

Coding Club Series – KS3 Curriculum Map

Strand*	KS3 NC Statements	Python Basics	Programming Art	Black Flag	Next Steps	Building Big Apps
CS	1. design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems	Foundations	Good	Full	Full	Full
CS	2. understand several key algorithms that reflect computational thinking [e.g. ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem			Full	Full	Full
CS	3. use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [e.g. lists, tables or arrays]; design and develop modular programs that use procedures or functions	Foundations	Foundations	Full (text based component)	Full (text based component)	Full (text based component)
CS	4. understand simple Boolean logic [e.g. AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [e.g. binary addition, and conversion between binary and decimal]	Boolean – full Binary - no	Boolean – full Binary - no	Full	Full	Full
CS	5. understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems					
CS	6. understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	Foundations – text	Foundations – images	Full – text & images Foundations – sounds	Foundations – text & images	
IT	7. undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users		Good			
IT	8. create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability					
DL	9. understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.			Good – protecting online identity		

* Strand: CS = Computer Science, IT=Information Technology, DL= Digital Literacy

Summary

Students could obtain good coverage of the CS aspects in the KS3 National Curriculum in a project based, differentiated course; where the learning of programming is carefully planned and much of the required Computer Science content is covered incidentally by following either **all three Level 1 books** or **Python Basics and Python: Next Steps**. This would leave plenty of time to cover the missing statements, 5, 7, 8 and 9 in the usual way as these have been traditionally taught in KS3 ICT courses.

Level 2 and 3 books provide comprehensive foundations for the programming components in GCSE Computer Science.