



Curriculum Map

Subject: Computer Science

Year group: 7

	Autumn 1/Autumn 2	Autumn 2	Autumn 2/Spring 1	Spring 2	Summer 1	Summer 2
<p>Content</p> <p><i>Declarative Knowledge – ‘Know What’</i></p>	<p>Introduction to Computer Science – Basic Computer Skills Development</p> <p><i>Digital Literacy Skills</i> <i>Effective use of tools</i> <i>Information technology</i></p> <p>Collaborating online effectively <i>Creating Media</i> <i>Design and development</i> <i>Effective use of tools</i> <i>Information Technology</i> <i>Safety and security</i></p>	<p>Using Media for a cause</p> <p><i>Creating Media</i> <i>Design and Development</i> <i>Effective use of tools</i> <i>Information technology</i></p>	<p>Computer systems</p> <p><i>Computer Systems</i> <i>Data and Information</i> <i>Information Technology</i> <i>Programming</i></p>	<p>Networks from semaphores to the internet</p> <p><i>Networks</i> <i>Computer Systems</i> <i>Safety and security</i></p>	<p>Developing Programming Skills Using Scratch With CS First</p> <p><i>Algorithms</i> <i>Programming</i></p>	<p>Programming Skills Using Scratch...continued (advanced)</p> <p>Algorithms Programming</p>
<p>Skills</p> <p><i>Procedural Knowledge – ‘Know How’</i></p>	<p>Collect, organise and present data and information in digital content.</p> <p>Create digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience.</p> <p>Collaborating online effectively</p> <p>Create a memorable and secure password for an account on the school network</p>	<p>Select the most appropriate software to use to complete a task</p> <p>Identify the key features of a word processor</p> <p>Apply the key features of a word processor to format a document</p> <p>Evaluate formatting techniques to understand why we format documents</p> <p>Select appropriate images for a given context</p> <p>Apply appropriate formatting techniques</p>	<p>Recall that a general-purpose computing system is a device for executing programs</p> <p>Recall that a program is a sequence of instructions that specify operations that are to be performed on data</p> <p>Explain the difference between a general-purpose computing system and a purpose-built device</p> <p>Describe the function of the hardware components used in computing systems</p> <p>Describe how the hardware components</p>	<p>Define what a computer network is and explain how data is transmitted between computers across networks</p> <p>Define ‘protocol’ and provide examples of non-networking protocols</p> <p>List examples of the hardware necessary for connecting devices to networks</p> <p>Compare wired to wireless connections and list examples of specific technologies currently used to implement such connections</p>	<p>Predict the outcome of a simple sequence</p> <p>Modify a sequence</p> <p>Define a variable as a name that refers to data being stored by the computer</p> <p>Recognise that computers follow the control flow of input/process/output</p> <p>Predict the outcome of a simple sequence that includes variables</p> <p>Trace the values of variables within a sequence</p>	<p>Define a subroutine as a group of instructions that will run when called by the main program or other subroutines</p> <p>Define decomposition as breaking a problem down into smaller, more manageable subproblems</p> <p>Identify how subroutines can be used for decomposition</p> <p>Identify where condition-controlled iteration can be used in a program</p>



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<p>Remember the rules of the computing lab</p> <p>Find personal documents and common applications</p> <p>Recognise a respectful email</p> <p>Construct an effective email and send it to the correct recipients</p> <p>Describe how to communicate with peers online</p> <p>Plan effective presentations for a given audience</p> <p>Describe cyberbullying</p> <p>Explain the effects of cyberbullying</p> <p>Plan effective presentations for a given audience</p> <p>Describe cyberbullying</p> <p>Explain the effects of cyberbullying</p> <p>Check who you are talking to online</p>	<p>Demonstrate an understanding of licensing issues involving online content by applying appropriate Creative Commons licences</p> <p>Demonstrate the ability to credit the original source of an image</p> <p>Critique digital content for credibility</p> <p>Apply techniques in order to identify whether or not a source is credible</p> <p>Apply referencing techniques and understand the concept of plagiarism</p> <p>Evaluate online sources for use in own work</p> <p>Construct a blog using appropriate software</p> <p>Organise the content of the blog based on credible sources</p> <p>Apply referencing techniques that credit authors appropriately</p> <p>Design the layout of the content to make it suitable for the audience</p> <p>Construct a blog using appropriate software</p>	<p>used in computing systems work together in order to execute programs</p> <p>Recall that all computing systems, regardless of form, have a similar structure ('architecture')</p> <p>Analyse how the hardware components used in computing systems work together in order to execute programs</p> <p>Define what an operating system is, and recall its role in controlling program execution</p> <p>Describe the NOT, AND, and OR logical operators, and how they are used to form logical expressions</p> <p>Use logic gates to construct logic circuits, and associate these with logical operators and expressions</p> <p>Describe how hardware is built out of increasingly complex logic circuits</p> <p>Recall that, since hardware is built out of logic circuits, data and instructions alike need to be represented using binary digits</p>	<p>Define 'bandwidth', using the appropriate units for measuring the rate at which data is transmitted, and discuss familiar examples where bandwidth is important</p> <p>Define what the internet is</p> <p>Explain how data travels between computers across the internet</p> <p>Describe key words such as 'protocols', 'packets', and 'addressing'</p> <p>Explain the difference between the internet, its services, and the World Wide Web</p> <p>Describe how services are provided over the internet</p> <p>List some of these services and the context in which they are used</p> <p>Explain the term 'connectivity' as the capacity for connected devices ('Internet of Things') to collect and share information about me with or without my knowledge (including microphones, cameras, and geolocation)</p>	<p>Make a sequence that includes a variable</p> <p>Define a condition as an expression that will be evaluated as either true or false</p> <p>Identify that selection uses conditions to control the flow of a sequence</p> <p>Identify where selection statements can be used in a program</p> <p>Modify a program to include selection</p> <p>Create conditions that use comparison operators (>,<=)</p> <p>Create conditions that use logic operators (and/or/not)</p> <p>Identify where selection statements can be used in a program that include comparison and logical operators</p> <p>Define iteration as a group of instructions that are repeatedly executed</p> <p>Describe the need for iteration</p> <p>Identify where count-controlled iteration can be used in a program</p>	<p>Implement condition-controlled iteration in a program</p> <p>Evaluate which type of iteration is required in a program</p> <p>Define a list as a collection of related elements that are referred to by a single name</p> <p>Describe the need for lists</p> <p>Identify when lists can be used in a program</p> <p>Use a list</p> <p>Decompose a larger problem into smaller subproblems</p> <p>Apply appropriate constructs to solve a problem</p> <p>Decompose a larger problem into smaller subproblems</p> <p>Apply appropriate constructs to solve a problem</p>
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		<p>Organise the content of blog based on credible sources</p> <p>Apply referencing techniques that credit authors appropriately</p> <p>Design the layout of the content to make it suitable for the audience</p>	<p>Provide broad definitions of 'artificial intelligence' and 'machine learning'</p> <p>Identify examples of artificial intelligence and machine learning in the real world</p> <p>Describe the steps involved in training machines to perform tasks (gathering data, training, testing)</p> <p>Describe how machine learning differs from traditional programming</p> <p>Associate the use of artificial intelligence with moral dilemmas</p> <p>Explain the implications of sharing program code</p>	<p>Describe how internet-connected devices can affect me</p> <p>Describe components (servers, browsers, pages, HTTP and HTTPS protocols, etc.) and how they work together</p>	<p>Implement count-controlled iteration in a program</p> <p>Detect and correct errors in a program (debugging)</p> <p>Independently design and apply programming constructs to solve a problem (subroutine, selection, count-controlled iteration, operators, and variables)</p>	
<p>Key Questions</p>	<p>Why is my digital footprint? Why is there a need to have a strong password? How do I stay safe online?</p> <p>Why should I set my social media profile setting to private? What are the most important factors to be aware of when using social media to keep myself safe?</p> <p>What is cyberbullying? What are the effects of cyberbullying?</p> <p>What makes a good presentation? What are the</p>	<p>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.</p> <p>When is a source credible? Can I use this source in my work? What is a creative commons licence?</p> <p>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</p>	<p>How instructions are stored and executed within a computer system? How is binary used to store various data types?</p> <p>How can computers collect data from various input devices, including sensors and application software.</p> <p>What is the difference between hardware and application software, and their roles within a computer system.</p>	<p>What is a network? What are the components needed to make a network? What is network connectivity?</p> <p>What is the internet? Is it a protocol? What are packets?</p> <p>What is the difference between the internet and the world wide web?</p> <p>What services are available to us when using the WWW. How do these services all work together?</p>	<p>How can I use sequence, selection and iteration to develop a program to solve a problem?</p> <p>What is the difference between, and appropriately I can use if and if, then and else statements.</p> <p>Can I use a variable and relational operators within a loop to govern termination.</p> <p>Can I use loops and a sequence of selection</p>	<p>How can I develop modular programs that use procedures or functions?</p> <p>Can I design, write and debug modular programs using procedures?</p> <p>Can I combine programming theory with the use of hardware</p>



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	appropriate fonts to use? Who is my audience? Why does my audience matter?	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.	
Assessment	Online Baseline assessment Teacher assessment of project		Micro:Bit programming test	PC Basics End of unit knowledge test	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.	Binary numbers. Pair working. Resilience. Aspiration. Initiative.	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