Year 9: ASK Yourself!

Subject: Computer Science
Unit: Term 1

Skills	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
Sequencing Instructions	I can design a simple 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 flowchart to plan my solution.	I can design an algorithm to solve a complex problem. I can use Pseudocode to plan my solution.	I can design an efficient algorithm to solve a complex problem. I can modularise a solution.
Strings	I can input and output string variables.	I can concatenate strings.	I can insert tabs and new lines in printed output using escape codes.	I can apply string methods to transform strings.
For Loops	I can identify when instructions need to be repeated a definite number of times.	I can repeat a block of instructions a definite number of times.	I can use a for loop to count up in defined steps.	I can use a for loop to count down.
While Loops	I can identify when instructions need to be repeated an indefinite number of times.	I can repeat a block of instructions an indefinite number of times.	I can use nested while and for loops.	I can explain the difference between definite and indefinite loops.
Branching	I can use an if statement to carry out a block of instructions.	I can use if and else to select appropriate blocks of code.	I can use if, elif and else to select appropriate blocks of code.	I can use complex conditions with if statements.
Lists	I can define a variable of type list.	I can append or delete values to a list.	I can use index() to find a value in a list.	I can sort() and reverse() the values in a list.
Arrays	I can define a 2D array.	I can append or delete values from a 2D array.	I can print the values in a 2D array using iteration.	I can search a 2D array.
Random Functions	I can generate a random number in a given range.	I can use random numbers to generate mathematical questions.	I can use random numbers to select elements in a list.	I can use random numbers to select elements from 2D arrays.

K nowledge				
Hardware	I can identify hardware and software elements of a computer system.	I can identify a range of input and output devices.	I can identify a range of input and output devices and describe their purpose.	I can select appropriate input and output devices for a given situation.
Data Types	I can name primitive data types.	I can select appropriate data types to store specified data.	I can explain why a data type is appropriate.	I can discuss alternative data types.
Design the data structure	I know how to name and create variables for use in my solution.	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.
Python	I can use Python with support.	I can use Python with some support.	I can use Python to solve a problem.	I can explain how to solve a problem using Python.