

# *Chemistry*

## **Nature of Chemistry**

'Chemistry is an experimental science that combines academic study with the acquisition of practical and investigational skills. It is often called the central science, as chemical principles underpin both the physical environment in which we live and all biological systems. Chemistry is a prerequisite for many other courses in higher education, such as medicine, biological science and environmental science, and serves as useful preparation for employment'.<sup>1</sup>

## **Teaching Approach**

As chemistry is an experimental science, students have opportunities to design investigations, collect data, develop manipulative skills, analyze results, collaborate with peers and evaluate and communicate their findings. The investigations may be laboratory based or they may make use of simulations and databases. Students develop the skills to work independently on their own design, but also collaboratively, including collaboration with schools in different regions, mirroring the way in which scientific research is conducted in the wider community.

Students would have normally learnt the basics fundamentals of chemistry in Year 10 before progressing into the course. Students will study a variety of topics including; stoichiometric relationships, atomic structure, chemical bonding, periodicity, energetics of reactions, acids and bases, redox processes, organic chemistry, measurement and data processing, analysis and one of the four optional topics. Students will also learn examples of some key aspects of the 'Nature of Science' and its connection to Theory of Knowledge.

## **Where does it lead to?**

Studying chemistry opens doors to a wide range of careers. Chemistry is a part of our everyday lives and there is a vast range of jobs and careers open to those who have studied chemistry. Students would have acquired skills in research, technical, quantitative, written and oral communication upon completion of a chemistry coursework. Career opportunities exist both inside and outside of the laboratory. A degree in chemistry will provide an opportunity in areas such as chemical engineering, research analyst, pharmaceuticals, public sectors, energy and environmental related occupations.

<sup>1</sup> IB DP Chemistry Guide First assessment 2016. IBO, UK 2014.