Computing

Our aim is to equip our learners with the skills to live and work both competently and safely in the digital world. We offer an engaging curriculum for our learners which makes use of a vast range of software and hardware.

With a national shift from ICT to Computing, our Computer Science lessons focus on how computers actually work, rather than simply how to use them. Throughout KS3 we introduce our pupils to programming concepts so that as they reach KS4, those pupils who opt to study GCSE Computer Science, have the basic skill set to become competent computer programmers.

We are aware that not all of our students seek a future within the computing industry. However, creativity and digital literacy are still considered an important component of our curriculum, not only to engage our learners but also provide them with transferable skills which can be incorporated effectively into other subjects. Creative Technology forms part of our technology carousel and allows the students to develop skills and understanding of using and developing a range of creative media.

Staffing:

Mrs Doran   Curriculum Leader for Computing & Technology (Yr 7-11)
Mrs Sales   2nd for Computing & Technology (Yr 9)
Mr O'Hare   Teacher of Technology (Yr 7)

Curriculum

The following topics are studied at KS3.

	Autumn Term	Spring Term	Summer term
Year 7	Getting Started & Online Safety Block Programming (BBC Micro:bits) Bebras Challenge	How Computers Work Control Systems Using Flowol	Text Based Programming Using Python Spreadsheet Development
Year 8	Paws 'n' Claws – Graphics and Website Development Students will study 'Creative iMedia' as part of the technology carousel. Whilst branded as iMedia, this rotation covers elements of the KS3 Computer Science curriculum, including: Bitmaps v's vector images and how these are stored Vector Drawing Software HTML Website Development Exporting/File types		
Year 9	Getting Started Database Development Introduction to Python Programming Bebras Challenge	Data representation (Understanding binary and hexadecimal) BAFTA Young Games Designer Competition	Networks and Security Python Programming (advanced)

The following units are studied at KS4.

Pupils have **2** lessons per week in year 10 and **3** lessons per week in year 11.

	Autumn Term	Spring Term	Summer term
Year 10	**Systems Architecture** **Memory** **Bebras Challenge** **Networks & Protocols**	**Networks & Protocols (continued)** **Network Security** **System Software**	**Legal, Ethical, Environmental and Cultural Impacts of Technology** **Programming Fundamentals (an introduction)** **Revision and Preparation for End of Year Exam**
Year 11	**Algorithms** **Programming Techniques** **Bebras Challenge** **Revision and exam Technique in preparation for the mock exam**	**Producing Robust Programs** **20 hour Programming Task** **Boolean Logic** **Programming Languages and IDE's**	**Unit 1 Revision & Recap** **Unit 2 Revision & Recap**

Extra-curricular activities and visits:

As well as our exciting curriculum, as a school we like our pupils to get involved in external competitions and challenges. This is a great opportunity for pupils who need to be stretched and challenged, but also opportunity for those with an interest in technology. Activities include:

BAFTA Young Games Designer of the Year Award - Whether pupils love to code, draw or write the story, the competition allows you to explore the different areas of making a video game buy either entering the Game Making Award or Game Concept Award

Tomorrow's Engineer Robotics Challenge – an annual competition in which student teams can apply to be part of an exciting robotics challenge that sees them involved in 'aviation missions'. Teamwork, robots, design, discovery, fun and loads of LEGO are all part of the mix.

BBC Micro: Bit The micro:bit is a tiny programmable computer, designed to make learning and teaching easy and fun! The organisation frequently posts challenges that schools are invited to enter.

Bebras Challenge - The Bebras Computing Challenge introduces computational thinking to students. It is organised in over 40 countries and designed to get students all over the world excited about computing. Our heat is a national competition, where the highest scoring pupils in the country are invited to the next round which is hosted by Oxford University!