

Year 11 Chemistry

The GCSE Chemistry course continues to build on knowledge and understanding of Science from Years 9 and 10 as well as some topics originally studied in Key Stage 3. Topic C2 uses the theories of structure and bonding to explain the physical and chemical properties of different materials and how atoms are held together in these structures. This aligns with the Year 8 topic matter which covers atoms and molecules, symbols and formulae. Topic C3 is where we use quantitative analysis to determine the formulae of compounds and the equations for reactions. With this information students then use quantitative methods to determine the yield from chemical reactions. We then finish the GCSE teaching with the C4 topic, which covers the understanding of chemical reactions in a systematic way and allows students to predict what new substances would be formed in different chemical reactions. This topic also covers how we extract metals from their ores by a variety of processes. This aligns with the Year 8 topic reactions' which covers the rearranging of atoms in chemical reactions and the formation of new substances. All three topics include practical activities that enrich the learning, as well as practical demonstrations that do the same.

Methods of deepening and securing knowledge:

Retrieval practice	Almost all lessons have retrieval practice in them. This is usually as a starter activity.
Interleaving	Retrieval practice includes interleaved questions from previous topics, making connections between topics where possible. Many ideas from Key Stage 3 are revisited during Year 11 lessons.

	Autumn term 1	Autumn term 2	Spring term 1	Spring term 2	Summer term 1	Summer term 2
Topic(s)	C2 Bonding, structure and the properties of matter C3 Quantitative chemistry <ul style="list-style-type: none"> - Conservation of mass and balanced chemical equations - Relative formula mass - Mass changes when a reactant or product is a gas - Chemical measurements - Moles (Higher Tier only) - Amount of substances in equations (Higher Tier only) - Limiting reactants (Higher Tier only) - Concentrations of solutions 		C3 continued <ul style="list-style-type: none"> - Using concentrations of solutions in mol/dm (Higher Tier only) - Use of amount of substance in relation to volumes of gases (Higher Tier only) C4 Chemical changes <ul style="list-style-type: none"> - Metal oxides - The reactivity series - Extraction of metals and reduction - Oxidation and reduction in terms of electrons (Higher Tier only) - Reactions of acids with metals and salt production - Soluble salts 		Exam preparation	Exam preparation

	<ul style="list-style-type: none"> - Percentage yield - Atom economy 	<ul style="list-style-type: none"> - The pH scale and neutralisation - Titrations - Strong and weak acids - The process of electrolysis - Electrolysis of molten ionic compounds - Using electrolysis to extract metals - Electrolysis of aqueous solutions - Representation of reactions at electrodes as half equations (Higher Tier only) 		
Assessment	- November PPE to cover a full past paper on C6-C10 units	- February PPE to cover a full past paper on C1-C5 units	- Full public exams in May and June	

Independent Learning:

Independent learning is a core part of learning and serves to support learning in class, enrich student experience and develop knowledge and skills. There are 2 types of independent learning set in chemistry. Educake revision is an online platform that supports retrieval of knowledge and past paper questions that develop exam literacy. Preparing for assessment is an essential part of each topic as each assessment allows teachers and students to see their progress. It is crucial that revision is completed so students can show what they know.