Bishop Milner CATHOLIC COLLEGE — Year 9 LONG-TERM SEQUENCE for ICT/Computing

The curriculum for this stage of students' education has been designed to help the transition from year 8 to 9 computing while focusing on improving student's digital literacy, and recapping the core concepts of programming in a text-based programming language. Students will learn how to use a variety of software and advertise the content covered in GCSE Computer Science.

Half Term 1:	Half Term 2	Half Term 3
Python programming **STUDENTS MUST KNOW:** - How to write and run a Python program - The 3 main constructs of programming: Sequence, selection, and iteration - How to find and fix bugs in code - How to plan and write their own programs **How this will be assessed:** Students will write their own Python programs and complete a summative assessment.	**Media: Animations** **STUDENTS MUST KNOW:** - How to navigate a common 3D animation software (Blender) - How to add, move, rotate, and scale objects - How to add animations using keyframes - How to use vertex, face, and edge manipulation to create complex meshes. **How this will be assessed:** Students will produce a short animation which will be assessed against a rubric.	**Data Science** **STUDENTS MUST KNOW:** - How and where data is collected and used in day-to-day life - How to visualise and analyse large data sets - The investigative cycle steps - How to carry out a data science investigation. **How this will be assessed:** Students will take a multiple-choice summative assessment at the end of the unit and their project work will be assessed against a rubric.
Half Term 4	**Half Term 5**	**Half Term 6**
Representations: Going audio-visual **STUDENTS MUST KNOW:** - How to create digital media such as images and sound - How media is stored as binary code - How to use design software (GIMP and audacity) to manipulate images and sound **How this will be assessed:** Students will take a summative assessment at the end of the unit.	**Cybersecurity** **STUDENTS MUST KNOW:** - The techniques cybercriminals use to steal data, disrupt systems, and infiltrate networks - The value of their own personal data and how companies use it - What social engineering is and how to protect against attacks **How this will be assessed:** Students will take a multiple-choice summative assessment at the end of the unit.	**Physical computing** **STUDENTS MUST KNOW:** - How to set up and prepare to use a micro:bit - How to write and upload simple programs to a micro:bit - How to structure and undertake a programming project **How this will be assessed:** Students will work in pairs to build a physical computing project which will be assessed against a rubric. They will also complete a summative assessment.

Embedding this knowledge can be supported at home by cross curricular experiences as well as developing computational thinking skills by use of program such a Scratch and MSW Logo.
Codeacademy and code.org are also fun and challenging for anyone wanting to develop their programming skills