

Curriculum Intent Statement

Computer Science & IT

We believe that our students should have the opportunity to follow an IT and Computing curriculum that prepares them for life in modern Britain and take advantage of opportunity this can offer them in both Britain and the wider world.

Good quality IT skills enable student to engage positively within the modern work place, while Computer Science skills enables students to take an active part in the design, development and creation of new technologies to be used in the world in which they live.

The core to the subject is the understanding of how technology works, can be developed and utilised, and we draw and extend understanding from a range of other subjects outside of IT and Computing including DT, Graphics, Maths, Science and PHSE and embed clear and high quality literacy and numeracy skills through software development, problem solving and evaluation skills.

We provide a broad range of skills and experiences at KS3 which are then further developed as students enter KS4 and then extended to KS5.

At KS4 students all students are given the opportunity to study Creative Imedia giving them a wide range of IT skills that are used in the modern world including Graphics Design, Media Production and Web Development as well as the option to choose Computer Science at GCSE where they will go on to develop key problem solving skills useful in a range of disciplines as well as the coding and software development skills that will give them an opportunity to work or for further study in the developing area seen to be key in the modern world.

Computer Science and IT will give our students the opportunity to

Demonstrate knowledge and understanding and application of the key concepts and principles of Computer Science

- Understand and fundamental principles and concepts of Computer Science
- Be able to apply key algorithms and data representation and mathematical skills through practical and theoretical work.
- Understand the key components that make up digital systems and how they communicate
- Understand the impacts of digital technology to the individual, wider society, the ethical change s and cultural impacts as well as the positive and negative impacts digital technology has had on the environment
- To equip learners with a range of creative media skills and provide opportunities to develop, in context, desirable, transferable skills in areas such as research, planning and evaluation

Analyse problems in computational terms:

To make reasoned judgements

To design, program, evaluate and refine solutions.

- Plan and develop software using the software design life cycle
- Use a range of software design techniques such as flowcharts, pseudocode and visualisation diagrams

- Develop key problem solving skills of Abstraction, Decomposition and Algorithmic thinking
- Develop key skills and practical experience in script based programming languages and be able to design, write and debug programs to solve non simplistic problems.
- To be able to think creatively, innovatively, analytically, logically and critically when solving problems.
- Be able to make informed decisions on appropriate and efficient coding techniques such as sequence, selection, iteration and the use of functions
- To be able to design, program, evaluate and refine solutions to problems

<p>Pedagogy We strive to educate through a range of teaching strategies which are accessible for all our learners</p>	<p>Enrichment We aim to enrich our curriculum by:</p>
<ul style="list-style-type: none"> • A range of visual, auditory and kinaesthetic resources are used throughout lessons • Create an environment of confidence where students feel they can experiment, make mistakes and develop their skills in an independent manner • Regular use of teacher and student led live modelling to demonstrate processes and applications both practically and theory based • Experience a wider range of block based and script based languages to develop transferable programming skills 	<ul style="list-style-type: none"> • Establishing cross curricular links • Encouraging students to take part in national initiatives such as internet safety days and the UK Cyber Security Challenge • Encouraging students to contribute to the life of the school and the community • Developing partnerships with external providers that extend children’s opportunities for learning • Encourage students to engage in TV shows that can deepen their understanding of Computing and its impact on world around them • To give student the opportunity to develop skills with new and developing technologies such as 3D printing, Raspberry Pis