

Yr10 (KS4)	Topic Area	Knowledge/Skills that are taught	Knowledge/Skills revisited	What does good look like?	Resources/support at home
Autumn 1	Unit 6 Programming	Data types and operations Sequence and selection Iteration Arrays and lists Subprograms Errors and testing Validation Files	Y7 Spring 2 Y7 Summer 2 Y8 Aut1 Y8 Spring 1 Y8 Spring 2 Y9 Aut2 Y9 Spring1 KS4 CS Programming KS5 CS Programming	<ul style="list-style-type: none"> <li>Understand and use data types: integer, real, Boolean, char and string</li> <li>Declare and use constants and variables</li> <li>Use input, output and assignment statements</li> <li>Use selection and nested selection statements</li> <li>Use NOT, AND and OR and relational operators when creating Boolean expressions</li> <li>Use random number generation</li> </ul>	Google classroom PG Online  <a href="https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2</a>  Replit <a href="https://replit.com/">https://replit.com/</a>
Autumn 2	Unit 2 Data	Storage units and binary numbers Binary arithmetic and hexadecimal Binary shifts and two's complement	No prior knowledge is essential with this unit. However, students should have a basic	<ul style="list-style-type: none"> <li>Define the terms bit, byte, kibibyte, mebibyte</li> </ul>	Google classroom PG Online

		<p>ASCII Images Sound Compression</p>	<p>understanding of computer systems from lessons delivered as part of the Key Stage 3 national curriculum.</p> <p>KS3 Understanding computers KS3 Graphics</p>	<ul style="list-style-type: none"> <li>• Understand that data needs to be converted into a binary format to be processed by a computer</li> <li>• Convert positive denary whole numbers (0-255) into 8-bit binary numbers and vice versa</li> <li>• Explain the need for data compression</li> <li>• Understand how bitmap images are represented in binary including the terms:             <ul style="list-style-type: none"> <li>- Pixels</li> <li>- Resolution</li> </ul> </li> </ul>	<p><a href="https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2</a></p> <p>Replit <a href="https://replit.com/">https://replit.com/</a></p>
Spring 1	Unit 3 Computers	<p>Components of a computer system</p> <p>The CPU and the Fetch-Execute cycle</p> <p>Secondary storage</p> <p>Operating system</p> <p>Utility software</p> <p>Identifying vulnerabilities</p> <p>Programming languages</p>	<p>KS3 Understanding computers</p> <p>Building on KS2 knowledge</p> <p>Y7 Aut1</p> <p>Y8 Aut 2</p> <p>Y9 Spring 2</p> <p>KS4 CS Systems architecture</p>	<ul style="list-style-type: none"> <li>• Components of a computer system</li> <li>• The CPU and the Fetch-Execute cycle</li> <li>• Secondary storage</li> <li>• Operating system</li> <li>• Utility software</li> <li>• Identifying vulnerabilities</li> </ul>	<p>Google classroom</p> <p>PG Online</p> <p><a href="https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2</a></p> <p>Replit <a href="https://replit.com/">https://replit.com/</a></p>

				<ul style="list-style-type: none"> <li>• <b>Programming languages</b></li> </ul>	
Spring 2	Unit 1 Computational thinking	Decomposition and abstraction Developing algorithms using flowcharts Developing algorithms using pseudocode Algorithm output, errors and trace tables Searching algorithms Sorting algorithms Truth tables	Y7 Spring 2 Y7 Summer 2 Y8 Aut1 Y8 Spring 1 Y8 Spring 2 Y9 Aut2 Y9 Spring1 KS4 CS Programming KS5 CS Programming Unit 2: Problem solving and theory of computation	<ul style="list-style-type: none"> <li>• <b>Understand flowchart symbols</b></li> <li>• <b>Understand arithmetic operators and variables</b></li> <li>• <b>Define the data types integer, floating point number, Boolean, character, string</b></li> <li>• <b>Be able to use arithmetic and relational operators</b></li> <li>• <b>Understand types of errors including:</b></li> <li>• <b>Syntax</b></li> <li>• <b>Logic</b></li> <li>• <b>Runtime</b></li> <li>• <b>Be able to apply logical operators in truth tables with up to</b></li> </ul>	Google classroom PG Online  <a href="https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2</a>  Replit <a href="https://replit.com/">https://replit.com/</a>

				<p>three inputs to solve problems</p> <ul style="list-style-type: none"> <li>Be able to follow and write algorithms using the following logical operators</li> <li>AND</li> <li>OR</li> <li>NOT</li> </ul>	
Summer 1	Unit 4: Networks	<p>LANs and WANs The Internet Wired and wireless connections Protocols and layers Network topologies Network security</p>	<p>KS3 Networks Y9 Aut1</p>	<ul style="list-style-type: none"> <li>Understand why computers are connected in a network</li> <li>Describe the difference between a Local Area Network and a Wide Area Network</li> <li>Explain the impact on performance of different network media: <ul style="list-style-type: none"> <li>Speed</li> <li>Range</li> </ul> </li> <li>Understand the characteristics of network topologies, including: <ul style="list-style-type: none"> <li>Star</li> </ul> </li> </ul>	<p>Google classroom PG Online</p> <p><a href="https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2</a></p> <p>Replit <a href="https://replit.com/">https://replit.com/</a></p>

Summer 2	Unit 5: Issues and impact	Environmental issues Ethical issues Legislation and privacy Cyber security	KS3 Using computers safely, effectively and responsibly Computer crime and cyber security AI and machine learning KS4 Unit 3 Computers	<ul style="list-style-type: none"> <li>• Discuss the environmental issues associated with the use of digital devices including:             <ul style="list-style-type: none"> <li>◦ Energy consumption</li> <li>◦ Disposal</li> </ul> </li> <li>• Understand the ethical issues of digital technology associated with the use of:             <ul style="list-style-type: none"> <li>• Robotics</li> <li>• Understand methods of intellectual property protection for computer systems and software including:                 <ul style="list-style-type: none"> <li>• Copyright Designs and Patents Act 1988</li> <li>• Discuss the threat of digital systems posed by malware including:                     <ul style="list-style-type: none"> <li>• Viruses, Trojans, key loggers</li> <li>• Understand how hackers exploit technical vulnerabilities to carry out</li> </ul> </li> </ul> </li> </ul> </li> </ul>	<p>Google classroom PG Online</p> <p><a href="https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2</a></p> <p>Replit <a href="https://replit.com/">https://replit.com/</a></p>
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				<ul style="list-style-type: none"> <li>cyberattacks including: <ul style="list-style-type: none"> <li>Unpatched software, out-of-date anti-malware</li> <li>Understand methods of protecting digital systems and data including: <ul style="list-style-type: none"> <li>Anti-malware, encryption, acceptable use policies, backup and recovery procedures</li> </ul> </li> </ul> </li> </ul>	
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Yr11 (KS4)	Topic Area	Knowledge/Skills that are taught	Knowledge/Skills revisited	What does good look like?	Resources/support at home
Autumn 1	Programming Project Unit 6 Revision	Data types and operations Sequence and selection Iteration Arrays and lists Subprograms Errors and testing Validation Files	Y7 Spring 2 Y7 Summer 2 Y8 Aut1 Y8 Spring 1 Y8 Spring 2 Y9 Aut2 Y9 Spring1 KS4 CS Programming KS5 CS Programming	<ul style="list-style-type: none"> <li>Understand and use data types: integer, real, Boolean, char and string</li> <li>Declare and use constants and variables</li> <li>Use input, output and assignment statements</li> </ul>	Google classroom PG Online <a href="https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/computer-science/gcse-edexcel/?tab=1cp2</a> PG Online Clear Revise Replit <a href="https://replit.com/">https://replit.com/</a>

				<ul style="list-style-type: none"> <li>• Use selection and nested selection statements</li> <li>• Use NOT, AND and OR and relational operators when creating Boolean expressions</li> <li>• Use random number generation</li> </ul>	<p>Seneca learning <a href="https://app.senecalearning.com">https://app.senecalearning.com</a></p> <p>Zigzag revision <a href="https://erevision.uk/">https://erevision.uk/</a></p>
Autumn 2	<p>Programming Project continued</p> <p>Unit 6 Revision</p>	<p>Data types and operations</p> <p>Sequence and selection</p> <p>Iteration</p> <p>Arrays and lists</p> <p>Subprograms</p> <p>Errors and testing</p> <p>Validation</p> <p>Files</p>	<p>Y7 Spring 2</p> <p>Y7 Summer 2</p> <p>Y8 Aut1</p> <p>Y8 Spring 1</p> <p>Y8 Spring 2</p> <p>Y9 Aut2</p> <p>Y9 Spring1</p> <p>KS4 CS Programming</p> <p>KS5 CS Programming</p>	<ul style="list-style-type: none"> <li>• Understand and use data types: integer, real, Boolean, char and string</li> <li>• Declare and use constants and variables</li> <li>• Use input, output and assignment statements</li> <li>• Use selection and nested selection statements</li> <li>• Use NOT, AND and OR and relational operators when creating Boolean expressions</li> </ul>	<p>Google classroom</p> <p>PG Online <a href="https://www.pgonline.co.uk/resources/compiler-science/gcse-edexcel/?tab=1cp2">https://www.pgonline.co.uk/resources/compiler-science/gcse-edexcel/?tab=1cp2</a></p> <p>PG Online</p> <p>Clear Revise</p> <p>Replit <a href="https://replit.com/">https://replit.com/</a></p> <p>Seneca learning <a href="https://app.senecalearning.com">https://app.senecalearning.com</a></p> <p>Zigzag revision <a href="https://erevision.uk/">https://erevision.uk/</a></p>

				<ul style="list-style-type: none"> <li>Use random number generation</li> </ul>	
Spring 1	Unit 1,2,3 Revision	See above	See above	See above	See above
Spring 2	Unit 4,5 Revision	See above	See above	See above	See above
Summer 1	Revision/Exams	Revision/Exams	Revision/Exams	Revision/Exams	Revision/Exams
Summer 2	Revision/Exams	Revision/Exams	Revision/Exams	Revision/Exams	Revision/Exams