



Key Stage 4 Curriculum Overview

Progression from Key Stage 3 and optional progression through Post-16 :

	Autumn Term	Spring Term	Summer Term
Year 9			<p>Students at the end of Key Stage 3 will be able to:</p> <ul style="list-style-type: none">• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs• Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Year 10	2.1.1 Computational thinking 2.1.2 Designing, creating and refining algorithms 2.2.2 Data types 2.4.1 Boolean logic Revision lessons before summative assessment	2.1.3 Searching and sorting algorithms 2.2.1 Programming fundamentals 2.2.3 Additional programming techniques 2.5.2 The Integrated Development Environment (IDE) Revision lessons before summative assessment	2.5.1 Languages 1.1.1 Architecture of the CPU 1.1.2 CPU performance 1.1.3 Embedded systems Revision lessons before summative assessment
Year 11	1.2.1 Primary storage (Memory) 1.2.2 Secondary storage 1.2.3 Units 1.2.4 Data storage 1.2.5 Compression Revision lessons before summative assessment	1.3.1 Networks and topologies 1.3.2 Wired and wireless networks, protocols and layers 1.4.1 Threats to computer systems and networks 1.4.2 Identifying and preventing vulnerabilities Revision lessons before summative assessment	1.5.1 Operating systems 1.5.2 Utility software 1.6.1 Ethical, legal, cultural and environmental impact 2.3.1 Defensive design 2.3.2 Testing (appears full but topics are smaller in size) Revision lessons before summative assessment

By the end of Key Stage 4 students should be able to:

- Demonstrate knowledge and understanding of the key concepts and principles of Computer Science.
- Apply knowledge and understanding of key concepts and principles of Computer Science.
- Analyse problems in computational terms: • to make reasoned judgements • to design, program, evaluate and refine solutions.