

Computer Science




















“At King’s Oak Academy, every child is a Computer Scientist”.

We aim for children to be enthused by an expanding range of technology and be aware of the possibilities that it can provide.

Lower school curriculum

Children are to be provided with the knowledge that technology comes with its dangers and are equipped to confront these independently. Our curriculum will build across the Key Stages, incorporating skills from a variety of subjects, including Art, Mathematics and Authors as well as encouraging our children to use their Topaz powers to communicate their learning effectively. As a school we celebrate our learning by giving children the chance to explore each other’s learning, recognising its successes. This also allows for children to evaluate other’s learning to improve their own. We aim for children to leave primary school being technically literate and able to stay safe and keep up with the digital world, not only in school, but in the outside world.

Course overview

Year 1	Year 2	Year 3	Year 4
 Using computers  Introduction to algorithms  Word processing  Working with sound, images, and video  E-safety	 How computers work  Internet  Knowing and exploring algorithms  Word processing-animation  E-safety	 Global computers  Programming  Working with sound, images, and video  Handling data  E-safety	 Networks and data  Being a programme engineer  Animation  E-safety

Middle school curriculum intent statement




















Computing is at the heart of today’s world. During their time in Middle School, students will have an opportunity to develop their cultural capital as they are exposed to the significance of the subject and its impact upon the present and their future use of technology.

The journey will take students through the significant changes computing has brought to the world, from the first computer scientist Ada Lovelace, Alan Turing’s code breaker during WW2 as an introduction to encryption to the birth of the internet, and how these will change lives today and tomorrow.

The curriculum will develop students’ understanding of computational thinking, providing necessary problem solving through abstraction, decomposition, and pattern recognition. Computer Science is a subject which develops transferable life skills preparing students for a successful career, including that in a rapidly growing digital industry.

This is a scientific curriculum, allowing students to make informed decisions about current and future use of technology they are using, through the enjoyment of discovery and exploration.


Course overview

Year 5	Year 6	Year 7	Year 8
 Computing and security  Complex programming with conditions and patterns  Presenting information online  Handling data  E-safety	 Compatibility and design  Mastering programming  Working with sound, images, and video  E-safety	 Computer systems- E-safety, passwords, file management  Hardware- input/output devices, CPU/RAM  Computational thinking- Algorithms  Data representation- Binary, file types  Digital literacy project	 Hardware- CPU cycle virtual memory  Networking- LAN/WAN/PAN  Computational thinking- Data types  Data representation- Units, Binary  Digital literacy project

Upper school curriculum

This curriculum allows our students to understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation. Students work to analyse problems in computational terms through practical experience of solving such problems, including designing, writing, and debugging programs. Students will think creatively, innovatively, analytically, logically, and critically. It also enables students to understand the impacts of digital technology to the individual and to wider society.

Course overview

Year 9	
	Computational thinking- algorithms
	Programming- sequencing
	Programming project- system development life cycle