# Computer Science AQA

## Why Study Computer Science?

Ever wanted to make a difference? Thought about creating something completely original, such as a truly autonomous electric car or a re-usable space rocket? Want to design Formula 1 cars? The one thing that all of those potential careers have in common, is Computer Science.

Whether it's creating an aerodynamic model, simulating chemical reactions in lithium-ion batteries or a new loss-less compression algorithm to speed up video streaming, they all rely on people like you creating and manipulating complex software.

We will teach you how to do some of this. We will get you started on your journey to making a worthwhile contribution to science, technology and the world.

Computer Science has been upgraded by the Russell Group universities to be a facilitating subject for Computer Science, Engineering, Science and Economics degrees. They all require a strong level of numeracy and critical thinking. Computer Science will provide you with the ability to rapidly assimilate information and apply it to solve complex real-world problems. These skills are highly valued by employers and give you a head-start in the UK technology sector, which generates approximately 10% of our country's GDP and employs over a million people.

## Entry Requirements

A high level of numeracy and digital literacy are expected for Computer Science. We recommend that all candidates have at least a B or 6 in GCSE Computing or an A or 7 in GCSE Maths.

GCSE Computing is not a pre-requisite, but is helpful. Equivalent vocational qualifications will be considered.

## What is Involved?

- Control and modify computer systems using high level programming languages such as C#, Haskell and Python.
- An introduction to using Machine Code, Binary and Hexadecimal structures, particularly useful for later careers in cyber-security and architectural design.
- Explain core concepts of computing such as TCP/IP Networking, Processor Architecture and Construction.
- Create an original product such as a 3D physics-based game or e-commerce system using industry-standard project management techniques.
- Take part in the Cyber Security Challenge UK as part of your super-curricular enrichment.