



# Hilton Lane Primary School Computing Overview

		EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>National Curriculum Aims</b>		<p>To know how to operate simple equipment.</p> <p>To show an interest in technological toys with knobs or pulleys, or real objects.</p> <p>To show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</p> <p>To know that information can be retrieved from computers.</p> <p>To complete a simple program on a computer.</p> <p>To interact with age-appropriate computer software.</p> <p>To recognise that a range of technology is used in places such as homes and schools.</p> <p>To select and use technology for particular purposes.</p>	<ul style="list-style-type: none"> <li>- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation</li> <li>- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems</li> <li>- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems</li> <li>- Are responsible, competent, confident and creative users of information and communication technology.</li> </ul>					
<b>National Curriculum Subject Content</b>			<ul style="list-style-type: none"> <li>-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</li> <li>- create and debug simple programs</li> <li>-use logical reasoning to predict the behaviour of simple programs</li> <li>-use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> <li>-recognise common uses of information technology beyond school</li> <li>-Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</li> </ul>			<ul style="list-style-type: none"> <li>- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>- use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration</li> <li>- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>- 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</li> <li>- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>		
<b>Information Technology</b> <small>To evaluate and apply information technology</small>	<b>Computing Systems and Networks</b>		<b>Improving Mouse Skills</b>  <i>Learning how to login and navigate around a computer; developing mouse skills; learning how to drag, drop,</i>	<b>What is a Computer?</b>  <i>Exploring what a computer is by identifying how inputs and outputs work and how computers are</i>	<b>Networks</b>  <i>Learning what a network and how devices communicate and share information.</i>	<b>Collaborative Learning</b>  <i>Learning how to work collaboratively and exploring a range of collaborative tools.</i>	<b>Search Engines</b>  <i>Learning about how page rank works and how to identify inaccurate information.</i>	<b>Bletchley Park</b>  <i>Discovering the history of Bletchley and learning about code breaking</i>



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			<p><i>click and control a cursor to create works of art.</i></p> <p><b>Skills Showcase- Rocket to the Moon</b></p> <p><i>Developing keyboard and mouse skills through designing, building and testing. Creating a digital list of materials, using drawing software and recording data.</i></p>	<p><i>used in the wider world to design their own computerised invention.</i></p> <p><b>Word Processing</b></p> <p><i>Developing touch typing skills, learning keyboard shortcuts and simple editing tools.</i></p>	<p><b>Emailing</b></p> <p><i>Sending emails with attachments and understanding what cyberbullying is.</i></p> <p><b>Journey inside a Computer</b></p> <p><i>Assuming the role of computer parts and creating paper versions of computers to consolidate understanding of how a computer works.</i></p>	<p><b>Website Design</b></p> <p><i>Learning how web pages and sites are created and how to embed media and links. (Spring 1)</i></p> <p><b>HTML</b></p> <p><i>Learning about the markup language behind a webpage; becoming familiar with HTML tags, changing HTML and CSS code to alter images and 'remix' a live website.</i></p>	<p><i>and password hacking. Demonstrating digital literacy skills by creating presentations</i></p>	
	<b>Data Handling</b>		<p><b>Introduction to Data</b></p> <p><i>Learning what data is and the different ways it can be represented. Learning why data is useful and the ways it can be gathered and recorded.</i></p>	<p><b>International Space Station</b></p> <p><i>Learning how data is collected, used and displayed and the scientific learning of the conditions needed for plants and humans, to survive.</i></p>	<p><b>Comparison cards database</b></p> <p><i>Learning about records, fields and data and sorting and filtering data.</i></p>	<p><b>Investigating Weather</b></p> <p><i>Researching and storing data on spreadsheets and designing a weather station.</i></p>	<p><b>Mars Rover 1</b></p> <p><i>Learning about the Mars Rover, exploring how and why it transfers data including instructions, and how messages can be sent using binary code.</i></p> <p><b>Mars Rover 2</b></p> <p><i>Exploring how the Mars rover: moves, follows instructions, collects and sends data; understanding how computers work, what</i></p>	<p><b>Big Data 1</b></p> <p><i>Identifying how barcodes and QR codes work. Learning how infrared waves are used for the transmission of data while recognising the uses of RFID.</i></p> <p><b>Big Data 2</b></p>



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							data is and how it is transferred.	Further developing understanding of how networks and the Internet are able to share information. Learning how big data can be used to design smart buildings.
<b>Computer Science</b> <i>To understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation</i>	<b>Programmi ng</b>		<b>Algorithms Unplugged</b>  <i>Algorithms, decomposition and debugging are made relatable to familiar contexts, following directions, learning why instructions need to be specific.</i>  <b>Programming Bee-Bots</b>  <i>Introducing programming through the use of a Bee-Bot and exploring its functions.</i>	<b>Algorithms and debugging</b>  <b>Developing an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops.</b>  <b>Scratch Jr</b>  <i>Exploring what 'blocks' do' by carrying out an informative cycle of predict &gt; test &gt; review. Programming a familiar story and make a musical instrument.</i>	<i>Scratch</i>  <i>Exploring the programme Scratch, following the predict &gt; test &gt; review cycle. Learning about 'loops' and programming an animation, story and game.</i>	<b>Further coding with Scratch</b>  <i>Revisiting the key features and beginning to use 'variables' in code scripts.</i>	<b>Programming Music</b>  <i>Building-on programming and music skills to create different sounds, beats and melodies which are put to the test with a Battle of the Bands performance!</i>  <b>Micro:bit</b>  <i>Creating algorithms and programs that are used in the real world. Using the 'predict, test and evaluate' cycle to create and debug programs with specific aims.</i>	<b>Intro to Python</b>  <i>Using the programming language 'Python' to create designs and art. Learning how to create loops and nested loops to make their code more efficient.</i>



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<p><b>Digital Literacy</b></p> <p><i>To ensure pupils are responsible, competent, confident and creative users of information and communication technology.</i></p>	<p><b>Creating Media</b></p>		<p><b>Digital Imagery</b></p> <p><i>Taking and editing photos, searching for and adding images to a project.</i></p>	<p><b>Stop Motion</b></p> <p><i>Learning how to create simple animations from storyboarding creative ideas.</i></p>	<p><b>Video Trailers</b></p> <p><i>Developing digital video skills to create trailers, with special effects and transitions.</i></p>	<p><b>Computational Thinking</b></p> <p><i>Solving problems effectively using the four areas of abstraction, algorithm design, decomposition and pattern recognition.</i></p>	<p><b>Stop Motion Animation</b></p> <p><i>Creating animations, storyboard ideas and decomposing a story into small parts before putting together to create the illusion of a moving image.</i></p>	<p><b>History of Computers</b></p> <p><i>Writing, recording and editing radio plays set during WWII, learning about how computers have evolved.</i></p> <p><b>Inventing a Product</b></p> <p><i>Designing a product, pupils: evaluate, adapt and debug code to make it suitable for their needs and designing products in CAD and creating a website and video.</i></p>



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Online Safety	relationships education		<i>Learning how to stay safe online and how to manage feelings and emotions when someone or something has upset us.</i>	<i>Learning: how to keep information safe and private online; who we should ask before sharing things online and how to give, or deny permission online.</i>	<i>Learning: the difference between fact, opinion and belief; and how to deal with upsetting online content. Knowing how to protect personal information online.</i>	<i>Searching for information and making a judgement about the probable accuracy; recognising adverts and pop-ups; understanding that technology can be distracting.</i>	<i>Learning about app permissions; the positive and negative aspects of online communication; that online information is not always factual; how to deal with online bullying and managing our health and wellbeing.</i>	<i>Learning to deal with issues online; about the impact and consequences of sharing information online; how to develop a positive online reputation; combating and dealing with online bullying and protective passwords.</i>
	relationships and sex education							
	health education							
	citizenship computing							

Term	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	<i>Online safety lesson 1</i> <b>Computing systems and networks: Improving mouse skills (6 lessons)</b>	<i>Online safety lesson 1</i> <b>Computing systems and networks 1: What is a computer? (5 lessons)</b>	<i>Online safety lesson 1</i> <b>Computing systems and networks 1: Networks (5 lessons)</b>	<i>Online safety lesson 1</i> <b>Computing systems and networks: Collaborative learning (6 lessons)</b>	<i>Online safety lesson 1</i> <b>Computing systems and networks: Search engines (5 lessons)</b>	<i>Online safety lesson 1</i> <b>Computing systems and networks: Bletchley Park and the history of computers (5 lessons)</b>
Autumn 2	<i>Online safety lesson 2</i>  <b>Programming 1: Algorithms unplugged (5 lessons)</b>	<i>Online safety lesson 2</i>  <b>Programming 1: Algorithms and debugging</b>	<i>Online safety lesson 2</i> <b>Programming: Scratch (5 lessons)</b>	<i>Online safety lesson 2</i> <b>Programming 1: Further coding with Scratch (5 lessons)</b>	<i>Online safety lesson 2</i> <b>Programming 1: Music (5 lessons)</b> Option 2: chrome books	<i>Online safety lesson 2</i>  <b>Programming: Intro to Python (5 lessons)</b>



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		(5 lessons)			(6 lessons)	
Spring 1	Online safety lesson 3 Programming 2: Bee-Bot (6 lessons)	Online safety lesson 3 Programming 2: ScratchJr (5 lessons)	Online safety lesson 3 Computing systems and networks 2: Emailing (6 lessons)	Online safety lesson 3 Creating media: Website design (6 lessons)	Online safety lesson 3 Data handling: Mars Rover 1 (5 lessons)	Online safety lesson 3 Data handling 1: Big Data 1 (5 lessons)
Spring 2	Online safety lesson 4 Skills showcase: Rocket to the moon (5 lessons)	Online safety lesson 4 Creating media: Stop motion (6 lessons)	Online safety lesson 4 Computing systems and networks 3: Journey inside a computer (5 lessons)	Online safety lesson 4 Skills showcase: HTML (5 lessons)	Online safety lesson 4 Programming 2: Micro:bit (5 lessons)	Online safety lesson 4 Creating media: History of computers (5 lessons)
Summer 1	Online safety lesson-consolidation and revisit Creating media: Digital imagery (7 lessons)	Online safety lesson 5 Data handling: International Space station (5 lessons)	Online safety lesson 5 Creating media: Video trailers (6 Lessons)	Online safety lesson 5 Programming 2: Computational thinking (5 lessons)	Online safety lesson 5 Creating media: Stop motion animation (6 lessons)	Online safety lesson 5 Data handling 2: Big Data 2 (5 lessons)
Summer 2	Online safety lesson-consolidation and revisit Introduction to data (5 lessons)	Online safety lesson-consolidation and revisit Computing systems and networks 2: Word processing (5 lessons)	Online safety lesson-consolidation and revisit Data handling: Comparison cards databases (7 lessons)	Online safety lesson-consolidation and revisit Data handling: Investigating weather (5 lessons)	Online safety lesson-consolidation and revisit Skills showcase: Mars Rover 2 (5 lessons)	Online safety lesson-consolidation and revisit Skills showcase: Inventing a product (5 lessons)