



# The Billericay School

A specialist maths and computing school

## Science Department



### **Science department aims and rationale.**

Our aim is to deliver a broad and balanced science education which prepares all our students for their future lives, either in the world of work or further education. We all strive to present lively, stimulating and exciting lessons which not only develop our student's investigative skills and generate real interest, but also equip them with a knowledge and understanding of key scientific principles.

Strong emphasis is placed on the active involvement of our students in their learning process and they are exposed to a wide range of teaching and learning activities. This variety provides many opportunities for students to enhance many skill areas such as thinking, ICT, problem solving, reasoning, independent learning, performance, information processing, enquiry, creative thinking, evaluation and the ability to work with others.

### **Department facilities**

Since extensive improvements in 2012 the science department boasts 13 well equipped labs. Alongside this we have 4 exceptionally well equipped prep rooms, facilitated by experienced technicians, and a shared work area.

### **Curriculum**

In Year 7 and 8 all students receive three lessons (60 minutes each) of Science a week. Our Wikid UPD8 course ensures that every science lesson, whatever the topic, gets students motivated to learn. Themed units set science in relevant contexts, which ensures that the engagement becomes real understanding. Wikid teaching sequences are built from the ground up on the best learning research.

Students begin studying GCSE Science in Year 9 and most will sit AQA GCSE Combined Science Trilogy in Year 11. Our most able students are invited to study Single Sciences leading to three separate GCSEs in Biology, Chemistry and Physics. Year 9 students receive 6 hours a fortnight of curriculum time with this increasing to 9 hours in Year 10 and 11 with extra time allocated in Year 11 for those students completing Single Sciences.

## **Key Stage 5**

Science 'A' levels have always been a popular choice for our 6<sup>th</sup> form students. Our alumni include students taking medicine, going to Oxbridge and gaining awards from some of the most prestigious universities in the country.

## **Biology**

Biology is always a popular choice at The Billericay School, recruiting between 25 and 30 students each year. We currently have two Year 12 classes and one Year 13 class all following the OCR Biology A course. Students are provided with extensive resources, including 24-hour access to the Pearson on-line textbook and topic based exam question packs for each chapter. Our teachers are enthusiastic and imaginative, guiding our students to excellent results year on year. The practical work that we carry out underpins the whole course, as well as contributing to the Practical Endorsement award. A strong technical team supports our teaching. We strive to provide our students with relevant enrichment activities throughout the course, and our year 12 students attend a residential field trip to Flatford Mill each summer.

## **Chemistry**

Chemistry is becoming an increasingly popular choice at A Level and there is currently one Year 12 class and one Year 13 class following the OCR Salters (B) A Level Chemistry course. Practical work is central to the course and we have a well-equipped A Level Chemistry department with fume cupboards and ample space for practical work. Every room has a projector, a teacher's computer and there is access to laptops and a variety of data logging equipment for the students to use in these rooms. We have a tradition of enthusiastic teachers and technicians who support and encourage the students to extend their practical work in extension lessons after school or at lunchtime. The department involves students in extracurricular activities such as spectroscopy workshops and visits to The Royal Society's summer science exhibition or A Level Study events with leading Chemistry speakers.

## **Physics**

Physics at The Billericay School is always well subscribed and we currently have one Year 12 class and one Year 13 class following the Edexcel A level Physics course. Specialist Physics teachers, who are enthusiastic about their subject, teach and support students. Students are provided with a textbook for personal use at home, as well as topic specific student booklets that contain a topic checklist, key word list and past paper questions. Practical work is undertaken extensively, enriching theory and the students' subject knowledge, as well as leading to the Practical Endorsement requirement of the course. The department is well equipped and supported by conscientious and skilled technicians. Enrichment opportunities, such as Physics in Action lectures, are offered and students can take part in the British Physics Olympiad, both in Y12 and Y13.