

Year 6 Scheme of Work – Computing

Unit	Time (Wks)	Activities	Outcomes	Differentiation	Assessment	NC Links	Other Subject Link
6.1 E-Safety (DS)	3-4	L1 - Find similarities and differences between in-person and cyberbullying; identify good strategies to deal with cyberbullying. L2 - Identify secure websites by identifying privacy seals of approval. L3 - Understand the benefits and pitfalls of online relationships; identify information that I should never share. L4 – Understand how to send emails safely.	- Explain what the SMART acronym means; - Look in the address bar of a website so check for security; - Identify the lock symbol in an address bar; - Explain why someone might have an online friendship; - Create and send a safe, respectful, and well-structured email.	- Discussions - Pair work	Continuous throughout. Discussions.	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	PSHCE
Previous learning: Y3 – Branching databases; sorting objects into groups, sort data using yes/no questions				Next learning: KS3 – Collecting and analysing data			
6.2 Spreadsheets (CS, IT, DL)	6-7	L1 - Enter data and formulae into a spreadsheet. L2 - Order and present data based on calculations. L3 - Add, edit and calculate data. L4 - Use a spreadsheet to solve problems. L5 - Plan and calculate a spending budget. L6 - Design a spreadsheet for a specific purpose. Software: Microsoft Excel	- Be able to enter formulae into cells. - Edit data and discuss the effect on results. - Use further functions including AVERAGE, MIN and MAX. - Create graphs. - Design own spreadsheet for a specific purpose.	- Help sheets - Populated spreadsheets - Tinker time - Use-Modify-Create - Pair work	Continuous throughout. Complete a spreadsheet model	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	Maths
Previous learning: Y5 – Condition switches between actions; variables; pick random; clone; indefinite loop				Next learning: KS3 - Use 2 or more programming languages to solve a variety of computational problems			
6.3 Scratch (CS)	7-9	Crab Maze Game L1 - Understand the concept of conditions, loops and basic procedures through everyday examples. L2 - Predict the code from a pre-created game using the switch background command, loops and conditions. L3 - Run the game code checking if predictions were accurate. L4 - Investigate aspects of the game code. L5 - Modify parts of the code. - Plan their own game using basic	- Understand the concept of conditions, loops and basic procedures. - Predict the code from a pre-created game using the switch background command, loops and conditions. - Run the game code checking if predictions were accurate. - Investigate aspects of the game code. - Modify parts of the code. - Plan and create a game using basic procedures. - Debug and refine the code.	- Example code. - Task instructions. - Tinker time - Pair programming - Unplugged activities - Concept before code.	Continuous throughout. Create a game.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; Solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work	Maths

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		<p>procedures.</p> <ul style="list-style-type: none"> - Code their game. - Test and refine their creations. <p>Software: Scratch</p>		- PRIMM scaffolding.		<p>with variables and various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>	
<p>Previous learning: Y4 – Describe early animation forms; create animation using stick figures; add a number of moving characters on a background; use a time slider; use a camera</p>				<p>Next learning: KS3 - Create, reuse, revise and repurpose digital artefacts for a given audience</p>			
6.4 Lego Stop Motion Animation (IT)	6	<p>L1 - Plan action using a storyboard L2 - Learn animation techniques L3 - Create a stop-motion animation film L4 - Use a green screen to change the background L5 - Add credits, titles and sound effects</p> <p>Software: Stop Motion Animation app</p>	<ul style="list-style-type: none"> - Create an animation film suitable for the audience. - Use appropriate sound effects in film. - Use a green screen to change the background. - Use small movements to create a flow. 	<ul style="list-style-type: none"> - Example Project. - Tinker time - Use-Modify-Create - Group work. 	<p>Continuous throughout.</p> <p>Produce an animation film using Lego minifigures.</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p>	Drama
<p>Previous learning: Y1 – Programming a Robot Mouse to move; Y2-5 – programming using Scratch</p>				<p>Next learning: KS3 - Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems; understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming</p>			

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<p>6.5 Crumble Traffic Lights / Buggy (CS)</p>	<p>6-8</p>	<p>Traffic Lights L1 - Understand the concept of indefinite loops through everyday examples. Extend the concept of indefinite loops through role play. L2 - Use a pre-created traffic light program. Modify a pre-created traffic light program. L3 - Explore and create their own traffic light sequence algorithm. L4 - Independently set up crumble and traffic lights crumb. Convert traffic light algorithm into crumble code. Test and refine their creations.</p> <p>Buggy (DT Project) L1 - Design a buggy using motors. Create chasis and attach electrical components. L2 - Explore and create a manoeuvring sequence algorithm to move buggy. Convert algorithm into crumble code. L3 - Move buggy steering right/left. L4 - Explore and create a drawing algorithm to draw shapes. Program buggy to draw shapes. Test and refine their creations.</p> <p>Software: Crumble</p>	<ul style="list-style-type: none"> - Create a traffic lights algorithm. - Set up crumble and traffic light crumb correctly. - Program crumble to simulate traffic lights. - Create a manoeuvring algorithm. - Set up crumble and geared motors correctly. - Program a crumble to move and steer buggy. - Program a crumble to draw shapes. 	<ul style="list-style-type: none"> - Maker cards - Group work - Tinker time - Use-Modify-Create scaffolding - Traffic light video - Unplugged time 	<p>Continuous throughout.</p> <p>Simulate a set of traffic lights.</p> <p>Make buggy move.</p>	<p>Select, use and combine a variety of software, including evaluating and presenting data and information. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>	<p>DT – making a buggy</p> <p>Maths – properties of shapes</p> <p>Art – Geometric shapes</p>
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