

Year 9: ASK Yourself!

Subject: Computer Science
Unit: Term 1

| | Launching 1-2 | Developing 3-4 | Progressing 5-6 | Mastering 7-9 |
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| Sequencing Instructions | <p>I can design a simple algorithm.</p> <p>I can identify the inputs, processes and outputs required in an algorithm.</p> | <p>I can design an algorithm to solve a problem.</p> <p>I can use a flowchart to plan my solution.</p> | <p>I can design an algorithm to solve a complex problem.</p> <p>I can use Pseudocode to plan my solution.</p> | <p>I can design an efficient algorithm to solve a complex problem.</p> <p>I can modularise a solution.</p> |
| 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. |



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| 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. |