


<b>Year 7 Computer Science</b>	<b>Curriculum Intent:</b> Computing consists of three stands: Computational Thinking, Computer Science and Digital Literacy. Within the Computer Science and Computational Thinking streams we will develop the student’s knowledge and understanding of what a computer is using the Input/Process/storage/output model of computing. In term one exploring the fundamentals of the model. We will examine the logic behind instructions and how they are processed. We de-mystify a computer by explaining what software is and how it is created, providing opportunities for students to develop their own software using a text-based programming language			
<b>Computer Science Year 7:</b>	<b>Term 1: Fundamentals of computer systems</b>	<b>Term 2: Simple Algorithms, Primary and secondary storage</b>	<b>Term 3 Consequences of Using Computers</b>	
<b>Topic Titles (in order of delivery)</b>	<ul style="list-style-type: none"><li>• What is a computer</li><li>• Difference between hardware and software</li><li>• Input / Output Devices</li><li>• Components of computers</li><li>• Memory</li></ul>	<ul style="list-style-type: none"><li>• What is Memory</li><li>• The need for storage</li><li>• What is data and how is it stored</li><li>• The different application software types<ul style="list-style-type: none"><li>○ Office type products</li><li>○ Specialised products<ul style="list-style-type: none"><li>▪ SIMS</li><li>▪ Payroll</li></ul></li></ul></li></ul>	<ul style="list-style-type: none"><li>• Moral consequence of using computers<ul style="list-style-type: none"><li>○ Environmental</li><li>○ Legal</li><li>○ Privacy</li></ul></li><li>• Legal issues of using computer systems<ul style="list-style-type: none"><li>○ GDPR</li><li>○ Hacking</li><li>○ Copyright and plagiarism</li></ul></li></ul>	
<b>Key knowledge / Retrieval topics</b>	<ul style="list-style-type: none"><li>• The computer as Input / Process. Output model</li><li>• What input devices are</li><li>• What output devices are</li><li>• Assistive technologies</li><li>• How the CPU works (FDE)</li><li>• Different types of memory (RAM / ROM)</li><li>• What software is</li><li>• Operating system Software</li><li>• Utility Software<ul style="list-style-type: none"><li>○ Anti-virus</li><li>○ Back-up</li><li>○ System management</li><li>○ File management</li></ul></li><li>• Application Software<ul style="list-style-type: none"><li>○ Types of</li><li>○ Appropriate uses of</li></ul></li></ul>	<ul style="list-style-type: none"><li>• ROM / RAM / CACHE<ul style="list-style-type: none"><li>○ Differences</li><li>○ Purposes</li><li>○ Benefits</li></ul></li><li>• Secondary Storage<ul style="list-style-type: none"><li>○ Different types<ul style="list-style-type: none"><li>▪ Magnetic</li><li>▪ SSD</li><li>▪ Optical</li></ul></li><li>○ Characteristics and uses</li><li>○ Appropriate type for particular purpose</li></ul></li><li>• Application software<ul style="list-style-type: none"><li>○ Types</li><li>○ Appropriate use</li><li>○ Which to use for a particular purpose</li></ul></li></ul>	<ul style="list-style-type: none"><li>• What are computers made of?<ul style="list-style-type: none"><li>○ Plastics</li><li>○ Rare poisonous metals</li></ul></li><li>• How are they disposed of?</li><li>• Pollution</li><li>• Impact on Climate Change</li><li>• What can we do?</li><li>• The need for Laws on use</li><li>• What laws are designed to do</li><li>• GDPR<ul style="list-style-type: none"><li>○ Privacy</li><li>○ Protecting data</li></ul></li><li>• Computer Misuse Act<ul style="list-style-type: none"><li>○ Black / White Hat Hacking</li><li>○ Other miss-use<ul style="list-style-type: none"><li>▪ Damaging equipment</li><li>▪ Destroying / changing data</li></ul></li></ul></li><li>• Copyright laws,<ul style="list-style-type: none"><li>○ Creative commons licence</li><li>○ Legal use</li><li>○ Plagiarism</li></ul></li></ul>	

<p><b>Understanding / Sequence of delivery</b></p>	<ul style="list-style-type: none"> <li>• Know what a computer is (Input / process / output / storage)</li> <li>• Difference between Hardware and Software</li> <li>• Input / Output storage devices</li> <li>• Internal components (CPU,Motherboard/RAM/BIOS/disks)</li> <li>• Peripherals and functions (camera, keyboard, printer, mic,mouse, scanner, headphones, speakers, printer) and function</li> <li>• Operating System, what they are what they do</li> <li>• management of software</li> <li>• management of hardware (drivers)</li> <li>• management of CPU and memory</li> <li>• Utilities e.g</li> <li>• backup</li> <li>• disk management</li> <li>• system management</li> <li>• antivirus"</li> </ul>	<ul style="list-style-type: none"> <li>• Computer Memory and Storage</li> <li>• ROM/RAM/Cache</li> <li>• Secondary Storage, use and purpose</li> <li>• Magnetic / Solid State / Optical, characteristics and use</li> <li>• Identify appropriate storage given circumstance"</li> <li>• Identify a range of application software and use <ul style="list-style-type: none"> <li>• image processing</li> <li>• Word Processing</li> <li>• Spreadsheet</li> <li>• Web browsers</li> <li>• Presentation</li> <li>• Database</li> <li>• IDE</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Moral - replacing humans / changing the world / spreading information and privacy</li> <li>• Legal - hacking / GDPR / Copyright - understanding laws exist that affect and control computer use</li> <li>• State the purpose of the following <ul style="list-style-type: none"> <li>• GDPR</li> <li>• Computer Misuse Act</li> <li>• Copyright, Designs and Patents act</li> <li>• Environmental Issues - recycling and waste / energy use / improvements in manufacturing</li> </ul> </li> <li>Open source - cost differences / support / customisation</li> <li>Introduction to python. Using Turtle to develop: Basic programming concepts <ul style="list-style-type: none"> <li>○ Sequence</li> <li>○ Selection</li> <li>○ Iteration</li> </ul> </li> </ul>
<p><b>Assessments</b></p>	<ul style="list-style-type: none"> <li>• CAT1 – The basics of what a computer is.</li> <li>• Homework</li> </ul>	<ul style="list-style-type: none"> <li>• Low stakes testing</li> <li>• CAT2 – Computer Basics, storage and applications</li> <li>• Homework</li> </ul>	<ul style="list-style-type: none"> <li>• Low stakes testing</li> <li>• Homework</li> <li>• End of year PPE based on OCR Entry Level assessment</li> </ul>