Sheldon School
A high performing school

GCSE Computer Science

Subject Title	Computer Science
Exam board	OCR
Specification code	J277
Entry Level	All sit the same paper
Exam details	Paper 1 Computer Systems 1.5 hours (written) Paper 2 Computational Thinking, Algorithms and Programming 1.5 hours (written) Exams are each worth 50% of the final mark
Setting arrangements	n/a
Time allowed	5 lessons per fortnight in Y10, 5 in Y11
Textbooks and revision guides	**Endorsed** Textbooks: https://www.ocr.org.uk/qualifications/gcse/computer-science-j277-from-2020/textbooks/ Craig & Dave: https://student.craigndave.org/
Homework information	40-60 minutes per week Content revision, practice exam questions, independent research, revision resource creation, online quizzes

Term	Topics	Content
Y10 1 + 2	1.6 Ethical, Legal, Cultural and Environmental Impacts of Digital Technology 1.1 Systems Architecture	• Impacts of digital technology on wider society • Legislation relevant to Computer Science • Purpose of the CPU • CPU components • CPU performance • Embedded systems
3 + 4	1.2 Memory & Storage 1.3 Computer Networks, Connections & Protocols	• Primary storage • Secondary storage • Units of data storage • Numbers – binary & hexadecimal • Character sets – UNICODE & ASCII • Compression • Network Topologies – LAN & WAN • Network hardware • Wired & wireless networks • Network protocols
5 + 6	1.4 Network Security 1.5 Systems Software	• Threats to systems • Malware & Cybersecurity • Operating Systems • Utility Software
Y11 1	2.1 Algorithms 2.2 Programming Fundamentals 2.3 Producing Robust Programs	• Computational Thinking Skills • Creating, refining and evaluating algorithms • Trace Tables • Standard searching & sorting algorithms • Standard coding conventions • Arithmetic & Boolean operators • Data types • Defensive designs • Testing
2	2.4 Boolean Logic 2.5 Programming Languages and IDEs	• Boolean logic • Different types of languages • Translators & compilers • The nature of IDEs

3	Practical Programming	All students will be given the opportunity to undertake a programming task or tasks during their course of study. The programming task(s) must allow them to develop skills within the following areas when programming: • Design • Write • Test • Refine Each task(s) will use one or more high-level text-based programming language, either to a specification or to solve a problem (or problems).
4 + 5	Revision	Revisit topics previously studies. Use past-papers and focus on exam technique.
Links to websites and revision materials: https://student.craigndave.org/ https://senecalearning.com/en-GB/blog/free-ocr-computer-science-gcse-revision/ https://isaaccomputerscience.org/topics/gcse?examBoard=all&stage=all#ocr https://www.bbc.co.uk/bitesize/examspecs/zmtchbk		