Computing Curriculum Overview

The Computing curriculum aims to equip students with the skills to participate in a rapidly changing world through the three main strands of Computer Science, Information Technology and Digital Literacy.

- Computer Science includes block and text-based programming and knowledge of hardware, software and networks. Also, the concepts of computational thinking.
- Information Technology they learn the different Microsoft Office packages, including Spreadsheets, PowerPoint, Word and creating forms.
- Digital Literacy is the ability and skill to find, evaluate, utilise, share, and create content using information technologies and the Internet we discuss many e-safety issues surrounding social networks but also use software to create digital content, manipulate photographs and create comics.

Computing skills are a major factor in enabling children to be confident, creative and independent learners and it is our intention that children have every opportunity available to allow them to achieve this. It will support students with their further academic study, both in school and in their wider lives. It can lead onto careers such as software developers, programmers or technical support and jobs that currently do not exist!

	Autumn	Spring	Summer
Year 7	In Year 7 students need to be confident in understanding the importance of communicating safely and respectfully online, and the need for keeping personal information private. This will include work on looking and understanding a digital footprint and recognising any online dangers with the 3 C's of Contact, Conduct and Content. Students will learn computational thinking methods. This is about using techniques that a computer would use to break down problems to help support students thinking across all subjects and in real life.	Students will learn the basics of a range of different programs (applications) and how each component has a specific use i.e. using spreadsheet models. Students will be introduced to computing theory. This will include the History of early computing devices to the history of modern computing. They will also develop knowledge in hardware, software, processing and networks.	Through project-based learning students will be using their ICT skills (Microsoft Office) to plan a school trip. Throughout this project students will become more confident with how to research using the internet, gather information using Microsoft forms, using spreadsheets for budgeting and how to present their information using power point. Students will continue to develop their programming skills from key stage with block-based programming, using Scratch to apply theories of modular programming using procedures.

Year 8	In Year 8 students will recognise the dangers of sexting and develop an understanding of the legal ramifications of sending and receiving nude images under the age of 18. They will gain the knowledge to be safe when online gaming, with specific details on the time spent gaming and chatting to strangers while gaming. Student will learn Number Representation. This includes Binary and its importance in computing. They will learn Binary and Hexadecimal number systems and how to convert between Binary-Denary-Hex. Finally, in this unit, students will understand how Binary and Hex are used in creating image and sound files. Creating Vector graphics for a Festive card	During Term 2, students will learn the text-based programming language of Small Basic. They are taught the fundamental elements sequence, selection and iteration to create more efficient code. Creating a game using Kodu software. This is block-coding software which they use to reiterate the concepts of sequence, selection and iteration. Students create a world for a main character to achieve an aim of the game. They learn how to score/lose points using other characters and debug problems. They peer assess the games by their playability and difficulty.	Students will continue to be introduced to further text-based programming skills using Python. Extending knowledge of sequence and selection with an understanding of syntax required to create a working program in Python.
Year 9	Students will learn understanding the importance of communicating safely and respectfully online this includes building Digital Resilience to help cope with the pressures of online communications on mental health. Students will extend their Python knowledge further by establishing a solid understanding of variables and selection, with a continuation to iteration (FOR and WHILE loops).	After completing their main character for the comic, they demonstrate understanding of what makes a good story by creating a storyboard for their comic as well as producing a final product. Linking with iMedia and Photography, students will learn photo editing. They will manipulate and enhance photographs using many different tools using Affinity software.	Students will gain knowledge in using Boolean logic and how this is used for Logic Gates. Students will understand how Truth Tables contribute to their understanding of how Logic Circuits work. Student will dip into the world of Cyber Security, increasing their knowledge of how to protect their data and digital devices. An understanding of the threats to their data will help prevent social engineering attacks over scam email and phone calls. Also, how to

	Students will embark on a mini project to create a comic. This dip into iMedia gives students the chance to create characters using the vector-based drawing package of Inkscape, an understanding of what makes a good story by creating a storyboard for their comic as well as producing a final product.		thwart viruses and other Malware threats. We conclude their learning with a short unit in Artificial Intelligence. Students will gain understanding of the difference between rule-based and data-driven system and how computers learn from data.
Year 10	Students will continue their learning of the three strands of computing. • Computer Science – this includes extended knowledge of computational thinking, with an extended Mindset lesson on Python programming involving arrays, procedures and functions. • Information Technology - they will learn about the use of IT in the workplace. • Digital Literacy – this includes discussions on the 'filter bubble', privacy and illegal content.		
Year 11	The focus for this year will be IT in the wider world. • Information Technology - they will refresh their knowledge of spreadsheets as essential skill for the workplace. We will also focus on the job of project managers within industry • Digital Literacy - this includes discussions on 'fake news' and how to spot it and the right to access information		