



# **Year 9 Computing Learning Journey**

When?	Understanding	Knowledge	Assessment
<p style="text-align: center;"><b>AUTUMN Term</b> <b>FIRST Half</b></p>	<p>Learners should have studied the following:</p> <p><b>5.1 Computational Thinking - Decomposition</b></p> <p>Decomposition</p> <p><b>5.2 Computational Thinking – Abstraction</b></p> <p>Abstraction Algorithms</p> <p><b>5.3 Computational Thinking – Writing Algorithms</b></p> <p>Pseudocode Syntax Start / Stop</p> <p><b>5.4 Flowcharts</b></p> <p>Decision Process Input / Output Flow Diagram</p> <p><b>5.5 Linear Search</b></p> <p>Search Algorithm</p> <p><b>5.6 Binary Search</b></p> <p>Sort Algorithm Linear Binary</p>	<ul style="list-style-type: none"> <li>• Search Algorithm</li> <li>• Sort Algorithm</li> <li>• Linear</li> <li>• Binary</li> <li>• Bubble</li> <li>• Insertion</li> <li>• Flow Diagram</li> <li>• Ordered List</li> <li>• Search Efficiency</li> <li>• Comparisons</li> <li>• Pass</li> <li>• Merge Sort</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading relevant sections of textbook</li> <li>• Section 5</li> <li>• Algorithms</li> <li>• Work through textbook theory Pages 83 to 89</li> <li>• Open Discussions</li> <li>• Questions &amp; Answers</li> <li>• Note-taking in Exercise Books</li> </ul>

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<p style="text-align: center;"><b>AUTUMN Term</b> <b>SECOND Half</b></p>	<p>Learners should have studied the following:</p> <p><b>5.7 Bubble Sort</b> Bubble</p> <p><b>5.8 Insertion Sort</b> Insertion Flow Diagram Ordered List Search Efficiency Comparisons Pass</p> <p><b>5.5 Linear Search</b> Search Algorithm</p> <p><b>5.6 Binary Search</b> Binary</p> <p><b>5.7 Bubble Sort</b> Sort Algorithm Bubble</p> <p><b>5.8 Insertion Sort</b> Insertion Flow Diagram Ordered List Search Efficiency Comparisons</p> <p><b>6.1 Data Types</b> Data Type Integer, String &amp; Boolean Character Real / Float</p> <p><b>6.2 Operators</b> Arithmetic Operator Comparison or Logical Operator</p>	<ul style="list-style-type: none"> <li>• Data Type</li> <li>• Integer</li> <li>• String</li> <li>• Boolean</li> <li>• Character</li> <li>• Real / Float</li> <li>• Arithmetic Operator</li> <li>• Comparison or Logical Operator</li> <li>• AND</li> <li>• OR</li> <li>• NOT</li> <li>• Boolean Operator</li> <li>• Variable</li> <li>• Constant</li> <li>• Casting</li> <li>• Quotation Marks</li> <li>• Concatenate</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading relevant sections of textbook</li> <li>• Section 6</li> <li>• Programming Techniques</li> <li>• Work through textbook theory Pages 90 to 95</li> <li>• Open Discussions</li> <li>• Questions &amp; Answers</li> <li>• Note-taking in Exercise Books</li> </ul>

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<p style="text-align: center;"><b>SPRING Term</b></p> <p style="text-align: center;"><b>FIRST Half</b></p>	<p>Learners should have studied the following:</p> <p><b>6.3 Variables</b> Variable &amp; Constant</p> <p><b>6.4 Inputs &amp; Outputs</b> AND OR NOT Boolean Operator</p> <p><b>6.1 Data Types</b> Data Type Integer, String &amp; Boolean</p> <p><b>6.2 Operators</b> Arithmetic Operator Comparison or Logical Operator Variable Constant</p> <p><b>6.5 Program Flow - Sequence</b> Sequence Flow Diagram</p>	<ul style="list-style-type: none"> <li>• Sequence</li> <li>• Selection</li> <li>• Iteration</li> <li>• Flow Diagram</li> <li>• IF-THEN-ELSE</li> <li>• IF-ELSE-IF</li> <li>• Condition</li> <li>• Multiple Conditions</li> <li>• Nested IF</li> <li>• FOR Loop</li> <li>• WHILE Loop</li> <li>• Nested Loop</li> <li>• DO UNTIL Loop</li> <li>• Condition-Controlled Loop</li> <li>• Count-Controlled Loop</li> <li>• Nested FOR Loop</li> <li>• Decisions</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading relevant sections of textbook</li> <li>• Section 6</li> <li>• Programming Techniques</li> <li>• Work through textbook theory Pages 96 to 99</li> <li>• Open Discussions</li> <li>• Questions &amp; Answers</li> <li>• Note-taking in Exercise Books</li> </ul>

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<p style="text-align: center;"><b>SPRING Term</b></p> <p style="text-align: center;"><b>SECOND Half</b></p>	<p>Learners should have studied the following:</p> <p><b>6.6 Program Flow - Selection</b></p> <p>Selection Flow Diagram IF-THEN-ELSE IF-ELSE-IF Condition Multiple Conditions Nested IF</p> <p><b>6.7 Program Flow - Iteration</b></p> <p>FOR Loop WHILE Loop Nested Loop</p> <p><b>6.8 Data Structures</b></p> <p>Properties Fixed Size Static Dynamic Array Index</p>	<ul style="list-style-type: none"> <li>• Properties</li> <li>• Fixed Size</li> <li>• Static</li> <li>• Dynamic</li> <li>• Array</li> <li>• Index</li> <li>• Subroutine</li> <li>• Repeating Code</li> <li>• Parameter</li> <li>• Procedure</li> <li>• Function</li> <li>• Assign</li> <li>• Variable</li> <li>• Comparison</li> <li>• Boolean</li> <li>• Operators</li> <li>• Concatenate</li> <li>• Sequence</li> <li>• Selection</li> <li>• Iteration</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading relevant sections of textbook</li> <li>• Section 6</li> <li>• Programming Techniques</li> <li>• Work through textbook theory Pages 100 to 104</li> <li>• Open Discussions</li> <li>• Questions &amp; Answers</li> <li>• Note-taking in Exercise Books</li> </ul>

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<p style="text-align: center;"><b>SUMMER Term</b></p> <p style="text-align: center;"><b>FIRST Half</b></p>	<p>Learners should have studied the following:</p> <p><b>6.9 Subroutines</b></p> <p>Subroutine Repeating Code Parameter Procedure Function Assign Variable</p> <p><b>6.8 Data Structures</b></p> <p>Properties Fixed Size Static Dynamic Array Index</p> <p><b>6.9 Subroutines</b></p> <p>Subroutine Repeating Code Parameter Procedure Function Assign Variable</p> <p><b>7.1 Design</b></p> <p>Planning Top-Down Design Coding Decomposition Validation Check Range</p>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Top-Down Design</li> <li>• Coding</li> <li>• Decomposition</li> <li>• Validation Check</li> <li>• Range</li> <li>• Format</li> <li>• Criteria</li> <li>• Authentication</li> <li>• Password</li> <li>• Comment</li> <li>• Indentation</li> <li>• Naming Variables</li> <li>• Syntax Error</li> <li>• Logic Error</li> <li>• Symbol</li> <li>• Visual</li> <li>• Integrated Development Environment (IDE)</li> <li>• Auto-Complete</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading relevant sections of textbook</li> <li>• Section 7</li> <li>• Creating Programs</li> <li>• Work through textbook theory Pages 105 to 111</li> <li>• Open Discussions</li> <li>• Questions &amp; Answers</li> <li>• Note-taking in Exercise Books</li> </ul>

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<p style="text-align: center; font-size: 2em; font-weight: bold;">SUMMER Term</p> <p style="text-align: center; font-weight: bold;">SECOND Half</p>	<p>Learners should have studied the following:</p> <p><b>7.2 Robust Programming</b></p> <p>Format Criteria Authentication Password Comment Indentation</p> <p><b>7.5 Introduction to Scratch</b></p> <p>Graphical User Interface Blocks Online Editor Block Palette Script Sprite</p> <p><b>7.6 Introduction to Python</b></p> <p>Backdrop Costume Paint Editor Animation Co-ordinates IDLE Python IDE Input Output Subroutine Module Library</p>	<ul style="list-style-type: none"> <li>• Graphical User Interface</li> <li>• Blocks</li> <li>• Online Editor</li> <li>• Block Palette</li> <li>• Script</li> <li>• Sprite</li> <li>• Backdrop</li> <li>• Costume</li> <li>• Paint Editor</li> <li>• Animation</li> <li>• Co-ordinates</li> <li>• IDLE</li> <li>• Python IDE</li> <li>• Input</li> <li>• Output</li> <li>• Subroutine</li> <li>• Module</li> <li>• Library</li> <li>• FOR Loop</li> <li>• WHILE Loop</li> <li>• Sequence</li> <li>• Selection</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading relevant sections of textbook</li> <li>• Section 7</li> <li>• Creating Programs</li> <li>• Work through textbook theory Pages 112 to 123</li> <li>• Open Discussions</li> <li>• Questions &amp; Answers</li> <li>• Note-taking in Exercise Books</li> </ul>