

Subject:

Computing

YEAR Group: 10



ARE	Term 2	Term 4	End of Year
<ul style="list-style-type: none"> ✓ Greater depth 	<ul style="list-style-type: none"> ✓ You demonstrate excellent computational thinking: abstraction, decomposition & algorithmic thinking ✓ You can independently apply understanding of Python to write working programs ✓ You can effectively apply concepts, principles, analytical, logical and evaluative computational thinking to solve a wide range of complex problems 	<ul style="list-style-type: none"> ✓ You can write efficient code using wide a wide range of techniques, data structures and recursion. ✓ You can apply fundamental concepts, principles and mathematical skills, using sustained analytical, logical and evaluative computational thinking, to a wide range of complex of problems ✓ You can confidently apply the use of SQL to search for data. ✓ You can apply the use of arrays efficiently when solving problems, include both one and two dimensional arrays ✓ You know how to use sub programs effectively to produced structured code ✓ You can use data types appropriately including: integer, real, Boolean & strings ✓ 	<ul style="list-style-type: none"> ✓ You can use standard searching and sorting algorithms efficiently: binary search, linear, bubble sort, merge sort & insertion sort ✓ You can design, develop and evaluate complex programming tasks effectively ✓ You can effectively test and de-bug programs independently ✓ You can effectively apply maintainability of code to all programs created ✓ You can confidently apply complex operations on binary numbers ✓ You have demonstrated relevant and comprehensive knowledge and understanding of fundamental concepts and principles including digital systems and societal impacts
Working at	<ul style="list-style-type: none"> ✓ You can demonstrate computational thinking: abstraction, decomposition & algorithmic thinking ✓ You can interpret, correct or complete algorithms. ✓ You can use variables, constants, operators, inputs, outputs, and assignments whilst programming ✓ You can use sequence, selection and iteration to control the flow of a program. ✓ You can make appropriate use of data structures (lists, tables & arrays) 	<ul style="list-style-type: none"> ✓ You are able to interpret, correct and complete algorithms effectively to solve complex real-world problems. ✓ You can use variables, constants, operators, inputs, outputs, and assignments whilst programming ✓ You can use sequence, selection and iteration to control the flow of a program. ✓ You can make appropriate use of data structures (lists, tables & arrays) ✓ You can apply the use of SQL to search for data ✓ You are starting to implement the use of sub programs within your code ✓ You understand the use of Data Types and can apply this knowledge to programs 	<ul style="list-style-type: none"> ✓ You have a good understanding of the purpose of, and be able to carry out different types of testing (iterative, final) ✓ You can identify syntax and logical errors ✓ You can select suitable test data ✓ You can apply standard searching and sorting algorithms efficiently: binary search, linear, bubble sort, merge sort & insertion sort ✓ You recognise the importance of writing maintainable code ✓ You can apply complex operations on binary numbers ✓ You have demonstrated mostly accurate and appropriate knowledge and understanding of fundamental concepts and principles including digital systems and societal impacts
Working towards	<ul style="list-style-type: none"> ✓ You can solve problems by breaking them down into smaller, logical parts using pseudocode or flowcharts ✓ You can problem-solve and de-bug code with some assistance ✓ You can use sequence, selection and repetition in programs ✓ You can work with variables and various forms of input and output 	<ul style="list-style-type: none"> ✓ You know how to design, write and debug programs so that they work effectively and accomplish specific goals with some independence ✓ You can confidently solve problems by breaking them down into smaller, logical parts using the correct pseudocode structure ✓ You understand data types and where they might be used 	<ul style="list-style-type: none"> ✓ You understand key algorithms that reflect computational thinking (sorting & Searching) ✓ You can create and de-bug simple programs ✓ You can carry out simple operations on binary numbers (conversion, addition) ✓ You have demonstrated limited knowledge and understanding of fundamental concepts and principles including digital systems and societal impacts