



SCIENCE DEPARTMENT

The department occupies a suite of 8 state-of-the-art laboratories, each equipped with gas, water and electricity. Each lab has access to one of three portable fume hoods which can also be equipped with gas, water and electricity. All labs are equipped with state of the art Smartboards linked to desktop computers. The desktop is linked to a classroom speaker system. There are also 2 standard whiteboards in each lab. The department has a set of portable netbooks available to staff on a booking basis.



There are currently 15 members of staff in the department. 13 are full time and 2 share a full time post. 1 member of staff is a Head of Year and 1 is the Head of the Teaching and Learning Team. The department also has a technician 3 days per week.

Aerial view model of St Mary's



Science
Department

KS3

Key Stage 3 provision is currently 6 x 1 hour lessons per 2-week cycle. There are comprehensive schemes of work and resources for all topics covered. Each scheme of work provides for structured learning and regular assessment. Students are encouraged to develop their skills, knowledge and understanding of Physics, Chemistry and Biology using varied approaches to learning.

In Year 7, students study 12 topics across the three Sciences, namely Forensic Science, Energy, Light and Sound, Cells, Particles and Separation, Magnets and Forces, Drugs and Alcohol, Rocks and Weathering, Chemical Reactions, Circuits, Food Chains, Space and Reproduction.

In Y8, students follow the AQA Entry Level Certificate (ELC), and have two distinct lessons a fortnight for each of the three sciences. This course allows us to introduce students to the subject matter they will meet during their Core GCSE in Year 9, but at a much more appropriate level. Assessment in Year 8 is by examination papers set by AQA, and teacher-devised coursework assessments. They complete one of these for each of Biology, Chemistry and Physics.

Three times a year there is a formal assessment and grades/levels are reported to parents/carers.

KS4

We currently deliver the AQA Science Trilogy Combined Science course as well as the three Separate Science courses.

Setting

In Year 7, students are set using a mixture of Key Stage 2 data from primary schools as well as CAT scores taken in the first term. For the Key Stage 3 course the students are grouped by ability. For the GCSE programmes in Key Stage 4, the students are also grouped by ability. Sets are reviewed every term and updated using students' assessment performance. Class sizes in KS3 are typically 30 pupils in sets 1 and 2, 25 in sets 3 and 4 and 15 in set 5.

GCSE classes follow the same pattern.

We currently have two AS level Chemistry groups each consisting of 10 students, two AS Biology groups of 11 and 15 students, two AS level Physics groups each consisting of 17 students and two year 12 BTEC (Vocational) Science groups of 4 and 7 students. There are two A level Chemistry groups of 11 and 4 students, one A level Biology group of 8 students, two A level Physics groups of 8 and 14 students and one year 13 BTEC (Vocational) Science group of 4 students.

KS4 Chemistry

Key Stage 4 provision for Year 10 and 11 Chemistry is currently 3 or 4 x 1 hour lessons per 2-week cycle. We follow the AQA board Chemistry Syllabus and students sit 2 exams. The Unit 1 paper is a 1 hour 45 minutes written paper worth 50% of the final marks covering atomic structure and the Periodic table, Bonding and structure, quantitative chemistry, chemical changes and energy changes.

The Unit 2 paper is also 1 hour 45 minutes and worth 50% of the final mark and includes rate and extent of chemical change, organic chemistry, chemical analysis, chemistry of the atmosphere and using resources.

Assessment is on-going - students sit a mock exam in Year 10 and 11 and grades are reported to parents/carers.

KS4 Combined Science

Key Stage 4 provision for Combined Science is currently 9x1 hour lessons per 2 week cycle. We follow the AQA board Trilogy Syllabus. Students sit 2 exams.

The Unit 1 paper is a 1 hour 15 minutes written paper worth 16.6% of the final marks covering atomic structure and the Periodic table, Bonding and structure, quantitative chemistry, chemical changes and energy changes.

The Unit 2 paper is also 1 hour 15 minutes and worth 16.6% of the final mark and includes rate and extent of chemical change, organic chemistry, chemical analysis, chemistry of the atmosphere and using resources.

Assessment is on-going - students sit a mock exam in Year 10 and 11 and grades are reported to parents/carers.

KS5 Chemistry

Key Stage 5 Chemistry provision is currently 10 x 1 hour lessons per 2-week cycle per subject.

The new A level course has been reorganized into 6 modules:

Module 1: Practical Skills

Module 2: Foundations in Chemistry

Module 3 : Periodic Table and Energy

Module 4: Core Organic Chemistry

Module 5: Physical Chemistry and Transition Elements

Module 6: Organic Chemistry and Analysis

Year 12 will be assessed by mock terminal examinations at the end of Year 12.

Examinations

A Level = 3 written papers at the end of year 13.

No coursework will contribute towards the final A-level grade although students will complete at least 12 assessed practicals across the two-year A-level for Year 13 students.

Assessment is on-going - students sit a mock exam in Years 12 and 13 and grades are reported to parents/carers.