Key Stage Three:

By the end of key stage 3, pupils are expected to know, apply and understand the matters, skills and processes specified in the programme of study.

Pupils should be taught to	At St Gregory's Catholic High School, this is taught
Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems	Year 7 Term 2 – Control systems with flowol Year 7 Term 2 – Games programming with scratch Year 8 Term 2 – Spreadsheet modelling Year 8 Term 3 – Computational Thinking and logic Year 8 Term 3 - App development Year 9 Term 2 – AI and machine learning. Year 9 Term 3 – Modelling in small basic
Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem	Year 7 Term 3 – First steps in small basic Year 7 Term 3 – Python for beginners Year 8 Term2 – Introduction to python Year 8 Term 3 – Computational Thinking and logic Year 9 Term 2 – Python next steps
Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	Year 7 Term 2 – Games programming using scratch Year 7 Term 3 – First steps in small basic. Year 7 Term 3 – Python for beginners Year 8 Term 2 – Introduction to python Year 8 Term 3 – Computational Thinking and logic Year 9 Term 2 – AI and machine learning. Year 9 Term 2 – Python next steps Year 8 Term 3 – Modelling in small basic
Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]	Year 7 Term 2 – Control systems with flowol Year 7 Term 2 – Games programming with scratch Year 8 Term 1 – Understanding computers Year 8 Term 3 – Computational thinking

Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems	Year 7 Term 1 – E-safety Year 8 Term 1 – Understanding computers Year 8 term 1 – Networks Year 9 Term 1 – Database development Year 9 Term 3 – HTML and web development
Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	Year 7 Term 1 – Graphics (images) Year 8 Term 1 – Understanding computers Year 8 Term 3 – Computational thinking Year 9 Term 2 – AI and machine learning
Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users	Year 7 Term 1 – Graphics Year 8 Term 3 – App development Year 9 Term 3 – HTML and websites
Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	Year 7 Term 1 – Graphics Year 8 Term 3 – App development Year 9 Term 3 – HTML and website development
Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns	Year 7 Term 1 – E-Safety Year 8 Term 1 – Understanding computers Year 9 Term 2 – AI and machine learning. Year 9 Term 3 – Computer crime and cyber security

Key Stage Four:

By the end of key stage 4, pupils are expected to know, apply and understand the matters, skills and processes specified in the programme of study.

Pupils should be taught to	At St Gregory's Catholic High School, this is taught
Develop their capability, creativity and knowledge in computer science, digital media and information technology	Year 10 Term 1 & 2 – Data, Computer Hardware and Networks Year 11 Term 1 & 2 – Computational Thinking and Problem Solving
Develop and apply their analytic, problem-solving, design, and computational thinking skills	Year 11 Term 1 & 2 – Computational Thinking and Problem Solving Year 11 Term 1 – Algorithms (Searching and Sorting) Year 11 Term 1 – Computer programming
Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns	Year 10 Term 3 – Impacts of digital technology