

Computing Year 9	The Year 9 Computing curriculum develops students' knowledge of computer science, information technology and digital literacy through increasingly independent and challenging learning experiences. Students deepen their understanding of programming, networks, databases, data analysis and professional digital communication whilst applying their skills to realistic projects and scenarios. The curriculum provides students with experience of both academic and vocational pathways. Through programming, algorithms and networking, students develop the computational thinking and problem-solving skills that underpin Computer Science. Through spreadsheets, databases, documentation and project work, students gain practical digital skills that reflect modern workplaces and support progression into Information Technology qualifications. By the end of Year 9, students will have the confidence, technical knowledge and independence to make informed choices about their future studies and become capable, responsible and creative users of technology.																													
Topic	Topic 1: Networks & Communication					Topic 2: Interface Design					Topic 3: Advanced Programming					Topic 4: Data Structures & Databases					Topic 5: Professional ICT & Documentation					Topic 6: Digital Solutions Project				
Interleaving	Students revisit computer systems knowledge from Years 7 and 8 and cybersecurity concepts from Year 8 to understand how modern networks operate securely and efficiently.					Students build on digital design and website skills from Years 7 and 8. Audience, purpose, accessibility and usability are revisited through the design of effective user interfaces.					Students revisit computational thinking, algorithms and programming constructs introduced in Years 7 and 8. Logical problem-solving and program design are reinforced through increasingly complex challenges.					Students apply audience, purpose and design principles developed through previous digital projects and web development. Data organisation, communication and evaluation skills are continually reinforced.					Students apply audience, purpose and design principles developed through previous digital projects. Communication and evaluation skills are reinforced through professional workplace contexts.					Students draw together knowledge and skills from across KS3, applying programming, data, design, communication and evaluation techniques within an independent project.				
Knowledge	Students learn how computer networks enable devices to communicate and share resources. They explore LANs and WANs, network hardware, wired and wireless connections and common network protocols. Students also investigate how data travels across networks and the internet and consider security risks and appropriate protection measures.					Students learn the principles of effective user interface design and how interfaces are developed for specific users and purposes. They explore layout, navigation, consistency, accessibility and usability alongside design conventions. Students consider how prototypes, user feedback and testing contribute to the development of successful interfaces.					Students develop more advanced programming skills using Python. They explore structured programming techniques including lists, functions and procedures, modular program design, validation and testing. Students learn how larger programs can be broken into manageable components and refined through systematic testing.					Students extend their understanding of databases by exploring more sophisticated methods of organising and retrieving information. They investigate relationships between tables, multi-table queries, reports and data integrity, and learn how relational structures improve the management of larger datasets.					Students develop professional digital communication skills through creating workplace-style documents. They explore professional emails, formal letters, reports and CVs, considering how structure, formatting, audience, purpose and tone influence effective communication. They also develop proofreading and quality-assurance skills.					Students apply knowledge and skills developed throughout KS3 to respond to a realistic digital brief. They learn how projects progress from requirements and planning through design and development to testing, refinement and evaluation, drawing on appropriate digital tools and techniques.				
Understanding	Students explain how different types of networks operate and describe the role of key networking hardware and protocols. They explain how data is transmitted across networks and evaluate the importance of security measures in protecting information and maintaining reliable communication.					Students explain how audience and purpose influence interface design decisions. They apply principles of usability, accessibility, navigation and consistency when developing interfaces and use testing and user feedback to identify and justify improvements.					Students design, develop and test programs using functions, procedures and data structures such as lists. They explain how decomposition improves program design and apply validation, testing and debugging strategies to improve reliability and maintainability.					Students design and use relational database structures to organise information effectively. They explain how relationships between tables improve data management and use queries and reports to retrieve meaningful information from increasingly complex datasets.					Students create professional communications appropriate for different audiences and contexts. They select suitable structure, formatting and tone and evaluate documents against professional standards, proofreading and improving their work where necessary.					Students independently plan, create and evaluate a digital solution in response to a given brief. They justify design decisions, respond to testing and feedback and identify opportunities to refine and improve their final solution.				
Skills	Computational Thinking	Problem Solving	Analysis, Evaluation and	Technical Vocabulary	Digital Literacy & Communication	Computational Thinking	Problem Solving	Analysis, Evaluation and Implementation	Technical Vocabulary	Digital Literacy & Communication	Computational Thinking	Problem Solving	Analysis, Evaluation and Implementation	Technical Vocabulary	Digital Literacy & Communication	Computational Thinking	Problem Solving	Analysis, Evaluation and Implementation	Technical Vocabulary	Digital Literacy & Communication	Computational Thinking	Problem Solving	Analysis, Evaluation and Implementation	Technical Vocabulary	Digital Literacy & Communication					
Assessment	Students complete a Network Investigation, explaining how networks operate, analysing communication methods and evaluating appropriate network security measures.					Students complete an Interface Design Challenge, designing and developing an interface for a specified audience and purpose and using feedback to justify improvements.					Students complete a Program Development Project, designing, creating and testing a structured Python program using functions, lists and appropriate validation.					Students design and implement a Relational Database Solution using linked tables, queries and reports to solve a realistic organisational problem.					Students complete a Workplace Communication Task, producing professional communications that demonstrate appropriate structure, formatting, tone and audience awareness.					Students complete a Digital Solutions Project, independently responding to a brief through planning, design, development, testing, refinement and evaluation.				