

Computer Science KS3 Knowledge and Skills Document

Vision statement: Our vision is to ensure that all students understand the key concepts of computer science, and can implement them across a range of programming areas to solve problems. Furthermore, they will be able to combine this with a wider knowledge of technology to feel prepared for the workplace, as well as using technology for their own enjoyment and pleasure, in a safe, secure and ethical manner.

	Knowledge	Skills
<u>Year 7</u>	<p>To be able to use key parts of school software and services.</p> <p>To identify and understand the purposes of key office software.</p> <p>Understand the difference between hardware and software.</p> <p>Know what an algorithm is, and the different flowchart symbols use to create them.</p> <p>Know how to run code in EduBlocks. Recognise the inputs in a piece of EduBlocks.</p> <p>Online safety areas including importance of passwords, two factor authentication, why use backups, implications of terms and conditions, use of incognito mode, malware and potential hardware issues, like compromised spycams.</p>	<p>Login to RMUnify, send emails and save files in folders.</p> <p>Format text and data in documents, presentations, and spreadsheets.</p> <p>Identify input and output devices, and different memory types.</p> <p>Be able to read a flowchart algorithm.</p> <p>Edit code in EduBlocks to better understand code. Combine blocks on EduBlocks to create simple working code.</p> <p>Online safety areas such as online platforms impact on people's views, grooming, consent for forwarding and sharing information, what is digital identity, using advanced searching tools, sitemaps, breadcrumb trails, be aware of licensing, such as creative commons,</p>

		wellness apps and fitness trackers
<u>Year 8</u>	<p>To understand the applications and legal implications of photo editing.</p> <p>Understand the purpose of computational thinking and be aware of a range of searching algorithms.</p> <p>Understand the purpose of the Turtle module in Python and recall names and purpose of some functions and structures.</p> <p>Know what a network is used for. Identify and understand key networking hardware.</p> <p>Online safety including copyright and ownership, including creative commons licensing, streaming, pirating, torrenting, and fair dealing</p>	<p>Use image editing tools to combine and manipulate images to form a digital collage.</p> <p>Can apply multiple searching algorithms. Can describe the use cases of algorithms to solve problems.</p> <p>Apply computational thinking skills to write code in EduBlocks using Python and Turtle that solve drawing problems.</p> <p>Can compare different types of network/networking hardware/protocol and select the most suitable for different situations.</p> <p>Online safety areas such as deep fake technology, image manipulation, impersonating individuals, search engine rankings, what influences them, links to fake news, social bots and echo chambers, geolocation, connectivity and internet of things</p>
<u>Year 9</u>	<p>Understand that many operations are similar across office software</p> <p>Understand the value of using flowchart and pseudocode algorithms</p> <p>Be aware of a range of sorting algorithms</p>	<p>Use specific tools in word processors, spreadsheets, presentation software and publishing software.</p> <p>Convert simple algorithms in to working code</p> <p>Can describe sorting algorithms, and compare</p>

	<p>Know that computers use binary numbers and logic gates for all underlying decisions and process</p> <p>Know that websites may contain malicious information</p>	<p>them using their positives and negatives</p> <p>Can convert between binary and denary numbers.</p> <p>Can complete truth tables for single logic gates</p> <p>Can evaluate the reliability of different websites</p> <p>Online safety areas including linking logic gates to advanced internet searches, echo chambers, social bots, deepfakes, fake news, false context</p>
--	---	---