



Computing Progression

Year 1	Autumn			Spring		Summer	
<u>Units</u>	Grouping and Sorting	Pictograms	Lego Builders	Maze Explorers	Animated Story Books	Coding	Spreadsheets
<u>Objectives</u>	<ul style="list-style-type: none"> To sort various items online using a variety of criteria. 	<ul style="list-style-type: none"> To learn to use pictograms to record data. 	<ul style="list-style-type: none"> To learn how to create, use and follow instructions on a computer. 	<ul style="list-style-type: none"> To understand the functionality of the direction keys and learn how to debug a set of instructions. 	<ul style="list-style-type: none"> To learn how to add animations, sound effects and voice recordings to stories. 	<ul style="list-style-type: none"> To understand the basics of coding such as events, objects and actions. 	<ul style="list-style-type: none"> To learn how to navigate around and enter data.
<u>Sticky Knowledge</u>	<p>Pupils should be able to explain:</p> <p>That we can use computers to sort objects by size, colour and number.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Sort Equal 	<p>Pupils should be able to explain:</p> <p>That we can use pictures to show numbers.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Data Pictogram Compare Totals 	<p>Pupils should be able to explain:</p> <p>That an instruction is something that is step by step to complete a task.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Code Program Sequence 	<p>Pupils should be able to explain:</p> <p>How to use the arrow keys to move an object.</p> <p>How to create and change a set of instructions.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Direction Route Unit 	<p>Pupils should be able to explain:</p> <p>How to add an animation and sound to a story.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Animation Background Features Font e-book 	<p>Pupils should be able to explain:</p> <p>That codes are sets of instructions.</p> <p>What objects and actions are in code.</p> <p>What backgrounds are.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Code Command Event Object 	<p>Pupils should be able to explain:</p> <p>That a spreadsheet has cells.</p> <p>How to enter data into cells.</p> <p>How to add clipart to cells.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Cell Data Spreadsheet Scene
<u>Cross-Curricular Links</u>	<ul style="list-style-type: none"> Maths-sorting/shape Science-sorting 	<ul style="list-style-type: none"> Maths-sorting/statistics 	<ul style="list-style-type: none"> English-instruction writing 	<ul style="list-style-type: none"> PE-orienteeering Geography-orienteeering 	<ul style="list-style-type: none"> English-story writing 	<ul style="list-style-type: none"> English-story writing 	<ul style="list-style-type: none"> Maths-statistics

Year 2	Autumn		Spring		Summer	
Units	Coding	Spreadsheets	Questioning	Effective Searching	Presenting Ideas	
Objectives	<ul style="list-style-type: none"> To understand algorithms, timed sequences and debugging. 	<ul style="list-style-type: none"> To use copy, cut and paste shortcuts. To use the totalling tools to solve problems. 	<ul style="list-style-type: none"> To construct binary trees to separate different items and answer questions. 	<ul style="list-style-type: none"> To understand terminology within internet searching. To search using the internet for a purpose. 	<ul style="list-style-type: none"> To explore and use different ways to present a story. 	
Sticky Knowledge	<p>Pupils should be able to explain:</p> <p>That an algorithm is a step by step set of instructions.</p> <p>What the collision detection event is.</p> <p>That different objects can do different actions.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Algorithm Debug Collision Output Sequence 	<p>Pupils should be able to explain:</p> <p>How to copy and paste in 2Calculate.</p> <p>How to use the totalling tools.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Drag Value Cut Total Equals 	<p>Pupils should be able to explain:</p> <p>How to use yes/no questions to separate information.</p> <p>How to use a binary tree to answer questions.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Data Database Field Record Sort 	<p>Pupils should be able to explain:</p> <p>That the easiest way to search the internet is using a search engine.</p> <p>That a digital footprint is information about a person that exists on the internet.</p> <p>That a network is connected devices that can send and receive information to each other.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Browser Digital footprint Network Search engine 	<p>Pupils should be able to explain:</p> <p>That an e-book is an electronic book that can be read on a computer.</p> <p>That a mind map is a tool for organising and representing knowledge.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> E-book Mind map Multiple choice Presentation 	
Cross-Curricular Links	English- story writing/ instructions		Maths- statistics	Various topics/subjects	Research searching- various topics/subjects	
Year 3	Autumn		Spring		Summer	
Units	Coding	Spreadsheets	Branching Databases	Simulations	Presenting	
Objectives	<ul style="list-style-type: none"> To use timers, repeat commands and create an interactive scene. 	<ul style="list-style-type: none"> To add and edit data. To explore 'more than', 'less than' and 'equals' tools. To describe cells using their addresses. 	<ul style="list-style-type: none"> To use and create branching databases. 	<ul style="list-style-type: none"> To explore and understand the purpose of simulations. 	<ul style="list-style-type: none"> To add media, animations, timings to presentations. 	
Sticky Knowledge	Pupils should be able to explain:	Pupils should be able to explain:	Pupils should be able to explain:	Pupils should be able to explain:	Pupils should be able to explain:	

e	<p>What a flowchart is and how they are used in computer programming.</p> <p>How to use the repeat command.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Action Alert Bug Debug Command 	<p>How they use symbols to compare data.</p> <p>How to make graphs and charts.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Bar graphs Data Equals Pie chart 	<p>That a database is a collection of data organised so information can be found easily.</p> <p>How to sort objects using a branching database.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Database Debugging Binary tree Branching 	<p>That a simulation is a program that models a real life situation.</p> <p>Name some simulations- like space training, piloting a plane, games.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Analysis Modelling Point of view Simulation Solution 	<p>That a transition is how one slide moves on to the next.</p> <p>How to preview and present a presentation.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Audio Preview Theme Wordart Transition 		
Cross-Curricular Links	Maths- statistics/flowcharts	Maths- statistics	Various topics/subjects	Science- space Various topics/subjects	Various topics/subjects		
Year 4	Autumn		Spring		Summer		
Units	Coding	Writing for different audiences	Spreadsheets	Logo	Animation	Effective Searching	Hardware Investigations
Objectives	<ul style="list-style-type: none"> To understand 'if', 'else' and 'repeat' statements. To understand how to use co-ordinates, use number variables. To create a playable game. 	<ul style="list-style-type: none"> To explore font size and style. To use simulated scenarios to produce different text types. 	<ul style="list-style-type: none"> To explore how to set numbers as currency or decimals. To add formulae to a cell, explore a timer, random number and spin tools. To use the line graphing tool to estimate values between data readings. 	<ul style="list-style-type: none"> To input simple instructions. To use and build procedures. 	<ul style="list-style-type: none"> To learn about onion skinning in animation. To add background and sounds to animations. To introduce 'stop motion' animation. 	<ul style="list-style-type: none"> To locate information and search effectively to find out information. 	<ul style="list-style-type: none"> To understand the differed parts that make up a desktop computer.
Sticky Knowledge	<p>Pupils should be able to explain:</p> <p>That an event is something that causes a block of code to run.</p> <p>That if/else statements</p>	<p>Pupils should be able to explain:</p> <p>Why we change the appearance of font-making things easier to read and highlighting</p>	<p>Pupils should be able to explain:</p> <p>That we can use spreadsheets for real life situations like budgeting for a party, sizing a field for a farmer, how to</p>	<p>Pupils should be able to explain:</p> <p>What logo is- a text based coding language used to control</p>	<p>Pupils should be able to explain:</p> <p>That an animation is when we add movement to still objects.</p>	<p>Pupils should be able to explain:</p> <p>That easter eggs are unexpected features within computing software.</p>	<p>Pupils should be able to explain:</p> <p>That components are parts inside of the computer casing.</p>

	are conditional commands. Key Vocabulary: <ul style="list-style-type: none"> Code blocks Event 'if' statement 'if/else' statement Input 	important parts. Key Vocabulary: <ul style="list-style-type: none"> Campaign Format Genre Reporter Viewpoint 	spend money over time Key Vocabulary: <ul style="list-style-type: none"> Average Budget Formula Random number tool 	and on-screen turtle, Key Vocabulary: <ul style="list-style-type: none"> Grid Logo commands Multi line mode procedure 	That onion skinning is a process where the shadow image from previous frames is shown to help you line up new images. Key Vocabulary: <ul style="list-style-type: none"> Animation Frame Stop motion 	We need to be aware of reliability when researching online. Key Vocabulary: <ul style="list-style-type: none"> Balanced view Easter eggs Key words Results page 	That a graphics card is used for displaying images. That the hard drive is where the computer stores all documents. Key Vocabulary: <ul style="list-style-type: none"> Graphics card Hard drive Hardware Motherboard Network card Output software
Cross-Curricular Links	<ul style="list-style-type: none"> maths- co-ordinates 	<ul style="list-style-type: none"> English- story writing/news paper articles 	<ul style="list-style-type: none"> PSHE- money Maths- money/decimals 	<ul style="list-style-type: none"> Art- digital literacy 	<ul style="list-style-type: none"> Art-digital literacy English- story writing 	<ul style="list-style-type: none"> Various subjects/topics 	<ul style="list-style-type: none"> Science- circuits/materials
Year 5	Autumn		Spring		Summer		
Units	Coding	Spreadsheets	Databases	3D modelling	Concept Maps		
Objective s	<ul style="list-style-type: none"> To understand and program a simulation. To understand decomposition and abstraction. To understand how to use friction in code. To understand different variable types and use them within code. 	<ul style="list-style-type: none"> To use formulae within a spreadsheet to convert measurements. To use a spreadsheet to model a real-life problem. To create formula that uses text variables. 	<ul style="list-style-type: none"> To learn how to search for information in a database and create their own. 	<ul style="list-style-type: none"> To explore the effect of moving points. To design a 3D model to fit certain criteria. 	<ul style="list-style-type: none"> To create a collaborative concept map and present this to an audience. 		
Sticky Knowledge	Pupils should be able to explain: That abstraction is a way of removing unnecessary details to get the program functioning.	Pupils should be able to explain: That spreadsheets are used to display, organise and interpret information. How to add a formula so	Pupils should be able to explain: Why it is useful to have a collaborative feature on a database. The different ways data can	Pupils should be able to explain: That points on a 3D net which create the corners of the 3D shape. That a design brief is a	Pupils should be able to explain: That a node is a way to represent concepts or ideas. That a concept is an idea		

	<p>Key Vocabulary:</p> <ul style="list-style-type: none"> Abstraction Concatenation Nest Physical system Simplify 	<p>that the cell shows the product of two other cells.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Format cell Formula bar 'how many' tool Profit 	<p>be searched and sorted.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Avatar Collaborate Database report Field 	<p>document for a project, which includes the main details and the goal and strategy.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> 3D printing Design brief Net Pattern fill 	<p>in the form of a question.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Concept Node Presentation mode Story mode
<u>Cross-Curricular Links</u>	<p>Maths- instructions</p> <p>English- instructions</p>	<p>Maths- measurements, money</p>	<p>Various subjects/topics</p>	<p>Design Technology- structures</p> <p>Art- structures</p>	<p>English- story writing</p>
<u>Year 6</u>	<u>Autumn</u>		<u>Spring</u>		<u>Summer</u>
<u>Units</u>	<u>Coding</u>	<u>Networks</u>	<u>Blogging</u>	<u>Binary</u>	<u>Spreadsheets</u>
<u>Objectives</u>	<ul style="list-style-type: none"> To use functions and flowcharts to test and debug a program. To design and make a text- based adventure game with a timer and score. 	<ul style="list-style-type: none"> To find out about LAN and WAN and how we access the internet in school. 	<ul style="list-style-type: none"> To plan for theme and content for a blog. To consider the effect upon the audience of changing the visual properties of a blog. 	<ul style="list-style-type: none"> To examine whole numbers are used as the basis for representing all types of data in digital systems. To represent whole numbers in binary. 	<ul style="list-style-type: none"> To use formulae for percentages, averages, max and min in spreadsheets when using Excel. To create a range of graphs using Excel. To apply spreadsheets skills to solve problems.
<u>Sticky Knowledge</u>	<p>Pupils should be able to explain:</p> <p>That decomposition is breaking a task in to its component parts so that each part can be coded separately.</p> <p>That a single instruction in a computer program.</p> <p>That a launch command will open another Purple Mash file or a website.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Decomposition Execute 	<p>Pupils should be able to explain:</p> <p>That both LAN and WAN are networks that connect computers together. LAN are for computers that are less than 1KM, whilst WAN extend over large areas.</p> <p>That a hub/switch is the connection point for networks where data packets from many locations join and are sent out to different devices.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> ethernet hosting 	<p>Pupils should be able to explain:</p> <p>That a blog is a website or webpage that can be about any subject.</p> <p>That an audience can interact with a blog by leaving comments.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Archive Blog 	<p>Pupils should be able to explain:</p> <p>That a single 0 or 1 is called a bit. (And this comes from 'Binary Digit')</p> <p>That a switch is a component that can be one of two states at any time: on or off.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Binary 	<p>Pupils should be able to explain:</p> <p>That creating or using a simulation of a real-life situation on a computer is called a computational model.</p> <p>That a group of letters, numbers or other symbols is called a formula. These allow a spreadsheet to carry out calculations.</p> <p>Key Vocabulary:</p> <ul style="list-style-type: none"> Budget Count tool

	<ul style="list-style-type: none"> • Launch Command • Tabs • X and y • properties 	<ul style="list-style-type: none"> • hub/switch • IP address 	<ul style="list-style-type: none"> • Collaborate • Nodes • Vlog 	<ul style="list-style-type: none"> • Bit • Microprocessor • Switch • Transistor 	<ul style="list-style-type: none"> • Expense • Probability • Dice tool • Computational model
<u>Cross-Curricular Links</u>	Design Technology- games	PSHE- communities	English- diary entries/recounts/blogging	Maths- sequences/patterns	Maths- statistics