Science Department Curriculum Plan A Level Chemistry September 2023

Curriculum Intent

Studying A Level Chemistry will enable our students to develop:

- ***essential knowledge of different areas of the subject and how they are linked***
- ***competence in a variety of practical, mathematical and problem-solving skills***
- ***a deep understanding of scientific methods***
- ***interest in and enthusiasm for the subject***
- ***an understanding of how society makes decisions about scientific issues***

	Autumn Term	Spring Term	Summer Term
Year 12 Content	**Elements of life (EL1-9):** atomic structure, quantitative and inorganic chemistry. **Developing fuels (DF1-11):** energetics, organic functional groups & reactions.	**Elements of the sea (ES1-7):** redox reactions, Periodic Table and equilibria. **The ozone story (OZ1-8):** intermolecular bonding, ozone reactions & mechanisms.	**What's in a medicine (WM1-5):** organic synthesis and analytical techniques.
Year 12 Skills	Required Practicals covered: • PAG1.1 Moles determination (mass/volume measurements) • PAG2.1 Acid-base determination (titration measurements) • PAG3.1 Enthalpy determination (temperature measurements)	Required Practicals covered: • PAG4.1 Qualitative analysis of ions (make & record observations)	Required Practicals covered: • PAG5.1 Synthesis of an organic acid (reflux, purification, distillation, identification of hazards) • PAG6.1 (vacuum filtration, recrystallisation, thin layer chromatography)
Year 12 Key Points	Intro to Chemistry assessment Sept Interim block tests on topics covered	Interim block tests on topics covered January 2 hour written exam based on EL and DF content	Interim block tests on topics covered June 2h 15min mock based on ES, OZ and WM content

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Year 13 Content	**The chemical industry (CI1-6):** reaction kinetics. **Polymers and life (PL1-9):** biochemistry. NMR spectroscopy. **The Oceans (O1-5):** energetics and acid-base equilibria. Energy and matter **Developing metals (DM1-3):** transition metal chemistry & redox titrations	**Developing metals (DM4-6):** electrochemical cells, complexes & ligands. **Colour by design (CD1-11):** carbonyl and arene reactions. Colour and dyes.	Finalising chapters and Required Practicals Prep for External exams: 15 week revision/prep timetable
Year 13 Skills	Required Practicals covered: • PAG9.1 Rates of reaction (continuous monitoring, recording, processing data) • PAG12.1 Research skills (investigative approaches, online/offline research, citing of sources	Required Practicals covered: • PAG8.1 Electrochemical cells (setting up & recording) • PAG7.1 Analysis of organic function groups • PAG11.1 pH measurements (pH chart meter and probes) • PAG10.1 Rates of reaction (initial rate method, variables) Revision and Exam Technique	Required Practical check and CPAC coverage analysed with additional skill area pieces completed where necessary. Revision and Exam Technique
Year 13 Key Points	Interim block tests on topics covered October 2023: Mock exam - 2h 15min written exam based on Y12 & 13 content completed. Cultural capital trip to Syngenta Co, Bracknell (agrochemical research facility)	February 2024: 2h 15min based on all content. Interim block tests on topics covered	External exams: June 2024