



## CHS Curriculum Intent

**SUCCESSFUL:** Learners who gain deep and powerful knowledge in preparation for life; combining academic rigour, curiosity and creative flair.

**CREATIVE:** Learners who are imaginative, optimistic and inventive; finding their voice to become effective communicators prepared for lifelong adaptability

**HAPPY:** Learners who are confident, resilient, well-rounded citizens; they understand the world's communities and are ready to discover their place in it.

## CHS Curriculum Area Framework for Learning – Year 9

<b>SUBJECT</b>	<b>BTEC Digital Information Technology Level 1/2</b>
<b>INTENT</b>	<p style="text-align: center;">“Those who can imagine anything, can create the impossible.” — Alan Turing</p> <p>As we live in an ever-changing digital world, Computer Science impacts everything from gaming, to medicine, banking, communications and connectivity. Most individuals and businesses rely on sophisticated computer systems and software throughout their daily lives and operations. Learners today are preparing for careers that might not even exist yet, and we hope our students can be one of the Computer Scientists who makes the world better, faster and more inter-connected!</p> <p>Studying Computer Science at Chorlton High School, will provide our learners with the tools, knowledge and skills to develop their computational thinking, programming, problem solving and analytical skills. Our learners can then apply these to a variety of programming projects. Studying Computer Science will also allow our learners to access a wider range of topics including digital literacy, e-safety, computer systems, networks, data representation and the positive and negative impact of computing on modern society.</p>

**Department:** **Computing & Technology 2021 - 2022**

**Subject:** **GCSE Computer Science**

<b>Year Group</b>	<b>Year 9</b>
<b>Rationale/ Narrative</b>	<p>Following on from their Key Stage 3 study, students will be taught topics that overlap between the Computer Science and current DIT qualifications throughout their common term. Students will acquire further digital literacy skills from their common term, through finding, evaluating and composing work using digital platforms, building students grammar, composition, typing skills and ability to design using technology.</p> <p><b>Foundations Term</b></p> <ul style="list-style-type: none"> <li>During Autumn term, Students will begin by studying an introduction to Computer Systems focusing on to Input / Output / Storage devices and understand the processing and connections via embedded systems. Students will look at system diagrams for computer system as well as processes on a larger scale such as organisational system diagrams</li> </ul>



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- students will move onto studying the **modern technologies and their impact**, this relates largely to how students have engaged with School over the past academic year and students will gain a deeper knowledge in how organizations and individuals use modern technologies to exchange information, communicate and complete work-related tasks, as well as access and manipulate data.
- It is vital students understand the implication of these tools and technologies so students will consider the **legal impact and ethical considerations** of digital systems and their use. Students will look at how legislation covering data protection, computer crimes and intellectual property has an impact on the way digital systems are used.
- Following on from this, Students will begin to understand the increased reliance of digital systems and it's need to hold onto data and the nature of threats to data through looking at **Cyber Security**, ways in which computer systems are attacked, how they occur and potential impact of breaches as well as preventative measures.
- Students will study programming and build upon the above knowledge by creating an authorized login system as part of a sequence of lessons. The project will help teachers make an informed decision on computing pathways for students.

## Spring & Summer Terms

### Computer Systems: Paper 1

**Systems Architecture:** Students will learn about the architecture of the CPU, alongside CPU performance and embedded systems.

**Memory & Storage:** Students will look at both Primary storage (Memory) and Secondary storage and will learn about the basics of how computers represent different information; including numbers, characters, images, sound

**Computer Networks, Connections & Protocols:** Following on from looking at Network security in Autumn, students will begin to look at Networks and different topologies, alongside wired and wireless networks.

### Computational Thinking, Algorithms & Programming: Paper 2

**Algorithms:** Students will start by having a heavy focus on Computational Thinking, understanding how problems can be broken down, understanding structure diagrams and learning how to develop algorithms in the form of flowcharts. Students will then learn how to adapt their algorithms into pseudocode, before studying programming fundamentals. Students in Year 9 will complete a mini programming-project, tying together the programming skills that they have learnt. The development of a text-based adventure game will be the basis of their programming project, making use of the three programming constructs, variables, string manipulation, random number generation and sub-programs.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KNOWLEDGE	<p><b>Foundations of Computing</b></p> <p>During this half term students will focus on the following areas of Computing:</p> <ul style="list-style-type: none"> <li>• Introduction to Computer Systems &amp; Diagrams</li> <li>• Modern Technology &amp; Impact of modern technologies</li> </ul>	<p><b>Foundations of Computing</b></p> <p>During this half term students will focus on the following areas of Computing:</p> <ul style="list-style-type: none"> <li>• Cyber Security               <ul style="list-style-type: none"> <li>○ System attacks and external threats</li> <li>○ Internal threats and impact of breaches</li> </ul> </li> <li>• Programming Techniques &amp; Project.</li> </ul>	<p><b>Computer Systems</b></p> <p>During this half term students will focus on the following areas of Computer Science:</p> <ul style="list-style-type: none"> <li>• Architecture of the CPU</li> <li>• The purpose of the CPU (FDE Cycle)</li> <li>• CPU Components &amp; their function</li> </ul>	<p><b>Computer Systems</b></p> <p>During this half term students will focus on the following areas of Computer Science:</p> <ul style="list-style-type: none"> <li>• Computer Networks</li> <li>• Networks &amp; Topologies</li> <li>• Wired and Wireless Networks</li> </ul>	<p><b>Computational Thinking, Algorithms &amp; Programming - PRACTICAL</b></p> <p>During this half term students will focus on the following areas of Computer Science:</p> <ul style="list-style-type: none"> <li>• Algorithms</li> <li>• Computational Thinking</li> <li>• Designing, Creating &amp; Refining Programs</li> </ul>	<p><b>Computational Thinking, Algorithms &amp; Programming</b></p> <p>During this half term students will focus on the following areas of Computer Science:</p> <ul style="list-style-type: none"> <li>• Algorithms</li> <li>• Designing, Creating &amp; refining Programs</li> </ul>





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	<ul style="list-style-type: none"> <li>• <b>Classwork Piece - Cloud Storage &amp; Computing</b> – ‘Letter’ addressed to school/organization analyzing impact of migration to cloud services.</li> </ul> <p><b>Key Assessment Piece:</b></p> <ul style="list-style-type: none"> <li>• <b>Classwork Piece - Modern Technology – Collaboration Tools:</b> Benefits to individuals &amp; organisations</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Classwork Piece - Cyber Security – External Threats</b> - Classwork Piece (<i>Task 4 Internal Threats &amp; Impact of Breaches</i>)</li> </ul> <p><b>Key Assessment Piece:</b></p> <ul style="list-style-type: none"> <li>• <b>Classwork Piece - Mini – Programming Project</b> – Log-in system as preventative measure.</li> </ul> <p><b>Computing Progress Checkpoint</b> Students will have a progress checkpoint assessment to assess their knowledge and understanding of the topics covered in this unit.</p> <p><i>MS Forms Topic Tests to be completed for each ‘unit’ (Introduction to Computer Systems. Modern Technology, Impact &amp; Ethical considerations)</i></p>	<ul style="list-style-type: none"> <li>• <b>Classwork Piece - Architecture of CPU – FDE Cycle</b> - Classwork Piece</li> </ul> <p><b>Key Assessment Piece:</b></p> <ul style="list-style-type: none"> <li>• <b>Classwork Piece - Storage</b> – Extended question (8 Marks).</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Classwork Piece - Networks- Home/School network diagram</b> Classwork Piece</li> </ul> <p><b>Key Assessment Piece:</b></p> <ul style="list-style-type: none"> <li>• <b>Classwork Piece - Wired VS Wireless</b></li> </ul> <p><b>Computing Progress Checkpoint</b> Students will have a progress checkpoint assessment to assess their knowledge and understanding of the topics covered in this unit.</p> <p><i>MS Forms Topic Tests to be completed for each ‘unit’ (Computer Systems)</i></p>	<ul style="list-style-type: none"> <li>• <b>Classwork Piece - Computational Thinking – (Flowcharts &amp; Selection)</b> - Classwork Piece</li> </ul> <p><b>Key Assessment Piece:</b></p> <ul style="list-style-type: none"> <li>• <b>Classwork Piece - Theory: Programming languages</b> – Classwork piece</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Classwork Piece - Logic Gates &amp; Truth Tables</b> - Classwork Piece</li> </ul> <p><b>Key Assessment Piece:</b></p> <ul style="list-style-type: none"> <li>• <b>Classwork Piece - Mini – Programming Project</b> – Text Based adventure Game</li> </ul> <p><b>Computing Progress Checkpoint</b> Students will have a progress checkpoint assessment to assess their knowledge and understanding of the topics covered in this unit.</p> <p><i>MS Forms Topic Tests to be completed for each ‘unit’ (Computational Thinking)</i></p>
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