KING EDWARD VI HANDSWORTH SCHOOL FOR GIRLS

Computer Science Department

Staffing

Mr Tim Pentland	Head of Computer Science
Mr Zack Solomon	Teacher of Computer Science
Mr Sandeep Beedh	Teacher of Computer Science
Mr Curtis Reid	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 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 365 and Teams. Department-specific software is available, for example in Computer Science, we use a range of software including Python 3, Kodu and Flowgorithm. All staff and students have their own Microsoft 365 accounts providing access to Teams, OneDrive, and Outlook. Computer facilities are made available to students during lunchtimes.

Students studying in one of the computer suites.

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 11 and 92 students in Year 10 who are studying for the OCR Computer Science GCSE (J277). At A Level, we have 15 Computer Science students in Year 12 and 11 in Year 13. Common with other subjects at the school, we do not offer AS Level. We follow the OCR Computer Science A Level course (H446). The main programming language we use at both GCSE and A Level is Python 3, although some students use additional languages such as JavaScript, HTML & CSS when undertaking their A Level NEA Programming Project.

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 and 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. In addition to programming and computational thinking, students study cyber security in Key Stage 3, where they learn about the importance of protecting digital systems, the basics of cryptography, and how to defend against cyber threats. This focus on cyber learning equips students with critical skills needed to navigate and secure the digital world.

At Key Stage 4, students study the OCR 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.

GCSE students creating a flow chart to plan a computer program

In Key Stage 5, we follow the OCR 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.

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.

Competitions

Our students are encouraged to participate in a variety of computing competitions to broaden their skills and knowledge beyond the classroom. Notable competitions include the UK Bebras Computational Thinking Challenge and the CyberFirst Girls competition. These events provide students with opportunities to test their problem-solving abilities, learn new skills, and compete with their peers at a national level. Many students participate enthusiastically, developing both their technical and teamwork abilities while representing the school with pride.

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.

T Pentland
Head of Computer Science
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