

Chemistry



This update contains information on any recent updates to documents for your subject along with further information and guidance.

I hope you find this information helpful, and please contact me if you have any questions.

Andy Shield
Qualifications Manager

The Qualifications Team

Andy Shield
Qualifications Manager

Sheron Ross
Qualifications Officer

Subject Review Report

The development and implementation of the whole suite of National Qualifications has been a huge programme of work dating from 2010 and included many stakeholders. As part of the review and evaluation of this programme, SQA has been engaging with teachers and lecturers on an ongoing basis, as well as gathering intelligence from the awarding and verification process. As a result of this work, SQA has created subject reports to give teachers and lecturers an insight into our planned incremental changes and further areas of investigation for each subject. Each report identifies the key issues for that subject and an associated action plan. Find out more information and what this means for your subject [here](#).

Planned changes to documents in session 2016/17

We have put in place an agreed schedule of planned changes to documents for National Qualifications in session 2016/17.

Publication date	Documents
End of April 2016	Course Specifications, Course Assessment Specifications and Unit Specifications
End of May 2016	Course and Unit Support Notes
End of August 2016	Unit assessment support packs
End of September 2016	Coursework assessment tasks, specimen question papers and exemplar question papers

This schedule takes into account any necessary changes that are identified as a result of verification activities, the exam diet and feedback received from centres throughout the current session. It is anticipated that additional, critical changes may be identified for some subjects following the grade boundary meetings which take place during the summer months. Where such changes are identified, we will make further updates and publish these documents by the following dates:

Publication date	Documents
End of August 2016	Course Specifications, Course Assessment Specifications and Unit Specifications (<i>further critical changes only</i>)
End of September 2016	Course and Unit Support Notes (<i>further critical changes only</i>)

Changes to documents in April and May 2016

Please ensure that you read the following updated documents in preparation for session 2016/17. To help you quickly and easily identify what has been updated, for every updated mandatory document we have also published a comparison document that clearly illustrates the changes.

These are published alongside the updated documents on our subject pages at www.sqa.org.uk/nqsubjects

The Notification of Changes spreadsheets have also been updated to reflect the latest changes to documents. You can view these spreadsheets at www.sqa.org.uk/nqsubjectchanges

Higher documents

Course and Unit Support Notes

The following amendments have been made to the Higher Chemistry Course and Unit Support Notes:

- *Chemical Changes and Structure*
The bonding continuum — exemplification of key areas column
'Candidates should be familiar with using the physical properties of a compound to deduce the type of bonding and structure in the compound' has been added for clarification.
 - *Chemistry in Society*
Chemical analysis — exemplification of key areas column
'Preparation of a standard solution' has been added to clarify that candidates should be aware of how to prepare a standard solution.
 - *Researching Chemistry*
A copy of the table detailing the apparatus, practical techniques and data analysis strategies on Approaches to learning and teaching section of the Course and Unit Support Notes has been copied into the *Researching Chemistry* section to make clear that this is required knowledge and skills. The heading in the first column of this table has been amended to emphasise that candidates should be familiar with the apparatus, practical techniques and activities.
 - *Researching Chemistry* — Outcome 1
Clarification that candidates can work in small groups but each candidate must show that they have individually met the Assessment Standard.
 - Combining assessments across Units
Transfer of evidence for Outcome 1 has been amended. Evidence of achievement of Outcome 1 and Outcome 2 in the Higher *Researching Chemistry* Unit can be used as evidence of the achievement of Outcome 1 in the *Chemical Changes and Structure*, *Nature's Chemistry* and *Chemistry in Society* Units of Higher. There is no requirement to match Assessment Standards. However, the achievement of Outcome 1 in the *Chemical Changes and Structure*, *Nature's Chemistry* or *Chemistry in Society* Units of Higher **cannot** be used as evidence of the achievement of Outcome 1 and Outcome 2 in the Higher *Researching Chemistry* Unit.
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Advanced Higher documents

Course Assessment Specification

Minor amendments have been made to various key areas to increase clarity.

Course and Unit Support Notes

Minor amendments have been made throughout the Advanced Higher Chemistry Course and Unit Support Notes to increase clarity. Detailed below are other amendments that have been made to increase clarity:

Working with others section

- 'The Project, including the practical work, must be the individual work of the candidate and not group work' has been added.

Unit assessment section

- Reference to group work has been removed as only the practical work not related to the project can be carried out by candidates working in groups.
- Reference to extended response essay type questions has been removed as these do not apply to Advanced Higher Chemistry.
- If assessments requiring more than minimum competence are used then 'care should be taken not to disadvantage candidates who would have been able to demonstrate minimum competence in an assessment set at Unit level' has been added.

Inorganic and Physical Chemistry

- Electromagnetic radiation and atomic spectra — exemplification of key areas column
 - 'The different types of radiation that make up the electromagnetic spectrum in order of wavelength' has been added.
- Transition metals — exemplification of key areas column
 - 'Candidates should be able to name complexes that include, for example, central metals that obey the normal rules in addition to copper and iron and ligands such as water, ammonia, halogens, cyanide, carbon monoxide, hydroxide and nitrite' has been added.
 - 'Candidates are not expected to know the order of ligands in the spectrochemical series' has been added.
- Chemical equilibrium — mandatory key areas column
 - 'Candidates should be able to select an appropriate indicator from given data including a titration curve' has been added
- Reaction feasibility — mandatory key areas column
 - 'Entropy and prediction of the effect on entropy of changing the temperature or state' amended to clarify that candidates do not have to be able to predict the numerical change in the entropy value.
- Kinetics — mandatory key areas column
 - 'Determine the rate equation from experimental data' has been added.

Organic Chemistry and Instrumental Analysis

- Molecular orbitals — mandatory Course key areas column
 - Sp hybridisation has been added.
 - Synthesis — exemplification of key areas column
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- ‘Learners would not be expected to know reaction conditions or catalysts unless otherwise stated’ has been added.
 - ‘These mechanisms can be explained in terms of inductive stabilisation of an intermediate carbocations’ has been added to the alkenes section.
 - Suitable reagents have been added to the carboxylic acids section and the aromatic hydrocarbons section.
 - ‘To form a range of consumer products’ has been removed from the aromatic hydrocarbons section.
 - Experimental determination of structure — exemplification of key areas column
 - ‘An empirical formula shows the simplest ratio of the elements in a molecule’ has been added.
 - ‘From a mass spectrum and empirical formula determine a molecular formula’ has been added.

Researching Chemistry

- A copy of the table detailing the apparatus, practical techniques and data analysis strategies in the Skills of scientific experimentation, investigation and inquiry section of the Course and Unit Support Notes has been copied into the *Researching Chemistry* section to make clear that this is required knowledge and skills. The heading in the first column of this table has been amended to emphasise that candidates should be familiar with the apparatus, practical techniques and activities.
 - The requirement for candidates to be familiar with the experimental procedures for each technique has been added to the exemplification of key areas column.
 - Suitable experiments have been moved from the exemplification of key ideas column to the suggested activities column.
 - Gravimetric analysis — exemplification of key areas column
 - Additional detail has been added.
 - Practical skills and techniques — mandatory key areas column
 - ‘Using R_f values to follow the course of a reaction’ has been removed.
 - Practical skills and techniques — exemplification of key areas column
 - ‘Selection of the solvent should involve consideration of: miscibility with water; solubility of the compound; volatility of the solvent and reactivity between the compound and solvent’ has been added.
 - Skills and techniques table
 - Gravimetric analysis has been added.
 - Assessment Standard 1.2 section
 - ‘Formal statements and diagrams of the experimental procedures adopted should be included in the record of work or daybook, these may be photocopies or printouts from reference sources’ has been added.
 - ‘It would be appropriate to give candidates a risk assessment template’ has been added.
 - Reference documents section
 - ‘Chemistry — a practical guide. Revised Advanced Higher’ has been added as this a very useful document that supports teaching and learning.
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Further information and guidance

Verification Key Messages

Key messages from round 1 of verification in session 2015/16 are available from the relevant subject pages of our website at www.sqa.org.uk/nqssubjects. You can access them from the 'Verification and Course Reports' heading in the Assessment Support section.

Key messages from round 2 will be published over the summer.

Looking ahead to session 2016/17

Understanding Standards programme

Our Understanding Standards programme will continue in session 2016/17 when we will publish more candidate evidence and commentary materials. We will also deliver a series of Understanding Standards events on Course assessment and continue to deliver subject-specific continuing professional development (CPD) webinars online, subject to request. In addition to this, throughout the session we will gather and publish assessment case studies to share good practice in assessment.

To access candidate evidence and commentaries for externally assessed Components of Course assessment, visit www.understandingstandards.org.uk

Candidate evidence and commentaries for Units and internally assessed Components of Course assessment are available from our secure website.

For more information on Understanding Standards, visit www.sqa.org.uk/understandingstandards

Continuing Professional Development (CPD) training

We are still offering free CPD training for teachers and lecturers, where particular areas of concern are identified which are not addressed by the Understanding Standards programme. This CPD support is subject-specific and is tailored to cover one or more qualification levels according to requirements.

Where there is sufficient demand, we may deliver CPD training through online webinars and, where appropriate, publish the recordings and related materials on our website after the webinar has taken place.

Stay informed

Subscribe to our newsletters

We currently issue two key newsletters for teachers and lecturers:

- Centre News (weekly)
 - New National Qualifications update (monthly)
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Both of these newsletters contain the latest news and updates for the National Qualifications. Centre News also includes subject-specific news and a regular reminder of key dates during the session.

To subscribe to our newsletters, visit <http://mailer.sqa.org.uk>

Visit your subject pages

Make sure you regularly visit your subject pages, where you can access documents and assessment support materials for your Courses, Verification Key Messages and information on Coursework. You will also find the latest news updates for your Courses in the 'Updates and announcements' section.

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Contact us

For centre enquiries, please contact our Customer Support Team:

Tel: 0303 333 0330

Fax: 0345 213 5000

E-mail: mycentre@sqa.org.uk
