Computer Science Curriculum Plan 2022-2023

Notes:

This is a working document

Year 10 plan includes reviewing topics from Year 9, as well as topics from year 10. Each review should not last more than a lesson and can include review sheets, mind maps etc

Week	1 2 3 4 5 6 7	8 9 10 11 12 13 14	15 16 17 18 19 20	21 22 23 24 25 26	27 28 29 30 31 32	33 34 35 36 37 38 39
Term	Term 1 - Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	Impact of Technology Unit, logging in, using Classroom inc meet. Respectful Online communication, E-Safety, cyberbullying, presenting to an audience. Unit assessment.	Programming Essentials in Scratch - Part 1. Sequence - Selection - Iteration, Operators, Variables, Problem solving.	Modelling Data - Spreadsheets. Getting to know a spreadsheet. Calculations, collecting data.	Using Media - Gaining Support for a cause. Word processing, sources, researching, promoting a cause. Add ESafety on Websites Kodu	Digital Imaging, create a Google site. DIsplay images in news style webpage on Google Sites. Write fake news article and add to website. Learn how to identify fake news, what is it's significance in today's world.	Programming Essentials in Scratch - Part 2. Sub-routines, conditional loops, lists, Translation quiz. What's in a computer? CPU, memory, storage. Strim Down - Make game at the end
Learning Path	https://drive.google.com/file/d/1d45etVc22zAS3mV1G3nfOFwkLNXcOW8B/view?usp=sharing	https://drive.google.com/file/d/1d45etVc22zAS3mV1G3nfOFwkLNXcOW8B/view?usp=sharing	https://drive.google.com/file/d/18e3iuUNw_ZFETFYrKtiGEK64kz6s1xj/view?usp=sharing	https://drive.google.com/file/d/1aoBIwZtokUloMQRzvZn2igIGWzKCIZfl/view?usp=sharing		https://drive.google.com/file/d/128No5hH6LVbQCIMiGJJa22wRELSKq0UK/view?usp=sharing
	Tests - Complete	Tests - Complete				

Term	Term 1 - Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 8	Computing Systems + Data Representation	Mobile App Development: using App Lab. Plan an app, user input, output, screen design and block programming.	Media Project using Google Sites to create a website on a provided topic - IOW Theme Park	Introduction to Python programming. Edublocks	Networks - From semaphores to the internet	(Microbits TBC)Turing Lab
Learning Path	https://drive.google.com/file/d/19GD8Q3G-fqPyAYRaCNlwqpK71MH0ccFE/view?usp=sharing	https://drive.google.com/file/d/19GD8Q3G-fqPyAYRaCNlwqpK71MH0ccFE/view?usp=sharing		https://drive.google.com/file/d/1eHNMPCDcxKBPrPGrUqDm-N3nP6eR3jCu/view?	https://drive.google.com/file/d/1eHNMPCDcxKBPrPGrUqDm-N3nP6eR3jCu/view?usp=sharing	https://drive.google.com/drive/folders/1BmsNlWG4_M1cniDCP-vvBwFWNtE5F0Ys?usp=sharing
	Tests		Tests		Tests	

Term	Term 1 - Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 9	Code.org - Computing Fundamental Express Course. Recap of CS fundamentals using code.org, revisit all areas of SSI, data, logic etc.	Cyber Security. Lookoing at personal data, techniques used by criminals, social engineering and how to protect against.	Intro to python, text programming. NCCE Unit	Introduction to Vector Graphics. Creating vector graphics based around icons and logos. Vector drawing software (inkscape)	Developing for the Web. Creating web sites using html and css. Adding images, links, interaction	Create a comic strip. Plan, write, draw and create comic strip, topical subject.
Learning Path		https://drive.google.com/file/d/1fQKFFUMQzFutFpARAGFjhnMDZRPlSQi8/view?usp=sharing	https://drive.google.com/file/d/1eHNMPCDcxKBPrPGrUqDm-N3nP6eR3jCu/view?usp=sharing	https://drive.google.com/file/d/1BR_gSha_FQ_V9RcYdaayN5zvnC4DMSFM/view?usp=sharing	https://drive.google.com/file/d/1qQ1rmDAcfmjbZ-BtblKvHw7qob01C3Lj/view?usp=sharing	https://drive.google.com/file/d/1BR_gSha_FQ_V9RcYdaayN5zvnC4DMSFM/view?usp=sharing

Comp

	Term 1 - Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10 CS- OCR	**NCCE - Computer Systems** Describe the role of the CPU. Explain the processes of the fetch-decode-execute cycle. Determine the role of main memory and secondary storage. Construct truth tables for three input logic circuits. Write a program using assembly language (LMC).	**NCCE - Computer Systems** Describe the role of the CPU. Explain the processes of the fetch-decode-execute cycle. Determine the role of main memory and secondary storage. Construct truth tables for three input logic circuits. Write a program using assembly language (LMC).	**Computer Systems** Describe the role of the CPU. Explain the processes of the fetch-decode-execute cycle. Determine the role of main memory and secondary storage. Construct truth tables for three input logic circuits. Write a program using assembly language (LMC).	**Algorithms Part 1 (L1-3)** Define the terms 'decomposition', 'abstraction', and 'algorithmic thinking'. Use trace tables.	**Data Representations** Explain how numbers, text, images, and sound are represented using binary digits. Perform operations on binary digits. Convert between units of measurement.	**Data Representations** Explain how numbers, text, images, and sound are represented using binary digits. Perform operations on binary digits. Convert between units of measurement.
Theory		Recap: 2.4	Recap: 2.1	Recap: 2.2	Recap: 2.3	Recap: 2.5
	Programming 1 – Sequence	Programming 2 – Selection	Programming 3 – Iteration	Programming 4 – Sub-Routines	Programming 5 – Strings and Lists	Algorithms Part 2 (L4-12)
	Determine the need for	Use randomisation in programs.	Use a while loop and a for	Explain the differences between a	Define the term 'graphical	Describe a linear and binary search.

Missing from national Curriculum:
-understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem

understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to **carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]**

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Programming	translators. Use sequence, variables, and input in Python. Design programs using a flowchart	Work with arithmetic and logical expressions. Use selection and nested selection in Python.	loop in Python. Perform validation checks on data entry. Design programs using pseudocode.	procedure and a function. Describe scope of variables. Use functions and procedures as part of the structured approach to programming. Test a program for robustness.	user interface' (GUI). Perform string handling operations. Describe the differences between a list and an array. Manipulate a list. Work with 2D lists.	Explain the key algorithms for a bubble, merge, and insertion sort

Year 11 CS - OCR	Term 1 - Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Theory	Impacts of Technology Ethical, cultural, environmental and legal issues Start Networking Unit	Networks and Networking Describe network components. Explain connectivity and distinguish between the various types. Describe the four layers of the TCP/IP model. Protect a network from threats.	Systems Security Describe the various ways that users and organisations can be affected by cyberattacks. Demonstrate how organisations can prevent cyberattacks.	Databases and SQL Describe a database and list its key terms. Determine the difference between a flat file and a relational database. Use structured query language (SQL) to retrieve and update data in a database. Revise Topics	Revise Topics Exams	Exams
Programming	Programming Project - 20hr programming project, scaffolded and guided. CnD Telium	Programming Project - Continuation	Programming Exam Questions	Programming Exam Questions	Revision	

Year 12 CS - OCR	Term 1 - Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	SLR1 The Processor SLR2 Types of Processor SLR13 Data Types SLR15 Boolean Algebra	SLR3 Input/Output/Storage SLR4 OS and Systems Software SLR5 Application Generation	Mock Exam SLR11 Networks SLR12 Web Technology	SLR10 Databases SLR 14 Data Structures	SLR6 Software development SLR16 Computer Legislation SLR17 Ethical Issues	Unit 1 revision Unit 2 revision Unit 3 Preparation
	SLR8 - Intro and LMC Programming: python introduction, input, output and data storage	SLR18 - Thinking abstractly SLR23 - programming techniques Programming: calculations &	SLR19 - Thinking ahead Programming: iteration, subroutines	SLR20 - Thinking procedurally SLR21 - Thinking logically Programming: Data structures, SQL	SLR25 - Algorithms Programming: read/write, sort/search	Programming: Unit 3 Preparation, further SQL, OOP

Year 13 CS - OCR	Term 1 - Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Recap SLR01,02,03,04,10 SLR07 Types of Programming	Recap SLR06, 11, 12 SLR09 Compression, encyption & hashing	Mock Exam Recap SLR 13,14,15	Recap SLR 05, 16, 17	Revision	Exam : Component 1
		Recap SLR18, 23	SLR 24 - Computational methods	Recap SLR 20, 21	Recap SLR 25/26 SLR 22 Thinking concurrently Revision	Exam : Component 2
	Unit 3 Project: analysis, design Hand-in Analysis	Unit 3 Project: design, implementation	Unit 3 Project: implementation Hand-in Design	Unit 3 Project: implementation, testing, evaluation Hand-in Implementation	Unit 3 Project: Hand-in completed Project	