

Saffron Walden County High School Curriculum

CURRICULUM SUMMARY



SAFFRON WALDEN
COUNTY HIGH SCHOOL

Year 12		AUTUMN TERM		SPRING TERM		SUMMER TERM	
		TERM 1A	TERM 1B	TERM 2A	TERM 2B	TERM 3A	TERM 3B
Computer Science	KNOWLEDGE DOMAIN	<p>Programming</p> <ul style="list-style-type: none"> • OOP <p>Theory Hardware and Software Pupils will learn how the computer functions and how the software interacts with the hardware. We also learn about the different types of software that are used in computer systems.</p> <p>Programming Language Classification Students will learn about the different programming language types, be able to identify differences between them, and scenarios where different languages may be more suitable.</p>	<p>Programming</p> <ul style="list-style-type: none"> • User interfaces • Assembly language <p>Theory Internal Hardware We will study the components within the computer and students will understand how the components interact with each other, how the data travels between them. They will be able to explain the factors that can have an impact on processor speed.</p> <p>External Hardware Pupils need to be able to explain how the following devices function; Laser Printer, RFID, Barcode reader, Digital Camera. They need to understand which devices are best suited to different scenarios.</p>	<p>Theory Data Representation Pupils will be familiar with a variety of number systems. Students will learn how to convert between the different number bases and understand why they are used. Units of measurement will be taught and students will be able to convert between the different units of measurement. We will move on to learn how sound and images are stored in the computer to include vector and bitmap images. We then move on to learn about compression and encryption. This includes the Caesar cipher and the Vernam cipher</p> <p>Logic Gates Pupils need to be able to complete the truth</p>	<p>Programming Database Programming</p> <p>Theory Database Theory Students will be able to design and create relational databases. They will be able to use technical terminology surrounding database theory. They will be able to normalise data to 3rd normal form and create databases using SQL commands, to include creation of tables, inserting, updating, retrieving and deleting data.</p>	<p>Programming Consolidation of Python</p> <p>NEA introduction Students are introduced to the NEA and spend time planning and coming up with their projects. They will write project proposals.</p>	<p>NEA Students write the analysis section which involves researching different areas and evaluating different approaches</p>

			<p>Secondary Storage Pupils need to be able to explain how different devices function, and be able to make a comparison between them, with particular reference to speed of access to data and capacity. SSD, HDD and Optical Drives are covered.</p> <p>Consequences of Computing Pupils will study the impacts of computing covering moral, ethical, legal and cultural. Pupils will learn about the changes that computing has brought to the world, the moral, ethical and legal responsibilities that computer scientists should be aware of. In this unit we will be practising essay writing skills.</p>	<p>tables for the different logic gates, draw logic gate circuits, know how to write logic gate expressions and complete truth tables for the circuits.</p> <p>Boolean Algebra Pupils will learn how to use Boolean identities and De Morgan's laws to manipulate and simplify Boolean expressions.</p>			
SKILLS DEVELOPED THROUGH THE KNOWLEDGE AND ENQUIRIES TAUGHT THIS HALF TERM	<p>Programming</p> <ul style="list-style-type: none"> • Decomposition • Abstraction • Generalisation • Pattern recognition • Python syntax <p>Theory Research and use of wider reading resources</p>	<p>Programming</p> <ul style="list-style-type: none"> • Decomposition • Abstraction • Generalisation • Pattern recognition • Python syntax • Design 	<p>Theory</p> <ul style="list-style-type: none"> • Converting between number bases • File size calculations • Binary addition and shift <p>Binary subtraction and Two's complement</p>	<p>Programming</p> <ul style="list-style-type: none"> • Decomposition • Abstraction • Generalisation • Pattern recognition • Python syntax 	<p>Programming Extend python skills</p>	<p>Programming</p> <ul style="list-style-type: none"> • Design skills <p>Skills</p> <ul style="list-style-type: none"> • Report writing • Research • Critical Analysis 	