

Implementation - Skills

	Coding	Logical Reasoning	Information technology	Digital Literacy	Digital Wellbeing	Online Safety
Year 1	<p>Know that an algorithm is an instruction</p> <p>Start reading, creating and debugging code (programs) using simple algorithms in block code</p> <p>Explain why errors in our code mean that it will not work properly</p>	<p>Start predicting what will happen based on an algorithm</p>	<p>Begin to create and save (and Save As) learning on a computer</p> <p>Begin to find where learning has been saved on the computer</p> <p>Follow instructions to find learning online</p>	<p>Begin to recognise technology in the world around us, e.g. traffic lights</p>	<p>Explain why it is good to limit screen time</p> <p>Explain why we should not use technology right before bedtime</p>	<p>Describe what personal information is and how to keep it private</p> <p>Explain who to speak to if they feel upset</p> <p>Explain why there should be an adult in the room when going online</p>
Year 2	<p>Read, create and debug code (programs) using simple algorithms in block code</p> <p>Explain why algorithms need to be precise</p> <p>Sequence algorithms accurately</p>	<p>Logically predict what a simple algorithm will do</p>	<p>Create, save (and Save As) and organise learning on a computer</p> <p>Use copy and paste</p> <p>Resize images</p> <p>Move text boxes and images around on a page</p>	<p>Recognise more common uses of information technology beyond school</p>	<p>Explain which games are age-appropriate and why</p> <p>Explain how things are shared online e.g., Email, YouTube...</p>	<p>Explain why you should ask for permission before going online</p>
Year 3	<p>Write block code for a purpose</p> <p>Debug code by looking at it line by line</p> <p>Experiment using loop and timers when coding</p>	<p>Logically predict what an algorithm will do</p> <p>Find an error in code and make a logical attempt to fix it</p>	<p>Use different applications to present and examine information, e.g., Word, Excel, PPT</p>	<p>Explain some uses for the internet</p> <p>Begin to use search technologies</p> <p>Begin to use email</p>	<p>Explain how people should behave online</p> <p>Explain the benefits of being in an online world</p>	<p>Explain the consequences of not keeping personal information safe</p> <p>Explain various ways to report upsetting behaviour online</p>
Year 4	<p>Use sequencing, loop and timers when coding in block code</p> <p>Begin to use if statements to simulate real world situations e.g., if the light turns red then stop</p> <p>Use logical reasoning to detect errors in code</p>	<p>Explain why program code may not have executed in the manner expected</p> <p>Use logical reasoning to debug an error in code</p>	<p>Use audio recording software to plan and compose an original piece of music</p>	<p>Begin to determine whether a web page is relevant for the search requirements</p> <p>Explain how requests for web pages are transmitted through the internet</p>	<p>Begin to show an awareness of how behaviour online can be viewed by others (e.g., School network manager or ISP)</p> <p>Describe the etiquette for collaborating, online and offline, e.g., via office 365 / shared learning</p>	<p>Explain what makes a password secure</p> <p>Explain what constitutes personal information and how to keep it safe</p>
Year 5	<p>Use sequencing, if statements, loops and timers when coding in block code</p> <p>Begin to use variables when coding in programs</p> <p>Solve problems in programs by decomposing them into smaller parts</p>	<p>Explain why program code may not have executed in the manner expected due to multiple errors</p> <p>Use logical reasoning to debug multiple errors in code</p>	<p>Combine a variety of apps to accomplish a particular purpose e.g., Presentations, podcasts...</p>	<p>Evaluate the quality of the information found on the internet</p> <p>Explain how search results are ranked</p>	<p>Explain the consequences of online behaviour</p>	<p>Explain what to do if you receive an inappropriate message</p>
Year 6	<p>Write and debug their code, explaining what bugs they found and how they fixed them</p> <p>Review their code, decide for themselves how this might be extended or improved</p> <p>Implement, test and debug these modifications using block code</p>	<p>Explain and justify choices when coding using logical reasoning to create an algorithm</p>	<p>Choose from a range of available programs and state why that program would be best to use. E.g., using photos, the internet, and a computer-based program to make a newsletter</p>	<p>Explain what a network is</p> <p>Explain how to connect to a network</p> <p>Know the difference between LAN and WAN and WLAN</p>	<p>Explain why some photos, videos and other media should not be shared with others</p> <p>Explain how the use of digital technologies can affect others</p>	<p>Explain how to respect the rights of others when using digital technologies</p> <p>Explain how to safely use the internet</p>
Year 7	<p>Create small codes with block editors and text editors that utilise variables and if statements. Include the debugging of errors.</p>	<p>Use logical reasoning to reflect on the accuracy of code and debug if inaccurate</p>	<p>Use a range of skills to create a publication such that assist with the consolidation of learning</p>	<p>Identify and explain the purpose of a small selection of components that make up a computer system/network</p>	<p>Explain why the over-use of technology has negative impacts on mental health</p>	<p>Explain the dangers of online communication with strangers</p> <p>Explain the dangers of malware</p>

Year 8	<p>Create programs that utilise loops and lists.</p> <p>Explain the context in which these constructs are used in existing programs</p>	<p>Explain how codes work using key terminology</p>	<p>Learn how to create and make spreadsheets tailored to a given scenario</p>	<p>Compare different between components of a computer system</p> <p>Explain the concept of binary within a computer system</p> <p>Explain the concept of a network using examples in the real world</p>	<p>Explain the negative impacts technology may have on people in the long term</p>	<p>Identify online abuse and explain how to stop and report it</p>
Year 9	<p>Apply programming techniques to a given scenario.</p>	<p>Design and plan algorithms by applying logic.</p> <p>Use the algorithms to create programs in a given scenario</p>	<p>Use cloud serviced applications to complete work online.</p> <p>Explain the concept of cloud computing further, including data transmission</p>	<p>Compare components and explain which device is more suitable</p> <p>Explain how binary logic is used within all aspects of the computer system</p> <p>Identify and explain different network topologies</p>	<p>Explain the issues people may encounter whilst using technology</p>	<p>Explain the impact online abuse can have on peoples' mental health</p>
Year 10	<p>Create programs that use a range of programming techniques such as variables, string manipulation, if statements, loops, lists, sub programs, modules, and text files</p>	<p>Plan and design algorithms using flowcharts and pseudocode that illustrate programs based on a given scenario</p>	<p>Choose suitable applications to produce a publication suited to the needs of its purpose</p>	<p>Explain the differences between internal components of a computer system and how they manage binary</p> <p>State and explain the pros and cons of different network topologies. Explain the role software has on threatening and protecting them</p>	<p>Reflect on the positive and negative impacts of digital technology, enabling them to make conscious decisions to protect themselves</p>	<p>Identify a range of different malware and know how to protect from malicious attacks</p> <p>Explain how to act responsibly when faced with challenging situations online</p>
Year 11	<p>Create a program based on a project brief provided. Test programs to ensure correct outcomes and document them</p>	<p>Read a brief and design a set of criteria points to ensure the program fully functions as requested.</p> <p>Plan, design, test and evaluate all areas of a program to ensure a successful final product has been created</p>	<p>Independently use skills developed to complete tasks in the wider world</p>	<p>Identify, explain and compare all aspects of computer systems, software and networks</p>	<p>Apply key wellbeing concepts in the wider world and their own lives</p>	<p>Apply internet safety knowledge to daily lives and support others to do the same</p>
Year 12-13	<p>Create complex programs using object orientated programming techniques. Use this knowledge to create a program that solves a real-world problem</p>	<p>Create a brief with criteria points to ensure the program fully functions as intended.</p> <p>Plan, design, test, gain feedback, develop and evaluate all areas of a program to ensure a successful final product has been created</p>	<p>Use a wide range of information technology skills to create reports in order to show progress and final outcomes of a creative project</p>	<p>Identify, explain and compare all aspects of system architecture, software development, data structures, algorithms, networks and binary</p>	<p>Apply key digital footprint knowledge to their daily lives. Especially when applying for jobs and universities</p>	<p>Identify and explain key internet safety threats to a network. As well as apply key knowledge about internet safety in their daily lives.</p>