# COMPUTER SCIENCE

**KEY STAGE 4**

**Years 10 and 11** pupils are currently taking part in the recently reviewed OCR Computer Science (9-1) course, which sees the subject moving to an 80% exam and 20% coursework subject.  Pupils will get the opportunity to learn a wide range of topics from what a computer system consists of, the different types of system security to the ethical, legal, cultural and environmental concerns. They will learn how to build algorithms and develop different functionality to meet design criteria.  Understanding of computer hardware and software are taught in addition to wired and wireless networks. There is also a focus on developing pupils' computational thinking and ability to develop algorithms and applying the knowledge they have learned by developing a solution to a real world problem.

**Component 1 - Computer Systems**:  (Examination unit – combination of short and long answer style questions, some of which require the writing of code); 1 hour 30 minutes; 80 marks; 40% of qualification.  In this examined unit pupils will explore the fundamentals of computer systems. They will study computer architecture, computer hardware and its components. Pupils will look into how software is used to perform functions for user interfaces and explore custom written and off-the-shelf software. This component will also give pupils a detailed knowledge of the inner working of wired and wireless networks alongside the   importance of systems security.

**Component 2 - Computational Thinking, Algorithms and Programming:** (Examination unit – combination of short and long answer style questions, some of which require the writing of code); 1 hour 30 minutes; 80 marks; 40% of qualification. This component is another written exam, focused on computational thinking and algorithms. Pupils are tested on the elements of computational thinking and logic. The main focus of the assessment is to test pupils' ability to write, correct and improve algorithms.

**Component 3 - Programming Project:** 20 hours; 40 marks; 20% of qualification. This is a practical unit where pupils are asked to design and create suitable algorithms to provide a solution to a given problem and then develop the solution using a suitable programming language.  They will then need to test and evaluate their solution to provide evidence of a programming solution and to build on techniques they have learnt.