

## Science – Position Statement

### Background and Context

The department is made up of a full time Head of Department, a further three full-time teachers and 2 part-time teachers, supported by one full time and one part time technician. One full time teacher also holds the post of assistant head, and has a reduced timetable of 20 contact hours per fortnight. All our teaching staff are Science trained, and therefore qualify as specialists to teach KS3 science. Many staff have developed expertise beyond their initial area of specialism and can be considered specialists in more than one subject, and this provides us with some flexibility with regard to staffing. Our current KS4 specialisms are Biology (3 full time teachers and 1 part time teacher), Chemistry (3 full time teachers) and Physics (1 full time and 1 part time teacher). One full time teacher completes their second year of ECT in July 2023. Previous advertisements for teaching posts have revealed limited access to physics specialist and for this reason the head of department has taught KS4 physics to ensure we can meet needs of future science cohorts. Currently our department boasts lots of expertise, both in teaching and in teaching at St Mary's.

### Current staffing

	Number of years in teaching	Number of years at St Marys.
Teacher 1	37	34
Teacher 2	21	21
Teacher 3	23	10
Teacher 4	18	13
Teacher 5	15	14
Teacher 6	14	5
Teacher 7	2	1

The syllabi offered at St Marys are curriculum heavy. Pupils at KS3 have 6 hours of curriculum time across a two week timetable. Pupils following the combined science course at KS4 receive 10 hours of curriculum time across a two week timetable, with those following the accelerated separate sciences course afforded 12 hours of curriculum time across a two week timetable.

Exam results are usually compared against FFT20 targets. Biology and Chemistry regularly exceed these stretching targets, with Physics and Combined Science striving to match them. Those pupils that leave us for A-Levels often choose a science. Of those progressing to our local sixth form, of our 2023 cohort, 50% of our separate science pupils take a science course (37 of 64), and 66% of our combined science pupils move on to take a science course (23 of 33).

## Curriculum

Science is the pursuit and application of knowledge and understanding of the natural and social world. This is achieved by following a systematic approach to gather evidence leading to testable theories. Science develops questioning skills, ensuring our future generations don't accept statements at face value, but probe the value, reasoning and evidence behind the top line. This is all supported by the six question words....

- *Who?*
- *How?*
- *Why?*
- *When?*
- *Where?*
- *What?*

At St Mary's, our pupils study Biology, Chemistry and Physics using a narrative-based approach. Ideas are introduced within relevant and interesting settings helping learners to anchor their conceptual knowledge of the range of scientific topics required at GCSE level.

Practical skills are embedded within the specification and learners are expected to carry out practical work in preparation for a written examination that will specifically test these skills.

At Key Stage Three, our pupils study a curriculum split into shorter units of work, with the schemes of work specifically created to ease transition from KS3 to KS4. Many of the more difficult concepts at KS4 are introduced and there is also opportunity to develop exam technique.

At Key Stage Four. Pupils experience one of two pathways. Those pupils more able to manage the extra demand are offered three separate GCSE courses. These are accelerated courses, with one additional hour per fortnight to study an extra (third) GCSE. The rest of the cohort study the Combined Science course, which culminates in the award of two GCSE grades. The units of work studied are similar, however the separate GCSE courses have additional content not covered by the combined Science course. This becomes increasingly different as the course progresses, and does some leave some space for movement across courses up until the end of year ten.

At KS4, we have begun to develop pupil specific feedback after end of unit tests which are used to provide analysis of areas of weakness, and further 'next steps' work is provided to address these areas.

The department regularly meet to share best practice and to review and update our curriculum. The most recent update includes the addition of literacy specific and careers specific content to our key stage three schemes of work. We have recently added a 'cultural capital audit' and this is an area which will need further focus over the upcoming year. These updates support the specific target areas of the school improvement plan.

### **Enrichment**

From the January of year eleven, pupils are supported with weekly after school revision sessions. These are run by subject specialists and offer opportunities for tailored revision of those topics pupils find more challenging.

As well leading science provision, all teachers are engaged as form tutors allocated to specific forms, and support the pastoral role of the school. This includes the delivery of 'Learning for Life; consisting of delivery of careers, RSE and citizenship teaching. Staff are also fully involved in the support of sports day, visits during work experience week, and immersion days. Our technicians are regularly 'made available' to help supervise trips and visits for departments across the school and previously have been key members whilst carrying out in school Covid testing.

The Science department run an annual outreach 'Science festival' for local primary schools. This invites year 5 and 6 pupils from primary schools into St Mary's to experience the world of science through guest speakers and interactive workshops. This has been funded through the school budget and has been in place since 2006.

