



NQ Chemistry Qualification Verification Summary Report 2024–25

Section 1: verification group information

Verification group name:	Chemistry
Verification activity:	Event
Round:	1
Date published:	June 2025

National Units verified

Unit code	Unit level	Unit title
H21G 73	National 3	Chemical Changes and Structure
H21G 74	National 4	Chemical Changes and Structure
H21J 74	National 4	Nature's Chemistry
J239 75	SCQF level 5	Chemical Changes and Structure
J23B 75	SCQF level 5	Nature's Chemistry
J1YK 76	SCQF level 6	Chemical Changes and Structure

Section 2: comments on assessment

Assessment approaches

National 3, National 4, SCQF level 5, and SCQF level 6 units

Some centres indicated that the candidate evidence they submitted was complete but they did not provide an outcome 1 report for their candidates. Complete evidence must include evidence for outcome 1 **and** outcome 2 and candidates cannot pass a unit until they pass **both** outcomes. If a candidate has not completed an outcome 1 report, centres should mark the evidence as interim.

All centres used the marking guidance provided in the SQA unit assessment support (UAS) packs to assess outcome 1.

National 3 candidates can use a template to complete their outcome 1 report. At National 4 and SCQF levels 5 and 6, candidates must not use a template. Candidates should use the candidate brief from the UAS pack to help them to write their report.

A few centres submitted outcome 1 reports that did not meet the candidate brief. If candidates produce an assignment report as part of their external assessment for National 5 or Higher, it is not appropriate to submit this as an outcome 1 report for SCQF levels 5 and 6. National 5 and Higher assignments do not count as evidence for an outcome 1 report in a unit because the assessment criteria do not match. For outcome 1, assessment standard 1.1, the plan must cover the detail outlined in the unit assessment.

Almost all centres verified used the SQA UAS packs to assess outcome 2. This is an effective way to ensure that assessment is at the correct level of demand, with appropriate coverage of key areas. Almost all centres verified used a single test with marks and a 50% cut-off score to assess outcome 2, rather than assessing assessment standards 2.1 and 2.2 separately.

A few centres used the portfolio approach. This is a valid approach if candidates have the opportunity to attempt all key areas and demonstrate the problem-solving skills appropriate to the level.

A few centres modified the UAS packs. These modifications were not always valid and sometimes assessed material not included in the unit specifications, which increased the level of demand. If centres modify UAS packs, or use centre-devised materials, they should submit them for prior-verification before they use them with candidates. This ensures that they are of the correct level of demand and have appropriate coverage of all the key areas in a unit.

To pass outcome 2, candidates must have the opportunity to attempt questions on all key areas. The SCQF level 6 units are freestanding. They are completely independent of the Higher Chemistry course. Centres should refer to the SCQF level 6 unit specifications to determine which key areas belong in each unit. It is not a valid assessment approach to move key areas between UAS packs. For example, the key area 'controlling the rate' must be assessed in Chemical Changes and Structure (J1YK 76), not Chemistry in Society (J23E 76).

A few centres used outdated versions of the SQA UAS packs. Centres using SQA UAS packs must ensure they use the most up-to-date versions from SQA's secure website.

If a centre accepts responses that are not in the marking guidance, they should annotate the marking guidance to reflect the additional correct responses. Some centres annotated the marking guidance, which was helpful during verification.

Assessment judgements

National 3 units

All centres verified made reliable assessment judgements and applied the marking guidance consistently throughout.

National 4 units

Almost all centres verified made reliable assessment judgements for outcome 1 and used the guidance in the UAS packs effectively. Candidates produced reports on topics appropriate to National 4 Chemistry, such as rates of reaction.

Assessors annotated candidate evidence and used log sheets and observation checklists to record their assessment judgements. All centres verified knew that candidates only needed to achieve five out of six assessment standards to pass outcome 1.

A few centres judged assessment standards 1.3 and 1.4 leniently. To achieve these assessment standards, candidates must correctly use SI units or standard abbreviations. When tabulating data, candidates should include the units in the table heading, or after every entry in the table, but not both.

Overall, centres made reliable assessment judgements for outcome 2 and applied the marking guidance consistently throughout. A few centres assessed candidates through additional oral questioning, to clarify written answers, which is acceptable. If centres use this approach, they should record the question asked and the candidate response on the candidate evidence.

SCQF level 5 and SCQF level 6 units

Outcome 1

All centres verified generally made reliable assessment judgements for outcome 1, but there were some common issues.

Candidates completed a range of experiments, including various rates of reaction and titrations. There are six assessment standards for outcome 1. Candidates must achieve five out of six to pass outcome 1.

Assessment standard 1.1 requires candidates to plan an experiment. The plan should include an aim, dependent and independent variables, key variables, measurements to be made, equipment, and detailed method, including safety. Some candidates did not identify key safety measures specific to their experiment, but assessors awarded them assessment standard 1.1. If experiments require additional safety measures, beyond general laboratory safety, candidates should include these in their plans. This particularly relates to the use of flammable chemicals or experiments where ventilation is required.

A few centres judged assessment standards 1.3 and 1.4 leniently. To achieve these assessment standards, candidates must correctly use SI units or standard abbreviations. When tabulating data, candidates should include the units in the table heading, or after every entry in the table, but not both.

Some centres judged assessment standard 1.6 leniently. Candidates need to support the evaluation of the experiment with appropriate justification. The evaluative point should identify a factor that would have a significant effect on the results and explain why. It is not sufficient for candidates to say that they repeated the experiment.

Outcome 2

The centres verified used the marking guidance effectively and usually made reliable assessment judgements. However, some assessors awarded full marks when candidates used incorrect units. Most questions do not require candidates to state units, but if a candidate provides a unit, it must be correct. Assessors must not award marks for incorrect units. Assessors must only apply this marking instruction once in an assessment. The general marking principles for National 5 and Higher provide guidance on this.

A few candidates incorrectly rounded final answers but gained marks. If candidates round answers, the rounding must be correct for the assessor to award a mark.

Section 3: general comments

Almost all centres verified in round 1 had a good understanding of national standards. Almost all centres provided candidate evidence that was internally verified by cross-marking.

Most centres clearly showed the assessor's judgements and the internal verifier's judgements by using different colours of pen. Internal verification activity like this is helpful to external verifiers. Many centres also included comments and notes on professional dialogue between assessors and internal verifiers, which was very helpful.

In some centres, the process of internal verification was not entirely effective. In some cases, the original assessor and internal verifier awarded marks incorrectly. On a few occasions, there was a discrepancy between the internal verifier and assessor, and it was not clear what the final assessment judgement was. Where assessment judgements differ, it is helpful to clearly mark on candidate evidence, or on a log sheet, what the final judgement was.

Centres used log sheets effectively to record information about assessment judgements and dialogue between assessors and internal verifiers. This is helpful to external

verifiers and gives centres a clear overview of when candidates achieved assessment standards.

The marking guidance provided in the UAS packs is not intended to be exhaustive and centres can modify it. However, centres must ensure that any modifications they make are of an equivalent standard to the existing guidance. If a correct answer is followed by a wrong response, this is a cancelling error and should not receive marks.

At National 4, and SCQF levels 5 and 6, some assessors awarded marks for responses that included incorrect units, incorrect chemical symbols, and incorrect specific chemical terms. If a response does not require a unit, but a candidate states an incorrect one, assessors should not award a mark. If a candidate states a chemical symbol, they must use the correct format, for example Br, not BR for bromine. Candidates must state chemical terms correctly. For most questions, unless specified in the marking guidance, a symbol is acceptable in place of a name. When writing chemical formulae and units, candidates must use subscript or superscript numbers and symbols, when appropriate, for their response to be correct.



NQ Chemistry Qualification Verification Summary Report 2024–25

Section 1: verification group information

Verification group name:	Chemistry
Verification activity:	Event
Round:	2
Date published:	June 2025

National Units verified

Unit code	Unit level	Unit title
H21M 74	National 4	Chemistry Assignment

Section 2: comments on assessment

Assessment approaches

All centres assessed the National 4 added value unit using the unit assessment support pack, Chemistry Assignment (National 4) Added Value Unit (published April 2018). This assessment allocates a total of 14 marks across five assessment standards.

Candidates must achieve 7 marks or more to pass. Energy from fuels, rates of reaction, acid rate, and electrochemical cells were common topics of the centres verified this year.

Centres can use evidence from the National 5 assignment as evidence for the added value unit. If a centre uses a National 5 assignment as evidence for the added value unit, then the assessor must judge this evidence using the marking criteria for the added value unit, applying marks out of 14. If a candidate does not achieve 7 marks or more, they can redraft their report.

Some centres allowed candidates to redraft or modify National 5 assignments to ensure that they could access all the marks available, while others did not. This meant that some candidates could not access all the marks, particularly those relating to the effect of their chosen issue on the environment and/or society. This increased the level of demand for these candidates.

Centres must not assess evidence from the National 5 assignment against the marking criteria for the National 4 added value unit until they have submitted the National 5 assignment to SQA for marking. This ensures that the centre meets the National 5 conditions of assessment in terms of no teacher or lecturer feedback on the report and no redrafting.

Assessment judgements

Assessment standard 1.1 requires candidates to clearly state what they are investigating and why the issue is relevant to the environment and/or society.

Statements and questions are acceptable and they do not have to include the word 'aim'. This assessment standard does not require candidates to demonstrate chemical knowledge. Evidence for assessment standard 1.1 cannot also count as evidence for assessment standard 1.4.

Assessment standard 1.2 requires candidates to select at least two relevant sources and record at least two sources in a way that a third party can retrieve them. Assessors should ensure that information is relevant to the issue before awarding a mark for a source. Although candidates do not have to use a formal referencing system, assessors should only award a mark for being able to retrieve information or data when candidates include the full URL. If candidates use a textbook, they do not have to include an ISBN or edition number at this level. If one of the sources is an experiment, then candidates should record the title and aim. This must be separate to the overall title and aim for the investigation. There is no requirement for one of the sources to be an experiment. Candidates can provide two other relevant sources.

Assessment standard 1.3 requires candidates to present information/data from one of their sources in a different way. Candidates must include the correct headings, labels and units. In addition, almost all (90%) of the processing must be correct for candidates to gain all 3 marks for this assessment standard. Some candidates incorrectly received all 3 marks for this assessment standard. Common errors included candidates receiving marks for omitting units and incorrectly plotting one or more bars out of four on a graph. To gain marks, candidates should plot points or bars on graphs to within plus or minus a half box tolerance. If a graph requires a line of best fit, assessors should treat joining the points as an incorrect processing point. Some candidates received marks for correct headings, labels and units even when they had not presented one of the sources in a different format.

Calculating averages and entering this into extended tables is an acceptable form of presenting data at National 4.

Some candidates presented their data in more than one different format, for example an extended table and a graph. There is no requirement to do this. If a candidate presents data in more than one format, they only need to present one format correctly to achieve the marks for this assessment standard.

Assessment standard 1.4 requires candidates to explain or describe underlying chemistry that relates to the issue. In addition, candidates should explain or describe at least one impact on the environment and/or society using some underlying chemistry. There were several examples of candidate evidence that had little or no underlying chemistry, meaning that candidates could not access marks allocated to this assessment standard. However, some centres incorrectly awarded marks. Centres should refer to the National 4 Chemistry Course Specification to determine whether candidate responses include chemistry at an appropriate level. Chemistry at a higher level than National 4 is also acceptable for this assessment standard. Candidates must include two distinct pieces of information to gain both marks for this assessment standard.

Some centres used the same piece of evidence to award candidates marks for assessment standards 1.1 and 1.4. Assessment standard 1.1 requires candidates to state the relevance of the issue to the environment and/or society but does not require a chemical explanation. Assessment standard 1.4 requires candidates to explain or describe chemistry that relates to the issue.

Assessment standard 1.5 requires candidates to communicate their findings clearly and concisely, using an appropriate structure. Candidate evidence for assessment standard 1.5 included reports and posters.

Assessors must only award a mark for summing up findings when the candidate backs up their findings with evidence from their investigation. Conclusions do not have to relate to all the data in the investigation. It is sufficient if a conclusion relates to at least

some of the findings or data. A few centres awarded marks for this assessment standard to candidates who did not link their findings to the issue they were investigating.

Assessors should only award a mark for structure for an investigation with clear sections. There is no requirement for these sections to have subheadings. If candidates produce posters, the information they include should be in clear sections, but it does not have to have the same order or flow as a report.

Section 3: general comments

All centres used a valid approach, and almost all made reliable assessment judgements.

Most centres had a good understanding of national standards. Almost all centres provided candidate evidence that was internally verified by cross-marking. Most centres clearly showed the assessor's judgements and the internal verifier's judgements by using different colours of pen. Internal verification activity like this is helpful to external verifiers. Most centres also included comments and notes on professional dialogue between assessors and internal verifiers, which was very helpful. However, in a few centres it was not clear what the final mark or judgement was. Where cross-marking leads to a difference of judgement between assessors and internal verifiers, it should be clear what the final assessment judgement was.

In some centres, the process of internal verification was not entirely effective. In some cases, both the original assessor and internal verifier awarded marks incorrectly to candidates. This was particularly true for assessment standards where candidates' data processing needed checked.