Computing Long Term Plan

2023-2024

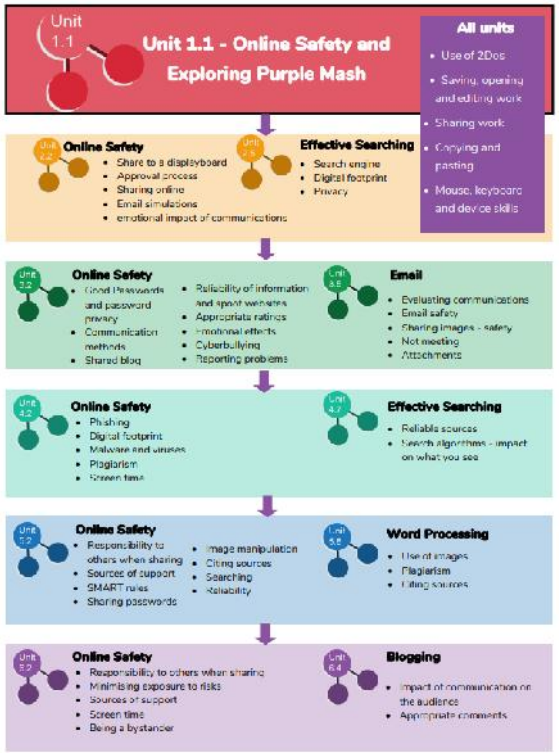
EYFS

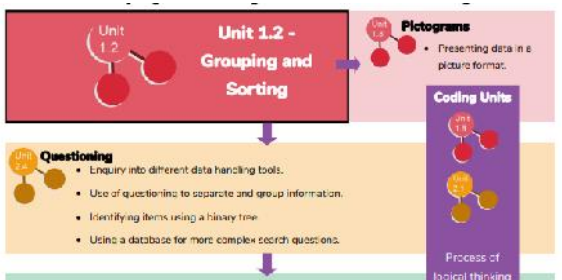
Understanding the World:

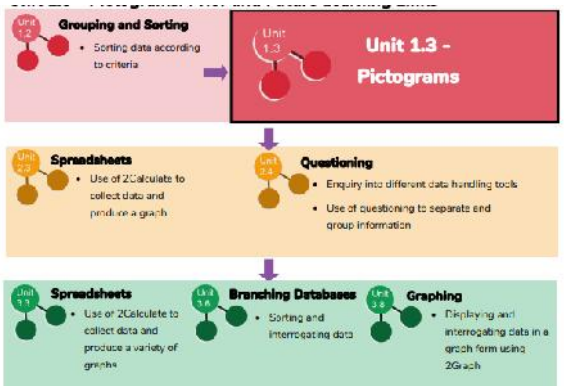
Technology: children recognise that a range of technology is used in places such as homes and schools. They select and use technology for purposes. In Reception, children will explore technology predominantly through the learning environment and classroom provisions. These will provide tasks such as;

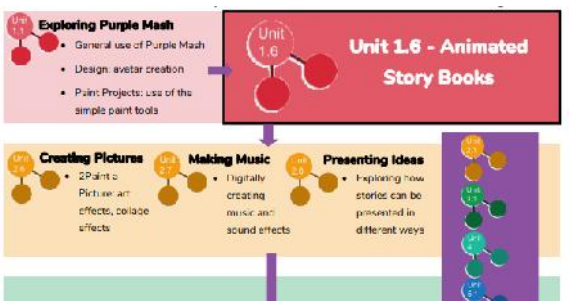
- taking a photograph with a camera or tablet
- searching for information on the internet
- playing games on the interactive whiteboard
- using a Beebot
- watching a video clip
- listening to music
- accessing Mini Mash
- interacting with google maps
- Numbots

Year 1

Autumn 1	Lesson Objectives	Success Criteria	Progression Links	Key Vocabulary
Online Safety	**Lesson 1;** • To log in safely and understand why that is important. • To create an avatar and to understand what this is and how it is used. • To be able to create a picture and add their own name to it. • To start to understand the idea of 'ownership' of creative work. • To save work to the My Work area and understand that this is private space. Lesson 2; • To learn how to find saved work in the Online Work area. • To learn about what the teacher has access to in Purple Mash. • To learn how to see messages left by the teacher on their work.	**Lesson 1;** • Children can log in to Purple Mash using their own login. • Children have created their own avatar and understand why they are used. • Children can add their name to a picture they created on the computer. • Children are beginning to develop an understanding of ownership of work online. • Children can save work into the My Work folder in Purple Mash and understand that this is a private saving space just for their work. Lesson 2; • Children can find their saved work in the Online Work area of Purple Mash. • Children can find messages that their teacher has left for them on Purple Mash. • Children can search Purple Mash to find resources Lesson 3;		• alert • avatar • button • device • file name • icon • log in • log out • menu • my work area • notification • password • private

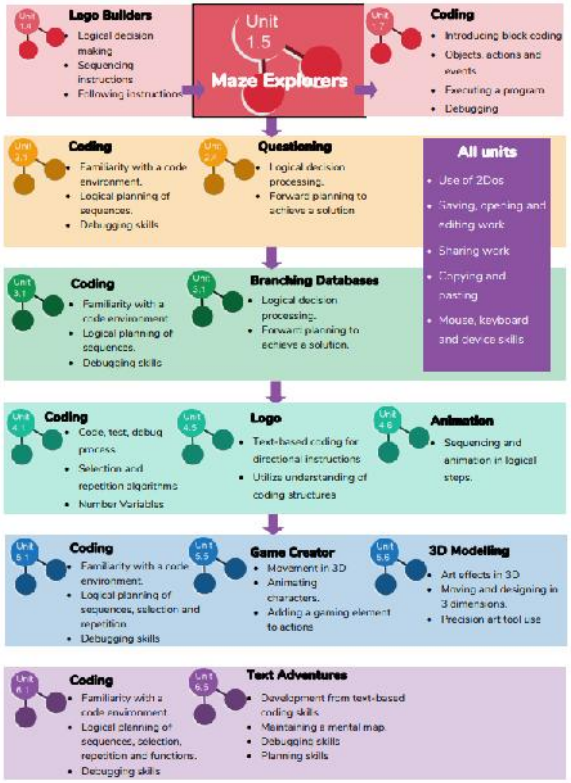
	• To learn how to search Purple Mash to find resources. <u>Lesson 3;</u> • To become familiar with the types of resources available in the Topics section. • To become more familiar with the icons used in the resources in the Topics section. • To start to add pictures and text to work. <u>Lesson 4;</u> • To explore the Tools area of Purple Mash and to learn about the common icons used in Purple Mash for Save, Print, Open, New. • To explore the Games area on Purple Mash. (extension) • To understand the importance of logging out when they have finished.	• Children will be able to use the different types of topic templates in the Topics section confidently. • Children will be confident with the functionality of the icons in the topic templates. • Children will know how to use the different icons and writing cues to add pictures and text to their work. <u>Lesson 4;</u> • Children have explored the Tools section on Purple Mash and become familiar with some of the key icons: Save, Print, Open and New. • Children have explored the Games section and looked at Table Toons (2x tables). • Children can log out of Purple Mash when they have finished using it and know why that is important.		
Autumn 2	<u>Lesson Objectives</u>	<u>Success Criteria</u>	<u>Progression Links</u>	<u>Key Vocabulary</u>
	<u>Lesson 1;</u>	<u>Lesson 1;</u>		• criteria • groups

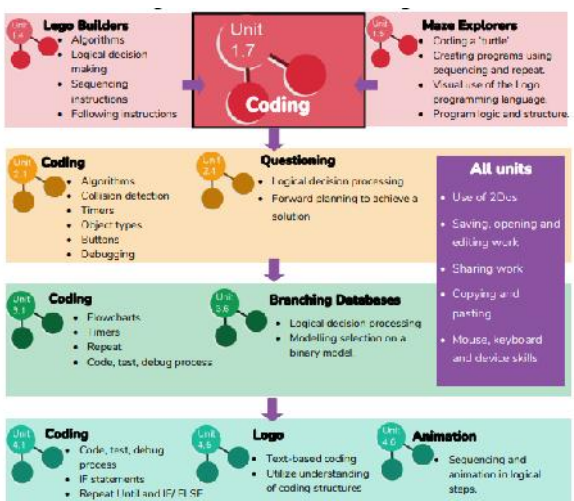
Grouping & Sorting	• To begin to think logically about the steps of a process. • To sort items using a range of criteria <u>Lesson 2;</u> • To sort items on the computer using the 'Grouping' activities in Purple Mash. • To bring together logical thinking and the use of technology. • To introduce the term 'algorithm' to describe logically following a process.	• Children can sort various items offline using a variety of criteria. • Children can follow a logical process to categorise objects. <u>Lesson 2;</u> • Children have used Purple Mash activities to sort various items online using a variety of criteria. • Children have experienced logical sorting using technology where items either fit a category or do not.		• sort • algorithm
Pictograms	<u>Lesson 1;</u> • To understand that data can be represented in picture format.	<u>Lesson 1;</u> • Children can discuss and illustrate the transport used to travel to school. • Children can contribute to the collection of class data.		• collect data • record results • compare • data • pictogram

	Lesson 2; • To contribute to a class pictogram. Lesson 3; • To use a pictogram to record the results of an experiment.	• Children have used these illustrations to create a simple pictogram. Lesson 2; • Children can contribute to a class pictogram. • Children can discuss what the pictogram shows. Lesson 3; • Children can collect data from rolling a die 20 times and recording the results. • Children can represent the results as a pictogram.		• title
	Lesson Objectives	Success Criteria	Progression Links	Key Vocabulary
Spring 1	Lesson 1; • To understand the differences between	Lesson 1; Children know the difference between a traditional book and an e-book.		• animation • background • clipart gallery

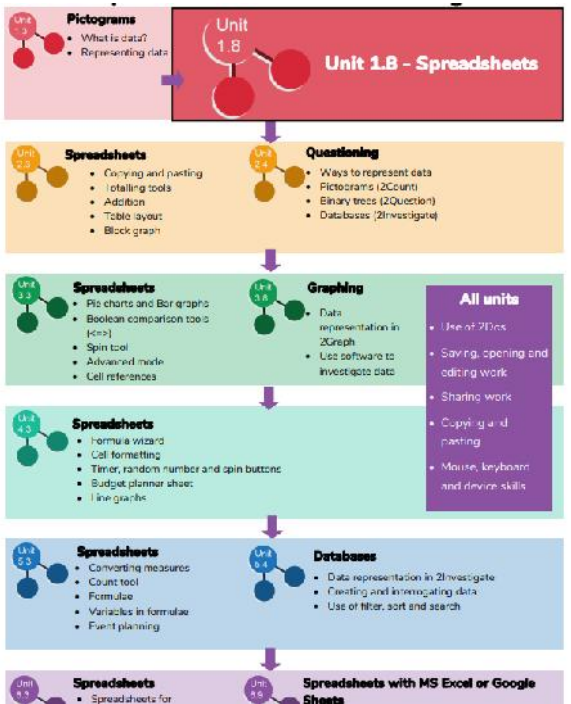
Animated Storybooks	traditional books and e-books. • To explore the tools of 2Create a Story's My Simple Story level. • To save the page they have created. <u>Lesson 2;</u> • To add animation to a picture. • To play the pages created so far. • To save the additional changes and overwrite the file. <u>Lesson 3;</u> • To add a sound effect to a picture. • To add a voice recording to the picture. • To add created music to the picture. <u>Lesson 4;</u> • To add a background to the story. • To demonstrate a good understanding of all the tools they have used in 2Create a Story and use	• Children can use the different drawing tools to create a picture on the page. • Children can add text to a page. <u>Lesson 2;</u> • Children can open previously saved work. • Children can add an animation to a page. • Children can play the pages created. • Children can save changes and overwrite the file. <u>Lesson 3;</u> • Children can add a sound to the page. • Children can add voice recording to the page. • Children can create music for a page. <u>Lesson 4;</u> • Children can add a background to the page. • Children can use the additional drawing tools on My Story mode. • Children can change the font style and size. <u>Lesson 5;</u> • Children can use the copy and paste function to add more pages to their animated e-book. • Children can share their e-books on a class story book display board.		• e-book • edit • font • sound • sound effect • text

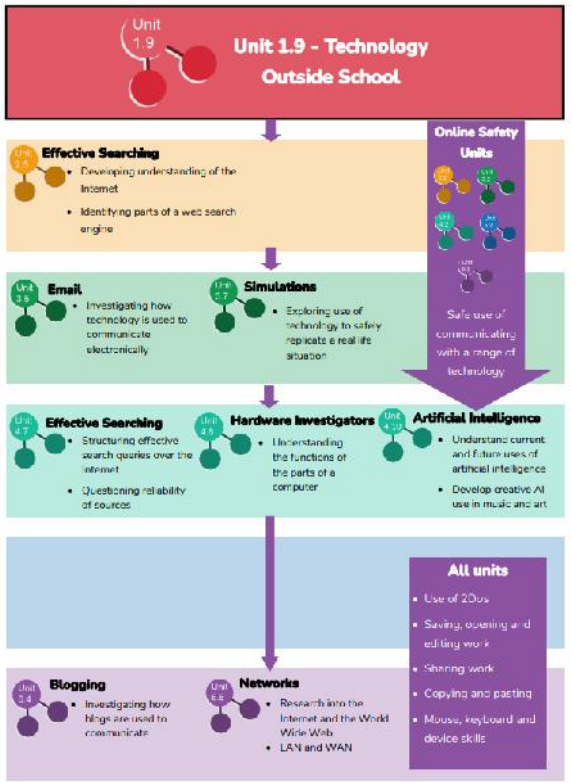
	these successfully to create their own story. <u>Lesson 5;</u> • To use the copy and paste feature to create additional pages. • To continue and complete an animated story. • To create a class display board of the story books created by the class.			
Spring 2	<u>Lesson Objectives</u>	<u>Success Criteria</u>	<u>Progression Links</u>	<u>Key Vocabulary</u>

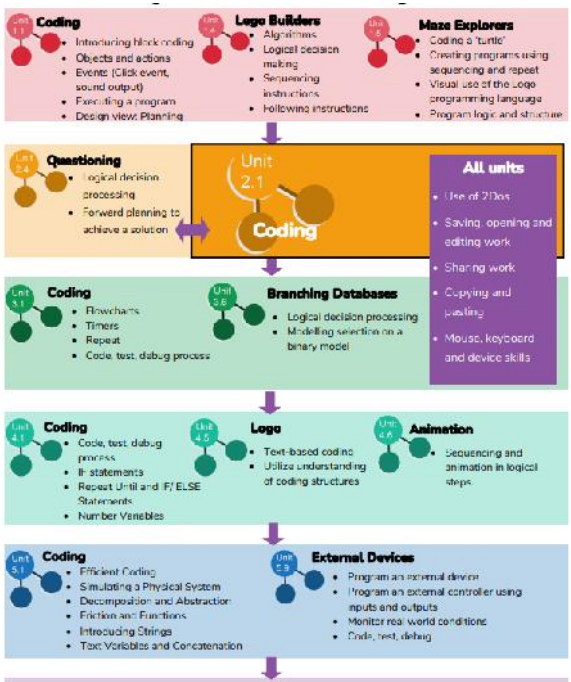
Maze Explorers	<u>Lesson 1;</u> • To understand the functionality of the basic direction keys in Challenges 1 and 2. • To be able to use the direction keys to complete the challenges successfully. <u>Lesson 2;</u> • To understand the functionality of the basic direction keys in Challenges 3 and 4. • To understand how to create and debug a set of instructions (algorithm). <u>Lesson 3;</u> • To use the additional direction keys as part of their algorithm. • To understand how to change and extend the algorithm list. • To create a longer algorithm for an activity. <u>Lesson 4;</u> • To provide an opportunity for the children to set challenges for each other.	<u>Lesson 1;</u> • Children know how to use the direction keys in 2Go to move forwards, backwards, left and right. • Children know how to add a unit of measurement to the direction in 2Go Challenge 2. • Children know how to undo their last move. • Children know how to move their character back to the starting point. <u>Lesson 2;</u> • Children can use diagonal direction keys to move the characters in the right direction. • Children know how to create a simple algorithm. • Children know how to debug their algorithm. <u>Lesson 3;</u> • Children can use the additional direction keys to create a new algorithm. • Children can challenge themselves by using the longer algorithm to complete challenges. <u>Lesson 4;</u> • Children can change the background images in their chosen challenge and save their new challenge.		• algorithm • challenge • command • direction • instruction • left and right • route • undo • unit

	• To provide an opportunity for the teacher to add these challenges to a display board for the class to try.	• Children have tried each other's challenges.		
Summer 1 Coding	**Lesson Objectives** Lesson 1; • To understand what instructions are. • To predict what will happen when instructions are followed. • To understand that computer programs work by	**Success Criteria** Lesson 1; • Children can give and follow instructions. • Children can draw symbols to represent instructions. • Children can arrange code blocks to create a set of instructions.	**Progression Links** 	**Key Vocabulary** • action • code • event • algorithm • command • execute • background • debug

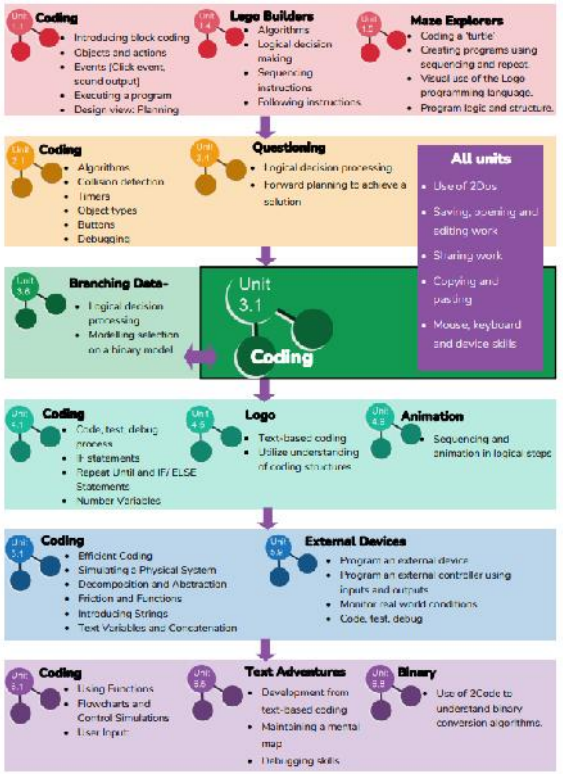
	following instructions called code. Lesson 2; • To use code to make a computer program. • To understand what objects and actions are. Lesson 3; • To understand what an event is. • To use an event to control an object. Lesson 4; • To understand what an event is. • To begin to understand how code executes when a program is run. Lesson 5; • To understand what backgrounds and objects are. • To understand how to use the scale attribute (property). Lesson 6; • To plan a computer program.	Lesson 2; • Children can create a program using code blocks. • Children can use object and action code blocks. Lesson 3; • Children can create a simple program using code blocks. • Children can use event, object and action code blocks. Lesson 4; • Children can create a simple program using code blocks. • Children can use event, object and action code blocks. • Children can notice when their code executes when their program is run. Lesson 5; • Children can edit a scene by adding, deleting and moving objects. • Children can change the size of objects using the attributes (properties) table. Lesson 6; • Children can create a design plan for their Free Code Scene program. • Children can use code to make the program they have designed work.		• input

	• To make a computer program.			
Summer 2 Spreadsheets	<u>Lesson Objectives</u>	<u>Success Criteria</u>	<u>Progression Links</u>	<u>Key Vocabulary</u>
	<u>Lesson 1;</u> • To understand what a spreadsheet looks like. • To be able to navigate around a spread sheet and enter data. • To learn new vocabulary related to spreadsheets. <u>Lesson 2;</u> • To add clipart images to a spreadsheet. • To use the 'move cell' and 'lock' tools.	<u>Lesson 1;</u> • Children can navigate around a spreadsheet. • Children can explain what rows and columns are. • Children can save and open sheets. • Children can enter data into cells. <u>Lesson 2;</u> • Children can open the Image toolbox and find and add clipart. • Children can use the 'move cell' tool so that images can be dragged around the spreadsheet.		• button • calculation • cell • clipart • column • count tool • data • delete • image • lock cell • move cell • row • speak tool

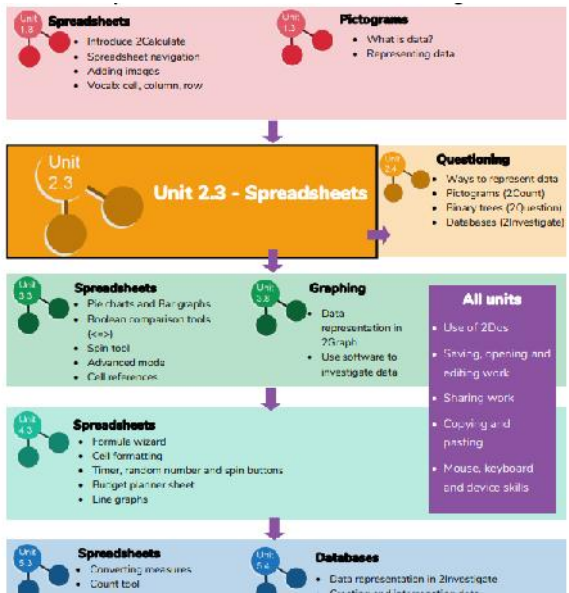
T Technology Outside of School	<u>Lesson 3;</u> • To use the 'speak' and 'count' tools in 2Calculate to count items. <u>Lesson 1;</u> • To find and understand examples of where technology is used in the local community. <u>Lesson 2;</u> • To record examples of technology outside school.	• Children can use the 'lock' tool to prevent changes to cells. <u>Lesson 3;</u> • Children can give images a value that the spreadsheet can use to count them. • Children can add the count tool to count items. • Children can add the speak tool so that the items are counted out loud. • Children can use a spreadsheet to help work out a fair way to share items (Extension) <u>Lesson 1;</u> • Children understand what is meant by 'technology'. • Children have considered types of technology used in school and out of school. <u>Lesson 2;</u> • Children have recorded 4 examples of where technology is used away from school.		• spreadsheet • value • computer • technology

Year 2/3				
Autumn 1 Year 2 Coding	Lesson Objectives Lesson 1; • To understand what an algorithm is. • To create a computer program using an algorithm. Lesson 2; • To create a program using a given design. • To understand the collision detection event. Lesson 3;	Success Criteria Lesson 1; • Children can explain that an algorithm is a set of instructions. • Children can describe the algorithms they created. • Children can explain that for the computer to make something happen, it needs to follow clear instructions. Lesson 2; • Children can plan an algorithm that includes collision detection.	Progression Links 	Key Vocabulary • action • algorithm • background • bug • button • click events • collision detector • command • debug • event • execute

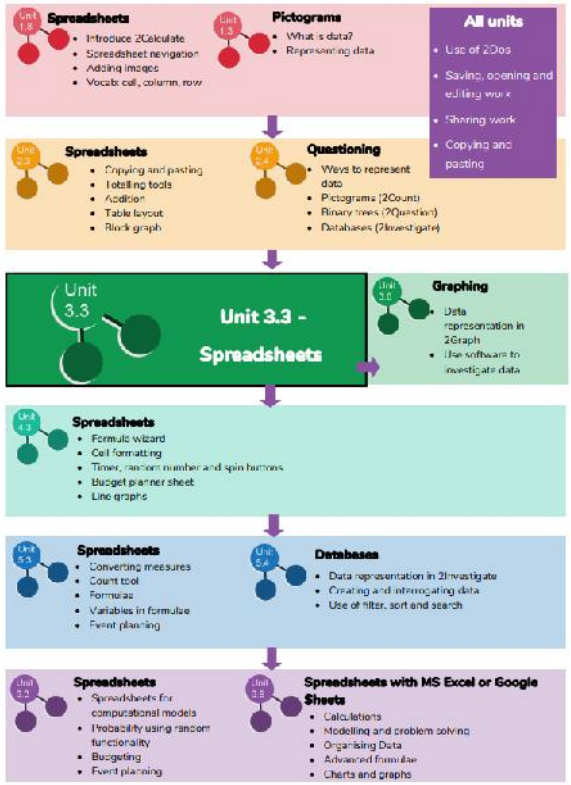
	• To understand that algorithms follow a sequence. • To design an algorithm that follows a timed sequence. <u>Lesson 4;</u> • To understand that different objects have different attributes (properties). • To understand what different events do in code. <u>Lesson 5;</u> • To create a program using a given design. • To understand the function of buttons in a program. <u>Lesson 6;</u> • To know what debugging means. • To understand the need to test and debug a program repeatedly. • To debug simple programs.	• Children can create a program using collision detection. • Children read blocks of code and predict what will happen when it is run. <u>Lesson 3;</u> • Children can create a program that uses a timer-after command. • Children can explain what the timer-after command does in their program. • Children can predict what will happen in a program that includes a timer-after command. <u>Lesson 4;</u> • Children can create a computer program that includes different object types. • Children can modify the attributes (properties) of an object. • Children can use different events in their program to make objects move. <u>Lesson 5;</u> • Children can create a computer program that includes a button object. • Children can explain what a button does in their program. • Children can modify the attributes (properties) of a button to fit their program design. <u>Lesson 6;</u>		

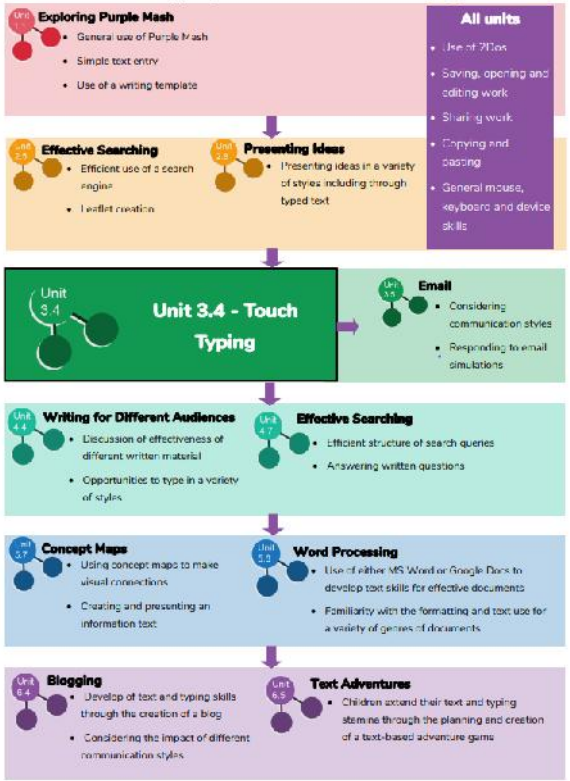
<u>Year 3</u> Coding	<u>Lesson 1;</u> • To review previous coding knowledge. • To understand what a flowchart is and how flowcharts are used in computer programming. <u>Lesson 2;</u> • To understand that there are different types of timers. • To be able to select the right type of timer for a purpose. <u>Lesson 3;</u> • To understand how to use the repeat command. <u>Lesson 4;</u> • To use coding knowledge to create a range of programs. • To understand the importance of nesting.	• Children can explain what debug (debugging) means. • Children can use a design document to start debugging a program. • Children can debug simple programs. <u>Lesson 1;</u> • Children can read and explain a flowchart • Children can use a flowchart to create a computer program. • Children can create a computer program that uses click events and timers. <u>Lesson 2;</u> • Children can create a program that uses a timer-after command • Children can create a program that uses a timer-every command • Children understand there can be different ways to solve a problem. <u>Lesson 3;</u> • Children understand how the turtle object moves. • Children can use the repeat command with an object.		• action • alert • algorithm • background • bug • button • click event • code • collision detection • command • debug

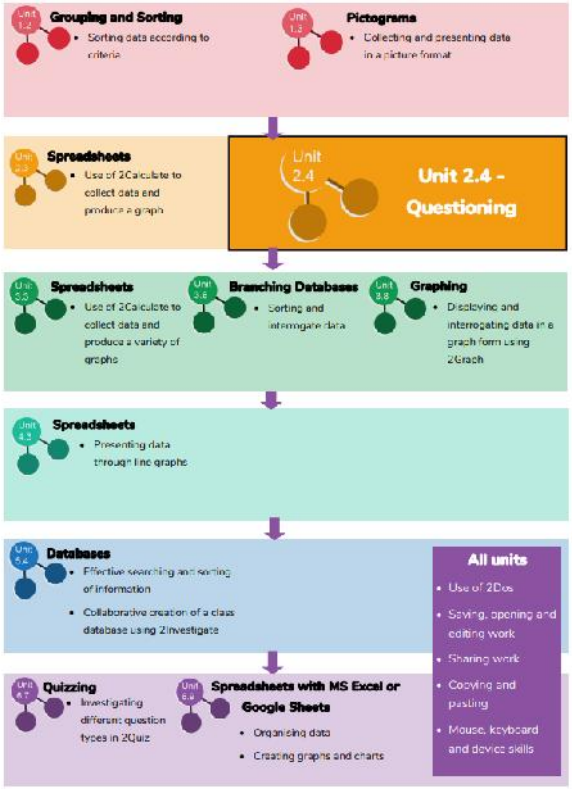
	Lesson 5&6; • To design and create an interactive scene.	• Children can create a computer program that includes use of the repeat command. Lesson 4; • Children can create computer programs using prior knowledge. • Children can run, test and debug their programs. • Children can consider nesting when debugging their programs. Lesson 5&6; • Children can use the attributes (properties) table to set the attributes of objects. • Children can plan their scene and code before they create their program. • Children can confidently make several different things happen in a program.		

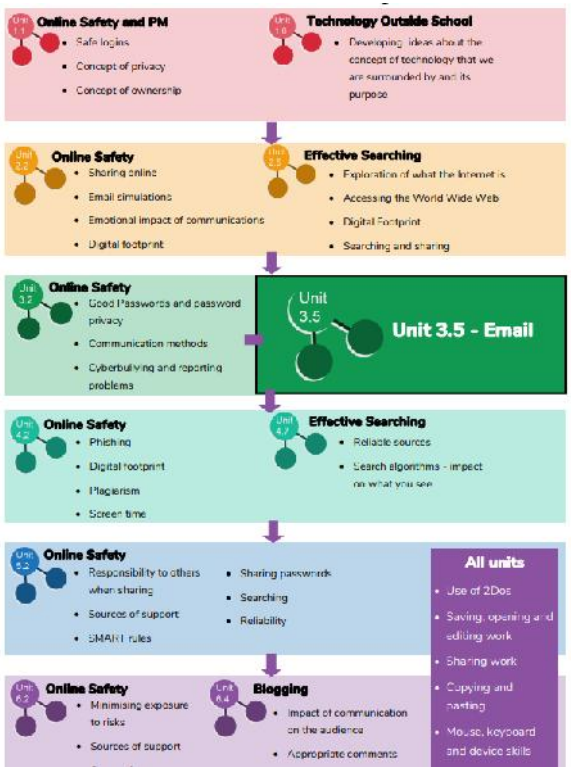
Autumn 2 Year 2 Spreadsheets	Lesson Objectives	Success Criteria	Progression Links	Key Vocabulary
	Lesson 1; • To review the work done in 2Calculate in year 1. • To revise spreadsheet related vocabulary. • To use some 2Calculate tools that were introduced in year 1. Lesson 2;	Lesson 1; • Children can explain what rows and columns are in a spreadsheet. • Children can open, save and edit a spreadsheet. • Children can add images from the image toolbox and allocate them a value. • Children can add the count tool to count items.		• block graph • cell • column • copy • count tool • data • drag • equals • equals tool • label

	• To use copying, cutting and pasting shortcuts in 2Calculate. • To use 2Calcuate totalling tools. • To use 2Calculate to solve a simple puzzle. <u>Lesson 3;</u> • To explore the capabilities of a spreadsheet in adding up coins to match the prices of objects. <u>Lesson 4;</u> • To add and edit data in a table layout. • To use the data to manually create a block graph.	<u>Lesson 2;</u> • Children can use copying, cutting and pasting to help make spreadsheets. • Children can use tools in a spreadsheet to automatically total rows and columns. • Children can use a spreadsheet to solve a mathematical puzzle. <u>Lesson 3;</u> • Children can use images in a spreadsheet. • Children can work out how much they need to pay using coins by using a spreadsheet to help calculate. <u>Lesson 4;</u> • Children can create a table of data on a spreadsheet. • Children can use the data to create a block graph manually.		• row • speak tool • table • total

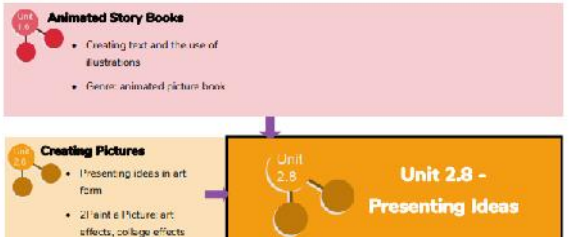
# Year 3 # Spreadsheets	Lesson 1; • To add and edit data in a table layout. • To find out how spreadsheet programs can automatically create graphs from data. Lesson 2; • To introduce the 'more than', 'less than' and 'equals' tools. • To introduce the 'spin' tool and show how it can be used to count through times tables. Lesson 3; • To introduce the Advanced mode of 2Calculate. • To learn about describing cells using their addresses.	Lesson 1; • Children can create a table of data on a spreadsheet. • Children can use a spreadsheet program to automatically create charts and graphs from data. Lesson 2; • Children can use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to calculations. • Children can use the 'spin' tool to count through times tables. Lesson 3; • Children can describe a cell location in a spreadsheet using the notation of a letter for the column followed by a number for the row. • Children can find specified locations in a spreadsheet.		• advanced mode • bar graph • equals • data • cell address • rows • columns • less than • more than • more than, less than, equal to tool • pie chart • quiz tool • spin tool • spreadsheet • table

Spring 1 Year 2/3 Touch Typing	**Lesson Objectives**	**Success Criteria**	**Progression Links**	**Key Vocabulary**
	Lesson 1; • To introduce typing terminology. • To understand the correct way to sit at the keyboard. • To learn how to use the home, top and bottom row keys. Lesson 2; • To practice and improve typing for home, bottom, and top rows. Lesson 3; • To practice the keys typed with the left hand. Lesson 4; • To practice the keys typed with the right hand.	Lesson 1; • Children understand the names of the fingers. • Children understand what is meant by the home, bottom, and top rows. • Children have developed the ability to touch type the home, bottom, and top rows. Lesson 2; • Children can use two hands to type the letters on the keyboard. Lesson 3; • Children can touch type using the left hand. Lesson 4; • Children can touch type using the right hand.		• posture • keys • space bar • typing

Spring 2 Year 2/3 Questioning	**Lesson Objectives**	**Success Criteria**	**Progression Links**	**Key Vocabulary**
	Lesson 1; • To show that the information provided on pictograms is of limited use beyond answering simple questions Lesson 2; • To use yes/no questions to separate information. Lesson 3; • To construct a binary tree to separate different items. Lesson 4; • Use 2Question (a binary tree) to answer questions Lesson 5;	Lesson 1; • Children understand that the information on pictograms cannot be used to answer more complicated questions. Lesson 2; • Children have used a range of yes/no questions to separate different items. Lesson 3; • Children understand what is meant by a binary tree. • Children have designed a binary tree to sort pictures of children. Lesson 4; • Children understand that questions are limited to 'yes' and 'no' in a binary tree. • Children understand that the user cannot use 2Question to find out		• binary tree • data • database • field • pictogram • question • record • search • sort

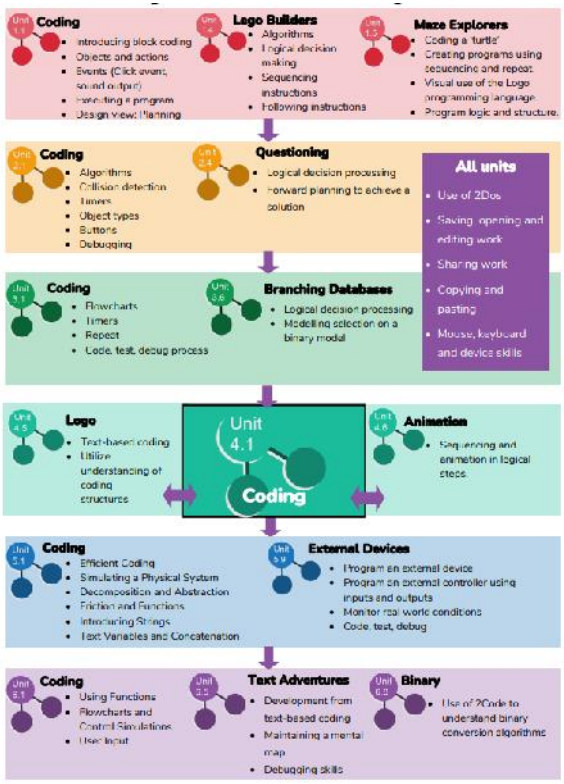
	• To use a database to answer more complex search questions. • To use the Search tool to find information.	answers to more complicated questions. • Children have matched 2Simple item pictures to names using a binary tree. <u>Lesson 5;</u> • Children understand what is meant by a database. • Children have used a database to answer simple and more complex search questions.		
Summer 1 <u>Year 2/3</u> <u>Email</u>	<u>Lesson Objectives</u> <u>Lesson 1;</u> • To think about the different methods of communication. <u>Lesson 2;</u> • To open and respond to an email. • To write an email to someone from an address book. <u>Lesson 3;</u> • To learn how to use email safely.	<u>Success Criteria</u> <u>Lesson 1;</u> • Children can list a range of different ways to communicate. • Children can use 2Connect to highlight the strengths and weaknesses of each method. • Extension: Children can order the various types of communication that have been used through history. <u>Lesson 2;</u> • Children can open an email and respond to it. • Children have sent emails to other children in the class.	<u>Progression Links</u> 	<u>Key Vocabulary</u> • address book • attachment • BCC • CC • communication • compose • email • inbox • password • personal information • save to draft • trusted contact

	<u>Lesson 4;</u> • To learn how to use email safely. <u>Lesson 5;</u> • To add an attachment to an email. <u>Lesson 6;</u> • To explore a simulated email scenario.	• Extension: Children can use the search option in the address book to find a classmate when sending an email. <u>Lesson 3;</u> • Children have written rules about how to stay safe using email. • Children have contributed to classmates' rules. • Extension: Children understand the importance of draft. <u>Lesson 4;</u> • Children have created a quiz about email safety which explores scenarios that they could come across in the future. • Extension: Children create title screens for their quizzes explaining what the quiz is about, and how to play it. <u>Lesson 5;</u> • Children can attach work to an email. • Children know what CC means and how to use it. <u>Lesson 6;</u> • Children can read and respond to a series of email communications. • Children can attach files appropriately and use email communication to explore ideas.		

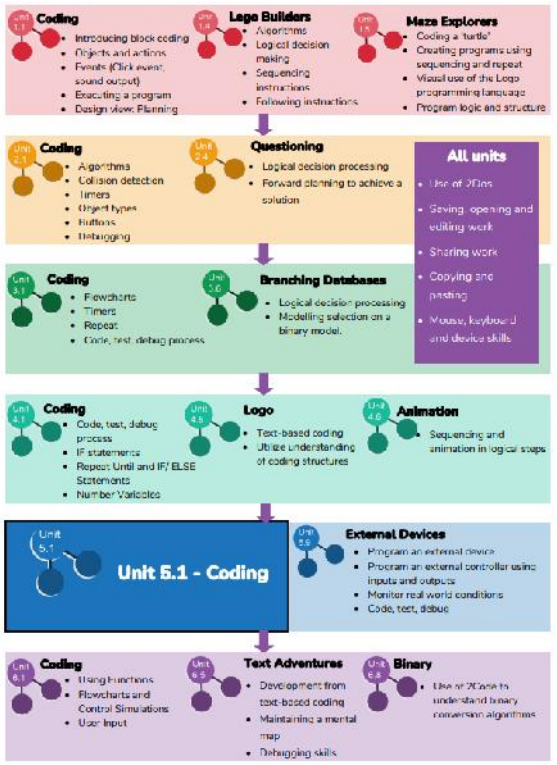
		• Extension: Children know why the terms CC and BCC are used • Children understand when to use CC or BCC		
Summer 2 Year 2/3 Presenting Ideas	Lesson Objectives	Success Criteria	Progression Links	Key Vocabulary
	<u>Lesson 1;</u> To explore how a story can be presented in different ways. <u>Lesson 2;</u> • To make a quiz about a story or class topic. <u>Lesson 3;</u> • To make a fact file on a non-fiction topic. <u>Lesson 4;</u>	<u>Lesson 1;</u> • Children have examined a traditional tale presented as a mind map, as a quiz, as an e-book and as a fact file. • Children know that digital content can be represented in many forms. <u>Lesson 2;</u> • Children have made a quiz about a story using 2Quiz. • Children can talk about their work and make improvements to solutions based on feedback received.		• E-book • fact file • fiction • mind map • node • non-fiction • presentation • quiz

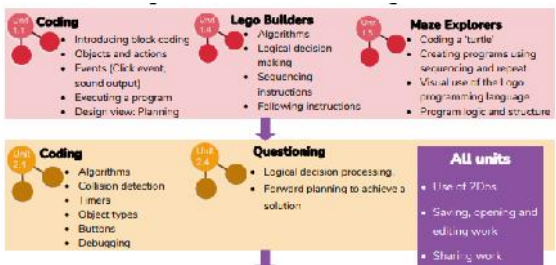
	• To make a presentation to the class.	<u>Lesson 3;</u> • Children have extracted information from a 2Connect file to make a publisher fact file on a non-fiction topic. • Children have added appropriate clipart. • Children have added an appropriate photo. • Children know that data can be structured in tables to make it useful. <u>Lesson 4;</u> • Children can use a variety of software to manipulate and present digital content and information. • Children can collect, organise and present data and information in digital content. • Children can create digital content to achieve a given goal by combining software packages.		

<u>Year 4/5/6</u>

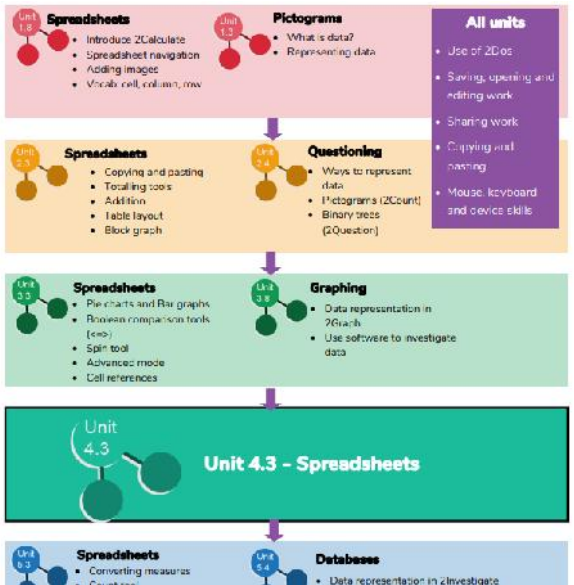
Autumn 1 Year 4 Coding	Lesson Objectives	Success Criteria	Progression Links	Key Vocabulary
	Lesson 1; • To review coding vocabulary and knowledge. • To create a simple computer program. Lesson 2; • To begin to understand selection in computer programming. • To understand how an IF statement works. Lesson 3; To understand the Repeat until command. • To begin to understand selection in computer programming. • To understand how an IF/ELSE statement works. Lesson 4; To understand the Repeat until command. • To begin to understand selection in computer programming.	Lesson 1; • Children can explore different object types in 2Code. • Children can use a background and objects to create a scene. • Children can plan an algorithm for their scene and use 2Code to program it. Lesson 2; • Children can create a program that includes an IF statement. • Children can interpret a flowchart that depicts an IF statement. Lesson 3; • Children can make use of the X and Y attributes (properties) of objects in their coding. • Children can create a program that includes an IF statement. Lesson 4; • Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes an IF/ ELSE statement.		• action • alert • algorithm • background • button • code blocks • command • debug • design • execute

	• To understand how an IF/ELSE statement works. <u>Lesson 5;</u> • To understand what a variable is in programming. • To use a number variable. <u>Lesson 6;</u> • To review vocabulary and concepts learnt in Year 4 Coding. • To create a playable game.	• Children can interpret a flowchart that depicts an IF/ ELSE statement. <u>Lesson 5;</u> • Children can explain what a variable is in programming. • Children can create and use variables when programming. <u>Lesson 6;</u> • Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes and IF/ ELSE statement. • Children can interpret a flowchart that depicts an IF/ ELSE statement.		

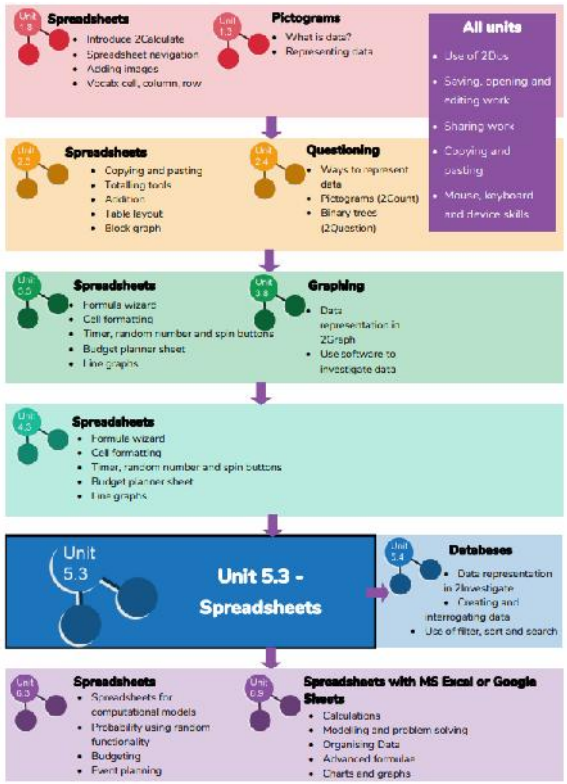
Year 5 Coding	Lesson 1; • To review existing coding knowledge. • To begin to be able to simplify code. • To create a playable game. Lesson 2; • To understand what a simulation is. • To program a simulation using 2Code. Lesson 3; • To know what decomposition and abstraction are in Computer Science. • To take a real-life situation, decompose it and think about the level of abstraction. • To use decomposition to make a plan of a real-life situation. Lesson 4; • To understand how to use friction in code.	Lesson 1; • Children can use simplified code to make their programming more efficient. • Children can use variables in their code. • Children can create a simple playable game. Lesson 2; • Children can plan an algorithm modelling the sequence of traffic lights. • Children can select the right images to reflect the simulation they are making. • Children can use their plan to program the simulation to work in 2Code. Lesson 3; • Children can make good attempts to break down their task into smaller achievable steps. • Children recognise the need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task. Lesson 4; • Children can create a program which represents a physical system.		• abstraction • action • algorithm • concatenation • debug • decomposition • efficient • flowchart

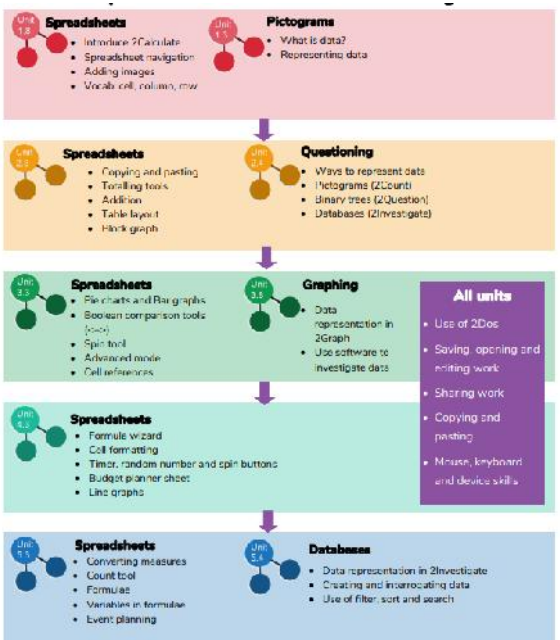
Year 6 Coding	• To begin to understand what a function is and how functions work in code. <u>Lesson 5;</u> • To understand what the different variable types are and how they are used differently. • To understand how to create a string. <u>Lesson 6;</u> • To begin to explore text variables when coding. • To understand what concatenation is and how it works. <u>Lesson 1&2;</u> • To design a playable game with a timer and a score. • To plan and use selection and variables.	• Children can create and use functions in their code to make their programming more efficient. <u>Lesson 5;</u> • Children can create and use strings in programming. • Children can set/change variable values appropriately. • Children know some ways that text variables can be used in coding. Lesson 6; • Children can create a string and use it in their program. • Children can use strings to produce a range of outputs in their program. <u>Lesson 1&2;</u> • Children can plan a program which includes a timer and a score. • Children can follow their plans to create a program.		• action

	• To understand how the launch command works. <u>Lesson 3;</u> • To use functions and understand why they are useful. • To understand how functions are created and called. <u>Lesson 4;</u> • To use flowcharts to test and debug a program. • To create a simulation of a room in which devices can be controlled. <u>Lesson 5;</u> • To understand the different options of generating user input in 2Code. • To understand how user input can be used in a program. <u>Lesson 6;</u> • To understand how 2Code can be used to make a text-based adventure game.	• Children can debug when things do not run as expected. <u>Lesson 3;</u> • Children can create a program that makes use of functions. • Children can create a program that uses multiple functions with the code arranged in tabs. • Children can explain how their code executes when their program is run. <u>Lesson 4;</u> • Children can follow flowcharts to create and debug code. • Children can create flowcharts for procedures. • Children can be creative with the way they code to generate novel visual effects. <u>Lesson 5;</u> • Children can code programs that take text input from the user and use this in the program. • Children can attribute variables to user input. • Children are aware of the need to code for all possibilities when using user input. <u>Lesson 6;</u>		• algorithm • command • co-ordinates • event • decomposition • execute/run • event • debug • flowchart

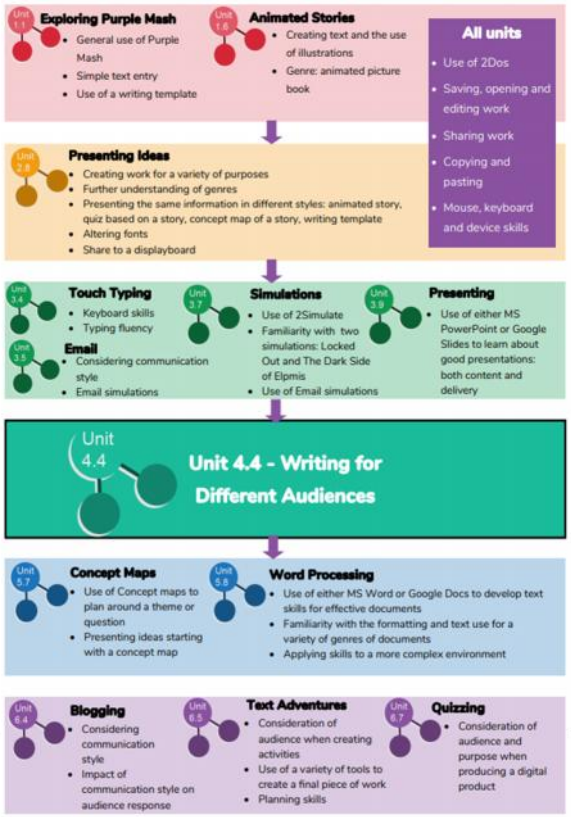
		• Children can follow through the code of how a text adventure can be programmed in 2Code. • Children can design their own text-based adventure game based on one they have played. • Children can adapt an existing text adventure so it reflects their own ideas.		
Autumn 2 Year 4 Spreadsheets	<u>Lesson Objectives</u> <u>Lesson 1;</u> • To explore how the numbers entered into cells can be set to either currency or decimal. • To explore the use of the display of decimal places. • To find out how to add formulae to a cell. <u>Lesson 2;</u>	<u>Success Criteria</u> <u>Lesson 1;</u> • Children can use the number formatting tools within 2Calculate to appropriately format numbers. • Children can add a formula to a cell to automatically make a calculation in that cell. <u>Lesson 2;</u> • Children can use the timer, random number and spin button tools.	<u>Progression Links</u> 	<u>Key Vocabulary</u> • average • spreadsheet • formula • column • budget • chart

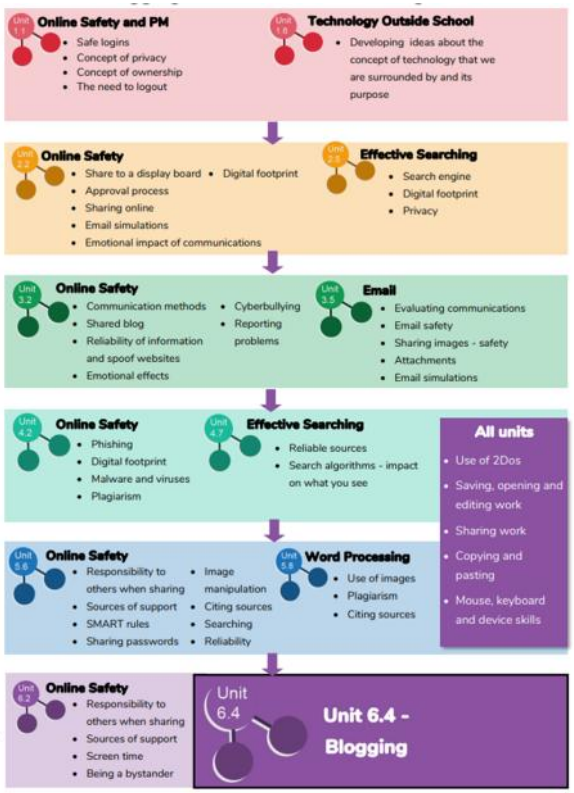
	• To explore how tools can be combined to use 2Calculate to make number games. • To explore the use of the timer, random number and spin button tools. <u>Lesson 3;</u> • To use the line graphing tool in 2Calculate with appropriate data. • To interpret a line graph to estimate values between data readings. <u>Lesson 4;</u> • To use the currency formatting tool in 2Calculate. • To use 2Calculate to create a model of a real-life situation. <u>Lesson 5;</u> • To use the functions of allocating value to images in 2Calculate to make a resource to teach place value.	• Children can combine tools to make fun ways to explore number. <u>Lesson 3;</u> • Children can use a series of data in a spreadsheet to create a line graph. • Children can use a line graph to find out when the temperature in the playground will reach 20°C. <u>Lesson 4;</u> • Children can make practical use of a spreadsheet to help them plan actions. • Children can use the currency formatting in 2Calculate. <u>Lesson 5;</u> • Children can allocate values to images and use these to explore place value. • Children can use a spreadsheet made in 2Calculate to check their understanding of a mathematical concept.		

Year 5 Spreadsheets	<u>Lesson 1;</u> • To use formulae within a spreadsheet to convert measurements of length and distance. <u>Lesson 2;</u> • To use the count tool to answer hypotheses about common letters in use. <u>Lesson 3;</u> • To use a spreadsheet to model a real-life problem.	<u>Lesson 1;</u> • Children can create a formula in a spreadsheet to convert m to cm. • Children can apply this to creating a spreadsheet that converts miles to km and vice versa. <u>Lesson 2;</u> • Children can use a spreadsheet to work out which letters appear most often. • Children can use the 'how many' tool. <u>Lesson 3;</u> • Children can use a spreadsheet to work out the area and perimeter of rectangles.		• rows • spreadsheet • columns • data • format • formula • advance mode • format • formula bar • formula wizard • 'How Many?' Tool

	• To use formulae to calculate area and perimeter of shapes. <u>Lesson 4;</u> • To create formulae that use text variables. <u>Lesson 5;</u> • To use a spreadsheet to help plan a school cake sale.	• Children can use these calculations to solve a real-life problem. <u>Lesson 4;</u> • Children can create simple formulae that use different variables. • Children can create a formula that will work out how many days there are in x number of weeks or years. <u>Lesson 5;</u> • Children can use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied.		• totalling tool • variable
<u>Year 6</u> <u>Spreadsheets</u>	<u>Lesson 1;</u> • To use a spreadsheet to investigate the probability of the results of throwing many dice. <u>Lesson 2;</u> • To use a spreadsheet to calculate the discount and final prices in a sale. Create a formula to help work out the prices of items in the sale.	<u>Lesson 1;</u> • To use a spreadsheet to investigate the probability of the results of throwing many dice. • Children can create a spreadsheet to answer a mathematical question relating to probability. • Children can take copy and paste shortcuts. • Children can problem solve using the count tool.		• rows • data • spreadsheet • columns • formula

	Lesson 3; • To use a spreadsheet to plan how to spend pocket money and the effect of saving money. Lesson 4; • To use a spreadsheet to plan a school charity day to maximise the money donated to charity.	Lesson 2; • Children can create a machine to help work out the price of different items in a sale. • Children can use the formula wizard to create formulae. • Children can use a spreadsheet to solve a problem. Lesson 3; • Children can use a spreadsheet to model a real-life situation and come up with solutions. • Children can make practical use of a spreadsheet to help plan actions. Lesson 4&5; • Children can use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life.		

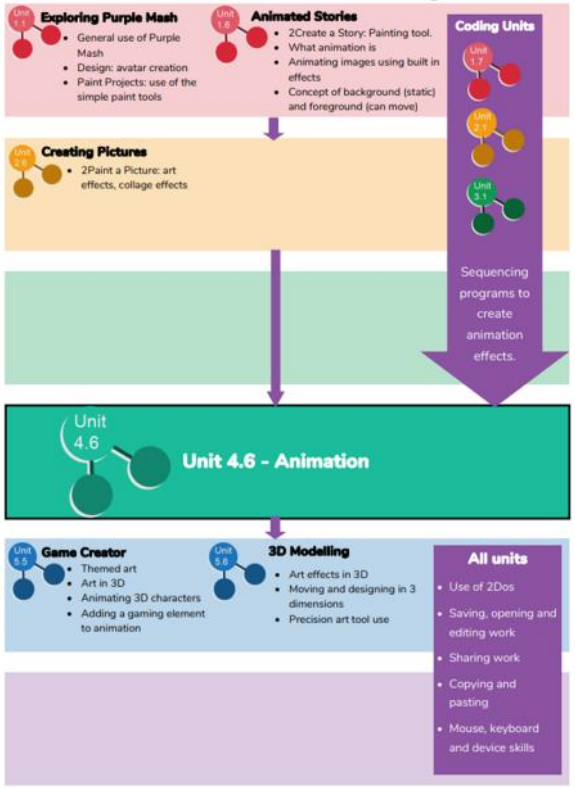
Spring 1 Year 4/5 Writing for different audiences	**Lesson Objectives** Lesson 1; • To explore how font size and style can affect the impact of a text. Lesson 2&3; • To use a simulated scenario to produce a news report. Lesson 4&5; • To use a simulated scenario to write for a community campaign.	**Success Criteria** Lesson 1; • Children can look at and discuss a variety of written material where the font size and type are tailored to the purpose of the text. • Children can use text formatting to make a piece of writing fit for its audience and purpose. Lesson 2&3; • Children can role-play the job of a journalist in a newsroom. • Children can interpret a variety of incoming communications and use these to build up the details of a story. • Children can use the incoming information to write their own newspaper report. Lesson 4 &5;	**Progression Links** 	**Key Vocabulary** • campaign • format • font • genre • opinion • reporter • viewpoint

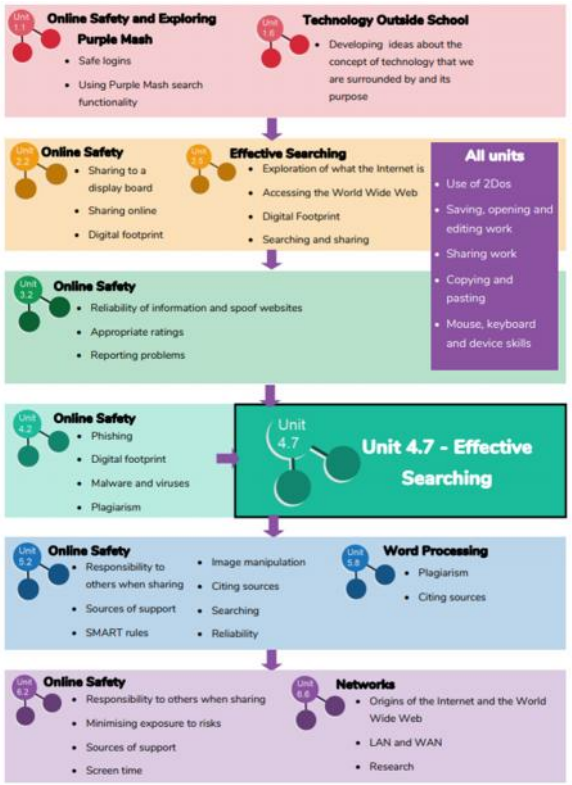
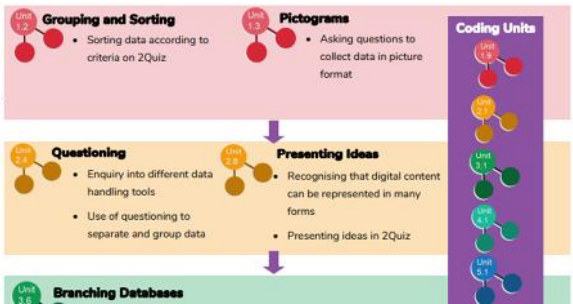
Year 6 Blogging	Lesson 1; • To identify the purpose of writing a blog. • To identify the features of successful blog writing. Lesson 2; • To plan the theme and content for a blog. Lesson 3; • To understand how to write a blog and a blog post. • To consider the effect upon the audience of changing the visual properties of the blog. • To understand how to	• Children can use 2Connect to mind-map ideas for a community campaign. • Children can use these ideas to write a persuasive letter or poster as part of the campaign. • Children can assess their texts using criteria to judge their suitability for the intended audience. Lesson 1; • Children understand how a blog can be used as an informative text. • Children understand the key features of a blog. Lesson 2; • Children can work collaboratively to plan a blog. Lesson 3; • Children can create a blog or blog post with a specific purpose. • Children understand that the way in which information is presented has an impact upon the audience. Lesson 4; • Children can post comments and blog posts to an existing class blog.		• approval • archive • blog • blog post • collaborative • commenting • vlog

	contribute to an existing blog. Lesson 4; • To understand the importance of commenting on blogs. • To peer-assess blogs against the agreed success criteria. • To understand how and why blog posts and comments are approved by the teacher.	• Children understand the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying. • Children can assess the effectiveness and impact of a blog. • Children understand that content included in their blog carefully considers the end user.		
Spring 2 Year 4/5 Databases	**Lesson Objectives**	**Success Criteria**	**Progression Links**	**Key Vocabulary**
	Lesson 1; • To learn how to search for information in a database. Lesson 2; • To contribute to a class database. Lesson 3&4; • To create a database around a chosen topic.	Lesson 1; • Children understand the different ways to search a database. • Children can search a database to answer questions correctly. Lesson 2; • Children can design an avatar for a class database. • Children can successfully enter information into a class database.		• arrange • avatar • chart • collaborative • data • database • field • group • record • database report • search • sort

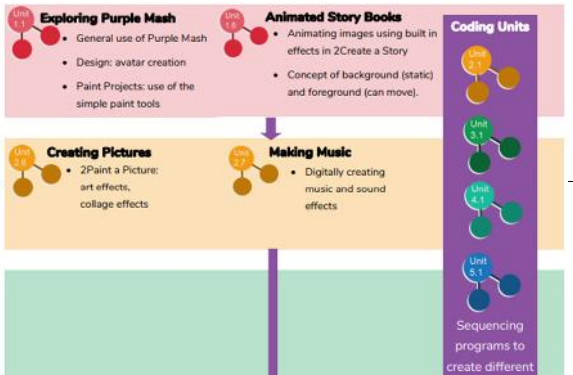
		Lesson 3&4; • Children can create their own database on a chosen topic. • Children can add records to their database. • Children know what a database field is and can correctly add field information. • Children understand how to word questions so that they can be effectively answered using a search of their database.		• statistics
Year 6 Text Adventure	Lesson 1; • To find out what a text-based adventure game is and to explore an example made in 2Create a Story. • To use 2Connect to plan a 'Choose your own Adventure' type story. Lesson 2;	Lesson 1; • Children can describe what a text adventure is. • Children can map out a story-based text adventure. • Children can use 2Connect to record their ideas. • Extension: Children can turn a simple story with 2 or 3 levels of decision making into a logical design. Lesson 2;		• text-based adventure • debug • sprite • selection • function • flow of control • step through

	• To use 2Connect plans for a story adventure to make the adventure using 2Create a Story. <u>Lesson 3;</u> • To read and understand given code for a text adventure game. <u>Lesson 4;</u> • To debug a text adventure. • To independently design and implement improvements to a text adventure game.	• Children can use the full functionality of 2Create a Story Adventure mode to create, test and debug using their plan. • Children can split their adventure-game design into appropriate sections to facilitate creating it. <u>Lesson 3;</u> • Children can explain the features and purpose of code within a given text adventure. • Children are able to step through each line of code and follow the flow of execution. <u>Lesson 4;</u> • Children can make logical attempts to debug more complex code involving a combination of functions, variables and a loop. • Children can suggest and implement ideas to further develop the program.		

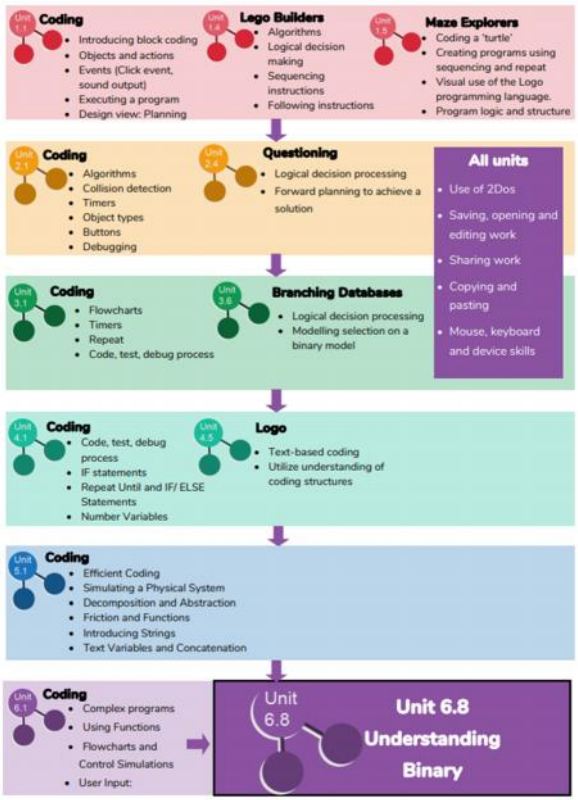
Summer 1	Lesson Objectives	Success Criteria	Progression Links	Key Vocabulary
Year 4/5 Animation	Lesson 1; • To decide what makes a good, animated film or cartoon and discuss favourite animations. • To learn how animations are created by hand. • To find out how 2Animate animations can be created in a similar way using technology. Lesson 2; • To learn about onion skinning in animation. • To add backgrounds and sounds to animations. Lesson 3; • Introducing 'stop motion' animation. • To share animation the class blog.	Lesson 1; • Children have put together a simple animation using paper to create a flick book. • Children understand animation frames. • Children have made a simple animation using 2Animate. Lesson 2; • Children know what the Onion Skin tool does in animation. • Children can use the Onion Skin tool to create an animated image. • Children can use backgrounds and sounds to make more complex and imaginative animations. Lesson 3; • Children know what 'stop motion' animation is and how it is created. • Children have used ideas from existing 'stop motion' films to recreate their own animation. • Children have shared their animations and commented on each other's work using display boards and blogs in Purple Mash.		• animation • frames per second • frame • onion skinning • pause • stop motion

Year 4/5 Effective Searching	<u>Lesson 1;</u> • To locate information on the search results page. <u>Lesson 2;</u> • To use search effectively to find out information. <u>Lesson 3;</u> • To assess whether an information source is true and reliable. <u>Lesson 1;</u>	<u>Lesson 1;</u> • Children can structure search queries to locate specific information. <u>Lesson 2;</u> • Children have used search to answer a series of questions. • Children have written search questions for a friend to solve. <u>Lesson 3;</u> • Children can analyse the contents of a web page for clues about the credibility of the information. <u>Lesson 1;</u> • Children have used the 2DIY activities to create a picture-based quiz.	 	• balanced view • easter egg • internet • key words • reliability • results page • search engine

Year 6 Quizzing	• To create a picture-based quiz for young children. Lesson 2&3; • To learn how to use the question types within 2Quiz. Lesson 4; • To explore the grammar quizzes. Lesson 5; • To make a quiz that requires the player to search a database. Lesson 6; • To make a quiz to test your teachers or parents.	• Children have considered the audience's ability level and interests when setting the quiz. • Children have shared their quiz and responded to feedback. Lesson 2&3; • Children understand the different question types within 2Quiz. • Children have ideas about what sort of questions are best suited to the different question types. • Children have used 2Quiz to make and share a science quiz (or another subject). • Children have considered the audience's ability level and interests when setting the quiz. • Children have shared their quiz with peers. • Children have given and responded to feedback. Lesson 4; • Children have tried out the different types of grammar games. • Children have chosen an appropriate tool to make their own grammar game(s). Lesson 5; • Children have used a 2Investigate quiz to answer quiz questions.		• audience • audio • case sensitive • clone • cloze • preview • quiz

		• Children have designed their own quiz based on one of the 2Investigate example databases. <u>Lesson 6;</u> • Children have used their knowledge of quiz types to create a quiz show quiz based on a curriculum area.		
Summer 2 <u>Year 4/5</u> <u>Game Creator</u>	<u>Lesson Objectives</u> <u>Lesson 1;</u> • To Introduce the 2DIY 3D tool. • To begin planning a game.	<u>Success Criteria</u> <u>Lesson 1;</u> • Children can review and analyse a computer game. • Children can describe some of the elements that make a successful game.	<u>Progression Links</u> 	<u>Key Vocabulary</u> • animation • image • texture • computer game • instruction

	Lesson 2; • To design the game environment. Lesson 3; • To design the game quest to make it a playable game. Lesson 4; • To finish and share the game. Lesson 5; • To self and peer-evaluate.	• Children can begin the process of designing their own game. Lesson 2; • Children can design the setting for their game so that it fits with the selected theme. • Children can upload images or use the drawing tools to create the walls, floor, and roof. Lesson 3; • Children can design characters for their game. • Children can decide upon, and change, the animations and sounds that the characters make. Lesson 4; • Children can make their game more unique by selecting the appropriate options to maximise the playability. • Children can write informative instructions for their game so that other people can play it. Lesson 5; • Children can evaluate my their own and peers' games to help improve their design for the future.		• perspective • customise • interactive • evaluation • playability

Year 6 Binary	<u>Lesson 1;</u> • To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems). • To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics. <u>Lesson 2;</u> • To examine how whole numbers are used as the basis for representing all	<u>Lesson 1;</u> • Children can explain how all data in a computer is saved in the computer memory in a binary format. • Children can explain that binary uses only the integers 0 and 1. • Children can relate 0 to an 'off' switch and 1 to and 'on' switch. <u>Lesson 2;</u> • Children can count up from 0 in binary using visual aids if needed. • Children can relate bits to computer storage. <u>Lesson 3;</u> • Children can convert numbers to binary using the division by two method. • Children can check their own answers using the converter tool. <u>Lesson 4;</u> • Children can make use of a variable set to 0 or 1 to control game states.		• base 2 • bit • base 10 • digit • integer • transistor • switch

	types of data in digital systems. • To recognise that the numbers 0, 1, 2 and 3 could be represented by the patterns of two binary digits of 00, 01, 10 and 11 • To represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary. <u>Lesson 3;</u> • To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary. • To explore how division by two can be used as a technique to determine the binary representation of any whole number by collecting remainder terms.			

	Lesson 4; • To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To represent the state of an object in a game as active or inactive using the respective binary values of 1 or 0.			