



A level

Computer Science

### What will I learn?

You will learn a range of practical programming skills as well as the theoretical knowledge to support your development as a computer scientist. The topics you study include:

- Computing principles
- Algorithms and problem solving
- Programming
- Computational thinking
- Computational maths
- Computer systems

### What could this course lead on to?

This course prepares students to enter a variety of Computer Science, ICT, Mathematics or Science degree level courses. It can lead to careers in Computer Science, Software Development, Database Management, Communications and Networking, Systems Development, Web Development or Programming.

#### Entry Requirements:

Grade 5 in GCSE Computer Science  
Grade 6 in GCSE Maths

### How will I be assessed?

You will be assessed by your teacher at the end of each unit of study so that we can monitor your progress and support you where necessary.

The official assessment for the course involves 2 terminal exams and a coursework project. Each exam is 2.5 hours long and is worth 40% of the final grade. The coursework project is worth 20% of the final grade, and links closely to the second exam. The assessments cover a range of theoretical knowledge, as well as the application of that knowledge to real world situations. The coursework project involves creating a program to solve a real world problem – students often produce their own 2D game for this element.

### Key content

**Computer Systems:** A detailed look at the structure and workings of modern computer systems. This includes deconstructing modern data representation systems, the CPU, data exchange, data structures, software development models and the legal, moral and ethical issues that can arise from the use of computer systems.

**Algorithms and Programming:** A study of computational thinking skills and problem solving. You will learn methods of problem analysis and how to design and create solutions to those problems as you would in the real world. You will study modern algorithms and use knowledge gleaned to help you to create and refine your own algorithms.

**Programming Project:** You will analyse a real life problem, design a solution and implement it using an object-orientated language such as Monkey X. The most common form of programming project is to create a 2D game which can be distributed both online and through app stores.

### Course Details

**Awarding Body:** OCR

**Website Specific Number:** H446

**Staff Contact:** Mr N Mellors/Mr M Hopkinson