



## Computer Science, IT, Business and Digital Media Department

### Long-term sequencing Year 10 GCSE Computer Science

**CURRICULUM INTENT:** To provide a smooth transition from KS3 to KS4; to understand and apply the fundamental concepts and principles of Computer Science; to analyse problems in computational terms through practical problem solving experience; to enable learners to think creatively, innovatively, analytically, logically and critically; to understand the components that make up digital systems and how they communicate with one another; to understand the impacts of digital technology to the individual and wider society, with particular attention paid to the cultural, ethical and spiritual impact, including the Catholic ethos of the school; to apply mathematical skills relevant to Computer Science; to embed coding into the majority of lessons where it is relevant; to raise attainment of boys and PP/SEND learners; and to provide a knowledge-rich and balanced curriculum to support all learners.

<p><b>HALF TERM 1:</b> <b>STUDENTS MUST KNOW;</b></p> <ul style="list-style-type: none"> <li>• Data Representation: Binary conversion and arithmetic, binary shifts Hexadecimal.</li> <li>• Data Representation: Images and Sounds, Compression</li> <li>• The workings of the CPU, registers, primary memory, cache, FDE cycle, secondary storage (types, characteristics)</li> </ul> <p><b>HOW THIS WILL BE ASSESSED:</b> Mini assessment at end of first H/T Weekly knowledge checkers and/or HW LRW1 (December)</p>	<p><b>HALF TERM 2:</b> <b>STUDENTS MUST KNOW:</b></p> <ul style="list-style-type: none"> <li>• The Internet – structure and function</li> <li>• Wired and Wireless Networks</li> <li>• Network Topology</li> <li>• Networks: IP and MAC addressing</li> <li>• Protocols and layers</li> <li>• Encryption</li> <li>• Network Hardware</li> </ul> <p><b>HOW THIS WILL BE ASSESSED:</b> Weekly knowledge checkers and/or HW LRW1 (December)</p>	<p><b>HALF TERM 3:</b> <b>STUDENTS MUST KNOW:</b></p> <ul style="list-style-type: none"> <li>• Network Security: Threats, Identifying and Preventing attack</li> <li>• Legislation: Computer Misuse Act, DPA, C&amp;P Act</li> <li>• Ethical, Cultural, Environmental and Privacy issues</li> </ul> <p><b>HOW THIS WILL BE ASSESSED:</b> Weekly knowledge checkers and/or HW LRW2 (March)</p>
<p><b>HALF TERM 4:</b> <b>STUDENTS MUST KNOW:</b></p> <ul style="list-style-type: none"> <li>• Operating Systems, utility software</li> <li>• Standards and Protocols</li> <li>• Computational &amp; Algorithmic Thinking</li> </ul> <p><b>HOW THIS WILL BE ASSESSED:</b> Full assessment (for work in HT3 and HT4) end of Spring2 Weekly knowledge checkers and/or HW LRW3</p>	<p><b>HALF TERM 5:</b> <b>STUDENTS MUST KNOW:</b></p> <ul style="list-style-type: none"> <li>• IDEs; advantages; IDLE as an IDE</li> <li>• Introduction to Python</li> <li>• Flowcharts and Pseudocode</li> </ul> <p><b>HOW THIS WILL BE ASSESSED:</b> <b>Begin NEA task</b> Weekly knowledge checkers and/or HW LRW3</p>	<p><b>HALF TERM 6:</b> <b>STUDENTS MUST KNOW:</b></p> <ul style="list-style-type: none"> <li>• Any outstanding topics previously missed through absence etc (HWPO)</li> <li>• Revision for LRW3 (full mock Paper 1)</li> <li>• How to complete the NEA task</li> <li>• Review LRW3 misconceptions</li> </ul> <p><b>HOW THIS WILL BE ASSESSED:</b> <b>Complete NEA task</b> Full assessment LRW3 Paper 1 Weekly knowledge checkers and/or HW</p>

**Home learning will consist of a combination of:** Worksheets (written and online), exam questions, QLA revision, GCSEPOD, SENECA

Stuart Bathurst Catholic High School