



SUBJECT: Curriculum Overview

Year 9

Term	Topic studied	What will I learn?	How will I be assessed?
Year 9 Autumn	Systems Architecture Memory Programming	<p>Systems Architecture:</p> <ul style="list-style-type: none"> The purpose of the CPU; The fetch-execute cycle; Common CPU components and their function; ALU (Arithmetic Logic Unit); CU (Control Unit); Cache o Registers; Von Neumann architecture; MAR (Memory Address Register); MDR (Memory Data Register); Program Counter; Accumulator <p>Memory</p> <ul style="list-style-type: none"> The need for primary storage; The difference between RAM and ROM The purpose of ROM in a computer system; The purpose of RAM in a computer system; Virtual memory <p>Programming is ongoing through the year with pupils learning how to code using Python. This includes the use of:</p> <ul style="list-style-type: none"> Selection statements; Iteration; Sequence; SQL; Writing to files; Using Tkinter; Flowcharts; Testing ;Evaluating 	<p>Students are required to flip between Theory and Programming. One lesson will be on Theory, with the next lesson on Programming.</p> <p>After each unit is complete, pupils will be tested and a level awarded.</p> <p>Students will also receive a programming test twice per term. A level is awarded.</p>
Year 9 Spring	Storage Wired and Wireless Networks Programming	<p>Storage</p> <ul style="list-style-type: none"> The need for secondary storage Common types of storage, Optical, Magnetic and Solid state Suitable storage devices and storage media The advantages and disadvantages of different storage devices and storage <p>Wired and Wireless Networks</p> <ul style="list-style-type: none"> Modes of connection Wired Ethernet Wireless Wi-Fi Bluetooth Encryption IP addressing and MAC addressing " Standards Threats and prevention 	<p>Students are required to flip between Theory and Programming. One lesson will be on Theory, with the next lesson on Programming.</p> <p>After each unit is complete, pupils will be tested and a level awarded.</p> <p>Students will also receive a programming test twice per term. A level is awarded.</p>
Year 9 Summer	Protocols and Layers Network Security Programming	<p>Protocols and Layers</p> <ul style="list-style-type: none"> Network protocols Email protocols Machine protocols OSI Model Packet Transmission Network routes taken by data Servers acting around the world <p>Network security</p> <ul style="list-style-type: none"> Threats to computer systems and networks Brute force attacks DoS attacks Data theft Identifying and preventing Encryption Firewalls Anti-malware software Penetration testing Physical security 	<p>Students are required to flip between Theory and Programming. One lesson will be on Theory, with the next lesson on Programming.</p> <p>After each unit is complete, pupils will be tested and a level awarded.</p> <p>Students will also receive a programming test twice per term. A level is awarded.</p>

