Subject: GCSE Computer Science
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Examination Board / Syllabus: (OCR) J277
Introduction The world depends on computers. In this GCSE you will learn about how computers work, the networks they use and how programming can create solutions to everyday problems and future challenges.
What will I study? **Component 01 – Computer Systems.** You will learn about digital systems and how they communicate with one another. This component introduces you to the computer processor, memory and storage, data representation, wired and wireless networks, network topologies, system security and system software. You will also consider the ethical, legal, cultural and environmental concerns associated with computer science. **Component 02 – Computational Thinking, Algorithms and Programming.** The most important aspect of computer science is problem solving. In this component, you will analyse problems in computational terms through practical experience including designing, writing and debugging programs. You will understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic and algorithms. You will have the opportunity to complete a sizable programming project during this course, where you will design, write, test and refine programs using a high-level programming language. This will prepare you for the written examination, in particular component 02. You will develop your ability to: • Break down problems effectively • Solve complex problems • Think logically • Learn through exploration **Skills needed to study this subject:** Learners are expected to be familiar with the Key Stage 3 Computing curriculum as well as having strong Mathematical skills.
How will my work be assessed? Component 01 – Computer Systems 50% (Exam) Component 02 – Computational Thinking, Algorithms and Programming 50% (Exam)
What would this subject enable me to do when I leave school? **Possible Careers + Future Study:** GCSE Computer Science lays the foundation for studying the subject at A Level and beyond. It is a useful first step to a broad range of careers including Cyber Security, Software Developer, Games Designer, Network Manager, Systems Analyst, Artificial Intelligence, Software testing, web designer. The qualification will also provide a good grounding for other areas that require logical thinking and analytical skills including healthcare, science and engineering.