Computing

CURRICULUM INTENT

STOCKSBRIDGE HIGH SCHOOL

"There's so many exciting things going on in the computer industry, that if you have an idea, a dream, something that you want to do, then just go for it." Stephanie Shirley

At SHS in KS3, we aim to prepare our learners for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Knowledge and understanding of Computing is of increasing importance for children's future both at home and for employment.

The core of Computing is Computer Science, in which learners are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, learners are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that learners become digitally literate; able to use, and express themselves and develop their ideas through, information and communication technology. We embed the essential skills in our KS3 scheme of learning to equip all students to become more autonomous users of IT in an ever-changing digital world)

The national curriculum (POS) for computing aims to ensure that all pupils:

STRAND 1: can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation

STRAND 2: can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems

STRAND 3: can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems

STRAND 4:are responsible, competent, confident and creative users of information and communication technology.
Content KS3:
Our aim is for all learners in KS3 to be confident when using digital technology and will gain knowledge and skills in the three inter-related strands that make up the Computer Science POS at this Key Stage. Teaching is delivered in a variety of differing ways to meet the needs of all our learners.

Computer Science: Students will learn how to create algorithms through role playing and kinaesthetic activities enabling them to develop logical reasoning and write their own computer programs (through textual and graphical based interfaces- Python/HTML/CSS/JavaScript & Scratch/Kodu)

Information Technology: Students learn now to store and organise their files appropriately. They develop the necessary skills to use a wide range of devices focusing on: Hardware / Software / Peripherals used on a Network as well as also being able to use cloud facilities such as OneNote /MLE. Pupils will experience a range of different applications and software initially selected by the teacher but over time pupils are encouraged to make decisions for themselves enabling them to become autonomous users of IT. Students will follow a POS that allows them through Solo Taxonomy to pick suitable tasks to allow continued sustained progress and engagement. Students also learn how to use Microsoft Office effectively through bespoke resources generated by the department that allow students to work independently and choose resources that are appropriate for their learning needs. Students will also be given the opportunity to develop their creative skills using: Graphical editing software (Photoshop) as well as Video (Moviemaker), Music (Audacity), Animation (Flash) and Website creation (Dreamweaver) via Project based activities using a system life cycle.

Content KS4:

Learners who wish to continue their studies into KS4 have the option of two differing learning paths: GCSE Computer Science (OCR-J277) as an option subject as well as a Vocational IT route- BTEC Award in DIT (Pearson- Digital Information Technology).

Our GCSE in Computer Science is engaging and practical, encouraging creativity and problem solving. It encourages students to develop their understanding and application of the core concepts in computer science. Students also analyse problems in computational terms and devise creative solutions by designing, writing, testing and evaluating programs.

BTEC DIT- The course is made up of three components: two that are internally assessed and one that's externally assessed. Our 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.

Through the study of computing at both KS3 and 4, leaners understand how to use technology safely and use case studies to understand the importance of keeping personal information private and treating other users with respect. They learn how to become responsible users of technology being aware of the impact of their Digital Footprint and the Legal and ethical responsibilities (Content-Contact-Conduct).

Those who do choose a Computing course at KS4 potential pathways include Software Developer, Database administrator, Computer Hardware Engineer, Systems Analyst, Network Architect, Web Developer, Security Analyst, Information Systems Managers, IT Manager.