Computer Science Long Term Plan Year 8

Temperance Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	HALF TERM
Topic	Python programming – Part I - Using Trinket.io								
Challenge Objective and Content (for all learners)	Introduction to Trinket.io Using PRIMM	Use input, assignment and, output statements in sequence	Using selection to control the flow of program execution		Use iteration to control the flow of program execution		Assessment	Use the importing of libraries to increase the complexity of code	
Inspire Opportunities		The use of Variables and assignment	Selection (if-elif-else) and how this is used in code to create decisions		Iteration (while and for loops) - more complex coding constructs			Using random and time imports	
Assessment Opportunities	Formative assessment: Through teacher observation, verbal feedback questioning and low stakes quizzes. Summative assessment: End of Unit assessment								

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	CHRISTMAS
Topic	Computing Systems						
Challenge Objective and Content (for all learners)	Describe the function of the computer hardware componentts	To understand the basic functions of the CPU	Describe how the components work together to execute programs	Building a Virtual PC	Inside the Computer	Assessment	
Inspire Opportunities	Learning about the Internal components (memory & types of both primary and secondary storage)	Fetch Decode Execute Cycle	Factors that affect the performance of the CPU (Clock, Cache, Cores)	Be able to identify different hardware components & describe how the components work together to execute programs This will aid students to choose their own parts to build a virtual computer.	Deconstruction of computers		
Assessment Opportunities	Formative assessment: Through teacher observation, verbal feedback questioning and low stakes quizzes. Summative assessment: End of Unit assessment						

Justice Term

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	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	HALF TERM
Topic	**Data Representation – Part I**						
Challenge Objective and Content (for all learners)	To be able to add two binary numbers together	To understand how images are represented digitally	Logic Gates : Describe how hardware is built out of logic circuits (AND, OR and NOT) Be able to complete truth tables for AND OR and NOT logic gates Be able to use Boolean Logic words in code			Assessment	
Inspire Opportunities	Exploring more complex binary additions	Creating more complex binary images	Introduction to Truth Tables and how these are used to track programs				
Assessment Opportunities	Formative assessment: Through teacher observation, verbal feedback questioning and low stakes quizzes. Summative assessment: End of Unit assessment						

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	EASTER
Topic	**Networks and Security**						
Challenge Objective and Content (for all learners)	Introduction to Networks. What is a network and why do we use them?	Network Topologies – Star, Mesh and Ring. Advantages and Disadvantages	Hardware used to create networks. Identification, advantages and disadvantages	Drawing Topologies using the correct hardware	Network Security, Dangers of networks and Malware	Assessment	
Inspire Opportunities	Research activities: History of networks & What happens when networks fail?	Other complex topologies such as a bus topology.	Creating their own virtual network using the correct hardware and topology for the type of network they are creating		Research into the most dangerous computer viruses		
Assessment Opportunities	Formative assessment: Through teacher observation, verbal feedback questioning and low stakes quizzes. Summative assessment: End of Unit assessment						

Computer Science Long Term Plan Year 8

Courage Term

	Week 1	Week 2	Week 3	Week 4	Week 5	HALF TERM
Topic	**The Impact of Technology**					
Challenge Objective and Content (for all learners)	How technology is used in society.	The positive effects of technology on society and the environment.	The negative effects of technology on society and the environment.	The impact of E-Waste on the environment.	Assessment.	
Inspire Opportunities	Ethical/Unethical use of technology. Research opportunities include: Medical Technology & Stuxnet.	How technology is used in the "real world" Discussions and research opportunities include: Careers, GPS, Solar Panels & Green energy.	Discussions and research surrounding privacy issues, e-safety such as personal image and obesity.	Discussions and impact on planned obsolescence, the digital divide and recycling.		
Assessment Opportunities	Formative assessment: Through teacher observation, verbal feedback questioning and low stakes quizzes. Summative assessment: End of Unit assessment					

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	SUMMER
Topic	**Website Development**						
Challenge Objective and Content (for all learners)	The creation of mood boards and wire frames to plan a website.	Creating a website through Google sites.	Introducing the software development cycle and how to use it effectively to develop and refine website development		To review and evaluate the websites that students have developed using the software development cycle.		
Inspire Opportunities	UX, Front end and Back-end careers research		The use of Bootstrap and HTML to add to the website design.				
Assessment Opportunities	Formative assessment: Through teacher observation, verbal feedback questioning and low stakes quizzes. Summative assessment: Success criteria and end of project evaluation.						

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