

Ursuline College Curriculum Implementation: Computer Science & IT Year 8



Curriculum Intent	<i>'I have come so that they may have life and have it to the full.'</i> 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 8 Intent	The curriculum for Year 8 builds on the foundations from Year 7 and broadens students' understanding of computing. Students begin with a dedicated careers unit, then revisit and modernise their e-safety knowledge before deepening their understanding of data representation, Boolean logic and how images and sound are stored. A new networks unit explains how the internet works and feeds into Year 9 cyber security. Students extend their Python programming with selection, loops, sub-routines and projects, develop data-handling skills with spreadsheets, and apply their creativity through game development in GameMaker and web development, providing a well-rounded computing education that prepares them for KS4.	
	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: Introduction to careers in computing Tech job families: software, cyber, data, design What skills do employers look for? Visiting speaker / case study My skills audit & computing pathway plan Reflection & showcase	E-safety (modernised): Scams, phishing & social engineering AI deepfakes, image-sharing & misinformation Breck Bednar session Data representation: Binary reviser, hexadecimal & binary addition Boolean logic (AND, OR, NOT) How images & sound are stored Networks:

		What is a network? LANs, WANs & hardware
Links to CST	Preferential option for the poor and vulnerable: Exploring careers widens horizons and opportunity, reflecting the preferential treatment of the poor by helping students from all backgrounds see a future in tech. Protecting people online and building digital literacy for all reflects the preferential treatment of the poor, defending the vulnerable and giving everyone the understanding to take part safely.	
Explicit Skill Content	What careers exist in computing and what people in tech do Understanding the main tech job families Identifying the skills employers value Completing a skills audit and pathway plan Reflecting on where I want to be in ten years Presenting my computing pathway plan	Recognising scams, phishing and social engineering Understanding AI deepfakes, image-sharing risks and misinformation Safe and healthy online behaviour (Breck Bednar) Converting between binary and denary (reviser) Converting to and from hexadecimal and adding binary numbers Using Boolean logic and truth tables How images and sound are represented as data What a network is; LANs, WANs and network hardware
Homework	- Research one tech job: what do they do day-to-day? - Complete skills audit started in lesson - Literacy keywords	- Spot-the-phish: annotate a real scam message - Christmas decoration – Computing - Literacy keywords
Assessment	MS Forms assessment at end of cycle: staying safe online and data representation Regular use of R&R to assess learning	
Disciplinary Literacy Vocab	Career Pathway Software Cyber Data Design Apprenticeship Skills Audit Employer Reflection	Phishing Social Engineering Deepfake Misinformation Binary Denary Hexadecimal ASCII Boolean AND OR NOT Truth table Pixel Sample Network LAN

		WAN
Texts/ Resources	Office 365 Careers case studies / visiting speakers	BBC iPlayer – Breck Bednar Logic.ly Office 365
KS4 Links	Careers education informs KS4 option choices and links to GCSE Computer Science and BTEC DIT / Cambridge Nationals pathways.	E-safety links to GCSE CS cyber security and social engineering. Data representation and Boolean logic are core GCSE CS topics, and networks feed both GCSE CS and the Year 9 cyber unit.
	Cycle 2	
	Term 3 4.1.27 – 12.2.27 6 weeks	Term 4 23.2.27 – 25.3.27 5 weeks
Focus & Skills	Networks: The internet – packets, IP & how data travels Wi-Fi, security & the web vs the internet Python: Selection Iterative loops (FOR) Conditional loops (WHILE)	Assessment Python: Sub-routines Text-based programming project – plan & build Spreadsheets: Functions & formulae
Links to CST	Preferential option for the poor and vulnerable: Networks connect isolated and under-served communities to information and opportunity, and programming lets students build solutions that serve those most in need. Programming and data skills equip students to create tools and organise information in ways that can support the poor and help communities make fair decisions.	
Explicit Skill Content	How the internet works – packets, IP addresses and how data travels Wi-Fi and network security; the web versus the internet Using selection in Python Using FOR loops for iteration Using WHILE loops for conditional repetition	Using sub-routines to structure code Planning a text-based program: inputs, outputs, decisions Building a program using selection and loops in context Using spreadsheet functions and formulae
Homework	• Turing Lab – Smart Cities • Debugging – spot the errors in the code • Literacy keywords	• Plan your program: inputs, outputs, decisions • Real-world data: collect 10 data points to chart next lesson • Literacy keywords
Assessment	Cycle assessment and assessment of the Python project R&R's to assess learning	
Disciplinary Literacy Vocab	Network Packet IP address	Sub-routine Function Parameter

	Protocol Router Wi-Fi Internet Web Selection Iteration For While Condition Variable	Variable Selection Iteration Loop Algorithm Formula Cell Reference
Texts/ Resources	Turing Lab Office 365	Thonny / Turing Lab Office 365 (Excel)
KS4 Links	Networks map onto GCSE CS network topologies, protocols and security and BTEC DIT infrastructure. Python selection and loops underpin GCSE CS algorithms and code writing.	Sub-routines and structured programming support GCSE CS and BTEC DIT Component 3. Spreadsheets link to GCSE CS data handling and BTEC DIT Component 2.
	Cycle 3	
	Term 5 12.4.27 – 28.5.27 7 weeks	Term 6 7.6.27 – 16.7.27 6 weeks
Focus & Skills	Spreadsheets: Maths functions & charts IF (selection logic in disguise) Game Development (GameMaker): Sprites, objects & rooms Movement & controls Collisions & scoring	Game Development (GameMaker): Polish, sound & menus Showcase & peer review Web Development: What is HTML? History of the web Build basic pages Design, style & accessibility
Links to CST	Preferential option for the poor and vulnerable: Presenting data honestly and creating inclusive games reflects the preferential treatment of the poor, ensuring resources and enjoyment reach everyone, not only the advantaged. Making games and websites that are accessible and inclusive embodies the preferential treatment of the poor, prioritising those often excluded by technology.	
Explicit Skill Content	Using maths functions and building charts Using IF statements (selection) in spreadsheets Creating sprites, objects, and rooms in GameMaker Programming movement and controls Adding collision detection and scoring	Adding polish, sound, and menus to a game Showcasing and peer-reviewing games Understanding HTML and the history of the web Building basic web pages Styling pages and designing for accessibility

Homework	• Business plan for your game • Literacy keywords & activity sheets	• Business plan for your game – final version • Plan your website – purpose & structure • Literacy keywords
Assessment	Assessment of final game prototype and web pages Continued use of R&R's	
Disciplinary Literacy Vocab	Formula Function Chart IF Condition Average Sprite Object Room Event Collision Variable Debugging	Prototype Playtesting Menu Sound Sprite Event HTML Tag Element Web page Style Accessibility
Texts/ Resources	Office 365 (Excel) GameMaker OneNote	GameMaker OneNote HTML editor Office 365
KS4 Links	Spreadsheets link to GCSE CS data handling and BTEC DIT Component 2. GameMaker develops variables, conditionals, loops and event-driven logic for GCSE CS and BTEC DIT Component 1.	GameMaker and HTML align with BTEC DIT Component 1 (UI and digital media) and support GCSE CS programming and understanding of how the web works.