

Science

Welcome to Science!

We are all passionate scientists who believe that understanding scientific thinking is fundamental to making decisions in society that could affect ourselves and others. It also enables us to broaden our minds in order to make informed decisions about all aspects of our lives. We are passionate about the subject as a way of understanding the universe and the excitement and enjoyment it can bring to how we view the world around us. We encourage the study of Biology, Chemistry and Physics equally and separately, but recognise the common skills required by all three.

We believe that the study of Science gives pupils the essential skills for decision making in whichever area they study in the future. The study of Science also paves the way to a vast array of careers and job opportunities whether they require pure scientific knowledge or an application of the skills and understanding gained through the study of the subjects.

Fundamental skills essential for Science include the analysis of data, the communication of ideas through speech and writing, the application of knowledge to explain natural phenomena and make predictions, the use of evidence to conclude and the use of practical skills to carry out experiments.

We love Science and our aim is to spread this enthusiasm to ensure the next generation of scientists are as prepared as they possibly can be for the world outside.

Our curriculum

At each Key Stage we have tailored the curriculum not only for academic success but to enrich the lives of the students studying the subject. We have designed practical based courses to prepare students for the new generation of qualifications and encourage their engagement with the subject.

At Key Stage 3 (Year 7 & 8) students follow a two year course with a large number of experiments split into distinct Biology, Chemistry and Physics units. Students develop their scientific skills through a wide range of activities designed to prepare them for GCSE and to enthuse and excite them about the subject.

At Key Stage 4, which starts in Year 9, students follow the AQA specification. Students continue to build upon their skills from Key Stage 3 with separate Biology, Chemistry and Physics classes. Assessment for the new generation of qualifications is one hundred percent by examination. Students will be entered for the AQA Trilogy exam (where they will cover all 3 sciences with reduced content) and be awarded a double GCSE in Science, or they will be entered for the 3 separate sciences to achieve 3 distinct Science GCSE's. The current Year 11 cohort are the final year of the previous specification and have a Controlled Assessment Unit that makes up 25% of the qualification.

To improve the exam success of our pupils, we have introduced skills sessions each week for Year 11 classes. During this time they work in the main hall at exam desks to practise their exam technique and timed responses to questions.

At Key Stage 5 we offer Biology (SNAB Edexcel), Chemistry (OCR) and Physics (OCR) A Levels, as well as L3 BTEC in Applied Science. All A Levels are 100% assessed through examination at the end of Year 13. There is an additional option for an AS qualification to be taken in Year 12. The L3 Applied Science BTEC course is assessed through a combination of examinations and coursework.

Enrichment and extracurricular activities

In the Science department we run a Key Stage 3 Science club at lunchtimes which is very popular with Year 7 and 8 students. We also have several extra-curricular catch up clubs for Key Stage 4 and Key Stage 5 students who want to boost their learning and understanding through journal clubs and subject enhancement sessions.

We celebrate Science week every March with special events and activities inside and outside lessons and work with departments across the school as well as coordinating tutor group activities to raise the profile of the subject.

We lead a number of trips during each term including to the Natural History Museum, King's College London and Juniper Hall Field Centre near Box Hill.

Support within Science

We provide extensive support for students in each Key Stage within the Science Department. Our team of learning support assistants are attached to many Science lessons and provide valuable support for students in Key Stage 3 and Key Stage 4.

We have three Technicians who also provide extra support for the department. The technician team specialise in Biology, Chemistry or Physics and assist with demonstrations and practical lessons.

At each Key Stage we run a large number of support sessions targeting students who are underachieving compared to their expected grades. We send letters home inviting pupils to specific intervention sessions with specialist teachers to work in small groups with pupils to boost their understanding, recall and analysis.

Subject Leaders:

Biology: Iona Whittington - iwhittington@carshaltonboys.org

Chemistry: Daniel Edgar - dedgar@carshaltonboys.org

Physics: Maria Wieland - mwieland@carshaltonboys.org