

The Computer Science curriculum

Computer Science curriculum vision

Computer Science prepares our students for the most important technology of our age. We're ambitious in driving our students to understand the technology they use every day. By the end of their time with us students should have the ability to explain how computers work, and use them to create impressive products.

The curriculum begins with understanding the foundations of all computer technology – 1s and 0s, which we call binary. Computers use billions of these every second to process and store everything from Minecraft to Mozart. Once we know the building blocks we start using them to construct our own computer programs. Students will be programming in Python by the end of Year 7, and creating their own websites by the end of Year 8. In Year 9 our students will learn some famous algorithms that are used to sort and search, before learning how to process data with Python and the BBC Micro:bits.

Key stage 3 – Units of study

Term	Year 7	Year 8	Year 9
Rotation 1	Binary and data representation Creating to impress (Office & email)	Computer Hardware and Booleans Building websites with HTML and CSS	Solving problems with computers (Algorithms) Digital citizens Processing Data with Python (Micro:bits)
Rotation 2	Algorithms (BBC Micro:bit) Programming in sequence (Python)	Presenting Data Iteration and Selection in Python	

Key stage 4 – Units of study OCR GCSE J277

Term	Year 10	Year 11
1	1.1 Systems architecture 1.2 Memory and storage	1.6 Ethics and legislation 2.3 Producing robust programs 2.5 Programming languages and IDEs
2	2.1 Algorithms 2.2 Programming fundamentals	2.2 Problem solving with programming 2.4 Boolean logic Trial exam prep
3	1.3 Networks	2.2.3 SQL Programming for the exam
4	1.4 Network security 2.2 Programming fundamentals	2.1 Algorithms for the exam paper.
5	1.5 Systems software	Review and exam preparation
6	2.3 Producing robust programs NEA task	

Key stage 5 – Units of study OCR A level H446

Term	Year 12	Year 13
1	1.1 Systems architecture 2.2 Problem solving and programming	3.1 – 3.4 The programming project 1.4.3 Boolean algebra 1.5 Legislation and ethics
2	1.2 Software and software development 2.2 Problem solving and programming	3.1 – 3.4 The programming project Exam skills: short answer questions
3	1.3 Exchanging data 2.2 Problem solving and programming	Applied problem solving Exam skills: programming 1.3 Databases and SQL
4	1.3 Exchanging data 2.2 Problem solving and programming	Applied problem solving Exam skills: programming Exam skills: 9 & 12 mark questions
5	1.4 Data types, data structures and algorithms 2.2 Problem solving and programming	Review and exam preparation
6	1.1 – 1.4 review 2.2 Problem solving and programming	