

Course report 2026

National 5 Chemistry, SCQF level 5

We've written this report for teachers and lecturers. We recommend you read this with the published course assessment documents and marking instructions.

Note: we've made changes to the course assessment from session 2026–27.

Check your [subject page](#) for more information.

The report:

- provides a summary of how each course component performed
- highlights areas of the question paper and coursework where candidates performed well and areas where they did not perform well
- has advice you might find useful when preparing candidates for assessment

We collect and prepare the statistics in course reports before we complete the appeals process.

Statistical and grade boundary information

Course entries

Number of resulted entries in 2025: 15,211

Number of resulted entries in 2026: 15,070

Distribution of course awards (including minimum mark to achieve each grade)

Course award	Number of candidates	Percentage	Cumulative percentage	Minimum mark required
A	6,633	44.0	44.0	86
B	2,878	19.1	63.1	73
C	2,170	14.4	77.5	61
D	1,727	11.5	89.0	48
No award	1,662	11.0	100	Not applicable

We've not applied rounding to these statistics.

In this report:

- 'Most' means greater than or equal to 70%.
- 'Many' means 50% to 69%.
- 'Some' means 25% to 49%.
- 'Few' or 'a few' means less than 25%.

You can find [statistical reports](#) on our website.

General commentary on grade boundaries

Our main aim when setting grade boundaries is to be fair to candidates across all subjects and levels, and to maintain comparable standards across the years, even as arrangements evolve and change.

For most National Courses, we aim to set examinations and other external assessments and create marking instructions that allow:

- a competent candidate to score a minimum of 50% of the available marks (the notional grade C boundary)
- a well-prepared, very competent candidate to score at least 70% of the available marks (the notional grade A boundary)

It's very challenging to get the standard on target every year, in every subject, at every level. Therefore, we hold a grade boundary meeting for each course to bring together all the information available (statistical and qualitative) and make final decisions on grade boundaries based on this information. Senior Qualifications Scotland staff normally chair these meetings.

Principal assessors use their subject expertise to evaluate the performance of the assessment and propose suitable grade boundaries based on the full range of evidence. We can adjust the grade boundaries as a result of the discussion at these meetings. This allows the pass rate to be unaffected in circumstances where there is evidence that the question paper or other assessment has been more, or less, difficult than usual.

- We can adjust the grade boundaries downwards if there's evidence that the question paper or other assessment has been more difficult than usual.
- We can adjust the grade boundaries upwards if there's evidence that the question paper or other assessment has been less difficult than usual.
- If levels of difficulty are comparable to previous years, we maintain similar grade boundaries.

Every year, we evaluate the performance of our assessments in a fair way, while ensuring standards are maintained so that our qualifications remain credible. To do

this, we measure evidence of candidates' knowledge and skills against the national standard.

For full details of the approach, please refer to the [Awarding and Grading for National Courses Policy](#).

How the course assessment performed

Question paper

Marker and centre feedback suggested that the question paper was fair but challenging and that the allocated time was appropriate, allowing candidates to answer all questions.

Candidates accessed the full range of marks, and the question paper effectively differentiated between levels of candidate performance.

The question paper was slightly more demanding than the 2025 question paper.

Section 1 was more demanding than intended. Question 4 did not perform as intended and we adjusted grade boundaries to account for this.

Section 2 performed as intended.

Assignment

The assignment performed as intended and effectively differentiated between levels of candidate performance. Candidates accessed the full range of marks.

Assignments covered a range of topics, including rates of reaction and electrochemical cells. Alcohols as fuels was a much less popular topic than in previous years.

How candidates performed

Areas where candidates performed well

Question paper

Section 1 (restricted-response questions)

Question 1	Most candidates identified an incorrect statement about a catalyst.
Question 2	Many candidates identified a molecule with the same shape as an ammonia molecule.
Question 5	Most candidates identified the charge on an ion from the number of protons, neutrons and electrons.
Question 6	Many candidates identified the explanation for the size difference between a sodium atom and a sodium ion.
Question 7	Most candidates identified the properties of a covalent network.
Question 8	Many candidates identified the solvent, solute and solution from a description of potassium chloride dissolving in water to form an electrolyte.
Question 9	Many candidates identified the relationship for calculating the percentage by mass of metal in lithium aluminium hydride.
Question 10	Many candidates identified the oxide that produces an acidic solution when shaken with water.
Question 11	Many candidates identified the systematic name for a structure of a branched alkene.
Question 12	Most candidates identified the shortened structural formula for a given structure.

Question 13	Most candidates identified the change in formula mass and strength of intermolecular forces going from cyclopropane to cyclobutane.
Question 14	Many candidates identified the shortened structural formula for vinegar.
Question 15	Most candidates identified the correct definition of metallic bonding.
Question 17	Most candidates identified a metal extracted from its ore by heating with carbon.
Question 18	Most candidates identified the metal that would become liquid when placed in a beaker of boiling water.
Question 19	Most candidates identified the catalyst and product for both the Haber and Ostwald processes.
Question 20	Most candidates identified the correct statement about nitrogen, phosphorus and potassium.
Question 21	Most candidates identified the effect of an electric field on alpha, beta and gamma radiation.
Question 23	Many candidates identified the correct definition of half-life.
Question 24	Many candidates identified the colour and density of a gas from a diagram of the apparatus used to collect and measure the gas.
Question 25	Most candidates identified the metal names used in a transition metal complex from given examples.

Section 2 (extended-response questions)

- Question 1(a) Many candidates stated what is meant by the term 'isotope'.
- Question 1(b)(i) Most candidates wrote the nuclide notation for hydrogen, given the number of neutrons.
- Question 1(b)(iii)(B) Many candidates drew a diagram of a molecule of heavy water, which showed all the outer electrons.
- Question 2(a)(i) Many candidates wrote the molecular formula for ethyne, given the general formula.
- Question 2(a)(ii) Most candidates identified two families that can be isomers of each other, given general formulae.
- Question 2(a)(iii) Most candidates identified the family of hydrocarbons for a molecule, given information about its structure.
- Question 2(b) Many candidates suggested what a negative bromine test indicates about the structure of a hydrocarbon.
- Question 2(c)(i) Most candidates calculated the number of isoprene molecules in a terpene, given the relationship.
- Question 3(a) Most candidates stated the chemical name from a formula.
- Question 3(b) Most candidates balanced a chemical equation.
- Question 3(c)(i) Most candidates suggested how a student would know that the reaction between lumps of limestone and excess dilute acid had finished.
- Question 3(c)(ii) Most candidates gained 2 marks for calculating the average rate from a table giving the time and volume of gas produced.
- Question 3(c)(iv) Many candidates suggested why the rate of a chemical reaction decreases over time.

Question 4(a)	Most candidates identified what must be used in the polymerisation to form a copolymer as described in a passage.
Question 4(c)	Most candidates gained 2 marks for completing a table using information from the passage.
Question 4(d)	Many candidates named the monomer from the name of a polymer.
Question 5(d)	Most candidates predicted the next value in the data set provided.
Question 7(a)(i)	Many candidates stated the test, including the result, used to identify oxygen gas.
Question 7(a)(ii)	Many candidates stated the products formed when an alkane burns in a plentiful supply of oxygen gas.
Question 7(b)(i)	Most candidates described the relationship between the number of branches in an alkane and its octane number, given a table of names and octane numbers.
Question 7(b)(ii)	Most candidates identified the most efficient fuel in the table, given the relationship between efficiency and octane number.
Question 7(c)(i)	Many candidates identified an addition reaction, given the structures of the reactants and products.
Question 8(a)	Most candidates named the elements known to exhibit radioactivity, using the information from the passage.
Question 8(c)	Many candidates gained 3 marks for calculating the time taken for a radioactive source to decay to 25% of its original activity and included the appropriate unit.
Question 9(a)(i)	Many candidates suggested one way in which the trend was not correct.

- Question 9(b)(i) Many candidates drew an arrow showing the path and direction of electrons on the diagram of an electrochemical cell.
- Question 9(b)(ii) Many candidates stated the purpose of an ion bridge.
- Question 9(c)(i) Many candidates gained 2 marks for calculating a standard cell potential, given a fully worked example.
- Question 9(c)(ii) Many candidates wrote the redox equation for the overall reaction.
- Question 9(c)(iii) Many candidates gained 3 marks for calculating the mass in grams of a solute required to make a standard solution.
- Question 10(a)(i) Many candidates stated what is meant by the term 'homologous series'.
- Question 10(a)(ii) Many candidates named the functional group found in all alcohols.
- Question 10(b) Most candidates calculated the mass in grams of ethanol in a volume of whisky, given the mass present in a different volume.
- Question 10(c)(iii) Many candidates gained 2 marks for naming the alcohol and carboxylic acid used to form an ester, given examples.
- Question 11(a)(i) Most candidates stated the term used to describe a chemical reaction that releases heat.
- Question 11(a)(ii) Most candidates stated the colour of the flame observed in a reaction.
- Question 11(c)(i) Many candidates calculated the average volume used from a table of results for a titration.

Assignment

Section 1	Most candidates wrote an aim for their investigation.
Section 3(b)	Most candidates provided sufficient raw data from their experimental procedure.
Section 3(c)	Many candidates presented their data in a correctly drawn table.
Section 3(d)	Many candidates correctly calculated their mean and/or derived values.
Section 3(e)	Most candidates provided an internet or literature source relevant to their experiment.
Section 3(f)	Most candidates provided an appropriate reference for their internet or literature source.
Section 4(a)	Most candidates selected an appropriate graph type by plotting either points or bars.
Section 4(b)	Most candidates selected suitable scales on their axis or axes.
Section 4(c)	Most candidates added suitable labels and units to their axes.
Section 4(d)	Many candidates accurately plotted data points and, where appropriate, a line of best fit.
Section 5	Many candidates made a valid comparison of the experimental data with data from their internet or literature source.
Section 6	Many candidates made a valid conclusion that relates to the aim and is supported by all the data in the report.
Section 8(a)	Most candidates provided an appropriate title for their report.
Section 8(b)	Most candidates provided a clear and concise report.

Areas where candidates did not perform well

Question paper

Section 1 (restricted-response questions)

- Question 3 Some candidates identified a graph of expected results when mass and particle size of a reactant change.
- Question 4 Few candidates identified the gas with the greatest number of electrons found in one mole.
- Question 16 Some candidates identified a substance that will react with an acid to produce a gas.
- Question 22 Some candidates identified the most suitable radioactive source for a given use based on radiation emitted and the half-life. Most candidates identified the source with the most suitable radiation emitted but the least suitable half-life.

Section 2 (extended-response questions)

- Question 1(b)(ii) Some candidates stated why the relative atomic mass is not a whole number.
- Question 1(b)(iii)(A) Few candidates calculated the mass of one mole of heavy water.
- Question 2(c)(ii) Some candidates calculated the mass of the final product formed when a terpene reacts with hydrogen, given the molar ratio and the mass of one mole of the terpene.
- Question 3(c)(iii) Some candidates suggested another measurement that could be used to follow the progress of a reaction.
- Question 4(b) Some candidates drew the structure of the other monomer used to make a copolymer, given the repeating unit and the structure of one of the monomers.

Question 5(a)	Many candidates gained 2 marks for calculating the energy absorbed by water due to a chemical reaction, given data including the mass of the reactant. Few candidates gained all 3 marks.
Question 5(b)	Some candidates suggested why a polystyrene cup increases the accuracy of the results for an experiment measuring temperature change.
Question 5(c)	Some candidates gained 2 marks for completing a graph, where the labels and first two points were given. Many candidates gained 1 mark.
Question 6	Some candidates gained 2 marks for describing the role of electrons in chemistry. Few candidates gained 3 marks.
Question 7(c)(ii)	Some candidates drew the expected product of a reaction, given a worked example.
Question 8(b)	Some candidates wrote a chemical formula for uranium(IV) oxide.
Question 8(d)	Few candidates explained why the formation of radium and polonium from uranium must include alpha decay.
Question 9(a)(ii)	Some candidates stated why an ionic solution can conduct electricity.
Question 10(c)(i)	Some candidates gained 2 marks for writing an equation, using symbols and formulae, which showed that a reaction was reversible. Some candidates only gained 1 mark.
Question 10(c)(ii)	Some candidates suggested an appropriate method of heating a flammable reaction mixture.
Question 10(c)(iv)	Some candidates circled the functional group on a molecule that is responsible for making the pH of a solution less than 7.

Question 11(b)	Some candidates described that the presence of hydrogen ions shows that an acid is present in a reaction.
Question 11(c)(ii)(A)	Few candidates gained 3 marks for a titration calculation. Few candidates gained 1 or 2 marks.
Question 11(c)(ii)(B)	Some candidates suggested why an indicator was not required in a self-indicating reaction, given the colour of the ions involved.
Question 12	Many candidates gained 1 mark for describing the chemistry of sodium chloride. Few candidates gained 3 marks.

Assignment

Section 2	Few candidates demonstrated a good understanding of the underlying chemistry related to their chosen topic. Some candidates demonstrated a limited understanding. Some candidates demonstrated a reasonable understanding.
Section 3(a)	Some candidates summarised their experimental method. Many candidates did not clearly describe what they were changing and measuring in their experiment.
Section 7	Some candidates gained 2 marks for identifying a factor that had a significant effect on their experimental procedure and describing how they minimised, or could have minimised, this effect. Few candidates identified a significant factor but not the fix for this factor. Many candidates did not gain any marks in this section.

Preparing candidates for assessment

You should refer to the National 5 Chemistry Course Specification on our [website](#).

Our [Understanding Standards website](#) has examples of candidate evidence from the assignment and question paper with commentary to help you prepare candidates for assessment and understand how we apply national standards.

Question paper

Make sure candidates are familiar with the command words used in the question paper and that they understand how they should respond to them.

Candidates should learn basic 'routines' for different types of calculations, in particular titration calculations.

In calculations worth more than 1 mark, candidates should be aware that they can gain credit for correctly demonstrating chemical concepts or for intermediate results in a multi-step calculation. You should encourage candidates to show their working clearly to increase their chances of gaining partial marks.

Candidates should be ready to answer questions involving calculations with a mole ratio other than 1:1, 1:2 or 2:1.

You should remind candidates that page 3 of the data booklet contains relationships that they can use in National 5 calculations.

Candidates should understand that they must correctly round their answers in all calculations.

Candidates should understand that if a unit is given in a question, they do not need to state the unit in their answer. If they do state a unit, it must be correct, otherwise they can miss out on available marks.

You should encourage candidates to learn the chemistry definitions provided in the National 5 Chemistry Course Specification.

You should encourage candidates to learn chemical tests, processes, and chemical reactions, such as the tests for common gases and the test for unsaturation. They should also be familiar with recycling chemicals as a method of making a process more economical.

Candidates should know how to write molecular formulae, and practise writing these. Candidates should also practise writing chemical equations. When writing formulae, charges must be superscript, and numbers of atoms and ions must be subscript. Many candidates miss out on marks through errors when writing chemical notation, particularly incorrect uppercase or lowercase letters in chemical symbols and incorrect positioning and sizing of numbers and charges in formulae.

Candidates should know that, when drawing organic structures, they must draw the bond connections to familiar functional groups correctly. Some candidates miss out on marks through errors in the bond connections within organic structures, particularly to methyl and ethyl groups.

You should make sure candidates complete a variety of practical work. This deepens their knowledge and understanding and develops practical laboratory skills. The National 5 Chemistry Course Specification explains the common chemical apparatus, general practical techniques, analytical methods and reporting of experimental work that candidates should be familiar with.

Candidates benefit from opportunities to practise answering open-ended questions. Candidates should be aware that, while there are no definitive answers to open-ended questions, they should make statements relevant to the situation or problem given. If a question asks candidates to describe how a student could investigate a chemical reaction or carry out an experiment, they should mention planning or designing an experimental procedure.

Assignment

You should refer to the most up-to-date National 5 Chemistry Assignment Assessment Task on [our website](#), which sets out the assessment conditions in full. This includes explaining your role in helping candidates choose a topic (page 5) and the resources candidates can access during the report stage (page 8).

You should encourage candidates to follow the outline structure in the 'Instructions for candidates' section from the assignment assessment task.

It is good practice to share the marking instructions with candidates before and during the research stage. However, candidates cannot use the marking instructions during the report writing stage.

Candidates should carry out an experiment that allows them to make measurements so that they can include these measurements in their report. Measurements include initial and final values where a change is being calculated, for example a change in temperature or mass. You should remind candidates that change in mass and change in temperature on their own are not raw data and would not be sufficient for them to gain the marks in section 3(b).

You should make sure that candidates understand that their choice of internet or literature source should allow them to make a comparison with their experimental results. They must give their reference for the internet or literature source immediately before, after or alongside their internet or literature source.

To help candidates prepare for the evaluation section, you could provide opportunities in class for them to identify factors that could significantly affect the reliability, accuracy or precision of an experiment and propose appropriate improvements to address those factors.

Changes to the course assessment from session 2026–27

- Reduced the question paper from 100 marks to 80 marks. (Section 1 now has 20 marks instead of 25, and section 2 now has 60 marks instead of 75.)
- Reduced the duration of the question paper from 2 hours and 30 minutes to 2 hours.
- Assignment still has 20 marks.
- Scaling to the assignment marks no longer applies.

We've amended the question paper details in the course specification. There's no change to teaching and learning. You might want to update your assessments, for example prelims, to reflect the changes in the question paper.