KS3 Computing Program of Study

Year 7

Module	Big Question	Assessment strands	Grading
Computer Basics	How do I use the school network?	can log onto computers, Firefly and email. Can create folders, save and retrieve files Can use keyboard and mouse fluently	Emerging:40% in end of unit test Needs support with skills Developing:55% in end of unit test Can complete some skills independently Secured:70% in end of unit test Can complete most skills independently Mastered: 85% in end of unit test. Shows independence in skills
Hardware and Software	What are hardware and software and what are their uses?	Can explain hardware and software and the difference between them Can describe key hardware components of a computer Can compare storage methods	Emerging: 40% in end of unit test Developing: 55% in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test
Spreadsheets	How can we use a spreadsheet to model data?	Can identify key features of a spreadsheet (rows, columns, cells) Can create simple formulae Can use common functions (SUM, AVE, MIN, MAX)	Emerging: 40% in end of unit test Needs support in setting up formulae/functions/charts Developing: 55 in end of unit test Can create simple formulae unaided but needs support with more

		Can create charts/graphs Can format data	complex activities, or identifying methods. Can create charts but may miss key features. Secured: 70% in end of unit test Can create formulae and functions independently. Can create suitable labelled charts/graphs. Sometimes needs support on complex tasks. Mastered: 85% in end of unit test Can independently identify methods and set up formulae/functions to achieve these. Formatting is used to enhance readability of data.
E-safety	How do I stay safe online?	Can explain what a digital footprint is Knows what online abuse is and where to seek support and guidance Understands how copyright law affects us Can explain how to post online safely and respectfully	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test
Presenting Data	How do I present data effectively?	Can identify and explain audience and purpose Can use search the Internet effectively (keywords, Boolean operators	Emerging: 40% in end of unit test Can create a basic presentation. Needs support to use software tools.

		Can identify reliable and untrustworthy sources online Can create a presentation suited for audience and purpose Can make use of presentation software tools (layouts, colour, graphics, animation)	Developing: 55 in end of unit test Can create a presentation making some use of key techniques but may need support. Secured: 70% in end of unit test Can create a presentation using a range of techniques which is mostly suitable for audience and purpose. Mastered: 85% in end of unit test Independently able to create a presentation which effectively uses software tools to meet the desired purpose and audience.
Scratch	What is block based coding?	Can explain linear programming and create a linear program. Can explain iteration and create an iterative (count and for loops) program. Can explain where IF statements are used and can create a program using this. Can identify and use variables in a program.	Emerging: 40% in end of unit test Can create a simple linear program Developing: 55 in end of unit test Can use iteration in coding with support. Secured: 70% in end of unit test Can create complex programs but needs support in debugging Mastered: 85% in end of unit test Is confident and can create programs with fluency and accuracy. Is able to debug their own work effectively.

Year 8

Module	Big Question	Assessment	Grading
Edublocks	How do I develop from block to text based programming?	Can create a sequential program Can use Edublocks to draw shapes using iteration Can use selection (IF) in a program Can create a program which uses an input from a user Can explain and use variables in a program Can create an effective program using functions	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test
Algorithms	What are algorithms and why do we use them?	Can identify the key strands of Computational Thinking. Can explain key programming constructs (sequence, selection, iteration) Can recognise and use mathematical operators Can create a flowchart to visually represent an algorithm Can use trace tables to test out algorithms	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test

Python	How do I create simple text based programs?	Can create a print statement Can store data from an input as a variable and use this in a program Can create iterative programs Can create programs using selection Can use Boolean operators in selection programs Can understand the difference between syntax and logic errors	Emerging: 40% in end of unit test Can create simple, linear programs. Needs support with more complex tasks and debugging. Developing: 55 in end of unit test Can use iteration and selection with support, needs support with debugging Secured: 70% in end of unit test Can create programs and debug showing a high level of independence. Mastered: 85% in end of unit test Programs fluently and is able to debug their work with ease.
Data Representation	How do computers store data?	Can recognise the key storage units and explain the links between them. Can explain why computers use binary Can convert numbers between binary and denary Can carry out simple calculations in binary	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test

		Can convert numbers between hexadecimal and binary Can explain what ASCII is and why it is used Can convert between binary and ASCII	
Software	What are the key types of software?	Can explain what a user interface is and how the design of this is important Can identify the key features of an operating system Can explain what utility software is Can explain the importance of updating ant-virus software regularly Can identify programs and their type	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test
Networks		Can explain what a network is Can explain what a protocol is and why they are used Can explain what a LAN is and where they are used Can explain what a WAN is and where they are used	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test

		Can identify and explain key items of network hardware Can explain the key differences between a wired and wireless network	

Year 9

Module	Big Question	Assessment	Grading
Python	How do I program in Python?	Can create a linear program Can use selection in a program Can use iteration in a program Can use mathematical and Boolean operators in a program	Emerging: 40% in end of unit test Can create a linear program but needs support in using operators and creating iterative or selection programs. Can add a comment to software. Developing: 55 in end of unit test Can use operators mostly effectively Can use selection/iteration but needs support with the other. Comments are basic. Secured: 70% in end of unit test Can program with increasing confidence but may need help with debugging. Comments show some understanding of key constructs

			Mastered: 85% in end of unit test Can confidently create short programs independently, comment their code, and debug
Sorting and Searching Algorithms	What are the key algorithms used in computer science?	Can explain why sorting and searching algorithms are used Can complete a bubble sort Can complete a merge sort Can complete a insertion sort Can complete a linear search Can complete a binary search	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test
Hardware and Software	What are the key hardware and software used in computing.	Can explain input devices and identify common examples of these Can explain output devices and identify common examples of these Can explain RAM and ROM and their uses in a computer Can explain what secondary storage is and identify the 3 types	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test

		Can select suitable components to complete a computer	
Logic Gates		Can identify AND, OR and NOT gates Can complete truth tables for logic gates Can represent logic through circuit diagrams Can write the Boolean logic for a given diagram Can give the outputs for logic circuits from a range of inputs	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test
System Security	What is system security?	Can explain why systems are attacked Can identify and explain key threats to computer systems Can identify logical methods to protect data Can identify physical methods to protect data Can explain penetration testing Can explain what phishing is and identify some ways to spot a phishing message	Emerging: 40% in end of unit test Developing: 55 in end of unit test Secured: 70% in end of unit test Mastered: 85% in end of unit test