COMPUTING

The course is not about learning to use tools or just training in a programming language. Instead the emphasis is on computational thinking. Computational thinking is a kind of reasoning used by both humans and machines. Thinking computationally is an important life skill. Thinking computationally means using abstraction and decomposition. The study of computation is about what can be computed and how to compute it. Computer Science involves questions that have the potential to change how we view the world. For example, we may be computing with DNA at some stage in the future, with computer circuits made of genes. This leads to the question, does the natural world 'compute'?

Experimental Computer Science can be done with computers whereby we can learn more about the natural world by observing the emergent behaviour of a colony of interacting software agents in a simulation. Computing / Computer Science is about designing new algorithms to solve new problems. In this sense Computer Science is no more about computers than astronomy is about telescopes. Many great challenges lie in the future for Computer Scientists to solve. This course, with its emphasis on abstract thinking, general problem-solving, algorithmic and mathematical reasoning, scientific and engineering-based thinking, is a good foundation for understanding these future challenges.

ENTRY REQUIREMENTS
Several subject areas of the previous AQA GCE Computing specification have been retained, with changes made to bring the content up to date as well as to shift the emphasis in the direction of Computer Science and Computation.

There is a clear distinction between this specification and the GCE ICT and GCE Applied ICT specifications. It has been written to avoid any overlap of subject content. Students following this specification do not need to have any prior knowledge of Computing or ICT.

EXAMINATION BOARD
AQA

MODULES
AS specification
Unit 1 is a practical, on-screen, examination which allows candidates to demonstrate their knowledge of the fundamental principles of the subject, focusing on programming through a problem-solving scenario using pre-release material.

Unit 2 focuses on the hardware and software aspects of Computing and the social and economic consequences of Computing.

The A2 specification builds on the content of AS, with Unit 3 focusing on computational thinking, what can be computed, programming and problem-solving including communication and networking. The second unit, Unit 4, is an internally assessed unit, with candidates required to complete a report on a computer-based programmed solution to a problem solving exercise of their choice.

WHERE DOES IT LEAD?
The course has been designed for students who wish to go on to higher education courses or employment where knowledge of Computing would be beneficial. One can study Computing and go on to a career in medicine, law, business, politics or any type of science.