Curriculum Map

Sandringham School
'Everybody can be Somebody'

Subject: Computer Science

Year group: 7

	Autumn 1/Autumn 2	Autumn 2	Autumn 2/Spring 1	Spring 2	Summer 1	Summer 2
Content *Declarative Knowledge – 'Know What'*	**Introduction to Chromebook and Google Services** *Digital Literacy Skills* *Effective use of tools* *Information technology* **Collaborating online effectively** *Creating Media* *Design and development* *Effective use of tools* *Information Technology* *Safety and security*	**Using Media for a cause** *Creating Media* *Design and Development* *Effective use of tools* *Information technology*	**Computer systems** *Computer Systems* *Data and Information* *Information Technology* *Programming*	**Modelling data - Spreadsheet** *Data and Information* *Effective use of digital tools* *Programming*	**Developing Programming Skills Using Scratch** *Algorithms* *Programming*	**Introduction to Python Programming** *Algorithms* *Programming*
Skills *Procedural Knowledge – 'Know How'*	Understand the purpose of the common platforms which make up Google Workspace Organise files and folders in Google Drive Rename files and folders in Google Drive Upload files to Google Drive Understand how to share files and folders Format text within a Google Doc Create and edit tables within a Google Doc Import images from the Internet into a Google Doc	Select the most appropriate software to use to complete a task Identify the key features of a word processor Apply the key features of a word processor to format a document Evaluate formatting techniques to understand why we format documents Select appropriate images for a given context Apply appropriate formatting techniques	Recall that a general-purpose computing system is a device for executing programs Recall that a program is a sequence of instructions that specify operations that are to be performed on data Explain the difference between a general-purpose computing system and a purpose-built device Describe the function of the hardware components used in computing systems Describe how the hardware components	Identify columns, rows, cells, and cell references in spreadsheet software Use formatting techniques in a spreadsheet Use basic formulas with cell references to perform calculations in a spreadsheet (+, -, *, /) Use the autofill tool to replicate cell data Explain the difference between data and information	Predict the outcome of a simple sequence Modify a sequence Define a variable as a name that refers to data being stored by the computer Recognise that computers follow the control flow of input/process/output Predict the outcome of a simple sequence that includes variables Trace the values of variables within a sequence	Describe what algorithms and programs are and how they differ - Locate and correct common syntax errors - Recall that a program written in a programming language needs to be translated in order to be executed by a machine - Write simple Python programs that display messages, assign values to variables, and receive keyboard input

Curriculum Map

	Use key tools (such as Spell Check and Word Count) Send and view emails in your school Gmail account Create and edit slides with a Google Slides presentation Import images from the Internet into Google Slides Work collaboratively with a classmate in creating Slide Deck	Demonstrate an understanding of licensing issues involving online content by applying appropriate Creative Commons licences Demonstrate the ability to credit the original source of an image Critique digital content for credibility Apply techniques in order to identify whether or not a source is credible Apply referencing techniques and understand the concept of plagiarism Evaluate online sources for use in own work Construct a blog using appropriate software Organise the content of the blog based on credible sources Apply referencing techniques that credit authors appropriately Design the layout of the content to make it suitable for the audience Construct a blog using appropriate software	used in computing systems work together in order to execute programs Recall that all computing systems, regardless of form, have a similar structure ('architecture') Analyse how the hardware components used in computing systems work together in order to execute programs Define what an operating system is, and recall its role in controlling program execution Describe the NOT, AND, and OR logical operators, and how they are used to form logical expressions Use logic gates to construct logic circuits, and associate these with logical operators and expressions Describe how hardware is built out of increasingly complex logic circuits Recall that, since hardware is built out of logic circuits, data and instructions alike need to be represented using binary digits	Explain the difference between primary and secondary sources of data Collect data Analyse data Create appropriate charts in a spreadsheet Use the functions SUM, COUNTA, MAX, and MIN in a spreadsheet Analyse data Use a spreadsheet to sort and filter data Use the functions AVERAGE, COUNTIF, and IF in a spreadsheet Use conditional formatting in a spreadsheet .	Make a sequence that includes a variable Define a condition as an expression that will be evaluated as either true or Identify that selection uses conditions to control the flow of a sequence Identify where selection statements can be used in a program Modify a program to include selection Create conditions that use comparison operators (>,<,=) Create conditions that use logic operators (and/or/not) Identify where selection statements can be used in a program that include comparison and logical operators Define iteration as a group of instructions that are repeatedly executed Describe the need for iteration Identify where count-controlled iteration can be used in a program	Describe the semantics of assignment statements - Receive input from the keyboard and convert it to a numerical value - Use simple arithmetic expressions in assignment statements to calculate values Generate and use random integers - Use binary selection (if, else statements) to control the flow of program execution - Use relational operators to form logical expressions Describe how iteration (while statements) controls the flow of program execution - Use multi-branch selection (if, elif, else statements) to control the flow of program execution Use iteration (while loops) to control the flow of program execution

Curriculum Map

		Organise the content of blog based on credible sources Apply referencing techniques that credit authors appropriately Design the layout of the content to make it suitable for the audience	Provide broad definitions of 'artificial intelligence' and 'machine learning' Identify examples of artificial intelligence and machine learning in the real world Describe the steps involved in training machines to perform tasks (gathering data, training, testing) Describe how machine learning differs from traditional programming Associate the use of artificial intelligence with moral dilemmas Explain the implications of sharing program code		Implement count-controlled iteration in a program Detect and correct errors in a program (debugging) Independently design and apply programming constructs to solve a problem (subroutine, selection, count-controlled iteration, operators, and variables)	- Use variables as counters in iterative programs Combine iteration and selection to control the flow of program execution - Use Boolean variables as flags
Key Questions	What makes a good presentation? What are the appropriate fonts to use? Who is my audience? Why does my audience matter?	What are application software? How do I identify the most appropriate type of software to use that is most suitable for the problem to be solved. When is a source credible? Can I use this source in my work? What is a creative commons licence? What is a blog? What makes a good blog? What is the most suitable layout for my blog? How do I format correctly so that the information I am trying to	How instructions are stored and executed within a computer system? How is binary used to store various data types? How can computers collect data from various input devices, including sensors and application software. What is the difference between hardware and application software, and their roles within a computer system.	How can I analyse and evaluate data to become information. Do I know that poor quality data leads to unreliable results, and inaccurate conclusions for individuals and organisations?	How can I use sequence, selection and iteration to develop a program to solve a problem? What is the difference between, and appropriately I can use if and if, then and else statements. Can I use a variable and relational operators within a loop to govern termination. Can I use loops and a sequence of selection	How can I use sequence, selection and iteration to develop a program to solve a problem? What is the difference between, and appropriately I can use if and if, then and else statements. Can I use a variable and relational operators within a loop to govern termination. Can I use loops and a sequence of selection

Curriculum Map

		get across is effective and gets the message across.	I know that digital computers use binary to represent all data.		statements in programs, including an IF, THEN and ELSE statement.	statements in programs, including an IF, THEN and ELSE statement
Assessment	Online Baseline assessment Teacher assessment of project		Micro:Bit programming test	End of unit online test and practical assessment	Midway peer assessment of student Scratch game End of unit assessment of Scratch game	
Literacy/Numeracy/ SMSC/Character	Writing and presenting information suitable for audience and purpose. Resilience, Initiative.	Writing and presenting information suitable for audience and purpose. Resilience, Initiative, Confidence,	Combining hardware and software terminologies. Problem solving and algorithmic thinking. Confidence. Resilience. Initiative.	Initiative, Aspiration, Resilience. Using Microsoft Excel for mathematical calculatiosn	Problem solving and algorithmic thinking. Peer support and experimentation. Confidence. Resilience. Initiative. Video Game responsibility	Problem solving and algorithmic thinking. Peer support and experimentation. Confidence. Resilience. Initiative. Video Game responsibility