

Course report 2026

Higher Chemistry, SCQF level 6

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: 10,120

Number of resulted entries in 2026: 9,991

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

Course award	Number of candidates	Percentage	Cumulative percentage	Minimum mark required
A	3,285	32.9	32.9	105
B	2,416	24.2	57.1	87
C	1,881	18.8	75.9	70
D	1,468	14.7	90.6	52
No award	941	9.4	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 1: multiple choice

The multiple-choice paper performed as intended. It had a good range of question difficulty, with the more difficult questions helping to distinguish between different levels of candidate performance.

Question paper 2

The question paper proved slightly more demanding than intended. We adjusted the grade boundaries to account for this.

Question paper 2 had a good range of question difficulty, with the more difficult questions helping to distinguish between different levels of candidate performance.

Assignment

The assignment performed as intended.

How candidates performed

Areas where candidates performed well

Question paper 1: multiple choice

Question 2	Most candidates identified a pure covalent bond.
Question 3	Most candidates identified that the magnesium atom is larger than the magnesium ion.
Question 4	Most candidates calculated the enthalpy change.
Question 7	Most candidates identified oil molecules as forming rancid products.
Question 8	Most candidates identified that the ester is not made from ethanol, propan-1-ol, methanoic acid and ethanoic acid.
Question 10	Most candidates identified reduction.
Question 12	Most candidates identified fats as being more saturated.
Question 19	Most candidates identified that enthalpy change does not affect the rate of a reaction.
Question 20	Most candidates identified that differences in polarity separate substances in chromatography.
Question 22	Most candidates identified the most reproducible results.

Question paper 2

Question 1(a)(i)	Most candidates stated the term used to describe the structure of sodium chloride.
Question 5(b)(ii)	Most candidates stated the number of isoprene units in limonene.
Question 5(d)(i)	Most candidates explained why carveol can be classified as a secondary alcohol.

- Question 7(a)(i) Most candidates showed one way to maximise profit.
- Question 7(b)(ii) Most candidates named compound X.
- Question 7(b)(iii)A Most candidates suggested why a water bath was a suitable method of heating.
- Question 7(b)(iii)B Most candidates gave a correct colour change.
- Question 7(b)(iii)E Most candidates stated that tertiary alcohols do not react with acidified dichromate solution.
- Question 7(c)(ii) Most candidates stated 'unsaturated' as the term given to a chemical that rapidly decolourises bromine solution.
- Question 8(a)(i) Most candidates named the type of reaction.
- Question 8(b)(ii) Most candidates identified the strongest intermolecular force.
- Question 10(a)(ii) Most candidates stated the effect of a catalyst on the position of equilibrium.
- Question 10(c)(i) Most candidates calculated the atom economy.
- Question 11(a)(i) Most candidates stated the term for a solution of accurately known concentration.
- Question 11(a)(ii) Most candidates calculated the mass of oxalic acid.
- Question 11(b)(iii)A Most candidates stated that the volume of oxalic acid was an average of the concordant titre volumes.
- Question 12(a)(i) Most candidates named the elements present.
- Question 12(a)(ii) Most candidates suggested the colour of flame thallium would produce.
- Question 12(b)(ii) Most candidates stated 'hard water' as the term used to describe water containing high levels of dissolved metal ions.

- Question 12(c)(i) Most candidates wrote the equation for the first ionisation energy of helium.
- Question 12(c)(ii) Most candidates explained why helium has no third ionisation energy value.

Assignment

- Section 1 Most candidates stated an aim, or aims, that they could investigate.
- Section 3(b) Most candidates supplied sufficient data from their own experiments.
- Section 3(e) Most candidates supplied information from an internet source.
- Section 4(a) Most candidates selected an appropriate graphical format.
- 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 8 Most candidates produced a clear and concise report, with an informative title.

Areas where candidates did not perform well

Question paper 1: multiple choice

- Question 5 Some candidates identified a redox reaction.
- Question 15 Some candidates identified the compound made by reacting edible oils with glycerol.
- Question 16 Some candidates identified the ion that is the catalyst.
- Question 17 Some candidates identified the correct statement.
- Question 18 Some candidates identified X to be FeCl_3 .

Question 21 Some candidates identified the chromatogram that showed a pure sample has been produced.

Question paper 2

Question 1(a)(ii)A Some candidates described what is meant by the term 'electrostatic attraction'.

Question 1(b)(ii) Some candidates gained 2 marks for calculating the boiling point of an aqueous solution of ammonium phosphate.

Question 2(a) Few candidates gained 2 marks for explaining fully how London dispersion forces are formed.

Question 2(b) Few candidates explained why H₂O and CH₄ are suitable for comparison.

Question 2(c) Few candidates gained 2 marks for explaining fully why water is a polar molecule.

Question 4(b) Few candidates gained 2 marks for explaining fully the way in which catalysts increase the number of successful collisions.

Question 4(d)(ii) Few candidates identified the free radical.

Question 4(e)(i) Some candidates suggested what is represented by the shaded area in the diagram.

Question 5(b)(i) Some candidates drew a structural formula for isoprene.

Question 5(c)(ii) Some candidates gained 3 marks for calculating the enthalpy of combustion of limonene.

Question 6(a)(ii) Some candidates suggested what would be seen at the end of the reaction.

Question 6(c)(ii) Some candidates gained 2 marks for explaining fully what is meant by denaturing.

- Question 7(a)(ii) Some candidates named the process used to separate ethanol from water.
- Question 7(a)(iii)B Few candidates gained 2 marks for explaining fully why increasing pressure would shift the equilibrium to the right, producing more ethanol.
- Question 7(a)(iii)C Some candidates gained 2 marks for calculating the enthalpy change.
- Question 7(b)(iii)C Some candidates completed the ion electron equation.
- Question 7(b)(iii)D Some candidates explained why the dichromate solution needs to be acidified.
- Question 7(c)(i) Few candidates gained 2 marks for completing the labelled diagram of apparatus suitable for preparing and collecting ethene. Some candidates did not add labels, and some candidates drew systems that would not work.
- Question 8(a)(ii) Some candidates drew a structural formula for a dipeptide.
- Question 8(b)(i)B Some candidates suggested why aspartic acid can be classified as acidic.
- Question 8(c) Few candidates suggested why proteins forming disulfide bonds are resistant to heat.
- Question 10(c)(ii) Some candidates gained 2 marks for calculating the time, in hours, required to produce 1 mole of ammonia.
- Question 11(a)(iii) Some candidates gained 2 marks for suggesting two improvements to the procedure.
- Question 11(b)(ii) Few candidates suggested one other step required before the burette is ready to begin the titration.
- Question 11(b)(iii)C Few candidates drew a structural formula for the sodium salt of oxalic acid.

Assignment

Section 3(a)	Some candidates summarised their experimental method and included a statement identifying additional safety measures or indicating that additional safety measures were not required.
Section 5	Some candidates provided a valid comparison of their experimental data with data from their internet or literature source.
Section 7	Some candidates provided an appropriate justification for their evaluative statements, based on their own experimental results.

Preparing candidates for assessment

You should refer to the Higher 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 1: multiple choice

Calculations

Candidates generally perform well in questions about calculations, but they should practise questions involving excess and limiting reagents (for example, question 17).

Questions about practical work

Candidates tend to perform less well in some questions about practical work. You should make sure all candidates experience practical techniques such as chromatography (for example, question 21).

Candidates must develop the practical skills associated with Higher Chemistry. You must specifically teach candidates how to use the equipment and the techniques listed in the [Higher Chemistry Course Specification](#) so that they gain a full understanding.

Questions about equilibrium

Candidates should practise questions about the effects of altering reaction conditions on equilibrium reactions (for example, question 18).

Question paper 2

Questions linked to statements in the course specification

Candidates must be able to accurately recall, explain and use statements from the course specification (for example, question 5(a), 'State another property of an essential oil').

Questions can also ask candidates about the compound names, structures and functional groups mentioned in the course specification (for example, question 5(b)(i), 'Draw a structural formula for isoprene' and question 6(c)(i), 'Name the class of compounds to which enzymes belong').

Calculations

Candidates generally perform well in questions about the calculations covered in the course, for example, question 10(a)(iii) on percentage yield, question 10(b) on Hess' Law, question 10(c)(i) on atom economy and question 11(b)(iii)B on titration calculations.

You should encourage candidates to set out their working clearly, as they can still gain partial marks if their final answer is incorrect. For example, in question 11(b)(iii)B, candidates could gain partial marks for applying $n = cV$ and the stoichiometry of the equation correctly.

Candidates tend to perform well in general numeracy calculations set in a chemical context. However, they must give answers appropriate to the units used, for example, they need to round answers in pence to whole pence. You should give candidates practice in scaling up answers. Candidates should be able to give quantities per mole and convert answers to other units.

Questions requiring more detailed answers

Candidates should understand that questions that require more detailed answers contain the words 'explain fully' or 'explain clearly' and are worth a minimum of 2 marks. You should make sure candidates understand that, to gain full marks for these questions, they must give a detailed explanation. (Candidates can include diagrams in their explanations, but diagrams alone will not gain full marks.) For example, in question 2(a), the first mark is for stating that movement or uneven distribution of electrons in a molecule causes temporary dipoles and the second mark is for a description of London dispersion forces as forces of attraction between temporary and induced dipoles.

Questions about equilibrium

Candidates should practice questions about the effects of altering reaction conditions on equilibrium reactions, in particular, changes in pressure and temperature (for example, question 7(a)(iii)B). Candidates need to understand how the change imposed affects the rate of the forward and backward reactions.

Open-ended questions

Some candidates do not attempt the open-ended questions. Candidates should practise answering this type of question.

Candidates need to know that, while there are no definitive answers to open-ended questions, their answer should contain statements relevant to the given situation or problem. For example, answers to question 3 should mention how the position of an element in the periodic table can predict its physical and chemical properties.

Candidates can give broad answers covering a number of aspects of a question or focus on one aspect and give a detailed explanation.

Candidates do not need to give a perfect answer to gain full marks. Markers judge open-ended questions holistically, rather than on a number-of-points basis (for example, 1 point, 1 mark; 2 points, 2 marks). Markers assign marks according to whether a candidate's answer demonstrates no understanding (0 marks); limited understanding (1 mark); reasonable understanding (2 marks) or good understanding (3 marks).

Questions about practical work

Candidates should be familiar with the apparatus and techniques listed in the [Higher Chemistry Course Specification](#). You should make sure candidates know that approximately 10 marks are available for questions about practical work.

Candidates tend to perform less well in questions about practical work, including questions about improvements to experimental procedure (for example question 11(a)(iii)) and questions about using apparatus correctly (for example question 11(b)(ii) about a burette). In the correct operation of a burette, the solution should be run onto the scale, below 0.00cm³, before a reading is taken.

Candidates should practise answering questions about drawing and labelling diagrams of assembled apparatus (for example, question 7(c)(i)). When drawing assembled apparatus, candidates need to ensure that they do not inadvertently draw closed tubes or incorrectly connected tubing that would leave the apparatus open to the air.

You must give candidates opportunities throughout the course to develop the practical skills required for Higher Chemistry. You should help them understand how to use the equipment and techniques in the course specification correctly and ensure they gain experience of the reactions listed there that involve colour changes.

Assignment

You should refer to the most up-to-date Higher 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 (pages 4, 7, 8 and 9).

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

You must guide candidates to choose experiments that allow them to access all 20 marks for the assignment. Dissolving effervescent tablets to undertake a rate experiment will involve the reaction of multiple compounds. This can make it difficult for a candidate to formulate an aim, access marks in underlying chemistry and provide appropriate data from the internet.

Candidates' experiments should allow them to complete appropriate chemical calculations. For a viscosity experiment, a calculation using the formula $\frac{1}{t}$ is not an appropriate calculation, as relative rate is not a measure of viscosity. Experiments must have measurable outcomes, appropriate for a centre laboratory and the equipment available, which can provide candidates with a range of values for the independent and dependent variables. For example, measuring the enthalpy of combustion of different brands of the same alcoholic drink would not yield data that a candidate could easily process.

You should pay particular attention to the instructions relating to experimental research and internet or literature research on pages 6 and 7 of the [Higher Chemistry Assignment Assessment Task](#). Underlying chemistry must be relevant to the experiment the candidate conducts. For example, an experiment investigating the effect of temperature on rate of reaction would not link to other factors affecting rate, such as concentration and particle size.

Candidates should give all calculated values including averages. You should advise candidates to graph calculated experimental values to allow for comprehensive analysis and evaluation. Best-fit straight lines and smooth curves must fit the data collected. Candidates should avoid including points not collected, for example, the origin. Correct graphing allows candidates to make better-informed comparisons between experimental and internet data and provides evidence for evaluative comments.

You should ensure that candidates understand that their analysis needs to include comments about the relationship between their experimental data and their internet data. Candidates must also understand that they need to compare and discuss data values within and between the two data sets.

You should make sure candidates understand that their conclusion must cover all the data in their report. If there is no agreement between their internet data and their experimental data, then they must state that there is no agreement and that they cannot draw a conclusion.

Changes to the course assessment from session 2026–27

- Replaced Question Paper 1 and Question Paper 2 with a single question paper that has two sections:
 - Section 1 is an objective test worth 20 marks.
 - Section 2 has restricted-response questions and extended-response questions worth 80 marks.
- New question paper is worth 100 marks in total and lasts 2 hours and 30 minutes.
- Assignment is still worth 20 marks, and is scaled to 25 marks instead of 30.

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 to the question paper.