

CURRICULUM SUBJECT	Computing		SUBJECT LEAD				Holly Drinkwater	
What are the end points in the subject you lead?	<ul style="list-style-type: none"> to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems to be responsible, competent, confident and creative users of information and communication technology 							
How is the curriculum at Woodley Primary School sequenced towards those end points?								
Knowledge and Skills	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5 (and Year 6 2020-21)	Year 6 (2021-22)	
Computer science		<ul style="list-style-type: none"> Sequencing – directional language, clicking, dragging, dropping, simple algorithms using programmed directional language and debugging Events – create a story Loops – simple repeats 	<ul style="list-style-type: none"> Sequencing – build on understanding of algorithms and debugging Events – learn that events add variety to algorithms Loops – using repeat loops, comparing efficiency of different algorithms, create own 	<ul style="list-style-type: none"> Sequencing – develop sequential algorithms, systematically identify errors in pre-existing code and debug (inc. incorrect loops, missing blocks, extra blocks, errors in sequence), introduction of new blocks inc. 	<ul style="list-style-type: none"> Sequencing – solving puzzles by giving sequenced algorithms, debugging Events – create video game using events Loops – create shapes using repeats blocks inc. pixels and degrees in Artist, introduction 	<ul style="list-style-type: none"> Sequencing – recap sequencing, debugging, loops, conditionals, while loops and introduce 'if/else' statements Sprites – consider use of commands in order to get right result, learn about sprites and behaviours, create game 	<ul style="list-style-type: none"> Sequencing – recap functions, sprites, interactions between sprites, loops and nested loops Variables – explore the creation of repetition designs using variables Data – run simple simulation to 	

		<ul style="list-style-type: none"> • Digital Citizenship – going places online safely following rules 	<p>images using loops</p> <ul style="list-style-type: none"> • Impacts of Computing – exercise empathy and creativity by sketching app to address needs of imaginary user • Digital Citizenship – digital footprint • End project – create a game using events, sequencing, loops and considering digital citizenship and impacts of computing 	<p>moving forward by specific number of pixels and turn by specific degrees.</p> <ul style="list-style-type: none"> • Events – learn that events make program interactive, build game using event handlers to detect mouse clicks and object collisions • Loops – use loops to build big structures faster and traverse mazes more efficiently, introduce more actions in to loops such as ‘collect’ • Binary – first look at 	<p>to nested loops</p> <ul style="list-style-type: none"> • Conditionals – introduction to games where points only scored in specific conditions, program using conditionals, introduction to while loops and until loops, make decisions about which conditional to use • Binary – learn how computers store pictures using simple ideas like on and off, create own images using on and off • Digital Citizenship – recognising which information is safe to share 	<p>inc. interactions between characters and user input</p> <ul style="list-style-type: none"> • Nested loops – practice nested loops with new goals, recognise more uses for nested loops in programming, create intricate designs, create portfolio-ready images. • Functions – write song by combining chunks of code into functions, understand how functions are useful and helpful, combine functions with ‘while’ loops 	<p>experience how computing can be used to collect data that identifies trends or patterns, discover machine learning and artificial intelligence, explore how data is used to enable a machine learning model to classify new data, learn about connections, URLs ,IP addresses and the DNS.</p> <ul style="list-style-type: none"> • For Loops – look for patterns in puzzles and use for loops
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				<p>binary translating something 'real life' to series of on and offs</p> <ul style="list-style-type: none"> • Data - create visualisations of data and use this to reason and predict • Digital Citizenship – recognising what to do if someone upsets, scares or angers them online, recognise what makes a strong password and create own • End project – build game from scratch using loops, sequence, 	<p>and which is private</p> <ul style="list-style-type: none"> • End project – create and share a game using sequential algorithms, debugging, events, loops, nested loops, until loops, while loops. • Application – Bring programming to life using Microbit and Makey Makey 	<p>and 'if/else' statements, create and modify images using functions in Artist.</p> <ul style="list-style-type: none"> • Impacts of computing – learn about accessibility and the value of empathy, design accessible solutions for hypothetical apps • Digital Citizenship – private and personal information, create interactive poster applying digital citizenship understanding • End project – create game in Artist or Sprite Lab using sequential 	<ul style="list-style-type: none"> • Sprites – create own customised behaviours for sprites, create interactive pet which look sand behaves how they wish • Digital Citizenship - learn what do to if someone uses mean or hurtful language online • End project – create project in Artist or Sprite Lab using sequential algorithms, debugging, events, loops, nested loops, for loops
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				<p>debugging and events.</p> <ul style="list-style-type: none"> • Application – Build simple, stationary robot and connect to iPad using Bluetooth, program light to turn on/off and motion sensor to detect movement 		<p>algorithms, debugging, events, loops, nested loops, conditionals (until loops, while loops, if/else statements) functions and sprites.</p> <ul style="list-style-type: none"> • Y5 Application – Build robot and connect to iPad using Bluetooth, program motors to make robot move using a pulley. Program motion sensor using conditionals. • Y6 Application – programme simple game using Makey Makey to control 	<p>conditionals (until loops, while loops, if/else statements) functions, sprites and variables.</p> <ul style="list-style-type: none"> • Application – programme simple game using Makey Makey to control
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<p>Information Technology</p>		<p>Use simulators to explore aerial photography (Google Earth), animate character using voice recorder, take photos, add soundboard to photos on Tiny Tap, use QR code, edit photos using pic collage and add text, create masks</p>	<p>Google Junior image search and key word search and save image to camera roll on iPad and shared drive on laptop, create simple animation to make image speech by adding voice recordings, design a house using a net template, print and create, create simple bar graph to record data, create interactive presentation using Tiny Tap including soundboard, ask a question and shape puzzle.</p> <p>Word Processing –</p> <ul style="list-style-type: none"> • Open a new page in Microsoft Word • Use the Save button and 	<p>Edit images to create image of themselves with a different background, add text to image, create game with single level, Google Junior key question searches, use data loggers to collect data on light, explore different ways to present data, present data collected in most appropriate way, create simple 3D animation using voice recordings and images.</p> <p>Word Processing –</p> <ul style="list-style-type: none"> • Use the Number Keys • Use the Shift key to create a Capital Letter • Use the Comma key 	<p>Create videos using sequencing, add music and green screen recordings, create interactive presentation to present data using sound recordings and puzzles/ quizzes, use key words to search on search engines, use data loggers to record data on sound, record a simple green screen video.</p> <p>Word Processing –</p> <ul style="list-style-type: none"> • Use a Drop Down Menu • Use the Undo and Redo edit options (drop down) • Insert Word Art and Format and Resize • Insert a Text Box and Format and Resize 	<p>Explore and compare different search engines, create branching database used to identify, create animation using still images, create tour simulation using Goggle Tour Builder, begin to use Google Advanced search, create multi-level game with enemies and level-ups, create presentation with map, videos, zooms, music, sound effects, present data using advanced graphing.</p> <p>Word Processing -</p> <ul style="list-style-type: none"> • Using Page Set Up/ Layout • School Name in Footer • Name and Date in Header 	<p>Create video inserting green screen videos, text, images and trimming, use data loggers to collect data on light and create advanced graph to present information, create animation to show timelapse, edit video with transitions, title slides and narration, use google advanced search using AND, OR, NOT, BETWEEN, WITHIN.</p> <p>Word Processing –</p> <ul style="list-style-type: none"> • Use Find and Replace • Print a Selection • Use Ctrl shortcuts and Function keys (Ctrl+C, Ctrl+V,
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			<p>name my work</p> <ul style="list-style-type: none"> • Open a Saved Document • Place the Cursor with Mouse and Arrow Keys • Insert Clip Art and Format and Resize • Use the Caps Lock Key • Insert text – write a label for the clip art image • Use the Space Bar to create a space • Use the Full Stop key • Use the Backspace key to delete letters to the left 	<ul style="list-style-type: none"> • Use the Apostrophe key • Use the shift key to create a Question Mark/ Exclamation Mark/ Inverted Commas • Use the Undo Button • Use the Delete key to delete letters to the right • Use the Enter Key to move to a new line • Select a piece of text by Clicking and Dragging • Change the Font Size • Change the Font Style • Change the Font Colour • Use Bold/Italic 	<ul style="list-style-type: none"> • Insert a Shape and Format and Resize • Create a Border • Use Cut/Copy and Paste icons • Align Right/ Centre/ Left and Justify • Page Views, Zoom and Print Preview 	<ul style="list-style-type: none"> • Insert Headings and Sub-headings • Use Bullet Points and Numbering • Use Home and End to jump to start/ end of line • Use the Highlight Tool • Use synonym tool • Put text into Columns • Insert Brackets/ Dashes/ Hyphens/ Pound Sign • Copy and Paste text from the Internet • Copy and Paste image from the Internet • Use Spell Check • Use Print Screen 	<p>Ctrl+X, Ctrl+S)</p> <ul style="list-style-type: none"> • Insert and edit tables • Highlight, drag and drop whole sections of text to move to a different location (i.e. into table) • Save image from the Internet and Insert to Document • Use Word Count • Double Click on a word to select it • Edit line spacing
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				<p>and Underline</p> <ul style="list-style-type: none"> • Use the Print Button 			
Digital Literacy		<p>Recognise the need to follow rules to stay safe online, explore personal and private information, learn to log in using passwords and keep these private, learn to be kind online, learn to report anything which upsets, angers or scares them online</p>	<p>Explore personal and private information and how to keep private info private, recognise the need to be alert online, recognise importance of being kind online, learn what to do if something or someone online scares, angers or upsets them.</p>	<p>How to protect my online reputation</p> <p>How to work out whether information online is true and reliable to be sharp and alert online</p> <p>I will recognise that not everything I read or see online is true</p> <p>That everything I put online can be retrieved via my digital footprint</p> <p>Examples of online scams</p>	<p>How to make strong passwords to secure my information online</p> <p>Ways in which I can be 'kind' to others online</p> <p>How to recognise the benefits and risks of live streaming.</p>	<p>What having a positive digital footprint means</p> <p>Ways in which I can start to build a positive digital footprint</p> <p>How to be a critical consumer while online</p> <p>About different online scams and phishing</p> <p>How to develop respectful, empathetic and healthy online relationships</p> <p>Ways to manage and respond in a healthy and safe way to hurtful online behaviour</p>	<p>Ways to develop safe habits online, including the importance of protecting personal information</p> <p>How to respect online privacy boundaries for myself and others</p> <p>Ways to seek or ask for help if I or others feel unsafe online</p> <p>How to develop respectful, empathetic and healthy online relationships</p> <p>Ways to manage and respond in a healthy and safe way to hurtful online behaviour</p>

						To recognise the benefits and risks of sharing online and understand that once something has been shared, it can always be retrieved	
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