

Switching to OCR A from OCR B (Salters)

Introduction

We are really excited about our GCE Chemistry A qualification. Whether taking on the AS Level or the full A Level, this fantastic course is a great qualification for those with an interest in the subject. Why choose Chemistry A?

- Building on our existing popular course, the specification was updated in consultation with teachers, higher education, learned societies and industry.
- The 'Big Ideas' of chemistry are arranged in topics that underpin the knowledge and understanding needed for the next generation of chemists.
- Chemistry A is enjoyable to teach and learn, giving learners the essentials for chemistry-related higher education courses as well as many transferable, marketable skills.
- The chemical topics are presented in a clear and logical linear order, with maths and How Science Work opportunities clearly highlighted, allowing you flexibility in how to approach the teaching.
- There are many highlighted opportunities for hands-on practical work, linking to our flexible practical assessment model.

Textbook comparison

We have not included a textbook comparison in this switching document as there are a number of textbooks available for Chemistry A and Chemistry B, and the order and organisation of content within these textbooks can vary. However, similarities in content mean that it is possible to use any textbook for the core content of either qualification. The specification can be used to identify relevant content, as well as that which is not required for a specific qualification. If you need further clarification on any specific content, you can email our Subject Advisor team at science@ocr.org.uk.

Support from OCR

We offer a range of support to teachers of our qualifications. This includes:

- A dedicated Subject Advisor team, with teaching and assessment experience, available to answer your queries and support your delivery of our qualifications. You can contact us by email at science@ocr.org.uk or by phone on 01223 553998.
- Monthly newsletters highlighting new resources, CPD courses, and other news about our qualifications.
- An online scheme of work builder which helps you create a bespoke scheme of work using the extensive range of resources we have provided for each specification.
- A wide range of support materials, including handbooks covering practical and mathematical skills, delivery guides, lesson elements, practical activity suggestions, candidate exemplar resources, and more.
- Free access to ExamBuilder, our mock assessment service that allows you to create your own bespoke assessments.
- Termly regional Science Teacher Networks, giving you the opportunity to meet with other teachers and our Subject Advisors.
- CPD courses, including courses for teachers new to teaching our qualifications and courses on outcomes from previous examination series to help inform your teaching.
- You can also follow and interact with our Subject Advisors on Twitter ([@ocr_science](https://twitter.com/ocr_science)).

Key similarities

OCR Chemistry A (H032/H432)	OCR Chemistry B (Salters) (H033/H433)
Practical skills take centre stage , detailed in full at the start of the specification in a separate module for clarity and prominence .	
Flexible practical assessment that allows you to use your own practical activities or select from our range of fully-detailed suggested activities. Our suggested activities are common to Chemistry A and Chemistry B, so you don't have to make any changes to the practicals you're using.	
Extensive support for mathematical skills development , with linking of skills in the specification and a dedicated Mathematical Skills Handbook.	
Clear labelling and organisation of the learning outcomes in the specification.	
Fewer marks in the AS and A Level assessments compared to other exam boards' qualifications, giving learners more time to develop their answers. (AS 140 marks in 180 minutes; A Level 270 marks in 360 minutes)	

Key differences

OCR Chemistry A (H032/H432)	OCR Chemistry B (Salters) (H033/H433)
A content-led approach. Specification based around detailed learning outcomes	A context-led approach. Students study chemistry in a range of different contexts, conveying the excitement of contemporary chemistry. Ideas are introduced in a spiral way with topics introduced in an early part of the course reinforced later.
The course is split into six modules : Modules 1 to 4 constitute the stand-alone AS Level qualification; Modules 1 to 6, combined with the Practical Endorsement, constitute the full A Level.	The course is split into ten modules (storylines): Modules 1 to 5 constitute the stand-alone AS Level qualification; Modules 1 to 10, combined with chemical literacy and the Practical Endorsement, constitute the full A Level.
The full A level is terminally assessed by three exam papers. There are no inserts in the examinations .	The full A level is terminally assessed by three exam papers; two of the examinations contain inserts . One paper contains questions based on a chemical literacy insert, and another contains questions based on a practical insert. See the 'assessment' section of this document for more details.

Content

The content within the [OCR Chemistry A specification](#) covers the key concepts of chemistry and will be very familiar. We've laid it out to support the co-teaching of the AS and A level and provide a logical linear progression through the A level.

OCR Chemistry A (H032/H432)	OCR Chemistry B (Salters) (H033/H433) (* indicates topic is split)
Module 1: Development of practical skills in chemistry Identical to Chemistry B content.	Module 1: Development of practical skills in chemistry Identical to Chemistry A content.
Module 2 – Foundations in chemistry Atoms, compounds, molecules and equations Amount of substance Acid–base and redox reactions Electrons, bonding and structure	EL Formulae, equations and amount of substance EL Atomic structure EL Bonding and structure* EL Equilibria (acid-base)* EL Modern analytical techniques DF Formulae, equations and amount of substance ES Formulae, equations and amount of substance ES Redox* OZ Bonding and structure
Module 3 – Periodic table and energy The periodic table and periodicity Group 2 and the halogens Qualitative analysis Enthalpy changes Reaction rates and equilibrium (qualitative)	EL Bonding and structure* EL Inorganic chemistry and the periodic table* EL Equilibria (acid-base)* DF Energetics DF Kinetics ES Inorganic chemistry and the periodic table ES Equilibria OZ Kinetics

OCR Chemistry A (H032/H432)	OCR Chemistry B (Salters) (H033/H433) (* indicates topic is split)
<p>Module 4 – Core organic chemistry</p> <p>Basic concepts</p> <p>Hydrocarbons</p> <p>Alcohols and haloalkanes</p> <p>Organic synthesis</p> <p>Analytical techniques (IR and MS)</p>	<p>DF Bonding and structure</p> <p>DF Organic functional groups</p> <p>DF Organic reactions</p> <p>DF Polymers</p> <p>DF Organic mechanisms</p> <p>DF Isomerism</p> <p>OZ Organic functional groups*</p> <p>OZ Organic reactions</p> <p>OZ Reaction mechanisms</p> <p>WM Organic functional groups*</p> <p>WM Organic reactions*</p> <p>WM Reaction mechanisms</p> <p>WM Modern analytical techniques</p> <p>PL Modern analytical techniques*</p>
<p>Module 5 – Physical chemistry and transition elements</p> <p>Reaction rates and equilibrium (quantitative)</p> <p>pH and buffers</p> <p>Enthalpy, entropy and free energy</p> <p>Redox and electrode potential</p> <p>Transition elements</p>	<p>EL Inorganic chemistry and the periodic table*</p> <p>ES Redox*</p> <p>CI Kinetics</p> <p>CI Equilibrium</p> <p>O Energetics</p> <p>O Equilibria (acid-base)</p> <p>DM Formulae, equations and amount of substance</p> <p>DM Bonding and structure</p> <p>DM Redox</p> <p>DM Inorganic chemistry and the periodic table</p>

OCR Chemistry A (H032/H432)	OCR Chemistry B (Salters) (H033/H433) (* indicates topic is split)
Module 6: Organic chemistry and analysis Aromatic compounds Carbonyl compounds Carboxylic acids and esters Nitrogen compounds Polymers Organic synthesis Chromatography and spectroscopy (NMR)	OZ Organic functional groups* WM Organic functional groups* WM Organic reactions* PL Structure and bonding PL Equilibria (acid-base) PL Organic functional groups PL Organic reactions PL Polymers PL Isomerism PL Modern analytical techniques*
Appendix 5f: Mathematical requirements Arithmetic and numerical computation Handling data Algebra Graphs Geometry and trigonometry	Appendix 5f: Mathematical requirements Arithmetic and numerical computation Handling data Algebra Graphs Geometry and trigonometry

Content in OCR Chemistry A not in OCR Chemistry B:

- water of crystallisation
- successive ionisation energies
- disproportionation
- Cahn–Ingold–Prelog rules
- Markownikoff's rule
- $k = \ln 2/t_{1/2}$
- determining quantities present at equilibrium
- K_p
- pH titration curves
- Born–Haber cycles
- fuel cells

- stereoisomerism of transition metal complexes
- reactions and colour changes of Mn^{2+} and Cr^{3+}
- electrophilic substitution of phenol
- C–C bond formation in synthesis
- reactions of nitriles

Content in OCR Chemistry B not in OCR Chemistry A:

- nuclear fusion
- charge density of ions and effect on stability of Group 2 carbonates
- solubility of salts and colours of precipitates
- methods for synthesising insoluble and soluble salts
- transitions between electronic energy levels in atoms
- flame colours of metal ions
- cracking
- electrolysis
- tests for nitrate and ammonium ions
- structure of proteins
- structure of DNA and RNA
- molecular recognition of pharmacophores in the body
- enzyme catalysis
- solubility product
- how dyes work and synthesis of azo dyes

Please note: the original specifications should be used as the definitive source of qualification content.

Assessment – AS Level

OCR Chemistry A (H032)	OCR Chemistry B (Salters) (H033)
<p>AS Paper 1: Breadth in chemistry Modules 1–4 70 marks, 50% of AS Level Written paper – 1 hour 30 minutes</p> <p>Section A: multiple choice questions, 20 marks. Section B: short answer question styles (structured questions, problem solving, calculations, practical) and extended response questions, 50 marks.</p>	<p>AS Paper 1: Foundations of chemistry Modules 1–5 70 marks, 50% of AS Level Written paper – 1 hour 30 minutes</p> <p>Section A: multiple choice questions, 20 marks. Section B: short answer question styles (structured questions, problem solving, calculations, practical) and extended response questions, 50 marks.</p>
<p>AS Paper 2: Depth in chemistry Modules 1–4 70 marks, 50% of AS Level Written paper – 1 hour 30 minutes</p> <p>Includes short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response mark schemes.</p>	<p>AS Paper 2: Chemistry in depth Modules 1–5 70 marks, 50% of AS Level Written paper – 1 hour 30 minutes</p> <p>Includes short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response mark schemes.</p>

Assessment – A Level

OCR Chemistry A (H432)	OCR Chemistry B (Salters) (H433)
<p>A Level Paper 1: Periodic table, elements and physical chemistry Modules 1, 2, 3 & 5 100 marks, 37% of A Level Written paper – 2 hours 15 minutes</p> <p>Section A: multiple choice questions, 15 marks. Section B: short answer question styles (structured questions, problem solving, calculations, practical), extended response questions, and level of response questions, 85 marks.</p>	<p>A Level Paper 1: Fundamentals of chemistry Modules 1–10 110 marks, 41% of A Level Written paper – 2 hours 15 minutes</p> <p>Section A: multiple choice questions, 15 marks. Section B: short answer question styles (structured questions, problem solving, calculations, practical), extended response questions, and level of response questions, 85 marks.</p>
<p>A Level Paper 2: Synthesis and analytical techniques Modules 1, 2, 4 & 6 100 marks, 37% of A Level Written paper – 2 hours 15 minutes</p> <p>Section A: multiple choice questions, 15 marks. Section B: includes short answer question styles (structured questions, problem solving, calculations, practical) and extended response questions, 85 marks.</p>	<p>A Level Paper 2: Scientific literacy in chemistry Modules 1–10 100 marks, 37% of A Level Written paper – 2 hours 15 minutes</p> <p>Includes short answer question styles (structured questions, problem solving, calculations, practical), extended response questions, and level of response questions. Also includes questions based on a pre-release article.</p>
<p>A Level Paper 3: Unified chemistry Modules 1–6 70 marks, 26% of A Level Written paper – 1 hour 30 minutes</p>	<p>A Level Paper 3: Practical skills in chemistry Modules 1–10 60 marks, 22% of A Level Written paper – 1 hour 30 minutes</p>

OCR Chemistry A (H432)	OCR Chemistry B (Salters) (H433)
Includes short answer (structured questions, problem solving, calculations, practical) and extended response questions.	Includes short answer question styles (structured questions, problem solving, calculations, practical), extended response questions, and level of response questions. Also includes questions based on a practical insert.
<p>Practical Endorsement in chemistry</p> <p>Separately reported non–exam assessment, with candidates demonstrating competence in a range of skills and techniques, in a minimum of 12 assessed practical activities. Teacher assessment against the Common Practical Assessment Criteria.</p>	<p>Practical Endorsement in chemistry</p> <p>Separately reported non–exam assessment, with candidates demonstrating competence in a range of skills and techniques, in a minimum of 12 assessed practical activities. Teacher assessment against the Common Practical Assessment Criteria.</p>

Want to switch to OCR?

If you're an OCR-approved centre, all you need to do is download the specification and start teaching.

Your exams officer can complete an [expression of interest form](#) which enables us to provide appropriate support to them. When you're ready to enter your students, you just need to speak to your exams officer to:

1. Make estimated entries by 10 October so we can send you any early release materials, prepare the question papers and ensure we've got enough examiners.
2. Make final entries by 21 February

If you are not already an OCR-approved centre please refer your exams officer to the [centre approval section](#) of our admin guide.

Practical Endorsement Administration (A Level only)

The requirements for the Practical Endorsement have been set by the Department for Education and Ofqual working with all awarding bodies to ensure a common approach. Just as when following the OCR Chemistry B A Level Chemistry qualification, your A Level learners studying OCR Chemistry A will need to demonstrate to you, their teacher(s), that they are competent in each of the skills and techniques defined for A Level chemists, and are consistently and routinely demonstrating competence against the Common Practical Assessment Criteria (CPAC).

You will need to:

- Keep records of carrying out practical activities as well as your assessment of competence of each of your learners in each of these skills and techniques. This can be done using our popular [OCR PAG tracker spreadsheet](#). Centres have found the tracker helpful and easy to use, and updated, improved versions have been available since September 2016.
- Designate a 'Lead Teacher' who will need to make sure that they have completed the [online Lead Teacher training](#)
- Email us at science@ocr.org.uk to let us know you've started teaching the qualification. This will make sure we have up-to-date information on your centre for planning monitoring visits. When a monitoring visit takes place at your centre for

Chemistry it will be carried out by an OCR-appointed monitor applying the criteria agreed across all awarding organisations. Up-to-date details on the monitoring process are available on the [Positive about practical](#) page.

Learners need to keep records of their practical work, which can be done in whatever format best suits you and your learners, be it a lab book, a loose leaf folder or an electronic record. Help, guidance and training are available from our [Positive about practical page](#).

Next steps

1. Familiarise yourself with the specification, sample assessment materials and teaching resources on the [OCR Chemistry A](#) qualification page (Assessment Preparation) of the OCR website.
2. Browse the [online delivery guides](#) for teaching ideas and use the [Scheme of work builder](#) to create your personal scheme of work.
3. [Get a login](#) for our secure extranet, [Interchange](#) – allows you to access the latest past/practice papers and use our results analysis service, [Active Results](#).
4. Sign up to receive [subject updates](#) by email.
5. Sign up to attend a [training event](#) or take part in webinars on specific topics running throughout the year or our Q&A webinar sessions every half term.
6. Attend one of our free teacher network events that are run in each English region every term. These are hosted at the end of the school day in a school or college, with teachers sharing good practice and Subject Advisors on hand to lead discussion and answer questions.
7. Follow us on Twitter ([@ocr_science](#)) where you can have discussions with other teachers and OCR Subject Advisors, and where new resources are developed and posted first.