

# Computer Science (OCR)

## ABOUT THE COURSE

Thinking computationally is an important life skill as it is all about problem solving. You will learn about techniques of abstraction and decomposition which involve breaking problems down into smaller parts to make them solvable.

The study of computation is also 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.

## WHAT DO I NEED TO KNOW OR BE ABLE TO DO BEFORE TAKING THIS COURSE?

You do not need to have studied Computer Science at GCSE level in order to take an AS or A level course in the subject. It is more important that you have a strong interest in computing and ICT related issues and want to learn computational thinking.

This course has an emphasis on abstract thinking, general problem solving, algorithmic and mathematical reasoning, scientific and engineering-based thinking, providing a good foundation for understanding future challenges. It is expected that students achieve at least a grade B in English and Maths GCSE.

## HOW CAN I DEVELOP MY FULL RANGE OF SKILLS BY DOING THIS COURSE?

As well as covering advanced level study of computing fundamentals, this course will enable you to develop skills which will be essential to you whatever you go on to do afterwards. The skills you can develop during this course are:

- capacity for thinking creatively, innovatively, analytically, logically and critically
- problem solving
- communication and working with others
- project and time management skills
- improving own learning and performance

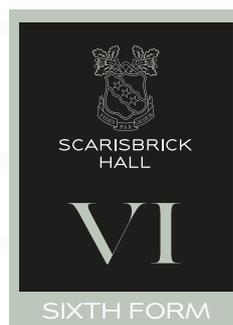
## Why Choose A-Level Computer Science?

**This course will appeal to you if you wish to pursue a career in the computing industry, or in a mathematical or science related profession.**

**You will enjoy studying a subject that affects your everyday life and is modern and up to date. For example you may have an interest in emerging technologies and how they can impact on society.**

**You should have an interest in the hardware and software that makes up our modern computer systems, and be willing to learn a programming language such as Python or Java.**

**However you should be aware that the course is very different to ICT, and is not about learning to use tools or design documents. Instead the emphasis is on computational thinking.**



# Computer Science (AQA)

## **AS COMPUTER SCIENCE**

In the AS specification there are two units studied in the Lower Sixth.

Computing principles (Unit 1) contains the majority of the content of the specification and is assessed in a written paper recalling knowledge and understanding.

Algorithms and problem solving (Unit 2) relates principally to problem solving skills needed by learners to apply the knowledge and understanding encountered in the Computing principles component.

The A-Level specification taken in the Upper Sixth builds on the content of AS, and adds an extra unit:

Programming project (Unit 3) is a practical portfolio based assessment with a task that is chosen by the teacher or learner and is produced in an appropriate programming language of the learner's or teacher's choice.

## **WHAT COULD I GO ON TO DO AT THE END OF MY COURSE?**

Students with an AS or A level in Computer Science have access to a wide range of possible career and higher education opportunities. You will learn and use a variety of transferable skills throughout the course. Computing combines well with a range of science and mathematics subjects to lead to university subjects in such areas as medicine, law, business, politics or any type of science.

