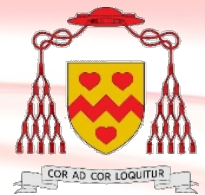


St John Henry Newman Catholic School Computing Department



A good computer scientist is not afraid of making mistakes. A logical mind and determination to solve problems are essential qualities. It's not about simply being able to use a computer, instead, a genuine interest in how computers work, and an enquiring mind can help on the road to success in computer science. Seeking to provide solutions to a system or user needs in order to improve performance or building on the solutions developed by others.

Not all pupils enjoy the science of computing but instead have a creative flair and an interest in the role that ever-increasing technological advances have had in the media industry, in terms of production and distribution. It is with this in mind that we encompass all areas of computing, IT and digital literacy in a curriculum to prepare pupils for a society that is reliant on technology.

Dept Vision:

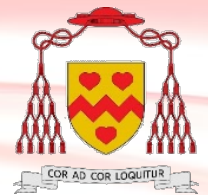
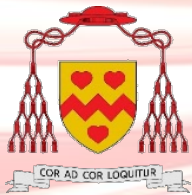
Computational thinking is a skill that all students should have the opportunity to develop alongside their literacy and numeracy focus. Coupled with confidence in their digital literacy, this is an attribute that they can transfer to other areas of their education to be logical thinkers, selecting appropriate methods to solve problems, using appropriate media to produce their findings. All students should have the ability to use information technology with competence and confidence, to ensure they have an equal opportunity to apply these skills in further education and employment. We aim to be a flagship department, having worked in collaboration with other schools, to ensure a high standard of education, not just within the school but across the city, bridging the gap from key stage 2 to 3, providing a sound theoretical and hands on approach that engages students and consolidates their understanding of computers around us in daily life in addition to keeping abreast of rapidly innovative processes so that they are thoroughly prepared both for education and their role in wider society.

The Cultural Capital of Computer Science

The department seeks to celebrate our cultural capital by recognising those who have contributed to key developments in technology that have gone on to shape our future. Students complete work on historical characters and we include references to their achievements within classroom displays. We incorporate a range of examples into class work, avoiding stereotypes and including individuals from a range of backgrounds. We seek to provide the necessary skills and knowledge that will allow pupils to be good digital citizens who can not only have the confidence to embrace technology in the workplace, but in their own experiences can be safe in the knowledge that their rights are protected and that they know how to behave.

Building on Key Stage 2

Students in year 7 join us with significant differences in their computing experiences. Personal and school experiences see pupils confident with a touch screen, and many have developed a basic knowledge of block coding without real understanding of the bigger picture. Our role is to illustrate the concept of computers and programming in real life with a relevant and engaging curriculum. Basic skills form part of our program, to ensure students can proficiently use common general purpose systems, along with the main applications, encouraging them to select the most appropriate software to complete the task, whilst instilling professional working practices to ensure all are prepared for the world of work. As our intake approaches the age of social media, although many have experienced this already, we take the opportunity to create awareness of the benefits and drawbacks to encourage responsible digital citizens who leave a positive footprint, adapting this based on a survey of our students' prior experiences.



Our curriculum is interleaved to take students on a progressive journey from years 7 through 11. Beginning each year with an online safety topic, we continue to reinforce this at regular intervals both in lessons and through our SALAD programme and assemblies. We share advice and information with parents on how to ensure the best experience for their children as safe and responsible users of technology by sharing the 'Vodafone Digital Parenting' magazine and updating social media posts with advice that meets the statutory online safety safeguarding duties.

Our interleaved curriculum allows students to build knowledge through the continual reinforcement and development of the key topics that underpin computer science, enabling students to see how the topics link together. For further information see our learning maps. We want our students to be able to experience real computer systems and develop their programming skills through applications that are relevant to future careers. We recognise that not all students enjoy the scientific nature of computers and possess skills that focus on the creative use of digital media and as such, as our students approach GCSE, we provide the option of a course that capitalises on their strengths, interests, and experiences.

Enhancing Vocabulary

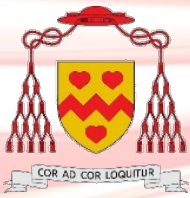
Staff are expected to model appropriate language and terminology for the subject. This is an integral part of developing both subject knowledge and understanding. Formal, day to day marking must focus on accurate use of key words, with key pieces that encourage pupils to use specific key terms within their responses. We provide a knowledge organiser for each topic that includes the relevant key words and visual stimulus to support this. These can and have been adapted to suit our EAL pupils.

Computing is a fast-moving subject, and how students learn changes over time. As such we aim to ensure that CPD allows us not only to develop innovative ways of delivering new and developing content but evidence-based methods of ensuring progress within the classroom. We regularly share good practice and resources with colleagues, within the department and across the school, taking the time to discuss school wide INSET, or to cascade external training that can be implemented in the department to good effect. We work with our local CSLC group to share materials and strategies and join together to bring in guest speakers and further relevant CPD provision. All department staff are Microsoft Office Specialists and regularly complete relevant training to hone our subject knowledge.

Enriching literacy/numeracy

A large part of computer science is based around numbers. As such, we deliver lessons that require simple and more complex addition, subtraction, multiplication and division. Students need to use these skills to perform binary conversions and arithmetic. Boolean logic in programming requires us to teach the use of appropriate operators to use in expressions and in code, ensuring that our numeric delivery follows the same formulas as taught by our maths colleagues, to ensure consistency of delivery.

To complement our whole school approach to DEAR (drop everything and read) time, we encourage our students to read articles both in and outside of the class, and include extended writing within to ensure students are prepared to write at the appropriate level in their examinations. Selected students are encouraged to read tasks or information aloud for the class.



Careers Development

We are quick to point out that most careers will involve some degree of technology within the job role. Studying the bigger picture in both computer science and business allows us to share a range of careers options with our students in IT and computer science. As part of the whole school careers calendar, we lead on the delivery of 'Unifrog' to all year groups, allowing them to create their own profile based on their interests, skills and qualities. This is revisited periodically to allow students to add details of any experiences they may have had, thus updating the job roles that link to their profile. We encourage students to research the careers they are interested in, looking at the different pathways available to them. When sharing subject specific careers, we will share examples of job opportunities, looking at the numbers of such posts available both regionally and nationally.