# Year 7 Computer Science Curriculum Map

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| **Overview** | We start Year 7 with a transitional unit to allow students to confidently move from Year 6 to Year 7. By the end of the unit, they should be able to use the school network safely and respectfully, as well as learning how Bishop Luffa uses Google Classroom and Drive as our online learning platforms. Students practice their touch typing skills at the beginning of lessons and are regularly challenged with a short test which helps them view their progress over the year. The Bebras Computing Challenge introduces computational thinking to the Year 7 students, this is an annual challenge and all students will participate until the end of KS3. Spheros are introduced to the students in the Autumn term, they will program the robots using block programming introducing the three basic programming constructs (sequence, selection and iteration). The "Who Wants to be a Millionaire" Game encourages students to improve their digital literacy by creating a game suitable for their given audience on a topic of their choice. The micro:bit unit allows learners to understand and apply the fundamental principles and concepts of Computer Science, including abstraction, logic, algorithms and data representation; they gain practical experience of writing computer programs using blocks in order to solve problems using a physical device. Pencil Code is used to explore programming, Pencil Code supports code in both blocks and text, in this unit students will start with basic concepts and then move on to more advanced concepts. The Scratch unit offers students the opportunity to expand on their knowledge of key programming constructs throughout the unit. | | | | | |
| **Year 7** | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| **Topic** | Collaborating online respectfully | BEBRAS Computing Challenge<br><br>Spheros | Who Wants to be a Millionaire Game | Micro:Bits | Pencil Code | Scratch |
| **Knowledge** | Online relationships<br>Online bullying<br>Privacy and security | BEBRAS: Computational thinking.<br>Spheros: Basic programming constructs (sequence, selection and iteration). Know what Spheros are and can do. | Create digital artefacts.<br>Searching for information effectively. | Use of blocks to program.<br>Fundamental principles and concepts of Computer Science.<br>Components of a micro:bit. | Use of blocks and introducing a text based language (CoffeeScript) to program.<br>Design simple algorithms. | Building on existing knowledge of key programming constructs. |
| **Skills** | Understand a range of ways to use technology safely, respectfully, responsibly, and securely | BEBRAS:<br>Practice computational thinking skills<br>Spheros: Develop coding skills using a physical device.<br>Practice collaboration. | Develop creative skills.<br>Practice collaboration.<br>Develop digital literacy skills.<br>Evaluation skills. | Practical experience of writing computer programs using blocks in order to solve problems using a physical device. | Debugging<br>Logical Reasoning<br>Geometric Constructions | Design and develop modular programs<br>Debugging<br>Logical Reasoning<br>Practice collaboration. |