



KING EDWARD VI HANDSWORTH SCHOOL FOR GIRLS

Computer Science Department

Staffing

Mrs Elizabeth Brown	Head of Computer Science
Miss Samantha Badchkam	Teacher of Computer Science and Technology
Mr Colin Jackson	Teacher of Computer Science and Technology
New Appointment	ICT Systems & Network Manager
Mr Usman Salim	Senior ICT Technician
Mr Jagjit Bains	ICT Technician

Computer Science is taught as a discrete subject in Key Stages 3, 4 and 5.

Facilities

There is a school-wide cabled and wireless network with over 400 PCs. We have a managed wireless network which is due to be upgraded later this year and we use the Windows 10 operating system. There are 6 dedicated computer suites which are available for departments to book for lessons when not in use for discrete Computer Science or Technology lessons. All classrooms in the school are equipped either with an interactive screen or with a data projector standard or interactive whiteboards depending on departmental requirements. All staff are provided with a laptop. A wide range of software is available on computers including Microsoft Office 2019. Department specific software is available, for example in Computer Science we use a range of software including Python 3, Haskell and Flowol. Moodle VLE is available for all departments and students to use. All staff and students have their own Google account providing access to Gmail, Google Drive and Google Classroom. Computer facilities are made available to students during lunchtimes.

External Examinations

Computer Science is well established as an examination subject in the school. It is a very popular optional GCSE for students in Key Stage 4 – we currently have 96 students in Year 10 and 56 students in Year 11 who are studying for the AQA Computer Science GCSE, specification 8525. A Level Computer Science has been offered since September 2016 and we have 20 A Level students in Year 12 and 12 A Level students in Year 13. Common with other subjects at the school, we do not offer AS Level. We follow the AQA Computer Science A Level course, specification 7517D. The main programming language we use at both GCSE and A Level is Python 3, although some students use additional languages when undertaking their A Level NEA Programming Project.



Students studying in one of the computer suites.

Timetable

Computing is compulsory for all KS3 students. We operate a fortnightly timetable and the current structure, in which all lessons last 50 minutes, is as follows:

Year 7: 3 lessons a fortnight

Year 8: 4 lessons a fortnight

Year 9: 2 lessons a fortnight

KS4 GCSE: 5 lessons a fortnight.

KS5 A Level: 11 lessons a fortnight.

Accommodation

Lessons are taught in one of the Computer Suites in the Main School building – the rooms are equipped with an interactive screen at the front, 32 student PCs and a teacher PC.

Courses Taught

Schemes of learning are written in line with National Curriculum and examination board specification requirements. Our aim is to provide a high quality computing education that equips students to develop into increasingly independent & discerning learners, creators and users of digital systems and content.

Key Stage 3 schemes are designed to prepare students for life in an ever-changing digital world as well as developing their thinking and computational skills and helping to prepare them for their future studies. Schemes are designed to encourage deep learning and metacognition as well as delivering Computer Science content. Students use a range of software including Microsoft Office and develop programming skills, initially with Scratch and, from Year 8, Python. Problem solving and exploring different solutions is encouraged both in the design of computer programs and the approach taken. Students are encouraged to develop as independent and collaborative learners who embrace the challenge of problem solving.

At Key Stage 4 students study the AQA 8525 Computer Science GCSE specification which is designed to equip learners with the logical and computational skills necessary to succeed at A Level, in the workplace and beyond. The GCSE is assessed through two written examinations sat at the end of the course in Year 11. The programming language used at Key Stage 4 is Python 3 and students are required to undertake programming challenges as part of the course. Other topics studied include data representation, computer systems and networks, cyber security and the impacts of digital technology on society.

In Key Stage 5 we follow the AQA 7517D Computer Science A Level which is designed to help students develop the knowledge, understanding and skills needed to progress to higher education or thrive in the workplace. Assessment is through two examinations and a non-examination assessment (NEA). Paper One is an on-screen examination, Paper Two is a written examination and the NEA is a practical computing project. Students continue to use Python 3 as their main programming language in Key Stage 5 but some also use other languages for their NEA and all learn about procedural, object-oriented and functional programming techniques. Other topics studied include data structures, algorithms, theory of computation, data representation, computer systems, architecture, networking and databases.



GCSE students creating a flow chart to plan a computer program

Students are encouraged to use computer rooms at lunchtimes and we have a Computer Club in which students can explore computing beyond the taught curriculum, for example programming Microbits and Raspberry Pi Computers. Many students participate in national competitions, for example UKBebras.

Further Information

This is a forward thinking and innovative department committed to raising standards in teaching and learning. The successful candidate will be joining a hard-working department with enthusiastic staff who want to continue to innovate in order to inspire and enthuse the next generation.

E Brown
Head of Computer Science
March 2022