



**CURRICULUM OVERVIEW**

**ICT**

**Key Stage 3 Curriculum Milestones**

**By the end of Year 7 students will be able to:**

Understand a range of ways to use technology safely, respectfully, responsibility and securely (including protecting their on-line identity and recognising inappropriate contact and know how to report it) through a focused online safety unit.

They would have developed a sound understanding of how hardware and software components make up a computer system and how computers communicate with other systems and have a sound understanding of computers are networked and how the internet works.

They will have used a visual programming language to solve a variety of computational problems and started on their programming journey by understanding and building on concepts such as Loops, Variables and forms of control

They will be adept at using Microsoft software such as Excel, PPT and Word. Developing their ICT skills to be able to create a wide range of documents and use the tools appropriately within each software package to create graphs, format work appropriately.

**By the end of Year 8 students will be able to:**

Understand risks when using technology and be aware of how to protect themselves and others. They develop knowledge in how to spot potential cyber attacks and how to effectively search for information on the internet and ensure that the information is safe and secure.

Students will further their understanding of how computers work (from Y7) by developing an understanding of how computers view data through binary. They will be adept at converting denary into binary, understanding how images and sound are made up of binary and how the computer converts them.

Build on previous programming knowledge (scratch) and start to develop an understanding of how programs are sequenced through Flowol tying in computational thinking skills to break down problems and spot patterns.

Develop an understanding of how animation is created, learning about frame rates, onion skinning etc.. to ultimately become competent uses of an IT package

**By the end of Year 9 students will be able to:**

Understand how personal data is used and how it needs to be kept secure and how the threats of cyber-attacks can impact on their own personal data. An understanding of how 'bots' are used to gather information and influence fake news.

Develop an understanding of how data is represented (building on the binary unit of Y8) both in sound and graphics and how to manipulate both sound and images with specific IT packages.



Students will build on their understanding of sequencing instructions (from Flowol) and start to develop an understanding of how to write programs in Python (preparing for KS4). They will develop an understanding of variables, writing simple code and how to spot errors (syntax issues)

Students will be introduced to some of the legal and ethical issues that surround computing and IT with a focus on Artificial Intelligence and how that will impact of society and the moral implications.

## Key Stage 4 Curriculum Milestones

**By the end of Year 11 students will be able to:**

Show an understanding through classwork and assessments that they have developed knowledge and understanding of how central processing unit (CPU), computer memory and storage, data representation, wired and wireless networks, network topologies, system security and system software work and their role in the world of computing.

They will also be able to demonstrate that they have been able to adeptly use software such as Photoshop and other software such as Excel to create projects based on client briefs (completion of two units of coursework). These projects will also demonstrate the students ability to develop planning and organisational skills in creating pre production documentation.

## Key Stage 5 Curriculum Milestones

**By the end of Year 13 students will be able to:** Develop an understanding of how Databases work and will be able to create and interrogate a database as part of an external exam. Students will also develop an understanding of how social media plays an important role in business. This will culminate in the creation of a report (based on students research) into different social media types, profiling of audiences and how businesses interact with clients through social media, this will be assessed in a piece of coursework.

Throughout Y12 & 13 students will develop independent research skills, have an understanding SQL programming language.