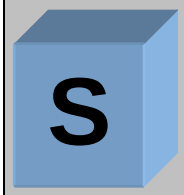
Year 11: ASK Yourself!

Subject: Computer Science

Unit: Whole Year

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
				
Numeric Functions	I can apply basic mathematical functions to integers and reals.	I use floor division in my calculations.	I can change the type of numeric data.	I can display real numbers to defined decimal places.
Lists **Arrays**	I can define a variable of type list. I can define a 2D array.	I can append or delete values to a list. I can append or delete values from a 2D array.	I can use index() to find a value in a list. I can sort() and reverse() the values in a list. I can print the values in a 2D array using iteration.	I can read lines from a text file into a list. I can search a 2D array.
Text Files	I can read values from a one line text file.	I can read values from a text file of many lines.	I can write values to a text file.	I can append values to a text file.
Design Top Down Input, Process Output Data structures	I can design a simple algorithm. I can use a diagram to show an algorithm. I can identify the inputs, processes and outputs required in an algorithm.	I can design an algorithm to solve a problem. I can use a Top Down approach to show an algorithm. I can use a flowchart to plan my solution.	I can design an algorithm to solve a complex problem. I can include functions in my algorithm design. I can use Pseudocode to plan my solution.	I can design an efficient algorithm to solve a complex problem. I can identify local and global variables in my algorithm.
Testing solutions	I can test my solution to ensure it works.	I can produce a test plan to ensure my solutions work and provide evidence of testing against my plan.	I can produce a test plan which includes normal, extreme and erroneous data. I can provide evidence of testing against my plan.	I can evaluate the robustness and efficiency of my solution.
Databases	I can create a flat file database	I can create a relational database	I can write SQL commands to search a database	I can use SQL commands to add or delete data in a database.

Knowledge				
Design algorithm	I know how to break of problem down into manageable steps.	I know how to use Top Down approach to break down the problem into manageable steps.	I know how to use Pseudocode to describe my algorithm.	I can evaluate alternative algorithms and select the most efficient.
Design the data structure	I know how and when to use variables to store values in my solution.	I know how and when to use lists to store values in my solution.	I know how and when to use 2D arrays to store values in my solution.	I know how and when to use text files to store values in my solution.
Evidence of solution	I can state the techniques used in my solution.	I can describe the techniques used in my solution.	I can discuss alternative techniques which could have been used in my solution.	I can evaluate the effectiveness of the techniques used in my solution.
Testing	I know how to create a simple test plan to check if parts of my solution work.	I know how to create a test plan to check if most parts of my solution work.	I know how to create a test plan with normal, extreme and erroneous data to check my solution works.	I know how to evaluate the robustness and efficiency of my solution.
Databases	I know how to design and create a flat file database to store data.	I know how to design and create a relational database to store data.	I know how to write SQL statements using logical operators to search for information in a database.	I know how to write SQL statements to append or delete data from tables in a database.
Use of Computers in Society	I can state a range of uses of computers in society.	I can describe a range of uses of computers in society.	I can explain how a wide range of computer systems are used in society.	I can discuss the impact of computer systems on society.
Legislation	I can identify the laws that relate to computer systems.	I can describe the laws that relate to computer systems.	I can explain why laws relating to computer systems are required.	I can discuss the effectiveness of laws relating to computer systems.