



## Year 8 Curriculum Overview

**Rationale: The Year 8 curriculum is designed to give students an introduction to the principles of Computational Thinking and build upon prior learning from Year 7. Students will experience a range of modules which will help them to develop their understanding of computational thinking, computer control, algorithms, the importance of women in computing, an introduction to high level programming, binary representation of characters, images and sound plus key moments in computing history**

Term/Length of Time	Outline	Assessment/Teacher Feedback Opportunities	Homework and Literacy resources
Autumn 1	<p><b>Computational Thinking</b> Students will gain an understanding of the main theoretical concepts of Abstraction, Decomposition, Pattern Recognition and Algorithms.</p>	<p>MS Forms based end of unit assessment. Mixture of Open and Closed questions with an additional focus on keywords/literacy</p>	<p><b>Minimum homework expectation - to be set on G4S</b> Completion of revision activity using Seneca Learning</p> <p><b>Optional homework tasks and Literacy resources</b> Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity</p> <p>Complete some Bronze Award badges on the <a href="#">iDEA Award</a> to showcase digital literacy and employability skills. Once complete students can move to Silver and then Gold certificates</p> <p>Access <a href="#">BBC Bitesize</a> and research more into this topic</p> <p>Complete an activity on <a href="#">Hour of Code</a></p> <p>Watch an episode of <a href="#">BBC Click</a> on the BBC iPlayer</p> <p>Additional Reading for Budding Computer Scientists: <a href="#">Choose a book from this recommended reading list</a> some of which can be found in the department or the library</p>
Autumn 2	<p><b>Computer Control</b> Students will apply their learning of computational thinking to understand flowchart symbols and create algorithms in the form</p>	<p>MS Forms based end of unit assessment. Mixture of Open and Closed questions with an additional focus on keywords/literacy</p>	<p><b>Minimum homework expectation - to be set on G4S</b> Completion of revision activity using Seneca Learning</p> <p><b>Optional homework tasks and Literacy resources</b></p>

	<p>of flowcharts. Students will use specific software (e.g. Flowol) to apply their learning to create a series of algorithms that solve real life problems</p>		<p>Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity</p> <p>Complete some Bronze Award badges on the <a href="#">iDEA Award</a> to showcase digital literacy and employability skills. Once complete students can move to Silver and then Gold certificates</p> <p>Access <a href="#">BBC Bitesize</a> and research more into this topic</p> <p>Complete an activity on <a href="#">Hour of Code</a></p> <p>Watch an episode of <a href="#">BBC Click</a> on the BBC iPlayer</p> <p>Additional Reading for Budding Computer Scientists: <a href="#">Choose a book from this recommended reading list</a> some of which can be found in the department or the library</p>
Spring 1	<p><b>Introduction to Python Programming</b> Students learn how to open Python, save, run and retrieve files. Students learn how to create print statements, data types and calculations. Students understand and apply the theory behind variables and sequencing. Students understand the need for and importance of commenting on their code.</p>	<p>MS Forms based end of unit assessment. Mixture of Open and Closed questions with an additional focus on keywords/literacy</p>	<p><b>Minimum homework expectation - to be set on G4S</b> Completion of revision activity using Seneca Learning</p> <p><b>Optional homework tasks and Literacy resources</b> Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity</p> <p>Complete some Bronze Award badges on the <a href="#">iDEA Award</a> to showcase your digital literacy and employability skills. Once complete students can move to Silver and then Gold certificates</p> <p>Access <a href="#">BBC Bitesize</a> and research more into this topic</p> <p>Complete an activity on <a href="#">Hour of Code</a></p> <p>Watch an episode of <a href="#">BBC Click</a> on the BBC iPlayer</p>

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Spring 2	<p><b>Cyber Security</b> Students will gain an understanding of the main concepts of cyber security through an online platform called 'Cyber Explorers' developed by the Department for Digital, Culture, Media and Sport (DCMS).</p>	<p>MS Forms based end of unit assessment. Mixture of Open and Closed questions with an additional focus on keywords/literacy</p>	<p><b>Minimum homework expectation - to be set on G4S</b> Completion of revision activity using Seneca Learning or bespoke learning activity</p> <p><b>Optional homework tasks and Literacy resources</b> Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity</p> <p>Complete some Bronze Award badges on the <a href="#">iDEA Award</a> to showcase digital literacy and employability skills. Once complete students can move to Silver and then Gold certificates</p> <p>Access <a href="#">BBC Bitesize</a> and research more into this topic</p> <p>Complete an activity on <a href="#">Hour of Code</a></p> <p>Watch an episode of <a href="#">BBC Click</a> on the BBC iPlayer</p> <p>Additional Reading for Budding Computer Scientists: <a href="#">Choose a book from this recommended reading list</a> some of which can be found in the department or the library</p>
Summer 1	<p><b>Data</b> Students recap their understanding of data and binary, how to decode denary to binary, convert them to letters</p>	<p>MS Forms based end of unit assessment. Mixture of Open and Closed questions with an additional</p>	<p><b>Minimum homework expectation - to be set on G4S</b> Completion of revision activity using Seneca Learning</p> <p><b>Optional homework tasks and Literacy resources</b></p>

	<p>using ASCII. Students learn how to add binary numbers including the concept of overflow errors. How computers covert binary to images and sound.</p>	<p>focus on keywords/literacy/numeracy</p>	<p>Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity</p> <p>Complete some Bronze Award badges on the <a href="#">iDEA Award</a> to showcase digital literacy and employability skills. Once complete students can move to Silver and then Gold certificates</p> <p>Access <a href="#">BBC Bitesize</a> and research more into this topic</p> <p>Complete an activity on <a href="#">Hour of Code</a></p> <p>Watch an episode of <a href="#">BBC Click</a> on the BBC iPlayer</p> <p>Additional Reading for Budding Computer Scientists: <a href="#">Choose a book from this recommended reading list</a> some of which can be found in the department or the library</p>
<p>Summer 2</p>	<p><b>Key Moments in Computing History</b> This unit aims to provide students with an understanding of the history of computers and famous computer scientists including: Alan Turing and cyphers, Sir Tim Berners Lee and the internet, George Boole and logic gates.</p>	<p>Verbal teacher feedback on production of digital artefacts with a focus on keywords/literacy/numeracy</p>	<p><b>Minimum homework expectation - to be set on G4S</b> Completion of a reading task plus an MS Forms quiz to assess understanding</p> <p><b>Optional homework tasks and Literacy resources</b> Creation of revision resource (e.g. mind map) to be submitted alongside compulsory activity</p> <p>Find out more about Alan Turing <a href="#">here</a></p> <p>Access more information about the Internet at <a href="#">BBC Bitesize</a></p> <p>Access more information about Boolean Logic at <a href="#">BBC Bitesize</a></p>

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