

■ IB SL Chemistry

Introduction

IB Standard Level Chemistry aims to give students an interesting and enjoyable education in the subject at this level. It provides the useful chemical background to courses in biology, physics and geography as well as being a worthwhile end in itself. The course is practically based with an emphasis on developing a good standard of investigative skills. The theoretical side of the course aims to develop the student's ability to understand the nature of matter. Using a logical approach it is possible to predict and explain the behaviour of materials. The course is completed with two options that allow the student to develop their own interests and see how the subject has relevance to biological, environmental or industrial applications. As with all the sciences, chemists contribute to a combined 'Group 4 Project' in collaboration with those studying physics, biology and design technology.

Content

The core at standard level comprises the following topics.

1. Stoichiometry – the relative numbers of atoms, molecules and ions in reactions
2. Atomic Theory – the inner structure of the atom which leads to the variety of elements
3. Periodicity – patterns and explanations in the behaviour of the elements
4. Bonding – the different way atoms and molecules attract each other
5. Energetics – heat changes during chemical reactions and their measurement
6. Kinetics – making reactions go faster; measuring and explaining their rates
7. Equilibrium – reactions that go both ways and how to influence them
8. Acids and Bases – protons lost and gained and an introduction to pH
9. Oxidation and Reduction – electrons lost and gained and an introduction to cells
10. Organic Chemistry – an introduction to the vast variety of compounds based on carbon
11. Measurement and data processing – handling experimental data correctly

The options available are two from:

Analytical chemistry, Human biochemistry, Chemistry in industry and technology, Medicines and drugs, Environmental chemistry, Food chemistry, Further organic chemistry.

Assessment

The course is examined through three written papers contributing a total of 76% of the final grade. The papers cover a range of multiple-choice, structured and extended response questions. The remaining 24% of the marks come from the investigative skills developed over the course and during the Group 4 project.