

GCSE **Computer Science**

2019-2021

**Please see a member of the Computing department for more
information**

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Qualification aims and objectives

The aims and objectives of this qualification are to enable students to:

Understand and apply the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms, and data representation

Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs

Think creatively, innovatively, analytically, logically and critically

Understand the components that make up digital systems, and how they communicate with one another and with other systems

Understand the impacts of digital technology to the individual and to wider society

Apply mathematical skills relevant to computer science.

The course consists of 3 elements:

- 2 exams each worth 40%
- 1 programming project worth 20%

Component 1: Computer Systems (1 hr 30 min Written Exam)

The exam covers: Computational thinking, problem solving, code tracing and applied computing as well as theoretical knowledge of Fundamentals of algorithms, Programming, Fundamentals of data representation and Computer systems.

Component 2: Computational Thinking, algorithms and programming (1 hr 30 min Written Exam)

This exam covers theoretical knowledge of; Fundamentals of data representation, Computer systems, Fundamentals of computer networks, Fundamentals of cyber security, Ethical, legal and environmental impacts of digital technology on wider society, including issues of privacy.

Component 3: Project (20hrs Coursework)

The non-exam assessment (NEA) assesses a student's ability to use the knowledge and skills gained through the course to solve a practical programming problem.

Students will be expected to follow a systematic approach to problem-solving, consistent with the skills of software development.