Ursuline College Curriculum Implementation: **Computer Science & IT Year 9**

Curriculum Intent	*'I have come so that they may have life and have it to the full.'* John 10: Chapter 10. V 10 Inspired by the Gospel values of love, joy, and compassion, we nurture and develop the whole child so that each unique individual grows in confidence and has the knowledge and skills to enable them to achieve their true potential. Our Computing curriculum aims to develop students' computational thinking and problem-solving abilities, equipping them with the skills needed for future success. Aligned with our core values of respecting, helping, and bearing with each other, we strive to foster resilience and creativity, enabling students to become critical thinkers who can tackle any challenge. Our broad and balanced curriculum prepares students for a technological world, teaching them to use various Computing and coding software. Through exposure to key computational concepts, students gain the knowledge, skills, and understanding to stay safe online, comprehend how computers work, and confidently use technology. This curriculum nurtures resilient learners capable of solving problems and learning from their mistakes. **Respecting each other, helping each other, and bearing with each other: Getting better never stops.**
Year 9 Intent	The curriculum for Year 9 advances students' understanding of computing and supports them in making informed KS4 and post-16 choices. Students begin with an extended careers programme covering pathways, diversity, entrepreneurship, and ethics in tech, followed by a cyber security taster. They consolidate and extend their Python programming, then replace block-based app building with a JavaScript web-apps unit that builds on Year 8's HTML and CSS. Students go on to develop advanced games in GameMaker, study sorting algorithms and encryption, and finish the year exploring artificial intelligence, machine learning, and AI ethics, preparing them for emerging KS4 content and for the Business Studies curriculum.

	Cycle 1	
	Term 1 2.9.26 – 23.10.26 7 weeks	Term 2 2.11.26 – 18.12.26 7 weeks
Focus & Skills	Careers in Computing: What do people in tech actually do? Pathways into tech: A-levels, T-levels, apprenticeships Cambridge Nationals & GCSE: what could you study next? Post-16 options: sixth form, college & apprenticeships	Careers in Computing: Women in tech / diversity in computing Tech entrepreneurship & startups Ethics in tech: who is responsible? Reflection & showcase: my computing future

	University & degree apprenticeships in tech Mock interview / application task Cyber security careers deep-dive	Cyber Security (taster): You and your data Social engineering, malware & attacks Defence, encryption & cyber careers
Links to CST	**Preferential option for the poor and vulnerable:** Careers education reflects the preferential treatment of the poor by opening tech pathways to students who might otherwise be overlooked or under-represented. Championing diversity, ethical tech and cyber safety puts the preferential treatment of the poor into practice, protecting and including those most at risk of being left behind or exploited.	
Explicit Skill Content	What people in tech actually do day-to-day Understanding pathways: A-levels, T-levels and apprenticeships KS4 options: Cambridge Nationals and GCSE Post-16, university, and degree apprenticeship routes Completing a mock interview / application task Exploring cyber security careers	Diversity and representation in computing How tech startups and entrepreneurship work Ethics and responsibility in technology How your data is collected and used Social engineering, malware, and common attacks Defence, encryption and cyber security careers
Homework	• Find a local tech employer – what roles do they advertise? • Draft a personal statement paragraph for a tech role • Literacy keywords	• Research a famous tech entrepreneur – 5 key facts • Christmas cracker design • Literacy keywords
Assessment	• MS Forms assessment and mock application at end of cycle • R&R's to assess prior learning	• MS Forms assessment at end of cycle (careers & cyber) • R&R's to assess prior learning
Disciplinary Literacy Vocab	Career Pathway A-level T-level Apprenticeship GCSE Cambridge National Post-16 Personal statement Interview Cyber	Diversity Entrepreneur Startup Ethics Data Social Engineering Malware Phishing Encryption Firewall Security
Texts/ Resources	• Office 365 • Careers resources • Guest speakers	• Office 365 • Cyber security resources

KS4 Links	Careers education directly informs KS4 and post-16 choices, linking to GCSE Computer Science, Cambridge Nationals and BTEC pathways.	The cyber security taster feeds GCSE CS system security and social engineering and the Cambridge Nationals cyber content.
	Cycle 2	
	Term 3 4.1.27 – 12.2.27 6 weeks	Term 4 23.2.27 – 25.3.27 5 weeks
Focus & Skills	Programming & Python: Revisers – IF, FOR, WHILE Loops and turtles Everything is random Wordle Challenges (flex)	Assessment Web Apps (JavaScript): HTML/CSS recap + what is JavaScript? JS events, buttons & changing the page Build your app: variables & logic in JS Showcase & peer review
Links to CST	**Preferential option for the poor and vulnerable:** Programming empowers students to create solutions that benefit disadvantaged communities, keeping the needs of the poor at the centre of technology. Designing apps that solve real-world problems reflects the preferential treatment of the poor, using technology to serve those in greatest need.	
Explicit Skill Content	Revising IF, FOR and WHILE Using loops with turtle graphics Using random number generation Building a Wordle-style game Solving programming challenges	• Recapping HTML and CSS and understanding what JavaScript is • Using JS events and buttons to change the page • Using variables and logic in JavaScript • Building and showcasing a web app
Homework	• Interpreting code worksheet • Python turtle quiz – fetch, decode, explain • Literacy keywords	• Sketch your app: 3 screens, what does each button do? • Test a classmate's app – one star and one wish • Literacy keywords
Assessment	• MS Forms / vocab assessment • R&R's to assess prior learning	• Cycle assessment and assessment of the final web app; peer review • R&R's to assess prior learning
Disciplinary Literacy Vocab	Variable Selection Iteration IF FOR WHILE	HTML CSS JavaScript Event Function

	Condition Random Function Algorithm Turtle Debug	Variable Button Element DOM Logic Debugging
Texts/ Resources	• Thonny • Turing Lab • Office 365	• HTML / CSS / JavaScript editor • Office 365
KS4 Links	Python revisers and projects consolidate GCSE CS algorithms, data types and code writing / tracing.	JavaScript web apps build directly on Year 8 HTML/CSS and support GCSE CS programming and BTEC DIT / Cambridge Nationals app and UI development.
	Cycle 3	
	Term 5 12.4.27 – 28.5.27 7 weeks	Term 6 7.6.27 – 16.7.27 6 weeks
Focus & Skills	GameMaker Advanced: Plan & prototype Core mechanics in GML Showcase & peer review Algorithms: Self-marking quizzes in Python Sorting: bubble, merge & insertion	Algorithms: Encryption basics Artificial Intelligence: What is AI? How do computers learn? + bias & hallucination Can you trust AI? Ethics & deepfakes AI ethics wrap-up + end of year reflection
Links to CST	**Preferential option for the poor and vulnerable:** Creating inclusive games and efficient algorithms reflects the preferential treatment of the poor, building technology that works well for everyone, including those with the least. Using AI and encryption responsibly reflects the preferential treatment of the poor, guarding against harms that fall hardest on the vulnerable and ensuring new technology benefits all.	
Explicit Skill Content	Planning and prototyping a game Programming core mechanics in GML Showcasing and peer-reviewing games Building self-marking quizzes in Python Understanding sorting algorithms: bubble, merge, and insertion	Understanding basic encryption What AI is and how it is used How machine learning works, including bias and hallucination Evaluating trust, ethics and deepfakes in AI Reflecting on the responsible use of AI
Homework	• Business plan for your game • Build a self-marking quiz on this year's topics • Literacy keywords	• AI in the real world – 3 examples + benefits/risks paragraph • Literacy keywords & activity sheets

Assessment	• Assessment of game prototype and algorithm tasks • R&R's to assess prior learning	• MS Forms assessment at end of cycle • R&R's to assess prior learning
Disciplinary Literacy Vocab	Prototype GML Mechanic Event Algorithm Bubble Sort Merge Sort Insertion Sort Efficiency Iteration Comparison	Encryption Cipher Key Artificial Intelligence Machine Learning Training data Bias Hallucination Ethics Deepfake Algorithm
Texts/ Resources	GameMaker Thonny Office 365	Thonny ChatGPT / AI tools machinelearningforkids.co.uk Office 365
KS4 Links	GML develops event-driven programming for GCSE CS and BTEC DIT Component 1. Sorting and searching algorithms are core GCSE CS exam content.	Encryption supports GCSE CS security. AI is being added to the GCSE CS curriculum, and this unit prepares students for the risks, benefits, and ethics of AI.