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 11

SUBJECT	Computer Science
INTENT	"I believe that at the end of the century, the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted" Alan Turning • Studying Computing at Chorlton High School allows our students to be prepared for a digital world, digital careers and how to use digital systems safely and responsibly. • Students will be taught the key skills to develop their digital literacy and awareness of computational thinking. • We aim to help our learners to become happy, successful and creative through our curriculum with students exploring a range of ways that the technology they interact with on a daily bases works and operates. Students are also able to develop their awareness through applying some of these in skillful tasks and activities.

Department: Computing & Technology 2020-2021

Subject: GCSE Computer Science *(OCR J276 (from 2016))*

CHORLTON HIGH SCHOOL: CURRICULUM

Year Group	**11**					
Rationale/ Narrative	Students have previously studied the majority of GCSE Computer Science (OCR J276) during Year 9 and Year 10 across component 01 (Computer systems) and component 02 (Computational thinking, algorithms and programming). However, during Year 11, students will study all remaining units and focus on exam question practice and explicit teaching of exam techniques. Walking talking mocks will embed this practice, and there will be room for structured revision in the Spring/Summer term based on exam analysis. A bank of OCR past questions by topic is located in V:\Curriculum Areas\Computing and Technology\1a. Planning 2019 2020\GCSE Computer Science\Assessment\OCR Past questions by topic and these will be used throughout Year 11 to asses students' understanding of key topics learnt during GCSE Computer Science (OCR). All students have been provided with electronic access to the OCR Revision Guide and SBL will run an after school revision session on Week A to develop students' confidence with Computer Science post lockdown. SBL has highlighted key students who made 'below expected' progress during their most recent progress test (Spring) in year 10 and these students will be targeted with these sessions initially. It is currently unknown whether students will need to complete the Programming Project (20 timetabled hours), which was planned for the Summer term during Year 10. This is currently under review within the exam board and OFQUAL. If this is still a formal requirement, students will complete during Autumn 1. However, failing this there will still be a significant focus on algorithms using past exam questions to prepare students for paper 2 (Computational thinking, algorithms and programming).					
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
KNOWLEDGE	***Programming Project (20 timetabled hours) – Project to be completed as a Home Learning Activity. As confirmed by OFQUAL, students are able to complete this activity without supervision and therefore this will be completed online using repl.it for the practical aspect and MS Forms for the Report.** *This will be broken up into:* - *Analysis* - *Design* - *Development*	**2.1 Algorithms – revisit as this topic was delivered during distance learning.** - Standard searching algorithms - Standard sorting algorithms **1.4 Wired and Wireless Networks– revisit as this topic was delivered during Year 9.** - Types of networks - Factors that affect the performance of networks -Client-server and peer-to-peer networks - Network hardware - The internet	**1.8 Ethical, Cultural, Legal, Environmental Issues – revisit as this topic was delivered during Year 9.** - How computer science technologies have an impact on ethical, legal, cultural, environmental and privacy issues. - How key stakeholders are affected by technologies - Open source vs proprietary software - Legislation ***1.5 Network topologies, protocols and layers – revisit as this topic as delivered during Year 9.**	**2.6 Data Representation - – revisit as this topic was delivered during Year 9.** - Units - Numbers - Characters - Images - Sound - Compression **2.5 Translators and facilities of language – revisit as this topic was delivered during distance learning.** - Different levels of programming language - Purpose of translators	**Exam – Mid May** **Structured revision based on exam analysis** • Algorithm a day • 6 a day exam questions • Revision guides	**Exam Over**

	- *Testing, evaluation, and conclusions* **1.6 System Security** - Forms of attack - Threats posed to networks - Identifying and preventing vulnerabilities **1.7 Systems Software** - Purpose and functionality of systems software - Operating systems - Utility system software ***Programming Techniques** – Model elements of the programming project and allow students to work independently on their project which will be broken down into home learning tasks.*	- Virtual networks	- Star and mesh network topologies - Wi-Fi - Ethernet - IP addressing - MAC addressing - Protocols - Layers - Packet switching	- Characteristics of assembler, compiler, interpreter - Common tools and facilities available in an IDE		
SKILLS	• Evaluation skills • Metacognitive practice • Exam technique • Identifying and selecting information • Breaking down key information	• Evaluation skills • Metacognitive practice • Exam technique • Identifying and selecting information • Breaking down key information	• Evaluation skills • Metacognitive practice • Exam technique • Identifying and selecting information • Breaking down key information	• Evaluation skills • Metacognitive practice • Exam technique • Converting binary to denary • Converting denary to binary • Converting hex to denary • Converting denary to hex • Converting hex to binary • Converting binary to hex • Logical reasoning.	• Evaluation skills • Metacognitive practice • Exam technique • Identifying and selecting information • Breaking down key information	

ASSESSMENTS	• **Baseline Assessment (Paper 1 and Paper 2 will be assessed with RAG checklist)–** to identify key focus areas for development during the Autumn/Spring terms. Students will receive a personalised checklist with practice questions by topic. – **KEY ASSESSED PIECE.**	• **Autumn Progress Test/College Entry Exam (Paper 1 and Paper 2)** with exam questions based on networks and sorting/searching algorithms to check understanding from Autumn term **– KEY ASSESSED PIECE.**	• Exam questions: 1.3.1 Networks and Topologies Q8 (DNS) & 12 (Network Protocols) & **– KEY ASSESSED PIECE.**	• **Spring Progress Test –** Students will sit separate Paper 1 and Paper 2 mock exams with their marks recorded. Students will receive a personalised checklist with practice questions by topic. – **KEY ASSESSED PIECE x2.** • Mock exam • Exam questions based on data representation • Exam questions based on translators and facilities of language	• Walking talking mock x 2 • External exams	