

Year 11 - Chemistry

Autumn term

Chemistry continues to build on knowledge of the periodic table gained in year 9 and now moves focus to describing and explaining the properties of specific groups of chemicals that share similar properties: group 1 (alkali metals), 7 (halogens) and 0 (noble gases). Students will gain further opportunities to practice writing balanced symbol equations including state symbols. Continuing with chemical reactions, factors affecting the rate of reactions are explored during both practical and theory work, as are the energy changes that occur during chemical reactions. Chemical reactions are often carried out to yield products of commercial value. Understanding how specific factors, such as temperature and surface area, affect the rate of chemical reactions enable chemists to ensure product yield and profit is maximal.

Spring term

The penultimate chemistry topics of the course are concerned with fuels and the atmosphere. Both topics have been met previously in KS3 but students will now be able to appreciate how there are many types of hydrocarbon fuels and evaluate which are most suitable for different purposes. The evolution of the Earth's atmosphere is also learned as are the implications of using fossil fuel on our atmosphere and the future of our planet.

Then final topics extend students' knowledge of fuels and polymers and the homologous series' of alkanes and alkenes are studied along with the structures and composition of alcohols and carboxylic acids. The production of plastics is explored as are the issues concerned with their recycling and disposal. Students will revisit ion formation and extend their learning by examining how to test for the presence of metal and non-metal ions and consider the ways in which these tests are used in industry, before finishing by considering the many uses of composite materials in everyday life and how nanoparticles are shaping the future of material science.

Summer term

Exam preparation and revision