**Subject:** **Computing**

**Year:** **7**

| Topic 1<br>Using computers effectively and safely | Topic 2<br>Networks | Topic 3<br>Scratch I | Topic 4<br>Scratch II | Topic 5<br>Spreadsheets | |
|---|---|---|---|---|---|
| • Considering best practice with passwords<br>• Choosing a secure password<br>• Logging on to school systems<br>• Efficient file management<br>• Basic functionality of software<br>• Online safety – including social media<br>• Personal data and keeping data safe<br>• Sourcing content online<br>• The impact of cyber bullying<br>• Basic digital skills and features of different software | • Fundamentals of a computer network<br>  • Transmission of data between devices<br>  • Understanding protocols<br>  • Hardware required within a computer network<br>  • Wired and wireless network comparisons<br>  • Rate at which data can be transmitted – Bandwidth<br>  • Packets of data and transferring | • Compare how humans and computers understand instructions (understand and carry out)<br>• Define a sequence as instructions performed in order, with each executed in turn<br>  • Modify a sequence<br>  • Predict the outcome of a simple sequence -Define a variable as a name that refers to data being stored by the computer<br>  • Make a sequence that includes a variable<br>  • Predict the outcome of a simple sequence that includes variables | • Define a subroutine as a group of instructions that will run when called by the main program or other subroutines<br>  • Define decomposition as breaking a problem down into smaller, more manageable subproblems<br>  • Identify how subroutines can be used for decomposition -Identify where condition-controlled | • Identify columns, rows, cells, and cell references in spreadsheet software<br>  • Use formatting techniques in a spreadsheet<br>  • Use basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /)<br>  • Use the autofill tool to replicate cell data<br>  • Explain the difference between data | |

| | | | | | |
|---|---|---|---|---|---|
| • Choosing an appropriate piece of software for a task<br>• Constructing a digital piece of work | these over a network<br>• Difference between Internet and World Wide Web<br>• Services provided over the Internet<br>• Connectivity and the Internet of Thing (IoT)<br>• Impact of Internet connected devices<br>• Components of a network when requesting data from the Web | • Recognise that computers follow the control flow of input/process/output<br>• Trace the values of variables within a sequence<br>• Define a condition as an expression that will be evaluated as either true or false<br>• Identify that selection uses conditions to control the flow of a sequence<br>• Identify where selection statements can be used in a program<br>• Modify a program to include selection - Create conditions that use comparison operators (>,<,=)<br>• Create conditions that use logic operators (and/or/not)<br>• Identify where selection statements can be used in a | iteration can be used in a program<br>• Implement condition-controlled iteration in a program<br>• Evaluate which type of iteration is required in a program<br>• Define a list as a collection of related elements that are referred to by a single name<br>• Describe the need for lists<br>• Identify when lists can be used in a program<br>• Use a list<br>• Apply appropriate constructs to solve a problem | and information<br>• Explain the difference between primary and secondary sources of data<br>• Collect data<br>• Analyse data<br>• Create appropriate charts in a spreadsheet<br>• Use the functions SUM, COUNTA, MAX, and MIN in a spreadsheet<br>• Use a spreadsheet to sort and filter data<br>• Use the functions AVERAGE, COUNTIF, and IF in a spreadsheet<br>• Use conditional | |

| | | | | | |
|---|---|---|---|---|---|
| | | program that include comparison and logical operators<br>• Define iteration as a group of instructions that are repeatedly executed<br>• Describe the need for iteration<br>• Detect and correct errors in a program (debugging)<br>• Identify where count-controlled iteration can be used in a program<br>• Implement count-controlled iteration in a program<br>• Independently design and apply programming constructs to solve a problem (subroutine, selection, count-controlled iteration, operators, and variables) | • Decompose a larger problem into smaller subproblems<br>• Apply appropriate constructs to solve a problem<br>• Decompose a larger problem into smaller subproblems | formatting in a spreadsheet<br>• Apply all of the spreadsheet skills covered in this unit | |