Switching to OCR B (Salters) from Eduqas

Introduction

We are really excited about our GCE Chemistry B (Salters) 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 B (Salters)?

- Building on our existing popular course of over 20 years, the specification has been updated in consultation with teachers, higher education, learned societies, industry and heavily supported by the University of York Science Education group.
- Chemical concepts (Chemical Ideas) are taught in a spiral curriculum in the context of contemporary Chemical Storylines, underpinning the knowledge and understanding needed for the next generation of chemists.
- Chemistry B (Salters) is enjoyable to teach and learn, giving learners the essentials for chemistry-related higher education courses as well as many transferable, marketable skills, with a strong focus on practical skills and chemical literacy.
- The chemical concepts are clearly presented in the specification, with maths, How Science Works and practical opportunities highlighted throughout, supporting you in your teaching, and linked to our flexible practical assessment model.
- An integrated textbook is available, bringing together the Chemical Ideas and Chemical Storylines, with links to specially developed support resources available through our publishing partner

Our offer

- Our A Level Chemistry team, Danièle Gibney and David Paterson, are passionate about chemistry and education. With chemical research, teaching, assessment, publishing and school science management experience, they are fully committed to supporting centres' delivery of Chemistry B (Salters) – contact Danièle and David by email at ScienceGCE@ocr.org.uk or by phone on 01223 553998.
- We have produced a wide range of support materials, from our handbooks (covering practical work and maths) to delivery guides, lesson elements, practical activities, candidate exemplars and more.
- Join our conversation on the OCR Community and on Twitter @ocr_science to ask questions, talk about and share good practice and ideas.

#PositiveAboutPractical

Key differences

OCR Chemistry B (H033/H433)	Eduqas (B410QA/A410QS)
Practical skills take centre stage, detailed in full at the start of the specification in a separate module for **clarity** and **prominence**	Specified practical activities listed in the specification
Flexible practical assessment that allows you to use your own practical activities, those provided through our publishing partner or from our range of fully-detailed suggested activities.	A core set of 24 specified practicals activities.
The core chemical concepts covered in contemporary contexts with a strong focus on **practical skills** and **chemical literacy** development.	The core chemical concepts divided into three main topics.
Extensive additional guidance throughout the specification, linking opportunities for **practical**, **mathematical** and **how science works** skills to learning outcomes.	Linking to skills at sub-topic level.
All papers assess content from across all teaching modules, providing a thorough test of a candidate's knowledge, understanding and skills.	Division of Core Concepts, Physical, Inorganic, Organic and Analytical chemistry between the papers.
Fewer marks in the AS and A Level assessments, giving learners more time to develop their answers. (AS 140 marks in 180 minutes; A Level 270 marks in 360 minutes)	20 more marks in AS Level (180 minutes) and 30 more marks in A Level (375 minutes)
Our subject team, including **Chemistry Subject Specialists**, are available by phone and email for advice on all aspects of delivering A Level Chemistry, and regularly run network sessions and CPD events around the country.	The Eduqas Science Team.

Content

One of the pillars of the Chemistry B (Salters) specification is that the qualification is taught in a 'context-led' manner. Everyday examples of chemistry in action, as well as modern industrial and other applications of chemistry, are used to set the scene in which the concepts are allowed to unfold.

The specification is divided into a series of modules that are designed to be taught through 'Storylines'. Each Storyline discusses a particular application or series of applications of chemistry. The Chemical Ideas are split across the modules to tie in naturally with the Storylines, rather than being split into related areas of content. This results in a 'spiral curriculum' in which areas of chemistry are revisited and reinforced throughout the course.

To exemplify this structure, the learning outcomes of the *Elements of life* Storyline can be summarised as the following journey from the creation of atoms in the Big Bang to quantitative analysis of solutions:

From the formation of hydrogen, then helium and ultimately the heavier elements in **nuclear fusion**, the Storyline moves on to **atomic structure** and then the fundamentals of **mass spectrometry**. The role of **electromagnetic radiation** in our analysis of star light is used to introduce the **quantum nature of energy** in atoms and their detailed **electronic structure** to the level of **orbitals**. We then move on to the story of the taming of the elements into the **Periodic Table** and our subsequent ability to make sense of the **trends in properties** of the elements. Returning to outer space, the nature of the interstellar gas clouds is used to introduce **covalent bonding** and **molecular shape**. Focussing then on a more human scale, the composition of the human body is used to introduce the **mole concept**, **relative masses,** and **amounts of substance** calculations. The nature of chemistry in our bodies such as in our bones and our nervous system provides the context for the **properties of ionic substances**, including **salt formation**, **structure** and **solubility**. The links between **structure and properties** is discussed in detail including **melting and boiling points**, **solubility** and **electrical conductivity**. Greater detail of **Group 1 and Group 2 elements** is then studied, looking at applications of the elements and compounds of the s-block and their property trends such as **first ionisation enthalpy**, **reactivity with water and oxygen**, and the **stability of the Group 2 carbonates**. Finally, the **basic** nature of **Group 2 oxides and hydroxide** leads into **acid–base chemistry** and the introduction of **titration techniques and calculations**.

From a Chemical Ideas point of view, the weaving of chemical concepts throughout the Storylines can be exemplified by looking at the development of the ideas of structure and properties of materials:

Firstly in *Elements of Life* the properties of **ionic substances in solution**, **ionic equations** and the **bonding in ionic, covalent and metallic substances** are studied. Next in *The Ozone Story*, **temporary and permanent dipoles** between molecules are studied in the context of haloalkanes, branching of alkanes and halogens. Further on in *The Ozone Story*, **hydrogen bonds** are studied in various contexts, including the properties of the hydrogen halides and alcohols. Next, *Polymers and Life* introduces the **bonding in protein structures**, leading on to **molecular recognition** in enzyme active sites. Finally, in *Colour By Design*, many aspects of structure and properties are summarised in the study of bonding dyes to fibres, covering **ionic, covalent, hydrogen and the dipole bonds**.

Summary of content by Storyline

AS Topics / First year A Level Topics	Second year A Level topics
Elements of life (EL) atomic structure, atomic spectra and electron configurations fusion reactions mass spectrometry and isotopes the periodic table and Group 2 chemistry bonding and the shapes of molecules chemical equations and amount of substance (moles) ions: formulae, charge density, tests synthesis of soluble and insoluble salts titrations and titration calculations	**The chemical industry (CI)** aspects of nitrogen chemistry kinetics equilibrium and equilibrium constant calculations effects of factors on the rate and equilibrium yields of reactions; consideration of the best conditions for an industrial process analysis of costs, benefits and risks of industrial processes
Developing fuels (DF) thermochemistry organic chemistry: names and combustion of alkanes, alkenes, alcohols heterogeneous catalysis reactions of alkenes addition polymers electrophilic addition gas volume calculations shapes of organic molecules, σ- and π-bonds structural and *E/Z* isomers dealing with polluting gases	**Polymers and life (PL)** condensation polymers organic functional groups amines and amides acid–base equilibria amino acid and protein chemistry optical isomerism enzyme catalysis and molecular recognition the structure and function of DNA and RNA structural analysis
Elements from the sea (ES) halogen chemistry redox chemistry and electrolysis equilibrium and equilibrium constant atom economy	**Oceans (O)** dissolving and associated enthalpy changes the greenhouse effect acid–base equilibria and pH solubility products entropy

AS Topics / First year A Level Topics	Second year A Level topics
The ozone story (OZ) composition by volume of gases the electromagnetic spectrum and the interaction of radiation with matter rates of reaction radical reactions intermolecular bonding haloalkanes nucleophilic substitution reactions the sustainability of the ozone layer	**Developing metals (DM)** redox titrations cells and electrode potentials d-block chemistry colorimetry
What's in a medicine (WM) the chemistry of the –OH group, phenols and alcohols carboxylic acids and esters mass spectrometry and IR spectroscopy organic synthesis, preparative techniques and thin layer chromatography green chemistry	**Colour by design (CD)** the chemical origins of colour in organic compounds aromatic compounds and their reactions dyes and dyeing diazonium compounds fats and oils gas–liquid chromatography carbonyl compounds and their reactions organic synthesis and polyfunctional compounds

Assessment – AS Level

OCR Chemistry B (Salters) (H033)	Eduqas (B410QA)
AS Paper 1: Foundations of chemistry **All teaching modules** 70 marks, 50% of AS Level Written paper – 1 hour 30 minutes Section A multiple choice questions, 20 marks. Section B includes short answer question styles (structured questions, problem solving, calculations, practical) and extended response questions, 50 marks.	**AS Paper 1: The language of chemistry, structure of matter and simple reactions: Sections C1.1-C1.7** 80 marks , 50% of AS Level Written paper – 1 hour 30 minutes Section A: short answer questions, 10 marks. Section B: structured and extended answer questions set in a range of contexts, 70 marks.
AS Paper 2: Chemistry in depth **All teaching modules** 70 marks, 50% of AS Level Written paper – 1 hour 30 minutes Question styles include short answer (structured questions, problem solving, calculations, practical) and extended response questions, including those marked using Level of Response mark schemes.	**AS Paper 2: Energy, Rate and Chemistry of Carbon Compounds** 80 marks, 50% of AS Level Written paper – 1 hour 30 minutes Section A: short answer questions, 10 marks. Section B: structured and extended answer questions set in a range of contexts, 70 marks.

Assessment – A Level

OCR Chemistry B (Salters) (H433)	Eduqas (A410QS)
A Level Paper 1: Fundamentals of chemistry: All teaching modules 110 marks, 41% of A Level Written paper – 2 hours 15 minutes Section A contains multiple choice questions, 30 marks. Section B includes short answer question styles (structured questions, problem solving, calculations, practical) and extended response questions, 80 marks	**A Level Paper 1: Physical and Inorganic Chemistry: Sections C1–C3 and PI1–PI5** 120 marks, 40% of A Level Written paper – 2 hours 30 minutes Section A: Short answer questions, 15 marks. Section B: structured and extended answer questions set in a range of theoretical, practical and other contexts
A Level Paper 2: Scientific literacy in chemistry: All teaching modules 100 marks, 37% of A Level Written paper – 2 hours 15 minutes A particular emphasis is placed on scientific literacy and includes a pre-release Advance Notice article worth 20 to 25 marks. Question styles include short answer (structured questions, problem solving, calculations, practical) and extended response questions.	**A Level Paper 2: Organic Chemistry and Analysis: Sections C1–C3 and OA1-OA4** 120 marks, 40% of A Level Written paper – 2 hours 30 minutes Section A: Short answer questions, 15 marks. Section B: structured and extended answer questions set in a range of theoretical, practical and other contexts

OCR Chemistry B (Salters) (H433)	Eduqas (A410QS)
A Level Paper 3: Practical skills in chemistry: All teaching modules 60 marks, 22% of A Level Written paper – 1 hour A particular emphasis is placed on practical skills. Question styles include short answer (structured questions, problem solving, calculations, practical) and extended response questions.	**A Level Paper 3: Chemistry in Practice: All sections** 60 marks, 20% of A Level Written paper – 1 hours 15 minutes Structured and extended answer questions with an emphasis on practical contexts and applications.
Practical Endorsement in chemistry 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.	**Practical Endorsement in chemistry** 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.

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 intention to teach 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 Eduqas A Level Chemistry qualification, your A Level learners studying OCR Chemistry B (Salters) 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 are available from September 2016.
- Register the name of a 'lead teacher' with JCQ. The lead teacher will then act as the contact person for arranging the monitoring visit. You will need to indicate that you are teaching the OCR Chemistry B (Salters) qualification. Your exams officer will have received an email with details of how to do this. If and when a monitoring visit

takes place it will be done by an OCR-appointed monitor applying the criteria agreed across all awarding organisations.

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 B (Salters) 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. We also have a lesson planning support document that links the sections of the specification to our delivery guides and further guidance, and includes suggested teaching hours.
3. Speak to your exams officer to get a login for our secure extranet, Interchange – this 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 Specialists on hand to lead discussion and answer questions.
7. Follow us on Twitter @ocr_science and join our free online community where you can have discussions with other teachers and OCR Subject Specialists, and where new resources are developed and posted first.