

### Curriculum Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Year 7</b>	Collaborating Online Respectfully	Modelling Data (Spreadsheets)	Networks	Programming - Part 1	Programming - Part 2	Gaining support for a cause
<b>Year 8</b>	Computing Systems	Developing for the Web	Introduction to Python Programming	Vector Graphics	Mobile App Development	Representations
<b>Year 9</b>	Cyber Security	Data Science	Animations	Physical Computing	Python Programming with Sequences	Representations (Audio/Visual)
<b>Year 10 DIT</b>	Exploring user interface design principles and project planning techniques				Collecting, presenting and interpreting data	
<b>Year 10 ComSci</b>	Components of a Computer System  Algorithms	Systems Software  Programming basics with python and algorithm and algorithm	Data Representation  Programming basics with python and algorithm and algorithm	Networks  Programming with Python (intermediate)	Ethics and issues  Programming with Python (advanced)	Design, Testing and IDE's
<b>Year 11</b>	Collecting, presenting and interpreting data		Effective digital working practices			
<b>Year 11 ComSci</b>	Components of a Computer System  Algorithms	Systems Software  Programming basics with python and algorithm and algorithm	Data Representation  Programming basics with python and algorithm and algorithm	Networks  Programming with Python (intermediate)	Ethics and issues  Programming with Python (advanced)	Exams
<b>Year 12</b>	Unit 8 - Project Management		Unit 1 - Fundamentals of IT		Unit 17 - The internet of everything	
<b>Year 13</b>	Unit 2 - Global Information		Unit 4 - Computer Networks		Unit 1 & Unit 2 resit preparation	Exams

### Homework Focus

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	Seneca Learning course - Computer Science (KS3)					
Year 8	Seneca Learning course - Coding: Introduction to Python v3					
Year 9	Seneca Learning course - Coding: Introduction to Python v3					
Year 10 DIT	Exploring user interface design principles and project planning techniques				Collecting, presenting and interpreting data	
Year 10 ComSci	Seneca Learning course - Computer Science (OCR GCSE)					
Year 11	Collecting, presenting and interpreting data		Effective digital working practices			
Year 11 ComSci	Seneca Learning course - Computer Science (OCR GCSE)					
Year 12	Unit 8 - Project Management		Unit 1 - Fundamentals of IT		Unit 17 - The internet of everything	
Year 13	Unit 2 - Global Information		Unit 4 - Computer Networks		Unit 1 & Unit 2 resit preparation	Exams

### Enrichment Opportunities

	Year 7	Year 8	Year 9	Year 10 ComSci	Year 10 DIT	Year 11 ComSci	Year 11 DIT	Year 12	Year 13
<b>Suggested Experiences</b>	Programming lego robotics in preparation for the FLL tournament.	CodeCombat - Develop Python programming knowledge.	CodeCombat Ozaria - Develop Python programming knowledge.	Using repl.it at home, attempt the python programming challenges.	Enhancing subject knowledge - <a href="https://www.bc.co.uk/bitesize/examspecs/zdiphbk">https://www.bc.co.uk/bitesize/examspecs/zdiphbk</a>	Using repl.it at home, attempt the python programming challenges.	Enhancing subject knowledge - <a href="https://www.bc.co.uk/bitesize/examspecs/zdiphbk">https://www.bc.co.uk/bitesize/examspecs/zdiphbk</a>	Google certification (Discuss with Mr Verrall)	Google certification (Discuss with Mr Verrall)

### Links to the Year 7 National Curriculum

Terms	The National Curriculum
<b>Autumn Term</b>	<ul style="list-style-type: none"> <li>- Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> <li>- 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</li> <li>- Design, use, and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> <li>- 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</li> </ul>
<b>Spring Term</b>	<ul style="list-style-type: none"> <li>- Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>- 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 (e.g. lists, tables, or arrays); design and develop modular programs that use procedures or functions</li> <li>- Understand several key algorithms that reflect computational thinking; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>- Understand simple Boolean logic (e.g. and, or, and not)</li> <li>- Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability.</li> </ul>
<b>Summer Term</b>	<ul style="list-style-type: none"> <li>- To use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; to make appropriate use of data structures (for example, lists, tables, or arrays); to design and develop modular programs that use procedures or functions</li> <li>- To understand several key algorithms that reflect computational thinking; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>- To understand simple Boolean logic (for example, AND, OR, and NOT)</li> <li>- To create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability</li> <li>- 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</li> <li>- Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability</li> </ul>

### Links to the Year 8 National Curriculum

Terms	The National Curriculum
<b>Autumn Term</b>	<ul style="list-style-type: none"> <li>- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation</li> <li>- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.</li> <li>- Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming</li> <li>- Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems</li> <li>- Understand how instructions are stored and executed within a computer system</li> <li>- Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability.</li> </ul>
<b>Spring Term</b>	<ul style="list-style-type: none"> <li>- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation</li> <li>- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems</li> <li>- Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems</li> <li>- Understand several key algorithms that reflect computational thinking; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>- Understand how instructions are stored and executed within a computer system</li> <li>- Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> <li>- 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</li> <li>- Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</li> </ul>
<b>Summer Term</b>	<ul style="list-style-type: none"> <li>- Design, use, and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> <li>- 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</li> <li>- Understand several key algorithms that reflect computational thinking; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>- Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability</li> <li>- Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</li> </ul>

### Links to the Year 9 National Curriculum

Terms	The National Curriculum
<b>Autumn Term</b>	<ul style="list-style-type: none"> <li>- 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</li> <li>- 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</li> </ul>
<b>Spring Term</b>	<ul style="list-style-type: none"> <li>- Create, reuse, revise, and repurpose digital artefacts for a given audience, with attention to trustworthiness, design, and usability</li> <li>- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms, and data representation</li> <li>- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems</li> <li>- Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems</li> <li>- Understand several key algorithms that reflect computational thinking; use logical reasoning to compare the utility of alternative algorithms for the same problem</li> <li>- Understand how instructions are stored and executed within a computer system</li> <li>- Design, use, and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> </ul>
<b>Summer Term</b>	<ul style="list-style-type: none"> <li>- Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits</li> </ul>

### Links to the KS4/5 specifications

Courses	The Exam Specification
<b>Y10 Digital T</b>	<a href="https://qualifications.pearson.com/content/dam/pdf/btec-tec-awards/information-technology/2022/specification-and-sample-assessments/btec-tech-award-digital-information-technology-spec.pdf">https://qualifications.pearson.com/content/dam/pdf/btec-tec-awards/information-technology/2022/specification-and-sample-assessments/btec-tech-award-digital-information-technology-spec.pdf</a>
<b>Y11 Digital IT</b>	<a href="https://qualifications.pearson.com/content/dam/pdf/btec-tec-awards/information-technology/2017/specification-and-sample-assessments/Spec-BTEC-L1-2TECHAWD-DIT.pdf">https://qualifications.pearson.com/content/dam/pdf/btec-tec-awards/information-technology/2017/specification-and-sample-assessments/Spec-BTEC-L1-2TECHAWD-DIT.pdf</a>
<b>Y10/11 Computer Science</b>	<a href="https://www.ocr.org.uk/Images/558027-specification-gcse-computer-science-j277.pdf">https://www.ocr.org.uk/Images/558027-specification-gcse-computer-science-j277.pdf</a>
<b>Y12/13 ICT</b>	<a href="https://www.ocr.org.uk/Images/268867-computing-qualifications-summary-brochure.pdf">https://www.ocr.org.uk/Images/268867-computing-qualifications-summary-brochure.pdf</a>