Skills Progression – Computing (Year 1-6) AY19-20

Year Group	Term 3 Coding	Term 4 Spreadsheets	Term 5 Presentation and Communication (Part 1)	Term 6 Presentation and Communication (Part 2)
1	Pupils will be taught to: • Explain what coding means • Know that for the computer to make something happen, it needs to follow clear instructions • Explain what a block code is • Read through combined blocks of code • Make a background using Design Mode • Add characters using Design Mode • Use the drop-down menu to change backgrounds and characters • Write a programme that controls how a character will move • Make a character move when clicked • Use collision detection to make objects interact • Programme a sound to play when objects collide.	Pupils will be taught to: • Navigate around a spreadsheet. • Explain what rows and columns are. • Save and open sheets. Children can enter data into cells. • Open the Image toolbox and find and add clipart • Use the 'move cell' tool so that images can be dragged around the spreadsheet • Use the 'lock' tool to prevent changes to cells • Use the tools in 2Calculate to count items • Give images a value that the spreadsheet can use to count them • Add the count tool to count items • Add the speak tool so that the items are counted out loud • Use a spreadsheet to help work out a fair way to share items	Pupils will be taught to: • Use the direction keys in 2Go to move forwards, backwards, left and right • Add a unit of measurement to the direction in 2Go Challenge 2 • Undo their last move • Move their character back to the starting point • Use diagonal direction keys to move the characters in the right direction • Know how to create a simple algorithm • Know how to debug their algorithm • Change the background images in their chosen challenge and save their new challenge • Understand how to try each other's challenges as 2Dos. 1.5 Maze Explorers	Pupils will be taught to: • Explain the difference between a traditional book and an e-book • Add different drawing tools to create a picture on the page • Add text to a page and change the colour, font and size of the text • Add an animation to the picture • Play the pages that they have created • Save changes and overwrite the file • Add their own voice recording to the page • Create their own music and add it to their page • Add a background to the page • Copy and paste a page in the book • Share their story book on a class story book display board. 1.6 Animated Stories

2	Pupils will be taught to:	Pupils will be taught to:	Pupils will be taught to:	Pupils will be taught to:
	- Explain that an algorithm is a set of instructions - Begin to understand that the Repeat and Timer commands both make objects repeat actions but function differently - Include a button in their programmes - Explain what debugging means - Debug simple programmes using 2Code - Explain why it is important to save their work after each functioning iteration of the programme they are making - Predict what the object in a peer's programme will do based on their knowledge of the objects' limitations e.g. a turtle can only move in specific ways - Can code a programme using a variety of objects, actions, events and outputs successfully.	- Explain what rows and columns are in a spreadsheet - Open, save and edit a spreadsheet - Add images from the image toolbox and allocate them a value - Add the count tool to count items - Use copying a pasting to help make spreadsheets - Use tools in a spreadsheet to automatically total rows and columns. - Use a spreadsheet to solve a mathematical puzzle - Use images in a spreadsheet. - Work out how much they need to pay using coins by using a spreadsheet to help calculate - Create a ttaught of data on a spreadsheet - Use the data to create a block graph manually.	- understand what 2Sequence is and how it works - Use the different sounds within 2Sequence to create a tune - understand what happens to the tune when sounds are moved - Add sounds to a tune they've already created to change it - Change the volume of the background sounds - Create two tunes which depict two feelings - Upload and use their own sound chosen from a bank of sounds - Create, upload and use their own recorded sound - Create their own tune using some of the chosen sounds. ==2.7 Making Music==	- Examine a traditional tale presented as a mind map, as a quiz, as an e-book and as a fact file - Collect, organise and present data and information in digital content - Know that digital content can be represented in many forms - Create a quiz about a story using 2Quiz - Talk about their work and make improvements to solutions based on feedback received - Extract information from a 2Connect file to make a publisher fact file on a nonfiction topic - Add appropriate clipart and a photo ==2.8 Presentation==

3	Pupils will be taught to:	Pupils will taught to:	Pupils will be taught to:	Pupils will be taught to:
	• Create a design that represents a sequential algorithm • Use a flowchart design to create the code • Explain what Object, Action, Output, Control and Event are in computer programming • Explain how their programme simulate a physical system i.e. my vehicles move at different speeds and angles • Describe what they did to make their vehicle change angle • Show that their vehicles move at different speeds • Make use of the X and Y properties of objects in their coding • Create an if statement in their programme • Use a timer and if statement to introduce selection in their programme • Show how their characters repeats an action and explain how they made objects repeat actions.	• Create a table of data on a spreadsheet • Use a spreadsheet programme to automatically create charts and graphs from data • Use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to calculations • Use the 'spin' tool to count through times tables. • Describe a cell location in a spreadsheet using the notation of a letter for the column followed by a number for the row • Find specified locations in a spreadsheet.	• Know that a computer simulation can represent real and imaginary situations • Give some examples of simulations used for fun and for work. • Provide suggestions of advantages and problems of simulations • Use a simulation to try out different options and to test predictions • Evaluate simulations by comparing them with real situations and considering their usefulness • Recognise patterns within simulations and make and test predictions • Identify the relationships and rules on which the simulations are based and test their predictions. ==3.7 Simulation==	• List a range of different ways to communicate • use 2Connect to highlight the strengths and developments of each method • Open an email and respond to it • Send emails to other children in the class • Create a quiz about email safety which explores scenarios that they could come across in the future • Can attach work to an email • Know what CC means and how to use it • Read and respond to a series of email communications • Attach files appropriately and use email communication to explore ideas. ==3.5 Email==

4	**Pupils will be taught to:**	**Pupils will be taught to:**	**Pupils will be taught to:**	**Pupils will be taught to:**
	• Use sketching to design a programme and reflect upon their design • Create a code that conforms to their design • Understand what a variable is in programming • Set/change the variable values appropriately • Interpret a flowchart that depicts an if/else flowchart • Make a character respond to user keyboard input • Create a timer that prints a new number to the screen every second • Explain how they made their programme change the number every second • Use an algorithm when making a stimulation of an event on the computer	• Use the number formatting tools within 2Calculate to appropriately format numbers • Add a formula to a cell to automatically make a calculation in that cell • Use the timer, random number and spin button tools. • combine tools to make fun ways to explore number • Use a series of data in a spreadsheet to create a line graph • Use a line graph to find out when the temperature in the playground will reach 20°C • Make practical use of a spreadsheet to help them plan actions • use the currency formatting in 2Calculate • Allocate values to images and use these to explore place value • Use a spreadsheet made in 2Calculate to check their understanding of a mathematical concept.	• Put together a simple animation using paper to create a flick book • Have an understanding of animation frames • Make a simple animation using 2Animate • Know what the Onion Skin tool does in animation • Use the Onion Skin tool to create an animated image • Use backgrounds and sounds to make more complex and imaginative animations • Know what 'stop motion' animation is and how it is created • Suggest ideas from existing 'stop motion' films to recreate their own animation • Share their animations and comment on each other's work using display boards ==4.6 Animation==	• Know what the common instructions are in Logo and how to type them • Follow simple Logo instructions to create shapes on paper • Follow simple instructions to create shapes in Logo • Create Logo instructions to draw patterns of increasing complexity • Understand the pu and pd commands • write Logo instructions for a word of four letter • Follow Logo code to predict the outcome • Create shapes using the Repeat function • Find the most efficient way to draw shape • To use and build procedures in Logo • Create 'flowers' or 'crystals' using Logo. ==4.5 Logo==

5	**Pupils will be taught to:**	**Pupils will be taught to:**	**Pupils will be taught to:**	**Pupils will be taught to:**
	- Explain how their programme stimulates a physical system - Select the relevant features of a simulation by using decomposition and abstraction - Reflect upon the effectiveness of their simulation - Know some ways that text variables can be used in coding - Create a game which has a timer and score pad - Use variables to control the objects in the game - Create loops using the timer and if/else statements - Include buttons that launch windows to websites and programmes.	- Create a formula in a spreadsheet to convert m to cm - Apply this to creating a spreadsheet that converts miles to km and vice versa - Use a spreadsheet to work out which letters appear most often - use the 'how many' tool - Use a spreadsheet to work out the area and perimeter of rectangles - Use these calculations to solve a real-life problem - Create simple formulae that use different variables - create a formula that will work out how many days there are in x number of weeks or years - Create a spreadsheet to model a real-life situation and come up with solutions that can be practically applied.	- Review and analyse a computer game - Describe some of the elements that make a successful game - Design the setting for their game so that it fits with the selected theme - Upload images or use the drawing tools to create the walls, floor and roof - Design characters for their game - Can decide upon, and change, the animations and sounds that the characters make - Make their game more unique by selecting the appropriate options to maximise the playability - Write informative instructions for their game so that other people can play it - Can evaluate their own and peers' games to help improve their design for the future. ==5.5 Game Creator==	- Know what the 2Design and Make tool is for - Know the different viewpoints in 2Design and Make whilst designing a building - Adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form - Edit the polygon 3D models to design a 3D model for a purpose - refined one of their designs to prepare it for printing - Print their design as a 2D net and then created a 3D model. ==5.6 3D Modelling==

| 6 | **Pupils will be taught to:**
Plan a programme before coding to anticipate the variables that will be required to achieve the desired effect Explain what functions are and how they can be created and labelled in 2Code Explain how they organised code in a programme into functions to make it easier to read Code programmes that take text input from the user and use this in the programme Aware of the need to code for all possibilities when using user input Create flowcharts for algorithms using 2Chart Be creative with the way they code to generate novel visual effects Follow through the code of how a text adventure can be programmed in 2Code Adapt an existing text adventure to make it unique to their requirements. | **Pupils will be taught to:**
create a spreadsheet to answer a mathematical question relating to probability take copy and paste shortcuts problem solve using the count tool Create a machine to help work out the price of different items in a sale use the formula wizard to create formulae Use a spreadsheet to solve a problem. Use a spreadsheet to model a real-life situation and come up with solutions Make practical use of a spreadsheet to help plan actions Use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life. | **Pupils will be taught to:**
Use the 2DIY activities to create a picture-based quiz
Consider the audience's ability level and interests when setting the quiz
share their quiz and responded to feedback
choose an appropriate Text Toolkit tool to make their own grammar game
Use 2Investigate quiz to answer quiz questions
Designed their own quiz based on one of the 2Investigate example databases
Use their knowledge of quiz types to create a show quiz based on a curriculum area.
<mark>6.7 Quizzing</mark> | **Pupils will be taught to**: understand how a blog can be used as an informative text Identify the key features of a blog Create a blog with a specific purpose Understand that blogs need to be updated regularly to maintain the audience's interest and engagement Post comments and blog posts to an existing class blog Understand the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying Comment on and respond to other blogs Assess the effectiveness and impact of a blog.
<mark>6.4 Blogging</mark> |