



Introduction:

Science is not just a discipline; it is a way of viewing and interpreting the world around us, of gathering and interpreting information, of testing and building knowledge. The broad aim of this department is to provide pupils with the knowledge, skills and experiences to be able to understand and appreciate their environment. Each pupil will be encouraged to view the world through scientific eyes.

More specifically, pupils will develop skills of rational, creative thinking and they will be provided with the necessary opportunities to formulate positive attitudes and opinions in order to be able to make informed, ethical decisions in their lives. They will measure, observe, infer, deduce, predict and conclude. They will hypothesise, test and communicate, whilst functioning as a critically thinking individual integrated in a group of motivated scientists.

The International General Certificate of Education (IGCSE) is an examination set by the University of Cambridge and is of a higher level than the UK based GCSE examination. It is a two year optional course beginning in Year 10.

Content:

Please note that the full course specification is available from this department and gives a detailed breakdown of all that follows. For practical purposes it is not included here.

The IGCSE course is actually started during the 3rd term in Year 9 (see Year 9 guide for details). Pupils who join the school in Year 10 will be guided in the process of catching up the work that they have missed.

Term 1:

- Atoms, elements and compounds
 - Atomic structure and the periodic table
 - Bonding: the structure of matter
- Stoichiometry
 - Formulae and equations
 - The mole and calculations

Term 2:

- Electricity and chemistry
- Chemical changes and energy
- Chemical Reactions
- Rate of reaction

Term 3:

- Reversible reactions
- Redox
- Acids and bases

Skills:

Skills will be developed in the areas of:

- Accurate observation.
- Planning and carrying out qualitative and quantitative investigations.
- Formulation and testing of hypotheses.
- Presentation and analysis of results
- Discussion of results and listening to the views of others
- Use of a wide range of sources of information
- Communication of knowledge.

Practical work:

Pupils are provided with a practical booklet which they fill in and must keep for the duration of the course. The booklet allows them to accumulate practical knowledge and skills which they will require in the final written practical examination. Throughout the course there is as much emphasis placed upon practical work as possible and students learn a wide range of laboratory techniques. The school community enjoys the use of excellent laboratory facilities with vanguard equipment and comprehensive resources. With safety always a priority, students are encouraged to put their scientific knowledge to the test. They plan, carry out and write up reports on experiments that are closely related to the theory covered in class. Being able to appreciate the practical significance of what they learn is a key factor in promoting real understanding.

Homework:

Pupils can expect two homework tasks per week: a 40 minute written assignment, and a learning assignment. During the course, it is expected that pupils review the work covered in class on a regular basis, and write their own revision notes in preparation for exams.

Assessment:

The final external examinations are taken in May or June of Year 11 and consist of the following papers:

- Paper 1: Multiple Choice (Core)
- Paper 2: Multiple Choice (Extended)

- Paper 3: Core theory
- Paper 4: Extended Theory
- Paper 6: Alternative to Practical

Pupils will either sit the Core Examinations (Papers 1, 3 and 6) or the Extended Examinations (2, 4 and 6). Grades A* to C are passing grades. Pupils sitting Core exams can achieve a maximum of a C grade, whereas those sitting Extended exams have access to all grades.

Pupils are assessed on a regular basis, usually at the end of each of the sections outlined above. During Year 10, there are two main internal examinations, in December (which covers all of the material from September to December) and June (which covers material from the whole of Year 10).

Digital usage in this subject:

Chemistry students access all resources including slides, worksheets, syllabus specification, textbook answers and mark schemes via google classroom. Pertinent video links to topics are also posted here. Seneca is recommended for revision.

Weekly homework are set through google form quizzes.

Resources and Materials:

- Complete Chemistry for IGCSE: Endorsed by University of Cambridge International Examinations (Paperback) by Gallagher and Ingram
- IGCSE Chemistry (Paperback) by B. Earl
- IGCSE Study Guide for Chemistry [Paperback] by Bob Berry
- CIE website: <http://www.cambridgestudents.org.uk/>

Average time spent each homework

Students must use Kerboodle every week, including 30-40mins as part of homework. Google classroom used less frequently, as required to supplement Kerboodle resources.

Typical tasks set

Interactive quizzes that test recall of key ideas and allow students to self assess. Worksheets and other online tasks that include research as well as consolidation of terms and to further explore ideas used in lessons.

Resources and Materials

The course follows the Exploring Science for Year 9 “working scientifically” which has it’s own text book covering Year 9 biology chemistry and physics. The scheme also suggests and provides support materials for practical work which is appropriate to all the topics covered.

Students also carry out experiments where relevant and this builds on their practical skills from years 7 and 8 and hopefully captures their interest by bringing the subject to life.