HOE VALLEY SCHOOL

COMPUTER SCIENCE

IN KS4:

Computational Thinking
Students will learn how to break down problems, design solutions, and write and debug programs using logical thinking. They will work with pseudocode, flowcharts, and coding to develop strong problem-solving skills.

Digital Literacy
Students will explore how technology impacts society, learn how to stay safe online, recognize cyber threats, and understand digital laws. They will also learn how to evaluate the reliability of information found online.

Information Technology
Students will build practical skills by learning how computer systems, networks, and storage work. They will use databases, coding environments, and software tools to organize and manage digital information.

IN KS3:

Computational Thinking
Students will develop computational thinking skills by learning how to design, sequence, and solve problems logically. In Year 7, they explore visual programming with Scratch and understand binary data storage. In Year 8, they advance by creating games with MakeCode Arcade, programming in Python, and organizing information in databases, strengthening their ability to tackle real-world problems systematically.

Digital Literacy
Students will build digital literacy by learning to stay safe online, recognize cyber threats, and critically assess online information. Year 7 students focus on online safety and understanding the structure of networks and the internet. In Year 8, students design user-friendly apps with Figma and explore climate change using data visualization, promoting responsible, informed technology use.

Information Technology
Students will enhance their information technology skills through hands-on practice with tools and systems. In Year 7, they master spreadsheet skills and explore AI by building simple machine learning models. In Year 8, they gain an understanding of computing system layers, database management, and use technology to organize, analyze, and present information effectively.

WR Topics with the WR logo are directly linked to the Hoe Valley School Work Ready Agenda.

"Where Logic Meets Creativity."
The Computer Science curriculum inspires students to become creative problem-solvers, ethical digital citizens, and future innovators. By the end of Year 11, students will not only master the ability to design and program solutions but will also have the critical insight and technological expertise needed to shape and lead in an increasingly digital world.

YEAR 11

Revision and exam technique - Targeting topics **WR** | Exam Season

Revision and exam technique - Targeting topics **WR** | Recapping main components | Programming Project **WR**

YEAR 10

Defensive design, Boolean logic, Translators, Compilers and IDEs | Ethical, legal, cultural and environmental impacts of digital technology **WR** | Mock Exams

Additional programming techniques and Data types **WR** | Systems architecture, Network security / Systems software **WR** | Memory, storage, computer networks, connections and protocols

YEAR 9

Computer memory and storage, Moral, legal, cultural and environmental concerns (ELC) | Computational logic Algorithms, Data representation (ELC) **WR** | Advanced Programming Techniques

Computer hardware and software (ELC) **WR** | Programming Project | Python Programming

YEAR 8

Climate Change Software Tools **WR** | Python (sqlite) **WR** | Databases and Logic Gates **WR**

UI Design Software **WR** | Layers of computing systems | Game Development in MakeCode

YEAR 7

Internet and Networks **WR** | New Tech, Chatbots and AI **WR** | Online Safety, Information Reliability and Bias **WR**

The Importance of Binary | Visual Programming Language | Using Google programs and the school network **WR**

COMPUTATIONAL THINKING

INFORMATION TECHNOLOGY

DIGITAL LITERACY