistic exploration leaves the candidates with little opportunity to apply any knowledge. Many candidates were incorrectly awarded marks in the top bands even though their design proposal showed almost no change and contained no more detail than their original idea.

Section 3: Marks awarded for *Communication* were generally in line with national standard.

Section 4: Marks awarded for *Evaluation of the Design Proposal* were generally in line with national standard. It should be noted that marks are awarded to the design proposal, not initial ideas or ongoing development. Candidates can base their evidence on the proposal within their folio, the finished practical model or both.

A number of candidates made no reference to the specification and simply described what they had done. To gain marks in the top band the evaluation must be based on valid evidence, eg comparison against specification, testing or opinion of others.

Practical Skills

Marks awarded for all sections of Practical Skills were generally in line with national standards. However, a significant number of centres were lenient in their judgments.

It should be noted that in these sections, the candidates are assessed on their practical skills and that proposal developed in Sections 1– 4 (Design Skills) must allow them to demonstrate these skills. Assessors should remind candidates of this before they undertake the design task and during the development stages.

Section 5: Marks awarded for *Measuring and Marking Out* were generally in line with national standard. However, a number of centres awarded marks when there was very little evidence of measuring or marking out, eg candidates had been supplied with all parts cut to size and had simply assembled the parts, or the project was very simple and did not allow the candidate to demonstrate the assessable skills.

Section 6: Marks awarded for *Using Hand & Machine Tools* were generally in line with national standard. However, a number of centres awarded marks when there was limited demonstration of skills. This was often the result of a very simple project that did not allow candidates to demonstrate the assessable skills. The level of assistance given by teacher or technician must also be taken into account, eg marks should not be awarded if material has been cut on a band saw by the teacher.

Section 7: Marks awarded for *Assembly of Components* were generally in line with national standard. However, a number of centres awarded marks when there was limited level of skill demonstrated/required in the assembly of the components of components. This was often the result of a very simple project that did not allow them to demonstrate the assessable skills.

Section 8: Marks awarded for *Finishing* were generally in line with national standard. A few centres were severe with their judgements, deducting marks for very minor blemishes on otherwise very well finished complex projects.

Higher

Verification was carried out by visiting verifiers. The majority of centres made reliable judgements. However, a significant number of centres were lenient in their judgements. The major issue was that a number of candidates carried out very little exploration or refinement, simply making very minor changes to one of their initial ideas. This impacted on marks for Sections 2–6.

The Design Information Record (DIR) should be completed by candidates before they undertake the task. The information on the DIR can be used to generate a specification that provides much of the direction for the exploration and refinement of the proposal.

The following points should be noted:

Section 1: Marks awarded for *Generating Ideas* were generally in line with national standard. However, a number of centres were lenient in their judgements, awarding marks in the top band when there was very little evidence to support this at Higher level. Marks are awarded for the range, creativity and diversity of ideas, not the quality. Reference should be made to the Marking Instructions.

Section 2: Marks awarded by a significant number of centres for *Exploring and Refining Ideas* were lenient. Marks were often awarded even although the design proposal was virtually the same as an initial idea. Marks were often awarded for superficial development, eg where there is a lot of repetition or lack of detail of component parts.

Section 3: Marks awarded for *Applying Graphic Techniques* were generally in line with national standard. A few centres were severe with their judgements, deducting marks for minor flaws in a graphic even though the body of work demonstrated very good application of graphic skills.

Section 4: Marks awarded for *Applying Modelling Techniques* were generally in line with national standard. A few centres were lenient in their judgements, simply awarding marks for models that had been produced but had not been used to develop the proposal. Marks are not awarded for the quality or presence of models, but for how the candidate has applied them to develop their solution.

Section 5: Marks awarded by a significant number of centres *Applying Materials and Processes* were lenient. Marks were often awarded even although the design proposal was virtually the same as an initial idea. Marks were often awarded for listing details of materials or processes. Marks are awarded for the use of the knowledge in developing the proposal.

Section 6: Marks awarded by a significant number of centres *Applying Knowledge and Understanding of Design Issues* were lenient. Marks were often awarded even although the design proposal was virtually the same as an initial idea. Marks were often awarded for listing details of design issues. Marks are awarded for the use of the knowledge in developing the proposal.

Advanced Higher

Verification was carried out by visiting verifiers. The majority of centres made reliable judgements. However, a number of centres were lenient in their judgements.

A number of candidates undertook tasks which were very restricted and did not allow them to generate strong evidence of the assessable skills. Assessors should provide advice on the suitability of tasks.

The following points should be noted:

Defining a design opportunity — analysis and research: Marks awarded were generally reliable. The research should be aimed at the task. A number of candidates carried out very generic research, eg into materials, which results in

poor definition of design opportunity and, ultimately resulted in a weak evidence in every section. It should be noted that an image board adds little to analysis and research unless the candidate draws information from it.

Project planning: Marks awarded were generally reliable. Most centres followed the format of the exemplars. To gain marks in the top bands, 'evidence of ongoing refinements to plan with detailed explanations for changes' is required.

Generating and developing ideas towards a design proposal: A significant number of centres were generous in this section, awarding marks when there was little evidence of generating, exploring or refining ideas. The lack of evidence was often a result of candidates not defining a clear and detailed opportunity.

Applying graphic techniques to inform and communicate design decisions: Marks awarded were generally reliable. The graphics must 'inform and communicate design decisions'. If sound refinement has taken place, graphics should communicate the details of the components.

Applying modelling techniques to inform and communicate design decisions: A significant number of centres were generous in this section, awarding marks when the model did not 'inform and communicate design decisions'. Modelling can be used to explore, test and refine aspects of the design. Results from modelling should offer candidates further opportunity to apply their knowledge of design issues.

Analysing and evaluating to inform design decisions: Marks awarded were generally reliable. Marks in this section are awarded for work during development of the proposal, and not the analysing of the research to define the problem.

Applying knowledge and understanding of materials and manufacturing processes: Although marks were generally reliable, a significant number of centres were lenient, awarding marks for very superficial evidence. At AH level, candidates should demonstrate sound knowledge about materials, processes, suitability of part design and assembly for the components of the proposal.

Applying knowledge and understanding of design issues: Although marks were generally reliable, a significant number of centres were lenient, awarding marks for very superficial evidence. Candidates who had not defined a clear and detailed opportunity had restricted opportunity to apply knowledge of design issues to develop their proposal.

General Points

There was clear evidence of internal verification procedures in most centres. However, the following points should be noted:

- ◆ Checking of arithmetic should be part of the Internal Verification process.
- ◆ The mark agreed by the internal assessor and internal verifier for each section should be clearly indicated. The agreed mark should be arrived at through discussion and reference to the band descriptors. The mark should

not be an average or the highest so that the candidate 'gets the benefit of the doubt'. The final mark agreed between the assessor and internal verifier must be clear.

- ◆ Some centres had used other centres for internal verification. Although this is a sound approach, assessment judgements must always be benchmarked against the SQA exemplars using the detailed marking instructions.
- ◆ **Centres should make use of the exemplars that can be found on the SQA Secure website.**