Subject: Computing
Faculty: Innovation
Year Group: 9

EXCELLING (-, =, +)			
	**All of the secure criteria plus:** • Acting as a digital leader in the classroom supporting their peers. • Applying knowledge and skills consistently. • Applying FDE cycle using 'Little Man Computer'	**All of the secure criteria plus:** • Use of code efficiency to improve runtime execution. • Creating real-world programs to serve a clear purpose.	**All of the secure criterion plus:** • Complex logic diagrams • Complete truth tables from a boolean algebra statement.
SECURE			
	Autumn Term	**Spring Term**	**Summer Term**
	Assessment strategy: Formative and Summative in class tests 9.1 Systems Architecture	**Assessment strategy:** Formative and Summative in class tests 9.2 Programming (Python)	**Assessment strategy:** Formative and Summative in class tests 9.3 Binary
Pillar 1 - Declarative Knowledge This is sometimes referred to as conceptual knowledge. - It consists of the facts, rules and principles of the domain as well as the relationships between them. - It can be understood as 'knowing that'.	• Difference between hardware and software. • Internal components that make up a computer for example RAM, CPU. • Difference between input and output devices. • Factors that affect the speed of CPU for example clock speed. • Features of general systems and embedded systems.	**Everything from term 1 plus:** • Define a variable and know the rules for naming variables. • Interpret what a flow diagram is showing. • Maintainability of code i.e. comments, indentation. • Features of count controlled and a condition-controlled loop. • Error detection and know what each error means.	**Everything from terms 1 and 2 plus:** • Know the order of Units of storage. • The role of binary numbers in a computer system. • Number systems for example base 2 and base 10. • How the binary place value system works. • Difference between lossy and lossless compression.
Pillar 2 - Procedural Knowledge This is knowledge of methods and processes that can be performed. - It can be understood as 'knowing how'. - Teaching the steps of these processes as knowledge helps pupils perform them more skilfully	• Investigate how computers work through performing the fetch-execute cycle. • 'Buy' individual components that make up a computer system linked to set criteria. • How the components work together and each serve a purpose. • What happens during the 'process' on a range of embedded systems.	**Everything from term 1 plus:** • Combine strings with variables in the print statement. • Create an if...else statement for the program to make decisions • Create complex programs that include nested if statements and use "and" and "or" in their conditions. • Create a flow diagram to plan a program • Create a for loop (count controlled and a while loop (condition controlled).	**Everything from terms 1 and 2 plus:** • Calculate unit of storage for example how many bytes go into a MB. • Read a binary number and work out its value. • Add two binary numbers. • How images and sound are represented in binary on computer systems. • How to produce logic gates linked to truth tables.
DEVELOPING (-, =, +)			
	Not yet secure with all of the criteria set out for the term.		