



Computer Science

Welcome to the Computer Science Department Curriculum Information 2018 - 2019

The Team:

Mr Mark Poeti Computer Science Subject Leader / Year Leader 8 & 9

Introduction to the Department:

In the Computer Science department we aim to:

- Develop an understanding of the digital world which pupils are living in
- Provide pupils with the knowledge of how to stay safe online
- Explain the ethical and environmental impacts of the digital age and technological advances
- Explore computational thinking and how the problem solving skills can be used cross-curricular

Key Stage 3 Information:

Year 7

Students will revise their knowledge of E-safety, followed by a series of projects designed to develop their understanding of the different strands of computing. These projects will include coding with Scratch and Micro:bits followed by web development.

Year 8

Students will revise their knowledge of E-safety, followed by a series of coding projects learning more advanced Scratch functions and text-based programming using Small Basic and Python. They will also complete a data-handling project using spreadsheets.

Year 9

Students will extend their knowledge from the previous two years, by continuing to studying text-based programming languages and computer systems. They will also explore some of the key computational theory which underpins Computer Science at GCSE and beyond.

Assessments take place at the end of each topic, in addition to computerised baseline tests at the start and end of the academic year.

Key Stage 4 Information:

GCSE Computer Science

GCSE Computer Science is a fast-paced, engaging course aimed at those students who are interested in developing their knowledge and understanding of how computers work and how to code using a text-based programming language. It is a subject that allows students to not only study the infrastructure, hardware and software that contribute to today's networks, but also the structure of the data itself and how it is stored. It also provides students the opportunity to consider the impact technology has on individuals, society and our planet. Students study the OCR 2016 (9-1) specification.

Assessment

Paper 1: Computer Systems

Written exam (*Summer exam series*) set in practically based scenarios - 50% of the GCSE

Pupils will cover a range of topics on the theory of computer science. This theoretical knowledge will then be assessed through multiple choice, short, long and extended answer questions. Topics will include data, networks, cyber security and the ethical, legal and environmental impacts of digital technology on wider society. Pupils will also be expected to understand aspects of software development.

Paper 2: Computational thinking, algorithm and programming

Written exam (*Summer exam series*) - 50% of the GCSE

Pupils will need to demonstrate the ability to create, understand and explain certain algorithms. They will also be assessed on programming concepts, data types and operations, in a programming language (predominately Python), using a variety of multiple choice, short and longer answer questions.

Non-exam assessment (NEA) - *Report and completed code list: totalling 20 hours of evidenced work (completion during Autumn Term in Year 11).*

BTEC Technical in Digital Information Technology

This engaging and current course is made up of three components: two that are internally assessed and one that's externally assessed. The three-block structure, explore, develop and apply, has been developed to allow students to build on and embed their knowledge. This allows them to grow in confidence and then put into practice what they have learned. The assessment structure is also designed so that students can build on what they learn, and develop their skills, as they move through the course.

Component 1: Exploring User Interface Design Principles and Project Planning Techniques

- Internally assessed assignment(s), 30% of the total course

Component 2: Explore Collecting, Presenting and Interpreting Data

- Internally assessed assignment(s), 30% of the total course

Component 3: Develop Effective Digital Working Practices

- Externally assessed exam • 40% of the total course