

## Computer Science – Year 9

### **Curriculum Intent**

In Year 9, Computer Science gives students the ability to develop their ICT software and AI skills, giving them a firm basis to support computer-based work in KS4 onwards. Experience and understanding of office-based programs can be applied across all subject areas, as well as an understanding of what is AI, skills in use and knowledge of when and how it is acceptable to use in education. Students considering the Key Stage 4 pathway in Computer Science will particularly also benefit from the development of script-based programming skills in Python, which are developed and built on further throughout the GCSE Computer Science course.

---

### **What Students Will Study Across the Year**

Throughout the first half of the year, students are tasked with the scenario of designing and running their own food-based business, applying concepts of computer science including abstraction decomposition and algorithmic thinking through flowcharts to help in establishing different elements of their business. They then move onto looking at Artificial Intelligence as a topic, understanding the concept of AI, its potential applications, both positive and negative, and skills in using generative AI. These skills are then applied to different tasks, both education based and linked to their business scenario.

A section of the year is also spent studying office based software skills including Word processing, Spreadsheets and presentation based applications, with practical experience of use following tutorials for skills that can be applied to both a business context for their scenario and also in a wider educational basis for ongoing computer based tasks such as course-work, applications and digital literacy.

Students also have a section of the year dedicated to experience and development of script-based programming skills in a language called Python. This builds upon the block-based experiences and understanding obtained in years 7 and 8, particularly helping to prepare students opting to take the dedicated GCSE Computer Science route, acting as a pre-foundation to skills taught in Year 10 and 11, with skills being revisited, practiced and developed as part of a spiral based curriculum with programming.

Experience of Python will introduce students to the specific writing of keywords and syntax required, using skills such as user inputs and variables to store data, outputs to display information and selection to make decisions for outputs based on different criteria used. Students will also be introduced to the concepts of count-controlled and condition-controlled iteration, with practice in coding and use. To support the learning of students of all abilities and strengths, learning is provided as guided code-along tutorials with opportunities for students to follow, complete and try challenges to extend their understanding and confidence.

---

### **Assessment and Progression**

Students complete two formal assessments across the year alongside ongoing assessment of classroom-based activities. Assessment focuses on understanding of software skills and computer science computational thinking knowledge covered during the first half of the year, followed by assessment of script-based programming fundamentals in Python during the second half. Students will also have the experience of applying techniques to a real-world based business scenario to see applications beyond that of education. By the end of Year 9, students have an improved confidence in software skills to apply across subjects, as well as strong fundamentals in programming for those progressing into Key Stage 4 Computer Science.