





Year 10: ASK Yourself!

Subject: Computer Science

Unit: Term 1

	Launching 1-2	Developing 3-4	Progressing 5-6	Mastering 7-9
 S skills				
Robustness	I can state the benefits of using techniques to ensure robustness.	I can apply data checking techniques to validate data.	I can use try & except to prevent errors.	I can select suitable test data to test normal, boundary and erroneous.
Searching	I can state how a linear search algorithm works.	I can state how a binary search algorithm works.	I can compare and contrast linear and binary search algorithms.	I can explain the advantages and disadvantages of both algorithms.
Sorting	I can state how the merge sort algorithms work.	I can state how a bubble sort algorithm works.	I can compare and contrast merge and bubble sort algorithms.	I can explain the advantages and disadvantages of both algorithms.
Boolean Logic	I can construct truth tables for AND, OR, NOT.	I can construct truth tables for simple logic circuits.	I can interpret the results of simple truth tables with up to 3 inputs.	I can create, modify and interpret simple logic circuit diagrams.
 K knowledge				
Input & Output Devices	I know the difference between hardware & software and can identify input and output devices.	I can identify input & output devices in embedded systems.	I can describe relationship between the device and the related interface.	I can explain the use and benefits of wearable technology.
Ciphers and Encryption	I know the difference between ciphers and encryption.	I know how computer systems use encryption to ensure data security.	I know how to create and decode a simple cipher.	I know how to evaluate the effectiveness of cipher.

Memory	I know the difference between memory and storage.	I know the differences between RAM and ROM.	I can describe how cache memory works.	I can explain the benefits of larger RAM in a computer system.
Storage	I know why secondary storage is required.	I know the different types of secondary storage.	I can describe the operation of solid state, optical, magnetic and cloud storage.	I can discuss the advantages and disadvantages of solid state, optical, magnetic and cloud storage.
CPU	I can state the purpose of the components of the CPU.	I can explain the role and operation the main components of the CPU.	I can explain the effect of the following on CPU performance: Clock speed; number of cores; cache size; cache type.	I can understand and explain the Fetch-Decode-Execute cycle.
Data Types	I can select appropriate data types to store specified data.	I can explain why a data type is appropriate.	I can describe the use of data structures to store data.	I can explain the benefits of using data structures to store data.
Binary Maths	I know how to convert from and to binary values.	I know how to add and subtract up to 2 binary values.	I know how to add, subtract, multiply and divide simple binary values.	I am confident in manipulating binary values using addition, subtraction, multiplication and division.