

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic (s)	Getting to know CVCC Systems	Problem Solving & Computational Thinking Algorithms	Data Manipulation using Spreadsheets	Technological Developments - Back to the Future	Connecting Computers using Networks	Programming Skills
Topic Objectives	<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> </ul>	<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>design and develop modular programs that use procedures or functions</li> </ul>	<ul style="list-style-type: none"> <li>undertake creative projects that involve selecting , and combining multiple applications, including collecting and analysing data and meeting the needs of known users</li> </ul>	<ul style="list-style-type: none"> <li>understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]</li> <li>understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming</li> </ul>	<ul style="list-style-type: none"> <li>Understand how computers communicate with one another and with other systems</li> <li>design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems</li> </ul>	<ul style="list-style-type: none"> <li>Use programming languages to solve a variety of computational problems ; design and develop modular programs that use procedures or functions</li> <li>undertake creative projects</li> </ul>
Acquired Knowledge / Skills	Logging on, passwords & Acceptable Use Policy Network Areas & Teams File management Email	Intro to sequencing & Problem Solving Problem solving in action practice Problem solving - Bebras Challenge Using Selection Finding & Fixing Errors	Getting to know spreadsheets Quick Calculations Collecting data Functions Data Skills (large sets)	Alan Turing & Code Breaking – Encryption Sir Tim Berners-Lee and the World Wide Web George Boole & Logic Gates Charles Babbage & Ada Lovelace - Algorithms	Networks & protocols Networking hardware Wired & Wireless Networks The internet Internet Services	Intro to programming & sequencing Variables & selection Operators Iteration Problem solving

	Cyber Bullying	Story plan & Production	Conditional Formatting	Margaret Hamilton & Katherine Johnson - Debugging	The WWW	Challenges																																																																																																
Target Vocabulary	<table border="1"> <tr><td>Computing,</td><td>Password</td></tr> <tr><td>Secure</td><td>Hazards</td></tr> <tr><td>Office 365</td><td>Comments</td></tr> <tr><td>Community</td><td>Social Media</td></tr> <tr><td>Cyber Bullying</td><td>Research</td></tr> <tr><td>Acceptable Use Policy</td><td>Online</td></tr> </table>	Computing,	Password	Secure	Hazards	Office 365	Comments	Community	Social Media	Cyber Bullying	Research	Acceptable Use Policy	Online	<table border="1"> <tr><td>Problem Solving</td><td>Algorithms</td></tr> <tr><td>Pattern Recognition</td><td>Abstraction</td></tr> <tr><td>Decomposition</td><td>Selection</td></tr> <tr><td>Debugging</td><td>Sequencing</td></tr> <tr><td>Iteration</td><td>Variables</td></tr> </table>	Problem Solving	Algorithms	Pattern Recognition	Abstraction	Decomposition	Selection	Debugging	Sequencing	Iteration	Variables	<table border="1"> <tr><td>Data</td><td>Reference</td></tr> <tr><td>Cell,</td><td>Column</td></tr> <tr><td>Row</td><td>Formatting</td></tr> <tr><td>Range</td><td>Drag handle</td></tr> <tr><td>AutoFill</td><td>Primary Data</td></tr> <tr><td>Select</td><td>Secondary Data</td></tr> <tr><td>Charts</td><td>Functions</td></tr> </table>	Data	Reference	Cell,	Column	Row	Formatting	Range	Drag handle	AutoFill	Primary Data	Select	Secondary Data	Charts	Functions	<table border="1"> <tr><td>Encryption</td><td>Plain Text</td></tr> <tr><td>Decryption</td><td>Cipher Text</td></tr> <tr><td>Ciphers</td><td>Boolean Logic</td></tr> <tr><td>AND NOT OR gates</td><td>Searching</td></tr> <tr><td>Sorting</td><td>Algorithms</td></tr> <tr><td>Hardware</td><td>Software</td></tr> <tr><td>Debugging</td><td>HTML</td></tr> <tr><td>World Wide Web</td><td>Tags</td></tr> </table>	Encryption	Plain Text	Decryption	Cipher Text	Ciphers	Boolean Logic	AND NOT OR gates	Searching	Sorting	Algorithms	Hardware	Software	Debugging	HTML	World Wide Web	Tags	<table border="1"> <tr><td>Network</td><td>Protocol</td></tr> <tr><td>Mainframe</td><td>Personal Computer</td></tr> <tr><td>HTTP</td><td>Standalone</td></tr> <tr><td>Hub</td><td>Server</td></tr> <tr><td>Router</td><td>Wireless</td></tr> <tr><td>ISP</td><td>Wired</td></tr> <tr><td>WiFi</td><td>Broadband</td></tr> <tr><td>TCP</td><td>Bandwidth</td></tr> <tr><td>VOIP</td><td>Buffering</td></tr> <tr><td>IoT</td><td>Internet Packet</td></tr> <tr><td>Spam</td><td>IP Address</td></tr> <tr><td>Privacy</td><td>Domain Name System</td></tr> <tr><td>URL</td><td>HTTPS</td></tr> </table>	Network	Protocol	Mainframe	Personal Computer	HTTP	Standalone	Hub	Server	Router	Wireless	ISP	Wired	WiFi	Broadband	TCP	Bandwidth	VOIP	Buffering	IoT	Internet Packet	Spam	IP Address	Privacy	Domain Name System	URL	HTTPS	<table border="1"> <tr><td>Sequencing</td><td>Execute</td></tr> <tr><td>Subroutines</td><td>Input</td></tr> <tr><td>Instructions</td><td>Process</td></tr> <tr><td>Variables</td><td>Output</td></tr> <tr><td>Storage</td><td>Tracing</td></tr> <tr><td>Commands</td><td>If Statements</td></tr> <tr><td>Conditions</td><td>Operators</td></tr> <tr><td>Iteration</td><td>Count Controlled</td></tr> <tr><td>Condition Controlled</td><td>Debugging</td></tr> </table>	Sequencing	Execute	Subroutines	Input	Instructions	Process	Variables	Output	Storage	Tracing	Commands	If Statements	Conditions	Operators	Iteration	Count Controlled	Condition Controlled	Debugging
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