Thomas Telford School
QUALITY THROUGH COOPERATION

Science Department Curriculum Statement

Intent

As a department our key aim is to engage all students and help them to identify and understand the science in the world around them. Through our diverse and challenging curriculum we aspire to equip learners with a variety of transferable skills that can be applied in the workplace across a range of careers, not only in the field of Science.

We strive to constantly evaluate and evolve our curriculum to ensure that students' knowledge is built up in a logical and incremental way which is vital for a thorough understanding of complex scientific concepts. We have recently refined our KS3 curriculum and enhanced our assessment methods in both KS3 and KS4 to focus on assessing cumulative knowledge and skills to gain a better understanding of individual student's command of Science whilst also identifying detailed targets for development.

Implementation

In Year 7 students are introduced to the fundamentals in Biology, Chemistry & Physics which form the building blocks for all other knowledge. Learners are also taught the 'vocabulary' of Science which are the skills that will underpin all aspects of Science up to GCSE and beyond. From Year 8 upwards, students are taught by skilled subject specialists who are keen to pass on the mastery of their own discipline.

Practical skills are an integral part of the Science curriculum and due to the longer lessons are seamlessly embedded in the day-to-day teaching. Creative timetabling and a wealth of resources enables all students have access to practical work at relevant points. Appropriate and timely assessments are used to check the cumulative knowledge and skills gained by students, to identify those who require extra support whilst highlighting those who are thriving and warrant enhancement opportunities.

Developing reading and communication skills within Science is key to promoting good outcomes and well-rounded individuals. Students are encouraged to further their understanding of current issues by referring to scientific journals in the Library and online. Development of examination technique focusses on identification of command words, the need to thoroughly process all information and the accurate use of subject specific vocabulary.

Session 3 activities have proved immensely popular and focus on enrichment and consolidation. Biology Field trips make use of the local environment whilst Physics A level students have had the opportunity to visit CERN. The Year 7 trip to Chester zoo puts the topics of adaptations, conservation and habitats into context.

Impact

Outcomes in the Science department are very favourable when compared to national standards in terms of attainment and progress. Sciences are incredibly popular in the Sixth Form with an average of 140 students studying at least one of the A levels in Biology, Chemistry or Physics. We have had great success with students progressing to prestigious universities to study Science based subjects, such as Medicine, Veterinary Medicine and Dentistry. Science is also the most successful department in the school when it comes to preparing students for studying at Oxford and Cambridge via our personalised mentoring programme.

A highlight of the School calendar is the Year 8 Science Fair. Students work in small groups to plan and carry out their own investigation, culminating in an exhibition of their work which is presented to teachers, parents and externally invited guests. This celebration of Science highlights the skills students have acquired throughout the process in order to reach this point; team work, communication and presentation.

The teachers in the Science department are always keen to share their love of the subject through well attended session 3 activities such as the KS3 Science club, Medical Society, Lego Robotics and STEM competitions.