



KING EDWARD VI HANDSWORTH SCHOOL FOR GIRLS

The Science Department

The Science Department

Science is one of the largest departments in the school and takes a key role in implementing new learning and teaching strategies, looking at novel ways to integrate ICT into the classroom. We run several science based clubs and use links with Mathematics and Technology to increase the girls' awareness of STEM related careers.

The Science Department at King Edward VI Handsworth is extremely well equipped in terms of practical equipment, lab space and experience of the existing staff. We have a history of successfully mentoring newly qualified teachers and those embarking on ITT.

The Science Department completed an extensive refurbishment program in March 2015. This included 5 new full size laboratories, a new Biology preparation room and a new spacious staff workroom as well as new pupil toilets and carpets in the communal hall areas. The whole department now consists of 15 well equipped laboratories and a demonstration classroom. These are all maintained by our experienced team of 3 technicians. Each lab has an interactive white board. The Biology Department is a keen adopter of new technology to support learning and has invested in providing the latest equipment to teachers.

At present the Science department has the following members of staff:

Biology Department

Dr Andrew Bailey (Subject Leader Biology)

Mrs Trudy Kirby

Miss Emma Lock (Pastoral Leader Y10)

Mrs Mahmooda Begum

Mrs Harbinder Flora

Mrs Magdalena Townsend Espinosa

Mr Mohsin Ghaffor (Biology Technician)

Chemistry Department

Mr Jonathan Whitehead (Subject Leader Chemistry)

Mrs Gurvinder Bajaj

Dr Ross Perrins

Mrs Nageena Hussain

Ms Natalie Samuels (Pastoral Leader Y9, also Teacher of Physics)

Mr Dilbagh Raja (Chemistry Technician)

Physics Department

Mr Mohammad Nawaz (Subject Leader Physics)

Ms Davina Campbell-Jackson (Science Beyond The Curriculum Coordinator)

Mr Charles Trotter (Assistant Head)

Mr Andy North

Mr Allan Lock (Physics Technician)



The ethos of the Biology Department

We are keen to continue our trajectory of significant improvement over the past few years. We are prepared to take calculated risks in seeking ways of enhancing each girl's progress in, and enjoyment of, Biology. Our aim is to be a friendly, collaborative, stimulating and supportive Department that strives for excellence through challenging, investigation-based study that is informed by research-based pedagogy. In recent years, we have, as part of a whole-school initiative, developed our understanding of Cognitive Load Theory and the development of memory and are continually embedding understanding of these into our schemes of learning and classroom practice. We welcome any teacher bringing new ideas into the department and are not afraid of new pedagogical thinking!

KS3

Years 7 and 8

Year 7 & 8 are taught each science for one 50-minute period a week, in form groups. In Y7 Biology, all pupils follow a bespoke Biology curriculum based on the BEST (Best Education in Science Teaching) resources. In Y8, all pupils follow a bespoke Biology curriculum based on the AQA Activate resources, although we plan to unify these schemes of learning shortly. For both years, the curriculum aims are to:

- Make all science relevant and contemporary.
- Bridge the gap between primary and secondary science education.
- Identify and correct student misconceptions.
- Develop students' retrieval skills, thereby embedding a solid biological foundation.

Pupils are continually assessed throughout the unit and in an end of unit assessment.

Year 9

Year 9 Biology groups have one double (100 minute) lesson per week. The students start their AQA GCSE Biology course, incorporating the new Required Practical Experiments and skills which fit in with those topics. The students have frequent end of topic test in order to track their progress throughout the course.

We have recently completed a re-ordering of our GCSE Biology Scheme of Learning, in order to approach a more "spiral" nature of learning, regularly revisiting, and building upon, prior topics.

KS4

Year 10 and 11 continue their study of AQA GCSE Biology, which they started in Year 9.

Both Year 10 and 11 have 5 x 50 min Biology lessons per fortnight, with two double (100 min) lessons each fortnight.

KS5

Year 12 and 13

Biology is a very popular subject at A-Level, and the provision we make for the subject is expanding. Currently the Department has approximately 100 students in five teaching groups in both Year 12 and Year 13.

The Department follows the AQA A Level Biology specification (7402).

The A Level Modules studied are:

Y12

4.1 Biological Molecules

4.2 Cells

4.3 Organisms exchange substances with their environment

4.4 Genetic information, variation and relationships between organisms

Y13

4.5 Energy transfers in and between organisms

4.6 Organisms respond to changes in their internal and external environments

4.7 Genetics, populations, evolution and ecosystems

4.8 The control of gene expression

Students are assessed on their Practical skills throughout the course through completion of 12 Required Practical Investigations.

The students are taught for eleven 50min periods per fortnight, shared between two teachers. Most lessons are double (100min) lessons that support thoughtful practical work.