Year 13 Chemistry: Year by Year Curriculum Document

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topics	**Physical Chemistry**: k_p, acids and bases **Focus**: changing the subject of equations and memorising equations	**Organic Chemistry Continued** Optical isomerism, Aldehydes and ketones, Carboxylic acids and derivatives , Aromatic chemistry , Amines , Polymers and Amino acids and DNA and Rate Equations, **Focus:** Practical skills including analysing/ evaluating and memorising equations	**Organic Chemistry continued:** Organic synthesis, NMR and Chromatography **Focus:** mechanisms and analytical techniques	**Organic Chemistry continued :** Chromatography and required practical catch up **Focus**: integrating chemical analysis techniques with multi-step calculations and linking topics in analysing problems	**End of Year Revision of all content:** Including required practicals **Focus:** final exam May/June 2023	**End of Year Revision of all content :** Including required practicals **Focus:** final exam May/June 2023
Assessments	Mock Exams w/b 10 10 22	Required Practical skills assessment	Mock Exams w/b 16 1 23	Required Practicals	Exam style assessment based earlier content	Full AQA exam papers in May/June 2023.

Building on Prior Learning	**Substantive Knowledge –** Since Year 12, students have used their knowledge of Inorganic, Organic and Physical Chemistry to develop ideas about chemistry and its application. These ideas will then be developed further in year 13. **Disciplinary/procedural Knowledge –** Students will develop their ability to use equations in performing calculations to solving more complex problems. This includes both changing the subject of the equation and performing multi-step calculations involving more than one equation from multiple topic areas. Required practical skills will be developed further with an emphasis on analysing/evaluating experiments along with the development & use of the technical language of scientific enquiry.
Cultural Capital	**There is cultural capital in abundance in this programme of study:** Students increase their scientific literacy; look into their chemistry-related attitudes and values and also how the student sees chemistry, holistically, as essential to their everyday life. This will include an appreciation of the impact chemistry has on modern society, for example the creation and use of organic chemicals and the use of cis-platin to treat cancer.
Mastery	**In terms of mastery** students will be given opportunities to apply their Chemistry knowledge through increasingly varied and complex contexts & scenarios. Students will gain experience in working through challenging questions using their recently gained knowledge of the subject material. They will use increasingly technical language when analysing and evaluating the results of the required practical experiments that they carry out in year 13 and will be challenged to link the knowledge they have developed across a range of topics together in order to enable them to give a fuller explanation of chemical concepts.
Development of Character	**A wide range of virtues are covered through the teaching of Chemistry:** The intellectual virtues of curiosity and resilience are explored through the teaching of Inorganic, Organic and Physical Chemistry. Collaborative working and honesty are important to the scientific method and development/acceptance of new ideas. These will continue to be covered throughout Year 13.
Extra-Curricular opportunities	**In School:** **Outside of School:**
Metacognitive Learning	Metacognitive skills are very important because they can develop high-level thinking and increase academic success. To this end, students are given frequent opportunities to model the approaches necessary to engage in problem-solving processes and choose strategies to improve cognitive performance in the future. Students will initially be shown how to approach the more complex calculations of Year 12, through modelling as well as the use of a systematic approach, which is then repeated so it becomes almost automatic. Over the course of the year increasingly more complex/varied scenarios will be used together with a gradual reduction of scaffolding/assistance in order to develop independence and resilience. Students will be guided both through feedback to help further their progress.