

Computer Science Long Term Plan Year 8

Temperance Term

W/C	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	HALF TERM
Area of Study	Introduction to Computing							
Core Learning	<u>Objectives:</u> <ul style="list-style-type: none"> Recognise the need to be safe and respectful online Be able to discuss the different aspects of Online Safety To be able to know the simple hardware that computers use To understand file sizes and how these are created/converted To understand what binary is and how computers use it. 				<u>Content:</u> Responsible and respectful use of technology Online safety Storage devices and their characteristics File sizes and converting file sizes Data representation – Binary			
Opportunities for Challenge	Research & worksheets on the History of the internet and how it developed and continues to develop. Worksheets on different types of hardware, Questions on converting larger files sizes and Binary Addition							
Assessment	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment							

W/C	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	CHRISTMAS
Area of Study	Computing systems						
Core Learning	<u>Objectives:</u> <ul style="list-style-type: none"> Describe the function of the computer hardware components Describe how the components work together to execute programs Be able to identify different hardware components To understand the basic functions of the CPU 			<u>Content:</u> Hardware and Internal components (CPU, memory, storage) Deconstruction of computers Fetch Decode Execute Cycle The CPU in more depth			
Opportunities for Challenge	Reconstruction of the computer systems after deconstruction, further research and questions on the Von Neumann architecture.						
Assessment	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment						

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W/C	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	HALF TERM
Area of Study	Computational Thinking – Part I						
Core Learning	<u>Objectives:</u> <ul style="list-style-type: none"> To be able to understand the fundamentals of Computational Thinking. To be able to describe and explain what abstraction, decomposition and problem solving is To be able to apply abstraction, decomposition and problem-solving skills to everyday problems. To learn the components of flow charts 			<u>Content:</u> Using, understanding and creating everyday algorithms. Discussions on Computing in “real world” contexts, including careers. How computational thinking is applied Introduction to flow charts			
Opportunities for Challenge	Teach Computing Curriculum Explorer activities:						
Assessment	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment						

W/C	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Easter
Area of Study	Python Programming – Part I						
Core Learning	<u>Objectives:</u> <ul style="list-style-type: none"> To understand the use of python as a coding language and why it is a popular programming language – real world applications of python To be able to input and output data using python To be able to understand the importance of sequencing and selection in python To be able to use selection and sequencing to make simple python programs 			<u>Content:</u> Computational thinking Sequencing Inputs and Outputs Selection Murder Mystery in python			
Opportunities for Challenge	More complex python coding challenges. Introducing iteration.						
Assessment	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: Python programming assessment.						

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Courage Term

W/C	Week 26	Week 27	Week 28	Week 29	Week 30	Week 31	HALF TERM
Area of Study	Is Technology Ethical?						
Core Learning	<u>Objectives</u> <ul style="list-style-type: none"> To understand how technology is used in society. To be able to name and explain the 3 laws associated with computing, Data Misuse Act, Copyright protection act and Computer Misuse act. To be able to describe positive and negative effects of technology on society and the environment. To be able to explain what e-waste is and how it is affecting the planet. To be able to explain the positive effects that technology is having on the environment 			<u>Content:</u> Ethical/Unethical use of technology How technology is used in the "real world" E-waste Positives and negative effects of technology on society and the environment			
Opportunities for Challenge	Teach Computing Curriculum Explorer activities:						
Assessment	Formative assessment: Through teacher observation, questioning and marked activities Summative assessment: End of Unit assessment						

W/C	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	SUMMER
Area of Study	Website Development						
Core Learning	<u>Objectives:</u> <ul style="list-style-type: none"> To understand what primary and secondary research is To use secondary research to begin the website design. To understand what a mood board and wireframe is To use of moodboards and wireframes. To be able to create a website that discusses the impact of E-waste on society. To understand what the software development cycle is and use it effectively. To review and evaluate a finished product 			<u>Content:</u> Learning about primary and secondary research Conducting secondary research Creating moodboards and wire frames The software development cycle Website creation using google sites Reviewing and evaluation.			



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Opportunities for Challenge	The use of Bootstrap and HTML to add to the website design.	
Assessment	Formative assessment: Through teacher observation, questioning and marked activities – reflection point halfway through the website Summative assessment: End of Unit assessment based upon website project.	