Sheldon School
A high performing school

GCSE Computer Science

Subject Title	Computer Science
Exam board	Edexcel
Specification code	Pearson Edexcel Level Level 2 GCSE (9-1) in Computer Science (1CP2) (2020 Spec)
Entry Level	All sit the same paper
Exam details	Paper 1: 1 hour 30 minutes Paper 2: 2 hours Paper 1: Principles of Computer Science – 1.5 hour written examination. Paper 2: Application of Computational Thinking 2-hour practical programming exam.
Setting arrangements	n/a.
Time allowed	5 lessons per fortnight in Y10, 5 in Y11
Textbooks and revision guides	**Textbooks** Pearson and Hodder textbooks. Use the above specification codes to choose the appropriate publications **Revision guide** Available from school office, 2020 Specification
Homework information	40-60 minutes per week Topic Notes from video content, practice exam questions, independent research, revision resource creation, online quizzes

Term	Topics	Skills	Assessment
Y10 1 + 2	Introduction to Computer Science and Programming	Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs. understand types of errors that can occur in programs (syntax, logic, runtime) and be able to identify and correct logic errors in algorithms. Understand how standard algorithms (bubble sort, merge sort, linear search, binary search) work	Exam based questions, programming skills and knowledge practical tests. End of unit tests/workbook assessment
3 + 4	Data Networks	Understanding of binary, data representation, data storage and compression. Understanding of hardware and software components of computer systems and characteristics of programming languages.	Exam based questions, programming skills and knowledge practical tests. End of unit tests/workbook assessment
5 + 6	Computational thinking	Understanding of what algorithms are, what they are used for and how they work; ability to follow, amend and write algorithms; ability to construct truth tables. Understand how standard algorithms (bubble sort, merge sort, linear search, binary search) work	Exam based questions, programming skills and knowledge practical tests. End of unit tests/workbook assessment

Y11 1	Algorithms	Understand the need for and be able to follow and write algorithms that use arithmetic operators (addition, subtraction, division, multiplication, modulus, integer division, exponentiation), relational operators (equal to, less than, greater than, not equal to, less than or equal to, greater than or equal to) and logical operators (AND, OR, NOT)	Exam based questions, programming skills and knowledge practical tests. End of unit tests/workbook assessment Online Revision (smartRevise)
2	Data Representation	2.2.1 understand how computers encode characters using 7-bit ASCII 2.2.2 understand how bitmap images are represented in binary (pixels, resolution, colour depth) 2.2.3 understand how analogue sound is represented in binary (amplitude, sample rate, bit depth, sample interval) 2.2.4 understand the limitations of binary representation of data when constrained by the number of available bits	Exam based questions, programming skills and knowledge practical tests. End of unit tests/workbook assessment Online Revision (smartRevise)
3 + 4	**Environmental, Ethical and Legal aspects of Computer Science**	Understand environmental issues associated with the use of digital devices (energy consumption, manufacture, replacement cycle, disposal) 5.2 Ethical and legal 5.2.1 understand ethical and legal issues associated with the collection and use of personal data (privacy, ownership, consent, misuse, data protection) 5.2.2	Exam based questions, programming skills and knowledge practical tests. End of unit tests/workbook assessment

		understand ethical and legal issues associated with the use of artificial intelligence, machine learning and robotics (accountability, safety, algorithmic bias, legal liability) 5.2.3 understand methods of intellectual property protection for computer systems and software (copyright, patents, trademarks, licencing)	
5	Revision and exam preparation	Overview of Key Topics, Exam Paper review and Preparation for Practical coding exam	Exam based questions, programming skills and knowledge practical tests. End of unit tests/workbook assessment Online Revision (smartRevise)
Links to websites and revision materials:		https://qualifications.pearson.com/en/qualifications/edexcel-gcses/computer-science-2020.html https://www.smartrevise.online/ https://isaaccomputerscience.org/ https://www.bbc.co.uk/bitesize/examspecs/zdqy7nb	