

Computing Skills Progression

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Computer Science</p> <p>(Algorithms, Problem Solving, Programming, Logical Thinking, Networks and Search Engines)</p>	<p>Understand algorithms as sequences of instructions in everyday contexts.</p> <p>Take real-world problems and then plan a sequence of steps to solve these.</p> <p>Give explanations for what they think a program will do.</p>	<p>Understand and recognise that common sequences of instructions or sets of rules can be thought of as algorithms.</p> <p>Program on screen, using sequences of instructions to implement an algorithm.</p> <p>Create a simple program on screen, using logical reasoning to predict the behaviour of programs and correcting any errors.</p> <p>Debug any errors in their own code.</p>	<p>Design and write a program using a block language, without user interaction.</p> <p>Explore simulations of physical systems on screen.</p> <p>Use sequence in programs.</p> <p>Explain a simple, sequence-based algorithm in their own words.</p> <p>Use logical reasoning to detect errors in programs.</p> <p>Understand that computer networks transmit information in a digital (binary) format.</p> <p>Know that email messages are sent and received through servers connected to the Internet as well as</p>	<p>Design and write a program using a block language to a given brief, including simple interaction.</p> <p>Develop their own simulation of a simple physical system on screen.</p> <p>Use sequence and repetition in programs.</p> <p>Write a program that accepts keyboard input and produces on-screen output.</p> <p>Use logical reasoning to detect and correct errors in programs.</p> <p>Understand how the Internet makes the web possible.</p> <p>Give an explanation of how requests for web pages, and the HTML for those pages, are transmitted via the Internet.</p>	<p>Design, write and debug a program using a block language based on their own ideas.</p> <p>Can experiment with computer control applications.</p> <p>Plan a solution to a problem using decomposition.</p> <p>Use sequence, selection and repetition in programs.</p> <p>Write a program that accepts keyboard and mouse input and produces output on screen and through speakers.</p> <p>Use logical reasoning to detect errors in algorithms.</p> <p>Understand how data routing works on the Internet.</p> <p>Understand how web pages are created and transmitted.</p>	<p>Design, write and debug a program using a second programming language based on their own ideas.</p> <p>Design, write and debug their own computer control application.</p> <p>Solve problems using decomposition, tackling each part separately.</p> <p>Use sequence, selection, repetition and variables in programs.</p> <p>Give clear and precise logical explanations of a number of algorithms.</p> <p>Use logical reasoning to detect and correct errors in algorithms (and programs).</p> <p>Understand how mobile phone or other networks operate.</p> <p>Give an explanation of how networks operate: know that information is transmitted digitally.</p> <p>Understand how domain names are converted into IP addresses on the Internet.</p>

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<p>Information Technology</p> <p>(Creating Content, Searching)</p>	<p>Can create original content using a range of digital technology as well as store and retrieve content.</p>	<p>Can store, organise and retrieve content on digital devices for a given purpose.</p> <p>Create and edit original content for a given purpose using digital technology, including manipulating and retrieving content.</p>	<p>Use a range of programs on a computer.</p> <p>Design and create content on a computer.</p> <p>Collect and present information.</p> <p>Search for information within a single site</p> <p>Understand that search engines select pages according to keywords found in the content.</p>	<p>Use and combine a range of programs on a computer.</p> <p>Design and create content on a computer in response to a given goal.</p> <p>Collect and present data.</p> <p>Use a standard search engine to find information.</p> <p>Understand that search engines rank pages according to relevance.</p>	<p>Use and combine a range of programs on multiple devices.</p> <p>Design and create programs on a computer in response to a given goal.</p> <p>Analyse and evaluate information.</p> <p>Use filters to make more effective use of a standard search engine.</p> <p>Understand that search engines use a cached copy of the crawled web to select and rank results.</p>	<p>Select, use and combine a range of programs on multiple devices.</p> <p>Design and create systems in response to a given goal.</p> <p>Analyse and evaluate data.</p> <p>Make use of a range of search engines appropriate to finding information that is required.</p> <p>Appreciate that search engines rank pages based on the number and quality of in-bound links.</p>

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Digital Literacy (Staying Safe)	<p>Understand how to keep safe while using digital technology and give strategies to do so.</p> <p>Show an awareness of and mention how IT is used for communication beyond school.</p>	<p>Keep safe and show respect to others while using digital technology.</p> <p>Respect others' rights, including privacy and intellectual property when using computers.</p> <p>Observe age restrictions on computer games.</p> <p>Understand that they should not share personal information online.</p> <p>Understand what to do if they have concerns about content or contact online.</p>	<p>Use digital technology safely and show respect for others when working online.</p> <p>Recognise unacceptable behaviour when using digital technology.</p> <p>Know who to talk to about concerns and inappropriate behaviour in school.</p> <p>Decide whether a web page is relevant for a given purpose or question.</p> <p>Use email and videoconferencing in class.</p>	<p>Demonstrate that they can act responsibly when using computers.</p> <p>Understand the difference between acceptable and unacceptable behaviours when using digital technology.</p> <p>Know who to talk to about concerns and inappropriate behaviour at home or in school.</p> <p>Decide whether digital content is relevant for a given purpose or question.</p> <p>Work collaboratively with classmates on a shared wiki.</p>	<p>Demonstrate that they can act responsibly when using the Internet.</p> <p>Discuss the consequences of particular behaviours when using digital technology.</p> <p>Know how to report concerns and inappropriate behaviour in a range of contexts.</p> <p>Decide whether digital content is reliable and unbiased.</p> <p>Work collaboratively with classmates on a class website or blog.</p>	<p>Show that they can think through the consequences of their actions when using digital technology.</p> <p>Identify principles underpinning acceptable use of digital technologies.</p> <p>Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts.</p> <p>Form an opinion about the effectiveness of digital content.</p> <p>Use online tools to plan and carry out a collaborative project.</p>