

Computing Curriculum

Intent

It is the aim of the department to enable students to develop skills and knowledge as part of a broad, balanced Computing curriculum. The Computing curriculum embraces the key disciplines of Computer Science, Information Technology and Digital Literacy.

Our Computing Curriculum takes into account the aims of the National Curriculum for Computing and ensures that our students:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology

Implementation

At KS3, students are introduced to a range of Computing topics, broken up into 4 'cycles'.

Year 7	Year 8
Networks and the Internet Students will learn how computer systems are connected together using networks, allowing them to communicate and share resources. They will understand that the Internet is an example of such a network. Students will understand how to stay safe online.	Data Modelling Students will understand how computational abstraction can be used to model real-world problems. They will develop and understanding of the use of spreadsheet modelling software.
Visual (blocks-based) Programming Students will understand the basic programming constructs: sequence, selection and iteration. They will design and create code which demonstrates their understanding of these constructs.	Text-based Programming Students will design and write computer code to solve a real-world problem. They will develop their understanding of the use of variables, constants, operators, inputs, outputs and assignment. They will write code that demonstrates and understanding of sequence, selection and iteration. They will test their products effectively.
Data Storage and Representation	User Interface Design

Students will develop and understanding of Computer systems store and represent data. Including number, text and image data.	Students will understand how large projects are planned and managed before undertaking on a project to design an IT system.
<p style="text-align: center;">Interactive Products</p> Students will use Information Technology to select and use digital artefacts to form part of an Interactive Product.	<p style="text-align: center;">Security</p> Students will understand about Computer Security, the forms of attack that Computer Systems may be subjected to and how to identify and prevent vulnerabilities.

At KS4 and KS5, students will have the opportunity to continue their study further as an option subject by choosing from a range of academic and vocational qualifications.

Key Stage 4	Key Stage 5
BTEC Level 1/2 Tech Award in Digital Information Technologies.	BTEC Level 3 Extended Certificate in Information Technologies.
OCR GCSE Computer Science (9-1)	OCR A-Level Computer Science