Key Stage 3 Computing - The Aims of Our Curriculum

1. Enable children to retain and apply this essential knowledge. 2. Inspire children to become life-long learners. 3. Create a culture of high aspiration through challenging content and therefore pride in achievement. 4. Promote the spiritual, moral, social and cultural development of children, including fundamental British values of democracy, the rule of law, individual liberty, mutual respect and tolerance for those with different faiths and beliefs and for those without faith. 5. Provide opportunities for developing self-confidence, self-awareness, independence, creativity, respect and resilience in children. 6. Promote knowledge and understanding of how children can keep themselves safe and healthy. 7. Develop children's numeracy, literacy and oracy, including the sustained expansion of their vocabulary. 8. Promote reading as a life skill and enable our children to become life-long readers.

Year 7	Areas	Term 1	Term 2	Term 3
	Content	Sorting and Searching algorithms. Bubble sort, insertion sort, binary search KPI 2 - Understand key algorithms that reflect computational thinking KPI 5 – Undertake creative projects that involve using and combining multiple applications across a range of devices • How bubble sort works • How insertion sort works • How linear search works • How binary search works • How to represent the algorithms as flowcharts	Introducing python KPI 1 – Use computational abstractions KPI3 – Understand simple Boolean logic such as AND, OR, NOT KPI 4 – Use two or more programming languages, at least one of which is textual • Basic python syntax and commands • Using variables • Using different data types • Using arithmetical operators • Use if, elif,else • Use different types of loops for while etc Logic gates – and,or,not Python Chatbot Program KPI 1 – Use computational abstractions KPI3 – Understand simple Boolean logic such as AND, OR, NOT KPI 4 – Use two or more programming languages, at least one of which is textual	HTML & CSS KPI 1 – Use computational abstractions KPI 4 – Use two or more programming languages, at least one of which is textual KPI 5 – Undertake creative projects that involve selecting, using and combining multiple applications across a range of devices • HTML page structure • HTML tags • Hyperlinks • Images • CSS

			• User input • Variables • If,elif,else • Concatenation	
	Literacy link	Instructions	Direct speech.	Writing content
	Assessment	Final algorithm project	Final chatbot program	HTML project
	Cross curricular links	Maths. Science	Maths. Science	

Year 8	Areas	Term 1	Term 2	Term 3
	Content	Data Representation – binary and hexadecimal KPI 6 – Explain how data of various types can be represented and manipulated in the form of binary digits. • Binary to denary • Binary to hexadecimal • Binary addition • Image representation • ASCII • RGB Networks KPI 2 – Understand the hardware and software components that make up networked computer systems • Server • Client • Switch • Router • WAN • LAN	Further Python – Functions KPI 1 – Design, use and evaluate computational abstractions KPI 3 – Understand simple Boolean logic such as AND, OR, NOT and its use in determining which parts of a program are executed. KPI 4 – Use two or more programming languages, at least one of which is textual, to solve computational problems Further Python – data structures. Lists KPI 1 – Design, use and evaluate computational abstractions KPI 3 – Understand simple Boolean logic such as AND, OR, NOT and its use in determining which parts of a program are executed. KPI 4 – Use two or more programming languages, at least one of which is textual, to solve computational problems KPI • Basic python syntax and commands • Using variables • Using different data types • Using arithmetical operators • Use if, elif,else • Use different types of loops for while etc Logic gates – and,or,not • Using functions • Using lists – append remove	3D Modelling and Printing. Robotics KPI 1 – Design, use and evaluate computational abstractions KPI 4 – Use two or more programming languages, at least one of which is textual, to solve computational problems KPI 5 – Undertake creative projects that involve selecting, using and combining multiple applications across a range of devices. • 3D design in Tinkercad • Exporting files to .STL for 3D printing • Connecting motors to raspberry pi – importance of H Bridge • Programming raspberry pi to control motors • Using Bluetooth to connect an android tablet remotely • Using bluedot app to create a python remote control program

	Literacy link		Narrative – adventure game text	
	Assessment	Online quizzes	Final adventure game project	Final robot project
	Cross curricular links	Maths Science	Maths Science	DT Maths Science