Switching to OCR B (Salters) from Eduqas

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
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.

OCR Chemistry B (Salters) (H433)	Eduqas (A410QS)
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.