Computing & ICT KS3 Curriculum Overview

	Learning Cycle 1	Learning Cycle 2	Learning Cycle 3	Learning Cycle 4	Learning Cycle 5	Learning Cycle 6
Topic	**Year7** **Digital working practice in school.** **Year8** **Spreadsheet Modelling** **Year9** **Python Programming**	**Year7** **Computer Hardware and Software** **Year8** **Computational Thinking (including Bebras Challenge)** **Year9** **Python Programming (including Bebras Challenge)**	**Year7** **E-Safety and Online Respect** **Year8** **HTML CSS and Networks** **Year9** **Cyber Security and Cryptography**	**Year7** **Microbits** **Year8** **Data Representation Images and Sound** **Year9** **Exefest Project (using IT)**	**Year7** **Binary and Logic Gates** **Year8** **Computer Graphics** **Year9** **iDEA**	**Year7** **Scratch and Rapid Router** **Year8** **Scratch Games Project** **Year9** **iDEA and project**
Critical Prior Knowledge	**Year7** None **Year8** Simple maths (addition, multiplication etc**)** **Year9** Basic block based programming concepts	**Year7** Using a computer. **Year8** How to follow some step-by-step rules **Year9** Understand and correct simple programs written in python	**Year7** Understanding of how to use computers **Year8** Know what a website is. **Year9** Know that there are dangers when using online systems (apps and websites)	**Year7** Understanding of basic hardware. **Year8** Know what images and sound are. **Year9** Use a computer and understand general concept of software	**Year7** Basic understanding of a computer. **Year8** Know what a computer graphic is. **Year9** None	**Year7** Understanding of how to use computers **Year8** Understanding of using Scratch for block based programming **Year9** Understanding of what badges to be going for to finish the award.
Overall Intent (Big ideas and key concepts)	**Year7** How to use computers safely and efficiently **Year8** To know why and how to use spreadsheets **Year9**	**Year7** To know what make up a computer (hardware and software). **Year8** To know why and how to use spreadsheets **Year9**	**Year7** To be safe and know what to do when using computers **Year8** To create a website and know some of the main tags when making a website	**Year7** To know what a microbit and create some basic games for them **Year8** To know how digital images and sound are created and stored on computers.	**Year7** To know why binary and logic gates are linked to all computers. **Year8** To know some of the different types of images	**Year7** To know how to use Scratch and understand some of the basic fundamental of programming (Data types, sequences, selection and iteration) **Year8**

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	To create some simple programs written in python	To see the real world application and correct simple programs written in python	**Year9** To know what risks there are to computer systems	**Year9** To use prior knowledge to bring together a project that uses a variety of different software for an intended audience.	and how to create them. **Year9** To collect badges to go towards their Bronze iDEA.	To use prior knowledge to create their own game using Scratch. **Year9** To collect badges to go towards and complete their Bronze iDEA and gain their certificate.
Essential Knowledge mileston es (What students must master)	**Year7** Manage digital data, work with computer accounts, Communicate with E-mail **Year8** Know what a spreadsheet is and some basic formulae **Year9** Basic input and output statements, Using variables.	**Year7** Basic input, output and storage devices and software. **Year8** Decomposition, abstraction and algorithmic thinking. **Year9** Simple sequences of code and the arithmetic operators (+-*/)	**Year7** How to stay safe online and who to tell if worried. **Year8** Some basic HTML tags to use in a website. **Year9** Some of the main risks when working online and how to prevent them	**Year7** What the micro bit is and some basic code to make a game. **Year8** How digital sound and images are made up of binary digits. **Year9** Choosing the right software when creating digital artefacts for a particular audience.	**Year7** How the binary number system is used within computers. **Year8** Using software to create basic graphics. **Year9** Have over 125 points for badges completed.	**Year7** Understand sequences of code used in Scratch . **Year8** Be able to program Scratch to control a sprite (mouse or keyboard) **Year9** Have gained their Bronze Award.

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Cultural Capital	**Year7** How to operate in a world that is digital. **Year8** Show spreadsheet uses within business and personal finances **Year9** How basic programming can be used in everyday applications and games e.g. how variables are used.	**Year7** The hardware and software that is used in working and personal lives. **Year8** Applying computational thinking skills to all aspects of problem solving and seeing it as a way of thinking. **Year9** Jobs within the UK that require a good understanding of programming and how python fits into the market as a whole.	**Year7** Staying safe in an ever-increasing digital world. **Year8** The code that make up the websites that feature every day for students. **Year9** What threats there are in the real world and how to prevent them using case studies.	**Year7** Uses of robotics within the real world and how to program them. **Year8** How digital images and sound are used all over applications and the web and how they are made up of binary digits. **Year9** Real world scenario that could be used to create own set of digital artefacts for own company. See uses of logo and icon design.	**Year7** How every device rely on binary as it simplifies the tasks. **Year8** Creating graphics and how logo's and icons are used within industry. **Year9** iDEA badge provide a variety of scope based on the badge from digital careers to making websites	**Year7** Basic programming concepts can be applied to all programming. Links to all apps that people use. **Year8** A very large and growing industry that plays a large part of the modern worls. **Year9** iDEA badge provide a variety of scope based on the badge from digital careers to making websites.

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Assessment Points	• Practical application. • Simulation. • Low stakes quizzes • Practical Coding Exercises.	• Low stakes quizzes. • Practical Coding Exercises.	Low stakes quizzes • Practical HTML Coding Exercises.	• Practical application. • Low stakes quizzes.	• Practical application. • Low stakes quizzes. • Online assessment for iDEA	• Practical application. • Low stakes quizzes. • Online assessment for iDEA
ECC Student Characteristics	Integrity, embrace challenge and creativity	embrace challenge, be reflective and use creativity and innovation	Be reflective and have integrity, be forward thinking and creative and embrace the challenge	Resilience, creativity and being engaged	Embracing challenge, creativity and reflection.	Be resilient and reflective, use creativity and embrace the challenge.
Connection to future learning (When is this	**<u>Year 7</u>** Throughout the whole school. **<u>Year 8</u>** Could be used again in GCSE or other subjects for planning	**<u>Year 7</u>** Throughout the subject in KS3, 4 and 5 references to hardware and software will be explored. Learning cycle 4 **<u>Year 8</u>**	**<u>Year 7</u>** Reflected back on each year, during lesson 42 sessions and built into understanding throughout life.	**<u>Year 7</u>** Learning cycle 6 with the drag and drop application of Scratch programming. **<u>Year 8</u>**	**<u>Year 7</u>** I year 8 learning cycle 4 and KS4/5. **<u>Year 8</u>** In year 9 learning cycle 4.	**<u>Year 7</u>** In year 8 learning cycle 6. **<u>Year 8</u>** Concepts can be applied in year 9 learning cycle 1 and 2.

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developed / revisited)?	**<u>Year 9</u>** Learning cycle 2	The idea of using computational thinking to solve problems can be applied to all aspects of problem solving in any subject. **<u>Year 9</u>** Would be developed further in KS4 and 5.	**<u>Year 8</u>** Developed further in KS5, Could use for own websites of the future. **<u>Year 9</u>** Developed in KS4 and 5, but cyber security is revisited every time usernames, passwords or accounts are referenced.	In Ks4 and 5 this area is developed further. **<u>Year 9</u>** In Cycle 5 and 6, using the practical applications learnt within the Inspiring Digital Enterprise Award.	**<u>Year 9</u>** Learning cycle 6. Badges earnt could relate to other parts of the curriculum, other subjects and beyond	**<u>Year 9</u>** Badges earnt would compliment other subjects and depending on the badge could be revisited in KS4/5.