The Wilnecote School: Our Curriculum

The Wilnecote School
ENSURING EXCELLENCE

Key Stage 4

Year group:	Topics covered:
Year 10	**IT** The coursework elements of the course covered in Year 10 covers the concepts of interface design and how a range of different devices are used in the real world. It allows students the chance to analyse existing interfaces, plan out a spreadsheet project to develop a system of their own against a given scenario, then create, test and analyse the spreadsheet system they've produced. This uses skills taught throughout Key Stage 3, both in terms of the design skills, spreadsheet skills and the creation/evaluation of the systems produced. In the theory part of the course, students learn about a range of topics including design tools, human-computer interaction, how data is used and tested, cybersecurity, digital communication, and the Internet of Everything. These theoretical areas underpin the practical and centre-assessed units, ensuring students understand not just how to use technology but how and why systems are designed, how they should be evaluated, what threats exist, and what ethical, usability, and connectivity issues arise in digital environments. **Computer Science** Throughout Years 10 and 11 students will learn programming skills alongside the theory content. Paper 1 assesses students' understanding of the fundamental principles of computer science. Topics include algorithms, programming techniques such as variables and control structures, data representation including binary and hexadecimal, computer systems and hardware, networks and network security, cybersecurity threats and protection measures, and the ethical, legal, and environmental impacts of digital technology. The paper consists of multiple-choice, short-answer, and extended-response questions, and accounts for 50% of the qualification. Paper 2 focuses on the practical application of computational thinking, requiring students to design, write, test, and refine programs to solve specific problems using Python. Students apply programming techniques to implement algorithms, evaluate the effectiveness of their solutions, and improve them based on testing. **Business & Enterprise** In Year 10, students focus on exploring enterprises, where they investigate different enterprises to understand their activities, aims, and the skills and characteristics of entrepreneurs. They explore how enterprises use market research to understand customer needs and competitor behaviour, and how internal and external factors affect enterprises. This component develops research, comprehension, and critical thinking skills, providing a foundation for understanding the enterprise sector.
Year 11	**ICT** The second component of the coursework has students carry out a second coursework project where they will design and create an augmented reality application based on a given brief, using online software to create an app that can be scanned and used on a mobile phone. Theory content will also continue from year 10, with increasing series of assessments and revision activities building up to the final exam. **Computer Science** In Year 11 the programming continues with additional skills and a wider range of challenges and tasks to solidify understanding and ensure students are ready for their programming exam in May. Theory topics include environmental, ethical and legal issues as well as cybersecurity and protecting networks. There is also work based around computational thinking, including work on algorithms (which was also looked at in Year 7), binary logic and decomposition. **Business & Enterprise**

	Students delve into planning for and pitching an enterprise idea, where they develop a business idea, plan its development, and pitch it to an audience. They learn about business planning, financial forecasting, and marketing strategies. This component emphasizes creativity, innovation, and communication skills, preparing students for real-world business challenges.
Assessment:	**How Will I be assessed at Key Stage 4?**
	IT Assessment is carried out in several ways. There are two pieces of official coursework to be completed which are marked internally, and the marks sent off to the exam board. Following this a moderation sample is requested by OCR, with those students' work being annotated and returned to OCR. In terms of the theory work, unit tests are carried out throughout KS4, as well as a range of lesson and homework tasks to ensure understanding. Mock exams are carried out to give students the chance to experience a full exam before their actual externally assessed exam. Formative assessment is carried out regularly during lessons and following marking of individual pieces of work, and more summative feedback is provided after unit tests. **Computer Science** Similar to IT, units of theory work are tested using end of unit summative tests, allowing us to see where gaps are in students' knowledge or understanding and carry out early intervention as a result. This is in addition to formative feedback throughout lessons, as well as using student difficulties to lead further teaching opportunities during both new skills and recapping previous learning both in the theory content and programming lessons. There is no coursework in Computer Science, but the programming will be assessed through a range of regular tasks that build on the skills being learnt throughout the two years. With the programming carrying a high degree of difficulty, accurate assessment throughout is important and necessary to ensure students are grasping the basics before attempting the more advanced concepts and skills. **Business & Enterprise** Assessment for the BTEC Tech Award in Enterprise consists of both internal and external components. Component 1 is internally assessed through a Pearson-set assignment, which includes tasks such as researching an enterprise, analysing market research methods, and evaluating external factors affecting the enterprise. Component 2 is also internally assessed and focuses on the planning and pitching of an enterprise idea. Component 3, the externally assessed component, involves a two-hour exam covering topics such as enterprise activity, marketing, and finance. This component is set and marked by Pearson and accounts for 40% of the total qualification.

National Curriculum Mapping

NC Statement	Where We Cover It
design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems	Unit 7.4 (Data Representation and Scratch) Unit 7.5 (Sreadsheets) Unit 8.6 (BBC Microbit) Unit 9.5 (Programming in Python)

understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem	Unit 7.4 (Data Representation and Scratch) Unit 8.6 (BBC Microbit) Unit 9.5 (Programming in Python)
use 2 or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	Unit 7.4 (Data Representation and Scratch) Unit 8.6 (BBC Microbit) Unit 9.5 (Programming in Python)
understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]	Unit 7.4 Data Representation and Scratch) Unit 8.6 (BBC Microbit)
understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems	Unit 7.3 (Intro to Computers) Unit 8.3 (What is a Network)
understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	Unit 7.3 (Intro to Computers) Unit 7.4 (Data Representation and Scratch)
undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users	All units throughout KS3 contain this
create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	Most units. Most notably: - Units 7.2, 8.2, 9.2 (E-safety) - Unit 7.6 (Stop-motion Animation) - Unit 8.4 (Bigger Picture) - Unit 8.5 (Web Design) - Unit 9.4 (Advertising and Marketing)
understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns	Unit 7.2, 8.2, 9.2 (E-safety)