TNHA Curriculum Planning Document

Subject: Computer Science

Year: 10

Timescale	Autumn			Spring			Summer		
Prior Learning (from KS2/3)	Y9 Programming	None	None	None	None	None	None	Year 9 Data Representation	None
Topic/ Unit title	Algorithms and Programming 1/2 – Top down Design, Flowcharts and Pseudocode, Input, Output, Variables, Data Types, Selection.	Algorithms and Programming 3/4 – Iteration, External code, Validation, Authentication, Abstration	Programming and Programming 5 – Arrays, Sorting, Searching, Efficiency	Programming and Programming 5/6 – Trace Tables, Simple subroutines, Decomposition, Scope, Constants.	Programming and Programming 7 - Complex subroutines, Strings, String Operations	Programming and Programming 8 – 2D Arrays, Nested iteration.	Programming and Programming 8/9/10 – Complex programs, Decomposition, Records, Creating Algorithms, More Validation Techniques, Errors and Testing.	Data Representation 11/12/13/14 Number systems (Binary, Denary, Hexadecimal), Units of Storage, Binary Operations and Arithmetic.	Mocks and other school activity
SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit	Consider their place in a technical world, how they are better than computers in most regards but also understand their own limitations. How problem solving through algorithmic design can be related to non computing related problems. Group work.	Consider their place in a technical world, how they are better than computers in most regards but also understand their own limitations. How problem solving through algorithmic design can be related to non computing related problems. Group work.	Must reflect upon own learning to create imaginative programming solutions and also have links to actual programming jobs. How problem solving through algorithmic design can be related to non computing related problems.	Must reflect upon own learning to create imaginative programming solutions and also have links to actual programming jobs	Must reflect upon own learning to create imaginative programming solutions and also have links to actual programming jobs	Must reflect upon own learning to create imaginative programming solutions and also have links to actual programming jobs	Must reflect upon own learning to create imaginative programming solutions and also have links to actual programming jobs	Consider their place in a technical world, how they are better than computers in most regards but also understand their own limitations.	

Assessment Opportunities	Each Topic is assessed by at least one end of topic test (3 Algorithm assessments, 4 Programming assessments) with each containing some questions on prior learning.								
Links to other units in KS3/4.	Y10 – Programming (all)	Y10 – Programming (all)	Y10 – Algorithms 1	Y10 – Algorithms (all) Y10 – Programming 1	Y10 – Algorithms (all) Y10 – Programming 1-2	Y10 – Algorithms (all) Y10 – Programming 1-3		None	None

TNHA Curriculum Planning Document

Subject: Computer Science

Year: 11

Timescale	**Autumn**			**Spring**			**Summer**		
Prior Learning (from KS2/3)	Y9 Data Representation	Y7 Computer Systems		Y9 Internet Security	None	None	None	None	None
Topic/ Unit title	Data Representation 15/16/17/18 Character Sets, Images, Sound, Compression.	Computer Systems 19/20/21/22/23/24/25 Logic, CPU Architecture and Performance, Memory, Secondary Storage, Embedded Systems, HW vs SW, Types and functions of SW, High and Low Level languages.		Networks and Cyber Security 26/27/28/29/30/31/32 Adv & Dis Networks, Wired vs Wireless, Classifications, Protocols, Network Security, TCP/IP, Social Engineering, Malware, Security.	Databases And Consequences of Technology 33/34/35/36/37/38/39 Database Concepts, SQL, Hacking, Cloud Storage, Cyber Security, Wireless Networking, Mobile Tech, Wearable Tech, Implants, Privacy vs Safety, Autonomous Vehicles.	Revision - Algorithms and Programming Theory	Revision – Data Representation, Computer Systems, Networks, Cyber Security and Databases	Revision - Consequences of Technology Revision of all topics and past papers.	
SMSC/Cultural Capital/Character/FBV- outline specific areas that are covered in this unit	Consider their place in a technical world, how they are better than computers in most regards but also	Consider their place in a technical world, how they are better than computers in most regards but also understand their own limitations.		The increasing use of technology at the expense of human labour and freedoms. Ethical and legal use of technology.	Ethical and legal use of technology. The increasing use of technology at the expense of human labour and freedoms.	Must reflect upon own learning to create imaginative algorithmic solutions and also have links	Ethical and legal use of technology. The increasing use of technology at the expense of human labour and freedoms.	The increasing use of technology at the expense of human labour and freedoms.	

	understand their own limitations.				Ethical use of technology including conservation and the effect on less developed countries.	to actual programming jobs	Consider their place in a technical world, how they are better than computers in most regards but also understand their own limitations.	Ethical use of technology including conservation and the effect on less developed countries.	
Assessment Opportunities	Each Topic is assessed by an end of topic test. The test has some questions that test prior knowledge.								
Links to other units in KS3/4.	Data Representation	None		None	None	Y10 – All	Y10 – Data Rep Y11 - All	Y11 - All	