KS4 Computing across the curriculum

At Nishkam High School, we are committed to developing our students' information technology skills across various subjects to ensure they are well-prepared for further education and professional careers. The integration of IT into our curriculum fosters essential skills in digital literacy, computational thinking, and information technology application. Through these strands, students learn to apply technology effectively, think critically, and solve problems in a digital environment.

Digital Literacy

In Key Stage 4, students are introduced to digital literacy across subjects, helping them develop the ability to use technology for research, communication, and presentation purposes. All students use Seneca and Show My Homework for online learning and self-assessment across subjects, strengthening their ability to interact with digital content, track progress, and enhance their understanding of the subjects they study.

Students in Business, Health and Social Care, and ASDAN all use Microsoft Word and PowerPoint for research, documentation, and presentation. These tools support students in organising and presenting their work professionally. Researching and referencing information online is a critical skill developed across these KS4 subjects, enabling students to explore topics and present their findings clearly.

In Art, students research artists, techniques, and concepts online, compiling their findings to enrich their portfolios. This encourages them to think critically about visual media and creatively document their work in a digital format.

In Photography, students create and manage digital portfolios and use IT to enhance their photography projects. They are tasked with researching online, editing photos, and presenting their creative work. These activities provide students with experience in digital imaging and online research, reinforcing their ability to navigate digital spaces proficiently.

Computational Thinking

Computational thinking involves breaking down complex problems into manageable parts, recognizing patterns, and developing solutions using logical reasoning. Throughout Key Stage 4, students engage in various computational thinking activities across subjects.

In Mathematics, students use Sparx to enhance their problem-solving skills. The platform supports them in developing a deeper understanding of mathematical concepts through structured exercises. This platform allows students to engage with problems, practice calculations, and visualise mathematical solutions in a structured and interactive environment.

In Food and Nutrition, students use Excel to organise and analyse data. The use of Excel encourages students to think critically and logically about data, supporting their ability to solve problems using technology.

In Physical Education (PE)/Sport Studies, technology supports the research of sports performance and analysis. Although there is minimal direct application of IT in the practical elements, students use digital tools for researching sports science, which enhances their understanding of data-driven performance and techniques.

Computer Science/Information Technology Application

Computer Science and the application of IT are at the heart of developing practical skills. Across subjects, students are encouraged to use technology to apply their design, problem-solving, and programming skills in real-world contexts.

In Business, students are introduced to using digital tools like PowerPoint to present their business plans and ideas to the class. These presentations require students to organize their ideas, present data, and communicate

effectively using technology. Additionally, research online provides students with real-world insights into business operations and strategies.

In Photography, students use Photopea and Photoshop to enhance and edit their photographs, applying design principles and digital manipulation techniques. This is essential for their coursework, as it helps them develop a critical eye for visual media while expanding their digital creativity.

In Food & Nutrition, students utilise Excel to create food labels and track nutritional data. This allows them to apply their understanding of food science and technology, reinforcing their ability to use digital tools to solve real-world problems.

In Health and Social Care, students use Microsoft Word to create reports, while PowerPoint is used to present findings and ideas. They learn to research topics related to health and social care and document their findings efficiently, preparing them for professional careers where digital communication and documentation are crucial.

In ASDAN, students complete a range of tasks that require them to use PowerPoint, Canva, and other digital tools to create presentations, reports, and charts. These tasks help students develop digital skills that are not only necessary for completing their coursework but also for navigating the modern workplace.

In Art, the use of Photoshop and online research tools enables students to manipulate images and develop a creative portfolio. This combination of creative and technical skills helps them produce artwork that is both digitally proficient and artistically rich.

In Music, students use YuStudio, a digital audio workstation that allows them to compose, arrange, and produce music digitally. Through this platform, students develop their digital music production skills, learning to manipulate sound and create original pieces. By using this tool, students gain valuable experience in modern music-making techniques, which are vital for both academic progress and future careers in the music industry.

Through whole school activities, students learn about key aspects of online safety. Topics include online literacy, where students develop skills to evaluate information and identify misinformation, and online crime, focusing on scams and protecting personal data. Students also learn to build a positive online career presence and manage online relationships respectfully. Additionally, they explore the impact of their online identity and how to navigate digital spaces safely. These important topics are reinforced through regular assemblies, information on Teams, and newsletters—such as those on Internet Safety Day—equipping students with the knowledge to make informed, responsible decisions in the digital world.

By embedding technology across the curriculum, Nishkam High School ensures that students develop the necessary digital literacy, computational thinking, and practical IT skills required for future academic success and professional careers. The integration of these skills in subjects ranging from business and science to art and physical education enables students to solve problems, think critically, and communicate effectively using modern technologies. Through this approach, we prepare students to thrive in an increasingly digital world, equipping them with the knowledge and skills they need to succeed at university and in their chosen careers.