

Curriculum Map Year 9 COMPUTING

Topic Name	Term	Skills developed with link to NC Subject content	Reflection on previous link in the curriculum	Progress to future link in the curriculum
Computational thinking	<i>Autumn HT1</i>	<ul style="list-style-type: none"> Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] 	<p><i>Year 7: Coding in Scratch part 1</i> <i>Year 7: Introduction to coding with Kodu</i> <i>Year 7: Coding in Scratch part 2</i> <i>Year 8: Python programming</i> <i>Year 8: Understanding computers</i> <i>Year 9: Python programming</i></p>	<p><i>GCSE: Basic programming constructs</i> <i>GCSE: Subroutines</i> <i>GCSE: Data structures, arrays and records</i> <i>GCSE: Structured programming</i> <i>GCSE: Boolean logic and expressions</i> <i>GCSE: algorithms, abstraction, decomposition and problem solving</i> <i>GCSE: Linear and binary searching</i></p>
Python programming	<i>Autumn HT2 and Spring HT 1</i>	<ul style="list-style-type: none"> Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions 	<p><i>Year 7: Coding in Scratch part 1</i> <i>Year 7: Introduction to coding with Kodu</i> <i>Year 7: Coding in Scratch part 2</i> <i>Year 8: Python programming</i></p>	<p><i>GCSE: Data types and operators</i> <i>GCSE: Variables, constants, inputs, outputs and assignment</i> <i>GCSE: Basic programming constructs</i> <i>GCSE: Subroutines</i> <i>GCSE: Data structures, arrays and records</i> <i>GCSE: Structured programming</i> <i>GCSE: classification of programming languages</i></p>
Graphics	<i>Spring HT1 and HT2</i>	<ul style="list-style-type: none"> Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability 	<p><i>Year 7: Using media</i> <i>Year 8: Understanding computers</i> <i>Year 8: Media: Vector graphics</i></p>	<p><i>GCSE: Bit patterns and binary,</i> <i>GCSE: Bitmaps</i> <i>GCSE: Binary representing data</i></p>
Cybersecurity	<i>Summer HT1</i>	<ul style="list-style-type: none"> Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns 	<p><i>Year 7: Impact of technology</i></p>	<p><i>GCSE: Computer networks, protocols and layers</i> <i>GCSE: Cybersecurity (Social engineering, malware, penetration testing)</i> <i>GCSE: Legal issues, impacts and risks on society</i></p>
Developing for the web: HTML	<i>Summer HT2</i>	<ul style="list-style-type: none"> Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users 	<p><i>Year 6: web page creation</i> <i>Year 7: Using media</i></p>	<p><i>Year 9: Media animations</i> <i>Year 9: Computational thinking and logic</i></p>

