Intent for the Year - Computing Year 8 Curriculum 2020-2021
In Computing we aim to provide an inspirational experience for every student in a safe and purposeful learning environment that is relevant, exciting and reflective in order for every student to be confident in their use of technology. Students will have the opportunity to get their program into space with Astro-Pi, improve de-cryption skills with the The Alan Turing Challenge and the Girls will enter the National Girls Computing Challenge.

Implementation:

Students experience opportunities to all increase their understanding of how computers work, the changes in modern technology, as well as to focus on key areas of e-safety such as how we use the internet impacts on everyday life. Throughout the year students will practice and improve their ICT skills such as word processing, simple spreadsheets and how to create presentations to help them across all aspects of their curriculum. All students have opportunities to develop understanding of basic Computational Thinking and Computer Skills that are in the programme of study, including ensuring that all students can create a simple program and identify key concepts of how a computer works.

Term	Enquiry/Topic/Unit: What is going to be taught?	Key Outcomes: What will students have achieved by completing this scheme of learning?	Character Education: How does this topic link to a sense of Self, Others and the World, in terms of Character Education?	Assessment: Will there be formative and/or summative testing? What role will interleaving play?	Vocabulary: What are the key words for this topic/unit that students must know?	Home-Learning: What homework will be set and why (e.g. consolidate/extend)?
1a	i) E-safety ii) Logging on/ Setup user & google chrome areas. SMHW and e-praise. iii) Algorithms iv) Build your own paper computer	understand a range of ways to use technology safely, including protecting their online identity and privacy. Access to cross-curricular technology. understand several key algorithms that reflect computational thinking. understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems	Be a responsible digital citizen- empathetic / courteous Resilient in completing / learning new skills Confident in approaching skills / learning Reflective – on new learning / technology and how it impacts on everyday life	Verbal feedback – interleaved throughout KS3 H/W tasks	Algorithm Flow diagram Pseudocode Search Sort Decision Input Output Software Hardware CPU Memory Graphics Card Sound Card Component Mouse Keyboard Automatic Manual	H/W task - algorithm H/W task - BEBRAS / computational thinking practise questions

		understand how instructions are stored and executed within a computer system				
1b	i) Word – tables, headers, footers ii) Basic Python skills – programming with a written language, including Astro-pi competition iii) To look at potential careers in cyber including cybercrime and programming.	Select, use and combine a variety of software that accomplish given goals, including collecting and presenting data. use 2 or more programming languages to solve a variety of computational problems. To consider what opportunities may be available in the future using technology.	Resilient in completing / learning new skills Confident in approaching skills / learning Reflective – on new learning / technology and how it impacts on everyday life Curious in exploring different careers	Bebras Verbal feedback – interleaved throughout KS3 H/W tasks	Table Header Footer Format Computational thinking Python Command Program Test Refine Input Output Variable If Else Elif Astro-Pi	H/W task - SMHW quiz H/W task - Python Quiz idea badge - reviewing work this term
2a	i) Excel – build on formulae skills ii) Cyphers – decoding skills, history of iii) E-safety - copyright and ownership / fake news	Select, use and combine a variety of software that accomplish given goals, including collecting and presenting data. understand how instructions are stored and executed within a computer system understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content,	Resilient in completing / learning new skills Confident in approaching skills / learning Reflective – on new learning / technology and how it impacts on everyday life	Verbal feedback – interleaved throughout KS3 H/W tasks	Formula Cell Message Cipher Decode Encryption Text Compression Execute Instruction	H/W task - fake news H/W task - cybersecurity idea badge

		contact and conduct, and know how to report concerns				
2b	i) Graphic Design software - Fireworks, image optimisation, vector graphics	create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	Resilient in completing / learning new skills Confident in approaching skills / learning Reflective – on new learning / technology and how it impacts on everyday life	Verbal feedback – interleaved throughout KS3 H/W tasks	Image optimisation	H/W task - graphic design idea badge H/W task - visualisation poster
3a	i) E-safety - health and wellbeing ii) Binary – why a computer uses it and how it works iii) Networks – protocols and hardware	understand a range of ways to use technology safely, respectfully, responsibly and securely, understand how numbers can be represented in binary and conversion between binary and decimal understand computer networks, including the internet and the opportunities they offer for communication and collaboration	Resilient in completing / learning new skills Confident in approaching skills / learning Reflective – on new learning / technology and how it impacts on everyday life	Verbal feedback – interleaved throughout KS3 H/W tasks	Binary Switch Transistor Network LAN WAN PAN VPN Star Mesh Bus Ring	H/W task -E-safety quiz H/W task - Binary quiz
3b	i) Blockly – revisit basic block programming ii) Clickteam fusion - Game planning, design and creation using more advanced programming skills	undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals. use 2 or more programming languages to solve a variety of computational problems	Resilient in completing / learning new skills Confident in approaching skills / learning Reflective – on new learning / technology and how it impacts on everyday life	Verbal feedback – interleaved throughout KS3 H/W tasks End of year exam	Program Block Design Create Costume Sprite Test Refine Tech Cyber Career	H/W task - storyboard H/W task - game review

iii) To look at potential careers in technology, especially gaming.	To consider what opportunities may be available in the future using technology.	Curious in exploring different careers			

Impact:

Be able to use computational / logical thinking to successfully program.

Start to understand how a computer works and how they are part of a network.

Explore the graphic design aspects of computer software and consider relevant careers.