

	Programming	Theory	Digital Citizen	Learner Profile
Year One	<p>P1 - Give computers instructions</p> <p>P2 - Create a sequence for an animation</p>	<p>T1 - Recall subject words</p> <p>T2 - Create an animation based on a theme</p>	<p>DS1 - Take photos on device</p> <p>DS2 - Upload work to Seesaw</p> <p>DS3 - Navigate device / OS</p> <p>DS4 - Use a keyboard</p>	A year one student at FPS is able to confidently use a device with a keyboard. They are able to create images and edit images using the device. They understand that instructions have to be in order.
Year Two	<p>P1 - Program a loop within code</p> <p>P2 - Program an animation that plays "On green flag"</p>	<p>T1 - Use subject words in a sentence</p> <p>T2 - Create an animation based on a theme that plays automatically</p>	<p>DS1 - Know not to be friends with people online as its dangerous</p> <p>DS2 - Retrieve work I have saved from a previous lesson</p> <p>DS3 - Understand how computers are used outside</p>	A year two student understands the concept of looping within code. They are able to login to a website and access saved work. They can create digital scenes based on a theme. They are able to retrieve saved work and continue with it
Year Three	<p>P1 - Able to detect errors in code</p> <p>P2 - Able to order program commands to achieve a specific outcome</p>	<p>T1 - Understand that problems can be broken down into smaller parts.</p>	<p>DS1 - Be aware people online may not be who they say they are</p> <p>DS2 - Keep password and personal information private</p> <p>DS3 - Understand it is important to be nice online</p>	A year 3 student can design and program a working game in a graphical programming language. They can include a working variable to record a score and program motion for users on an ipad or laptop. They can modify existing programmable sprites. They
Year Four	<p>P1 - Is able to use a block based programming language</p>	<p>T1 - I can use repeat commands.</p> <p>T2 - order programming commands into a sequence to achieve a specific outcome.</p>	<p>DS1 - Follow sensible e-safety rules</p> <p>DS2 - I can describe things online that I must tell an adult about</p>	A year 4 student can design and program a working game in a graphical programming language. They can include multiple working variables, loops, motion, create their own programmable sprites and suitable backgrounds. Students can switch between
Year Five	<p>P1 - Use logic to predict how a program will pan out.</p>	<p>T1- change an input to a program to achieve a different output.</p>	<p>DS1 - Understand how to protect myself online.</p>	A year five student at FPS understands SIS in relation to programming. They are able to

Year Five	<p>P2 - Write own code to complete a task</p> <p>P3 - Simulate a physical system such as traffic lights</p>	<p>T2 - use logical reasoning to predict the behavior of programs</p>	<p>DS2 - Use search effectively to find information.</p> <p>DS3 - Understand not all information online is true</p>	<p>spot errors in code and fix them. They are able to make reasonable judgements about code and decide what would happen. They can edit digital assets and understand file</p>
Year Six	<p>P1 - Create a variable to be used</p> <p>P2 - Demonstrate a knowledge of SIS in code</p> <p>P3 - Change a program to achieve a different output</p>	<p>T1 - Understand that networks can lead to wider opportunities for all</p> <p>T2 - Understands computers use a binary number system</p>	<p>DS1 - Save and retrieve files online</p> <p>DS2 - Create, modify and present digital assets</p> <p>DS3 - combine a range of media into my work</p>	<p>A year six student at FPS will be able to break down problems into smaller pieces and explain each step of an algorithm they have created. They will be able to understand variables and use them effectively. They will understand many that there are many solutions to one</p>

Year Seven	<p>P1 - Understand the difference between if and elif</p> <p>P2 - Declares and reassigns variables</p> <p>P3 - Use arithmetic operators within loops</p>	<p>T1 - Use Binary numbers</p> <p>T2 - Convert binary to denary and back</p>	<p>DS1 - Understand anything I post online can be seen and shared by others</p> <p>DS2 - Explain how to use tech in a safe and kind way</p>	<p>A year seven student is able to program using a text based language (Python) a sequence of events confidently. They are able to use a simple if statement within the code to give more than one option. They understand computers use binary and can solve simple</p>
Year Eight	<p>P1 - Is able to count and total in python</p> <p>P2 - Using an operator to determine when a loop ends</p>	<p>T1 - Can explain the concept of SIS</p> <p>T2 - Create pseudo code for a given problem</p> <p>T3 - Can create a simple logic diagram</p>	<p>DS1 - I support my friends to protect themselves and make good choices online, including reporting concerns to an adult.</p> <p>DS2 - I protect my computer or device from harm on the Internet.</p>	<p>A year eight student is able to implement a loop and determine when it will finish using count or totalling methods. They can convert from binary to denary and they can confidently solve logic propositions.</p>
Year Nine	<p>P1 - Use procedures to save time in programming</p> <p>P2 - Can create a program from given pseudo code</p>	<p>T1 - Can represent numbers in Hex / Dec / Den</p> <p>T2 - Understand logic statements and create circuits from them</p> <p>T3 - Can create simple logic</p>	<p>DS1 - evaluating the effectiveness of my own work and the work of others.</p> <p>DS2 - explain why I select a particular online tool for a specific purpose</p>	<p>Confident python programming skills are evident, a year 9 student is able to select from a range of problems and is able to implement Selection, Iteration, and Sequence into a program. They can create logic statements and complete truth</p>

		gates	DS3 - combine a range of	tables. They understand the
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Year Ten GCSE 5	<p>T1 - understand the need for validation and verification checks to be made on input data</p> <p>T2 - comment on the effectiveness of a given solution</p> <p>T3 - work out the purpose of a given algorithm</p>	<p>T1 - calculate the storage of a file</p> <p>T2 - state all the hardware related to the FEC</p> <p>T3 - understand Machine code and high level language</p> <p>understand logic propositions</p>	<p>DS1 - I can explain the consequences of sharing too much about myself online.</p> <p>DS2 - show understanding of the ethical issues raised by the spread of electronic communication and computer systems, including hacking, cracking and production of malware</p>	<p>Comfortable with programming simple solutions to problems. Has solid theory understanding and can apply this to answer basic questions in computing. Understands numerical conversions and logic propositions. Can explain whole problem and what they need to achieve, does have issues breaking this down into smaller parts.</p>
Year Two Year 11 GCSE 6	<p>P1 - comment on the effectiveness of a given solution</p> <p>P2 - choose suitable data types</p>	<p>T1 - Knows the relationship between data representation and data quality</p> <p>T2 - Understands the relationship between binary and electrical circuits, including Boolean logic</p>	<p>DS1 - understand copyright and plagiarism</p> <p>DS2 - Show a detailed understanding of the the consequences to myself and others of not communicating kindly and respectfully</p>	<p>Confident with solving a wide range of programming problems. Has very good theory understanding and can apply this to answer the more complex questions in computing. Can create logic circuits from a statement and can complete a truth table from a given circuit. Can explain whole problem and can break it down, however, will need assistance in linking the modular</p>
Year Two Year 11 GCSE 7	<p>P1 - work out the purpose of a given algorithm</p> <p>P2 - explain standard methods of solution</p> <p>P3 - understand the need for validation and verification checks to be made on input data</p>	<p>T1 - Perform QBE with a given example</p> <p>T2 - understand primary keys</p> <p>T3 - show an understanding of interpreters with high level languages</p>	<p>calculate the storage of a file</p> <p>understand the different use of buses</p> <p>state all the hardware related to the FEC</p>	<p>Very good theory application and solid understanding of most of the more complex aspects (Logic circuits, file size, FEC) can apply this knowledge to answer questions. Can explain how to break a problem down into smaller tasks and can on paper explain how get a working solution</p>
Year Two Year 11 GCSE 8	<p>P1 - Uses boolean expressions to determine when a program should terminate</p> <p>P2 - design sub routines and modular solutions where possible to improve program flow and ease of use.</p> <p>P3 - design sub routines and modular solutions where</p>	<p>T1 - understand secondary keys</p> <p>T2 - understand the need for both high and low level languages</p>	<p>show an understanding of interpreters with high level languages</p> <p>explain to explain how sensors work in real world</p> <p>explain how output devices work in real world</p>	<p>Exceptional computing theory and application of the theory. Able to, with confidence break problems into smaller tasks and create modular solutions to them. Will help others in the room and is able to teach other students with explanation.</p>
Year 11 CSE 9	<p>understands a wide range of data structures</p> <p>can use the different data structures for different solutions</p>	<p>T1 - State what information would be present in a SQL search</p> <p>T2 - able to understand simple SQL</p>	<p>understand the need for both high and low level languages</p> <p>show an understanding for assemblers</p>	

Year 12 G1	understands how to manipulate different data structures and can create sub routines to do this quickly	T3 - able to select the correct data for primary and secondary keys	
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