Key Stage 3 Computing	Curriculum intent	Curriculum content Computing National Curriculum Key Stage 3	Curriculum delivery Typical curriculum allocation: 2 hours a fortnight
Year 8 Transition project	To ensure that students have the basic ICT capability to use computer systems effectively.	**Word processing & file management** – Able to use standard functions of word processing applications and save/retrieve files. **Spreadsheet** – Perform basic calculations and create basic models/simulations. **Coding** – Understanding of sequence in at least 1 programming language/system.	Delivered in feeder middle schools. 3 activities designed to assess students' current skills in key areas of computing. **Assessment** 3 x 20min tests undertaken in feeder school and marked by Stratton to establish a baseline for students.
Year 9	Students can use computer systems effectively and safely. Equipped with the basic skills required in their future lives and employment, in a greater digital world. Students are prepared for the world of IT with an understanding of key programming constructs and common applications, but also exposed to topics from both IT and Computer Science qualifications at KS4 & KS5.	**ICT Essentials** – Introduction to school computer systems and resources. Overview of software required for all subjects. **E-Safety** – Understanding the risks of the internet **Programming** – developing programs using Makecode and Python. **Binary & Data representation** – How does the computer store and interpret information? **Hardware & Software** – What makes up a computer system?	Each topic is delivered over a half term with a mid-point formative assessment and an end-of-topic summative assessment graded against a given list of topic aims.

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Exam board link:
https://www.gov.uk/government/publications/national-curriculum-in-england-computing-programmes-of-study

Key Stage 4 Computer Science	Curriculum intent	Curriculum content OCR GCSE in Computer Science (J277)	Curriculum Delivery Typical curriculum allocation: 5 hours a fortnight
Year 10	Students will understand and identify the components of a computer and CPU, describing the flow of data through the registers and networks. Develop programs that can solve real world problems. Understand the importance of cyber security and the wider issues to computer science, involving ethical, cultural and environmental impacts of digital technology.	1.1 Systems Architecture 1.2 Memory and storage 1.3 Computer networks, connections and protocols 1.4 Network security 1.6 Ethical, legal, cultural and environmental impact 2.1 Algorithms 2.2 Programming fundamentals 2.3 Producing robust programs 2.4 Boolean Logic 2.5 Programming Languages and Integrated Development Environments **Computing Creative Time** – students are given 10% of curriculum time to build up their Computer Science skills working on a project of their own choosing.	Typically, each topic will be assessed formatively during lessons. A summative assessment using past paper questions will be used at the end of each topic to determine student knowledge base. Practical tasks will be assessed visually and with the aid of online tools.
Year 11	Construct truth tables and simple logic circuit diagrams. Be able to understand and apply the stages of software development. Extend and apply programming knowledge and understanding (incorporating robust and secure programming) to solve a real-world problem in a programming project.	1.5 Systems Software 2.2 Programming fundamentals 2.3 Producing robust programs **Computing 25** Students also undertake our own computing 25 programme, that incorporates 25 lessons, activities and ELA's to build on topics covered in year 10.	Students complete their programming project and gain an understanding of computer software. A summative assessment will be used at the end of each topic. Computing 25 lessons consist of lessons, exam paper questions and self-assessment activities on all course topics. **Assessment** **Paper 1** – Computer Systems 1 hour 30 mins – 50% of GCSE **Paper 2** – Computational thining, algorithms and programming 1 hour 30 mins – 50% of GCSE

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Key Stage 5 Computer Science	Curriculum intent	Curriculum content OCR A-Level in Computer Science (H446)	Curriculum Delivery Typical curriculum allocation: 9 hours a fortnight
Year 12	Students are able to think creatively, logically, critically and can demonstrate advanced problem-solving skills. Be confident in discussing the legal and ethical issues surrounding the use of computers. Students have built on their GCSE skills to gain an understanding of a wide range of complex, sometimes abstract, data structures and be able to develop algorithms that manipulate their data.	**1.1 The characteristics of contemporary processors, input, output and storage devices** **1.2 Software and software development** **1.4 Data types, data structures and algorithms** **2.1 Elements of computational thinking** **2.2 Problem solving and programming** **2.3 Algorithms** **3.1 Analysis of the problem** **3.2 Design of the solution** **3.3 Developing the solution** **3.4 Evaluation** Python is the main programming language used on the course, although any language can be used within the NEA coursework.	Typically, each chapter will be assessed formatively during lessons. A summative assessment using past paper questions will be used at the end of each topic to determine student knowledge base. Mock exams are used to establish progress towards mastery of topic areas.
Year 13	Demonstrate problem-solving skills and the range of methods to represent and classify both computable and non-computable algorithmic problems. Apply their design, programming and evaluation skills, to develop a substantial system for the non-exam assessment (NEA) Programming Project component. Demonstrate a theoretical and practical understanding of networking and communications for exchanging data.	**1.3 Exchanging Data** **1.5 Legal, moral, cultural and ethical issues** **3.3 Developing the solution** **3.4 Evaluation** With the use of the NEA coursework, some students chose to teach themselves a new language and/or to program for a different hardware platform (e.g. mobile phone applications).	Lessons are mixed between teaching/building on course topics as well as coaching students with NEA practical project. Summative assessments build on previous teaching and are used to direct students' learning on the run up to final exams. **Assessment** **Paper 1** – On-screen exam 2 hours 30 mins – 40% of GCSE **Paper 2** – Written assessment 2 hours 30 mins – 40% of GCSE **Non-exam assessment** 20% of A-level

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Exam board link:
https://www.ocr.org.uk/qualifications/as-and-a-level/computer-science-h046-h446-from-2015/