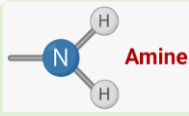




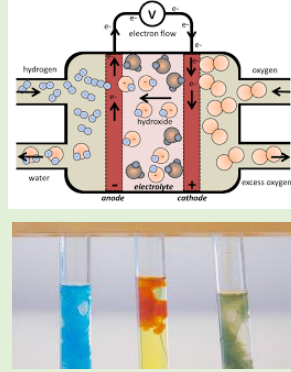
THOMAS ALLEYNE'S HIGH SCHOOL

A level Chemistry LEARNING JOURNEY

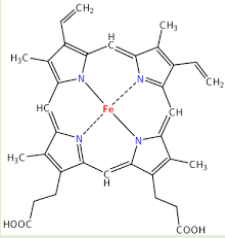
University



The organic chemistry topic is rounded off with the last group of organic compounds and their reactions. Finally students develop the analytical skills from Y12 with new techniques such as nmr to be able to combine a range of techniques for the identification of unknowns.



Students continue to build on physical chemistry from Y12 while introducing new concepts of entropy. The understanding of entropy then allows students to make predictions for feasibility which is revisited when studying electrochemical cells. Students use the redox reaction in electrochemical cells and combine this knowledge with quantitative topics from the beginning of Y12 to determine quantities of transition metals in redox titrations. Finally transition metals and ligands link closely to aspects of A level biology with haemoglobin being used as a specific example of multidentate ligands.



POST-18 PATHWAY

Final Exams

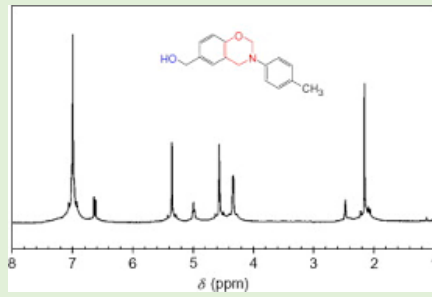
Organic Chemistry 2

Energy, Transition elements, redox and electrochemistry

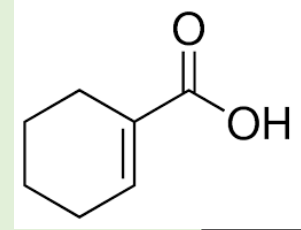
Higher Apprenticeships

Students use the concepts learnt in physical chemistry during Y12. They will develop further quantitative skills and using higher mathematical skills to analyse data from chemical reactions. Students will also learn to use logarithms to calculate pH and pH changes. This challenging but rewarding topic links well with Biology as students look at the role of the blood as a buffer.

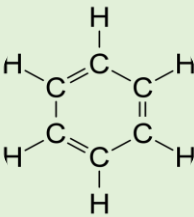
$$\ln k = \ln A - \frac{E_a}{RT}$$



The organic chemistry unit continues to broaden exposure to more organic compounds, including some met at GCSE (carboxylic acids and esters, and some that have never been met before such as aromatic compounds.

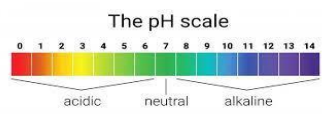
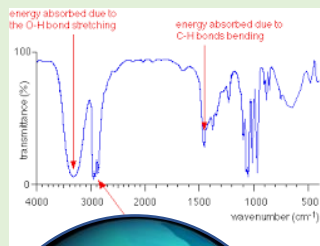
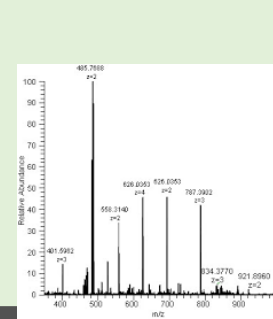


Mock Exam



Rates, Equilibrium and pH.

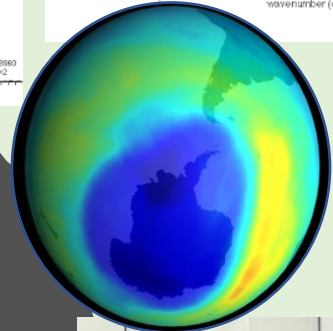
In the organic unit students develop their use of reaction mechanisms further. Students are also given the opportunity to learn new practical techniques such as heating under reflux. Finally students begin learning about analytical techniques, problem solving skills that will be built upon during Y13 a prepare students for further education in chemistry.



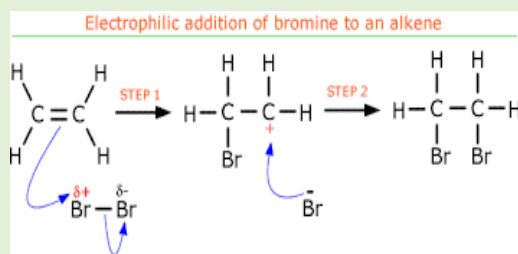
Year 13

Y12 Trial Exams

Alcohols, Haloalkanes and Analysis



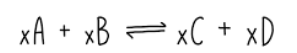
Students learn the skills of IUPAC nomenclature for the naming of a range of organic compounds. Students also learn the types of formula to represent these organic molecules. Students will then focus on the properties and reactions of alkenes and alkanes, with the introduction of reaction mechanisms.



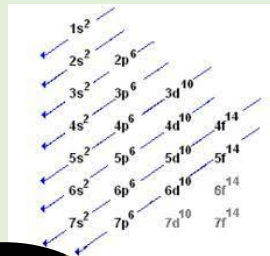
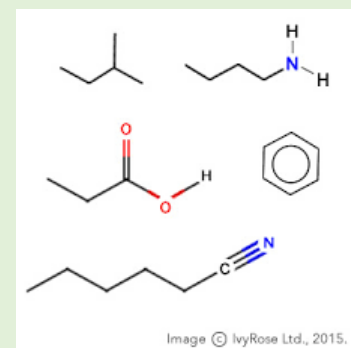
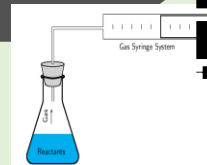
During the Physical chemistry topic students will add to their knowledge of rates, equilibrium and enthalpy change from GCSE. They will learn new equations to measure and calculate physical chemical quantities and constants. These skills will be further developed in year 13 building more complexities into the concepts and calculations.

Basic Organic Concepts

Physical Chemistry



$$K_c = \frac{[C]^x [D]^x}{[A]^x [B]^x}$$



Students also build on the GCSE topics of atomic structure and bonding. Looking at the existence of sub shells and different types of intermolecular force.

WELCOME

Year 12

Transition days and Bridging work

Foundations in Chemistry

Students develop their understanding of the groups and periods of the periodic table and the trends both down groups and across periods. Students will be able to explain these trends in terms of the electronic structure. Students will then go on to practically investigate the qualitative analysis methods for identifying unknown elements and compounds.

Students start the A level course with the foundations of Chemistry, this draws on what they already know from GCSE and elevates it to the next level. Initially we focus on improving the fluency on quantitative chemistry as well as introducing some new equations and perfecting those titration skills.

