

Science Curriculum Statement

In line with our whole school curriculum statement, Saint Aidan's is a Church of England High School with an inclusive Christian ethos. Our vision is:

- We **aspire** to be a school where life is lived in "all its fullness" (John 10:10).
- We **believe** in the God-given potential of every one of our students.
- We **succeed** by working together as a school where all can thrive and where excellence is valued.

As a result the science curriculum is designed to match this vision, whether in formal lessons or in the wider experience of students.

The formal science curriculum

Aims: Through the teaching of science at Saint Aidan's we aim:

- to stimulate, develop and maintain students' **interest and enjoyment** in science
- to illustrate the **relevance of science** to every aspect of students' lives, so they may each understand its importance as a subject
- to celebrate students' **natural curiosity** in the world around them, and encourage them to apply their **scientific knowledge to explain everyday** observations and processes
- to develop the **scientist in every individual**, so that each students' **success in science** is maximized
- to promote **STEM careers** with students of all ages and encourage all students to investigate the **employment possibilities** science can offer
- enhance each student's **literacy skills** so they may communicate their ideas accurately, make effective use of relevant **scientific vocabulary**, and **decipher questions** correctly through **confident reading**
- to promote a **variety of teaching and learning** methods (including **practical work**) to raise the achievement of students working **individually, in pairs or in groups**
- enhance students' **numeracy skills** so they can perform **calculations**, read and plot **graphs**, and **analyse data** well
- to develop students' **resilience** and encourage them to become more **independent in their learning**, to increase rates of progress and **develop study skills** that might stay with them **beyond** their time at St. Aidan's
- to encourage students to **identify links between science and other subjects** (such as maths, English, history, geography, P.E. and technology)
- to provide **continuity and progression** from KS2, through KS3 and KS4 and **prepare students** for science at KS5, and for life and work outside of education

Objectives: By the end of their education in science at Saint Aidan's all students should be able:

- to **recall a breadth of scientific knowledge and be able to apply it** to explain both familiar and unfamiliar situations
- to **plan scientific investigations** safely, recalling the correct names of the relevant **scientific apparatus** and identifying appropriate **variables**
- to be able to **analyse data and evaluate** its validity, reliability and accuracy
- to approach a variety of **scientific problems** with **confidence**, drawing on a range of well- established practical, numeracy and literacy skills to **achieve individual success**
- to obtain the **highest science GCSE grades** they are capable of

Key Stage 3

At Key Stage 3, all students have **three hours per week of science**; comprising one hour each of biology, chemistry and physics. Where possible, these lessons are provided by a science subject specialist, and in all cases, by a **science specialist**. Teachers follow a scheme of learning written in-house by the biology, chemistry and physics specialists, using information from the national curriculum to ensure full coverage. Each lesson plan provides guidance on how to **support and stretch** each student.

Year 7

Students are taught in one of six whole- school teaching groups, which are **largely mixed ability**. Students joining us in Year 7, sit a **baseline scientific enquiry skills test** in September.

Year 8

Students are taught in one of six whole- school teaching groups, which are **largely mixed ability**. There is a top, middle and bottom set on each half of the year group, keeping six classes in total.

Year 9

Students are placed into sets for science. Decisions are based on both formal and informal data collected over the previous two years. Once **GCSE pathway decisions** are made in December/ January we then make additional minor set changes, allowing us to **begin delivery of the GCSE** specifications for the last 5 months of this academic year (Jan-May).

Key Stage 4

Students' pathway is confirmed following their progress through the latter part of Year 9 in particular, and students' are put into one of **sets**, depending upon ability and GCSE science pathway.

Students at KS4 each receive **6 hours per week** of science; comprising **two hours each of biology, chemistry and physics**. All lessons are delivered by **science subject specialists**.

Students follow either the AQA Combined Science (Trilogy) 8464 specification giving them a double award, or all three separate sciences: AQA GCSE Biology 8461, AQA GCSE Chemistry 8462 and AQA GCSE Physics 8463.

Assessment

Regular assessment through class work, homework, knowledge and skills check points, scientific enquiry skills tests and formal knowledge & understanding based examinations measure student progress and inform teachers' planning. In Year 11, all formal assessments are made from questions from the **secure area of the AQA website**.

KS3 students are given a target range; and KS4 students have a minimum and also an **aspirational** GCSE target grade. These targets are based on whole school data received from KS2, and are tweaked according to our own progress data in school. Teachers have **ambitious expectations of all students** and encourage students to take a pride in their own progress. Students are involved in identifying their own strengths and areas for development following each assessment and are given advice on how to improve for next time.

Beyond the formal science curriculum

Throughout the five years, students have access to a **variety of clubs, competitions, trips and visitors** to **enrich** the science curriculum, and **promote STEM** careers.

Examples in recent years have included, Nature Club, the Hovercraft Challenge, visit to a Tim Peake lecture, KS4 School Physicist of the Year and GCSE Science Live!

From Year 9, students also have the opportunity to study **GCSE Astronomy** as an extra- curricular activity through our links with the Rossall School's Space Centre.