Year 7 Computing Curriculum Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	Web Design	ICT in Business	Algorithms	Graphics	Data representation	Microbits
Key Concepts	• Introduction to web design using Plain Text and WYSIWYG Editors. • Developing web pages using basic tags. • Formatting design using style.	• Exploring a range of ICT tools used in Business. • Designing and developing a business brand • Creating a variety of business documents. • Understanding the use of IT in business and basic security.	• Introduction to algorithms and flowcharts. • Creating flowcharts for scripts in scratch. • Developing a game in Scratch and using flowcharts to represent the algorithm.	• Introduction to vector and bitmap graphics. • Exploring the range of graphic file types. • Developing graphics using available tools.	• Exploring binary and its use in computing. • Converting between binary and denary. • Investigating ASCII and unicode.	• Fostering digital creativity for students • Developing connections between abstract ideas and real world outcomes. • Designing, building, prototyping and iterating.
Impact	Students will develop their own website describing the six main world religions.	A portfolio of business documents will be created by every student.	A unique game will be designed and implemented, showcasing students computational thinking.	A range of graphics products will be generated that are fit for purpose, using appropriate graphic tools.	Students will understand how computers use binary to represent data forms.	Using the BBC microbit, students will further develop their programming skills and creative computational thinking.

Year 8 Computing Curriculum Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	Scratch & flowcharts	Spreadsheet survey	Networks	Python programming	Cybercrime & security	Computer components
Key Concepts	• Introduction to algorithms and flowcharts. • Creating flowcharts for scripts in scratch. • Developing a game in Scratch and using flowcharts to represent the algorithm.	• Developing core spreadsheet terms and skills. • Carrying out independent primary research. • Using formulas and graphs to analyse survey findings.	• Introduction to computer networks. • Developing an understanding of network topologies. • Exploring wired and wireless communications.	• Introduction to python programming language. • Exploring the use of strings, variables and data types.	• Introduction to cybercrime. • Developing an understanding of cybercrime threats such as phishing. • Exploring methods to protect against such crimes.	• Introduction to the main components of a computer. • Exploring software classification
Impact	A unique game will be designed and implemented, showcasing students computational thinking.	Students will create a report, presenting their findings from the data analysed using a spreadsheet.	An understanding of networks in the real world will be developed.	Students will be able to use python to code and create programs to solve simple problems.	Students will develop an appreciation of the day to day, real world threats and how they can protect themselves.	Students will have an appreciation for a computer specification and what it means for them.

Year 9 Computing Curriculum Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theme	Web design and Networks	Data Representation	Python programming	Computer Systems	Databases	Yr 9 Project
Key Concepts	• Introduction to web design using Plain Text and WYSIWYG Editors. • Developing web pages using a range of tags to format and build tables. • Developing an understanding of computer networks	• Exploring binary, decimal and hexadecimal and conversion between different base number systems. • Understanding character encoding. • Developing an understanding of how images and sound are represented in binary.	• Introduction to python programming language. • Exploring the use of strings, variables and data types. • Developing an understanding of selection and iteration. .	• Introduction to hardware and software. • Exploring hardware components, including the range of storage mediums. • Investigating software classification.	• Exploring databases and their uses in the real world. • Developing understanding of data types. • Designing and creating a database.	• Developing a real world understanding of the system development life cycle. •
Impact	A website will be produced by all students, showcasing their web design skills in HTML, presenting their learning of networks.	Students will have an understanding of how all types of data is stored and what it means in the real world.	Students will be able to use python to code and create programs to solve specific problems.	Students will understand the a computer specification and what it all means in real terms.	Students will create a database, that can be queried and reports generated that are fit for purpose.	A portfolio of bespoke products and programs will be generated by each student, showcasing their ICT and computing skills.

KS4 Computing Curriculum Plan

	Autumn 1	Spring 1	Summer 1	Autumn 2	Spring 2	Summer 2
Theme	Fundamentals of algorithms & programming	Fundamentals of data representation & computer Systems	Computer networks	Programming project & cyber security	Impacts of digital technology & software development	Revision & exam preparation
Key Concepts	• Representing algorithms • Efficiency of algorithms • Searching and sorting algorithms • Data types • Programming concepts • Arithmetic, relational and Boolean operations • Data structures and handling files, strings etc in programming. • Structured, robust and secure programming • Classification of languages.	• Number bases and conversions between. • Units of information • Binary arithmetic • Character encoding • Representing sound and images. • Compression • Boolean logic • Software classification • System architecture	• What is a network? • Types of networks • Wired and wireless networks • Network topologies • Network protocols • Network security • TCP/IP model	• The programming project allows students to develop their practical skills in a problem solving context by coding a solution to a given problem and producing a report documenting the development of the solution. • Cyber security threats • Social engineering • Malicious code • Detect and prevent cyber security threats.	• Ethical, legal and environmental impacts of digital technology on wider society, including issues of privacy • Aspects of software development, including design, implementation, testing and evaluation.	• Thorough revision of every topic. • Past papers and mark schemes to be used throughout.