

# Sackville School Computer Science Curriculum - Year 10



TERM	WHAT? (Is delivered?)	WHY? (Is this important?)	WHY NOW? (Why is this taught now?)	IMPACT? (What is the impact at the end of this half term?)	ASSESSMENT
Aut 1	CPU Storage Data Representation	<ul style="list-style-type: none"> <li>Looking at the CPU, its purpose and functionality. Looking at von Neumann Architecture and how it has developed with time.</li> <li>Understanding the different primary and secondary storage methods. Being able to select a storage method for a given scenario.</li> <li>Binary to Denary and Hex conversions to understand data representation methods.</li> </ul>	<ul style="list-style-type: none"> <li>Computer devices use the same CPU architecture and the FDE cycle - understanding this process sets the building blocks for further learning</li> <li>Application of knowledge to be able to apply the knock to a given scenario is important</li> <li>Data representation and understanding how the computer converts data into binary is paramount to understanding machine code's role in daily use.</li> </ul>	Students will be able to: <ul style="list-style-type: none"> <li>Explain and discuss the FDE cycle</li> <li>State the principles of the von Neumann Architecture</li> <li>Outline the positives and negatives of each storage medium as well as their given characteristics</li> <li>Convert Binary to Denary up to an 8 bit binary number</li> </ul>	Assessments on each topic area on educake
Aut 2	Data representation: Sound, Images  Compression LANs and WANS	<ul style="list-style-type: none"> <li>To have an understanding of how sound is represented on a computer device</li> <li>To have an understanding of how images are represented on a computer device</li> <li>Understanding the key characteristics of LANs and WANs for network infrastructure knowledge</li> </ul>	<ul style="list-style-type: none"> <li>This builds on prior knowledge of data representation</li> <li>Focus on networking fundamentals to allow for further in depth learning later in the qualification</li> <li>Be able to explain how data is stored and how data uses storage - this is a cross reference link to lask half terms learning</li> </ul>	Students will be able to: <ul style="list-style-type: none"> <li>Explain the key characteristics of LANs and WANs</li> <li>Understand the correlation between image and sound data representation and the storage capacities of different devices. .</li> </ul>	Mock Exam  Assessment on each topic area on educake
Spr 1	<b>Networks:</b> Protocols, DNS, Servers, Topologies	<ul style="list-style-type: none"> <li>Understanding how computer devices communicate</li> <li>Builds on LANs and WANs from the previous half term and Key Stage 3</li> <li>Understanding the need for protocols and their use in a network                             <ul style="list-style-type: none"> <li>Being able to explain protocol usage and systems</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>How computer devices communicate with one another is different to a solo device and so this builds from singular, to multiple device requirements.</li> <li>Understanding systems and protocols within a network allows for a deeper understanding of network threats</li> </ul>	Students will be able to: <ul style="list-style-type: none"> <li>List the key features of each protocol</li> <li>Explain the need for different topologies</li> <li>Identify topologies based on communication pathways</li> <li>Discuss the role of a server</li> </ul>	Assessment on each topic area on educake  QWC assessment
Spr 2	Network Threats and Vulnerabilities	<ul style="list-style-type: none"> <li>Being able to understand how a threats can materialise and develop is vital to prevention</li> <li>Being able to prevent vulnerabilities is vital in today's word</li> <li>Opportunity for employer engagement</li> <li>Understanding mitigation</li> </ul>	<ul style="list-style-type: none"> <li>The world is changing and so understanding network threats, vulnerabilities and mitigation strategies is vital</li> <li>Its one of the largest strands of their exam</li> <li>It can be used in a wide range of job sectors</li> </ul>	Students will be able to: <ul style="list-style-type: none"> <li>List the key features of each protocol</li> <li>Explain the need for different topologies</li> <li>Identify topologies based on communication pathways</li> <li>Discuss the role of a server</li> </ul>	Mock Exam  Assessment on each topic area on educake

Sum 1	Legal, Ethical and Moral Issues	<ul style="list-style-type: none"> <li>• There are a range of legislation linked to the wide use of IT and IT industry</li> <li>• The ethical side of computing needs to be considered</li> <li>• Understanding the difference between an ethical, moral and legal impact of IT</li> <li>• Discussion surrounding ethical issues including environmental issues.</li> </ul>	<ul style="list-style-type: none"> <li>• The global changes seen due to the mining of raw materials for disposable technology means that its prudent to discuss the wider spread impact</li> <li>• A good understanding of legislation can be a preventative measure to laws being broken.</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>• Discuss the issues surrounding IT and its moral and ethical impact</li> <li>• Complete a range of scenario based questions</li> </ul>	QWC Questions
Sum 2	Coding Project	<ul style="list-style-type: none"> <li>• Developing an understanding of coding constructs</li> <li>• Being able to take pseudocode and put into textual code is important skill</li> <li>• Builds on the years learning</li> </ul>	<ul style="list-style-type: none"> <li>• Mandatory non examined assessment</li> <li>• Allows explorative learning in the summer term</li> <li>• Links to CW activities</li> </ul>	<p>Students will be able to:</p> <ul style="list-style-type: none"> <li>• Product robust programs</li> </ul>	Coded solutions

Links to L4L Curriculum and Gatsby Benchmarks:

- L4L Online Safety
- 2 - Learning from career and labor market information
- 5 - Linking curriculum learning to careers
- 5 - Encounters with employers and employees
- 8 - Personal Guidance