S3 Chemistry

Course Rationale

Chemistry is vital to everyday life and allows us to understand and shape the world in which we live. In the S3 Chemistry course you will continue to develop your knowledge and understanding of the big ideas of science, and the impact sciences make on our lives. You will develop an understanding of the earth's resources and the need for responsible use of them and be increasingly able to express an opinion on social, moral, ethical, economic and environmental issues based upon sound scientific understanding.

Course Content

The S3 Chemistry course consolidates levels 3 experiences and outcomes, and extends learning to level 4 within the CFE areas of

- Planet Earth – biodiversity & interdependence, energy sources & sustainability, processes of the planet
- Materials – properties and uses of substances, earth's materials, chemical changes
- Topical Science

The S3 course is divided into 6 topics

- Fundamental Chemistry (elements, chemical reactions, chemical techniques, the periodic table)
- Atomic structure and Formula writing
- Metals (properties and reactions of metals, reactivity series, extraction from ores, corrosion prevention)
- Bonding and Properties of substances
- Fuels (fossil fuels, hydrocarbon families, properties and reactions, pollution)
- Biochemistry (the carbon cycle, carbohydrates, alcohol, fertilisers and the nitrogen cycle).

Skills

Through practical work you will enhance your skills of scientific inquiry and investigation and continue to develop your creativity and scientific numeracy and literacy skills. You will develop skills in the accurate use of scientific language, formulae and equations. You will learn how to think creatively and independently, and analyse and solve problems; skills valued in many career areas as well as those in which Chemistry is particularly important such as medicine, pharmaceuticals, the food industry and the manufacture of plastics.

Course Assessment

You will receive informal feedback on your progress throughout your learning. At the end of each topic you will also get feedback from a more formal end-of-topic test.

Progression

The course is designed to cover the necessary level 4 learning pre-requisite for success in National 5 Chemistry. It also supports consolidation of level 3 outcomes for pupils at this stage in their learning.

Progression may therefore be to

- National 4 Chemistry
- National 5 Chemistry
- National 4 Biology or Physics
- Progress to National 5 Biology or Physics in one year may be possible for pupils who achieve level 4 Chemistry in S3, however since these courses build on the work covered in S3/National 4 this requires a significant commitment to additional personal study if pupils have not studied these subjects in S3.

Career Pathways

Agricultural consultant Biochemist Chemical engineer Clinical Psychologist Dentist Dietician Doctor Environmental Consultant Food Scientist Forensic pathologist Geoscientist Lab technician Materials engineer Neuroscientist Nurse Occupational therapist Orthoptist Pharmacist Paramedic Vet nurse Pharmacologist Physiotherapist Radiographer Textile technologist Teacher Vet