



CHEMISTRY



HEAD OF DEPARTMENT: DR OLDER
EXAMINATION BOARD: AQA

SPECIFICATION: 7405
QUALIFICATION: A-LEVEL CHEMISTRY

Studying A-Level Chemistry at Truro School is a completely immersive experience. Practical Chemistry forms a large part of the learning and every student is expected to set up and perform their own experiments.

Students flourish at Chemistry if they are curious and can take a newly taught concept and apply it in new and unique ways to solve a more complex problem. Chemistry is immersive because it is all around us; it helps us understand why things happen on an atomic level, and with that comes a deeper understanding and appreciation of the world that we live in.



WHAT YOU WILL STUDY IN LOWER SIXTH

The course begins by covering the structure of the atom and looking more closely at electronic orbital notation, demonstrating how the Periodic Table is linked to electronic configuration. Calculations form a large part of the first term's work; titration experiments are carried out to calculate the concentration of unknown solutions and reaction stoichiometry is studied. We also cover the Ideal Gas Equation and simple spectroscopic methods.

Over the year, you will also study Organic Chemistry. Some examples of topics focusing on the different functional groups include how alkanes act as fuels, how CFCs can break down

the ozone layer, how alkenes can be used to make everyday polymers and the interesting properties of alcohols that make them soluble in water.

As part of the Physical Chemistry section, you will learn about equilibria and Le Chatelier's Principle, including applying the equilibrium constant K_c to specific reactions to help predict their outcomes based on changing concentrations and pressures. You will also study rates and calorimetry and get to grips with Hess's Law.

SUBJECT EXTENSIONS AND SUPRA-CURRICULAR OPPORTUNITIES

We offer an A-Level Chemistry Extension class to teach very able students how to answer Olympiad style questions. Ultimately, the students attending this club will be coached to problem solve effectively using their course knowledge. This could mean the difference between an A and an A* grade at A-Level.

Lower Sixth students sit the Cambridge Chemistry Challenge

TOP-LEVEL FACILITIES

We have four labs all equipped to deliver A-Level practicals on an individual basis. We have state-of-the-art thin layer and column chromatography equipment, including a UV viewing box, and Quik-Fit apparatus for carrying out complex oxidation reactions involving both reflux and distillation set-ups. We have a huge range of chemicals to allow all the transition metal reactions to be carried out and storage facilities to accommodate both liquid nitrogen and dry ice.

Upper Sixth students sit the RSC Chemistry Olympiad paper



WHAT YOU WILL STUDY IN UPPER SIXTH

As part of the Organic Chemistry course, you will learn about many different functional groups and their associated reactions. Aspirin is studied in detail, including the synthesis and purification of a sample as part of the A-Level Chemistry practical assessment. You will study familiar compounds like paracetamol and amino-acids and progress through the year to design synthetic routes to make these compounds.

In your Physical Chemistry lessons, you will learn about entropy and kinetics; these explain why reactions happen and how fast reactions may go. Through learning about buffers, you will see how these extraordinary chemicals can be used in

biological systems to maintain pH. In the electrochemistry topic, you will have opportunities to build electrochemical cells and to study fuel cells as alternative sources of electrical energy.

As part of the Inorganic Chemistry course, you will learn about the properties and reactions of transition metal compounds; why they are coloured and how this property relates directly to the effect of photons on electrons in partially full d-sub shells.

Chemistry students will be taught by two A-Level specialists with expertise in Engineering, Material Science and Biochemistry and with qualifications

Chemistry A-level has been a really exciting course, inspiring all of us to study chemistry at degree level. The teachers at Truro School have supported us so well, offering to help us whenever we want especially with post-18 options. One of our favourite parts has been the amazing practical facilities which let us apply the theory we've learnt to real life, like when we synthesised aspirin. We have enjoyed the opportunity to get involved with extension lectures and lead lectures for younger students.

SOUMYA, MAYA AND ANGELO

WHERE WILL AN A-LEVEL IN CHEMISTRY TAKE YOU?

Chemistry A-Level is essential for degrees in Biochemistry, Material Science, Pharmacy, Medicine, Dentistry, Veterinary Science and Chemical Engineering. It can lead to university courses such as Nanotechnology, Environmental Science, Forensics, Sportswear Development, Teaching and Food Technology. Academically rigorous, A-Level Chemistry is highly regarded by Admissions Officers on many other courses, such as Accountancy, Economics and Law.

to Doctorate level in Organic Chemistry and Chemical Engineering.

In addition, we run Chemistry clinics which students can use to ask for help on prep tasks and re-visit the material covered in lessons in a relaxed and informal setting.

At Truro School there is enough equipment for every student to complete their practical work on an individual basis. This increases confidence and improves practical skills. We have the expertise and knowledge to run exciting and relevant practicals, often developed and enhanced 'in-house' to enrich and improve the learning experience.