Long Term Computing Planner 2021-2022

	Autumn	Spring	Summer
Early Years	**Three and Four-Year-Olds** - Personal, Social and Emotional Development Increasingly follow rules, understanding why they are important Physical Development Match their developing physical skills to tasks and activities in the setting Understanding the World Explore how things work		
	Reception - Personal, Social and Emotional Development Show resilience and perseverance in the face of a challenge Physical Development Develop their small motor skills so that they can use a range of tools competently, safely and confidently Know and talk about different factors that support their overall health and wellbeing e.g. screentime Expressive Arts and Design Explore, use and refine a variety of artistic effects to express their ideas and feelings.		
	ELG - Personal, Social and Emotional Development and Managing Self Be confident to try new activities and show independence, resilience and perseverance in the face of challenge Expressive Arts and Design and Creating with Materials Explain the reasons for rules, know right from wrong and try to behave accordingly		
Year 1	**Online safety:** • Can I log onto purple mash safely? • Can I search purple mash for resources? • Can I add pictures and text to work? • Can I save, print, open and find a new document on purple mash? • Can I show the importance of logging out when I am finished? **Grouping and sorting:**	**Lego Builders:** • Can I understand what is an instruction? • Can I understand what is an algorithm? • Can I follow and create simple instructions on the computer? • Can I organise instructions for a simple recipe? • Can I understand what debugging is? **Maze explorers:**	**Coding:** • Can I explain what is coding on a computer? • Can I build one and two step instructions? • Can I use 2code to create a simple program? • Can I use the properties table to change the look of objects? • Can I use code blocks to make characters move automatically? • Can I use the stop button to make characters stop?

	• Can I sort items using a range of criteria? • Can I use grouping activities on purple mash? **Pictograms:** • Can I show understanding that data can be represented in picture format? • Can I contribute to a class pictogram? • Can I use a pictogram to record results of an experiment?	• Can I use direction keys to complete challenges successfully? • Can I create and debug a set of instructions? • Can Ichange and create a longer algorithm for an activity? • Can I set a challenge for my friends? **Animated Storybooks:** • Can I say what an e-book is? • Can I draw a picture for my story? • Can I add animation to my story? • Can you create your own music and add it to your story? • Can you add a background to your page? • Can you add additional pages and animations to your story?	• Can I use collision detection to make objects perform actions? • Can I use sound properly? **Spreadsheets:** • Can I explain what is a spreadsheet? • Can I add an image to a spreadsheet? • Can I use a spreadsheet to count items? **Technology outside of school:** • Can I understand what technology is used in our local community? • Can I record four types of technology used outside of school?
Year 2	**Coding** • Can I understand what an algorithm is? • Can I create a computer program using simple algorithm? • Can I compare the Turtle and Character objects? • Can I use the button object? • Do I understand how use the Repeat command? • Do I understand how to use the Timer command?	**Questioning** • Can I understand that the information on pictograms cannot be used to answer more complicated questions? • Can I use a range of yes/no questions to separate different items? • Can I understand what is meant by a binary tree? • Can I design a binary tree to sort pictures of children?	**Creating Pictures** • Can I explain what is meant by impressionist art? • Can I use 2Paint a Picture to create art based upon this style? • Can I explain what pointillism is? • Can I use 2Paint a Picture to create art based upon this style? • Can I describe the main features of Piet Mondrian's work? • Can I use 2Paint a Picture to create art based upon his style?

	• Do I know what debugging means? • Do I understand the need to test and debug a program repeatedly? • Can I debug simple programs? • Can I create programs using different kinds of objects whose behaviours are limited to specific actions? • Can I predict what the objects will do in other programs, based on your knowledge of what the object is capable of? • Can I discuss how logic helped me understand that I could only predict specific actions, as that is what the objects were limited to? • Can I use all the coding knowledge, you have learned throughout your programming lessons to create a more complex program that tells a story? **Online Safety** • Can I know how to refine searches using the Search tool? • Can I know how to share work electronically using the display boards? • Can I use digital technology to share work on Purple Mash to communicate and connect with others locally? • Can I have some knowledge and understanding about sharing more globally on the Internet? • Can I understand how 2Repond can teach about how to use email?	• Can I understand that questions are limited to 'yes' and 'no' in a binary tree? • Can I understand that the user cannot use 2Question to find out answers to more complicated questions? • Can I match the 2Simple Avatar pictures to names using a binary tree? • Can I understand what is meant by a database? • Can I use a database to answer simple and more complex search questions? **Effective Searching** • Can I recall the meaning of key internet terms? • Can I completed a quiz about the Internet? •Can I identify the basic parts of a web search engine search page? • Can I "read" a web search results page? • Can I search for answers to a quiz on the internet? • Can I create a leaflet to consolidate my knowledge of effective Internet searching?	• Can I describe the main features of art that uses repeating patterns? • Can I use 2Paint a Picture to create art by repeating patterns in a variety of ways? • Can I combine more than one effect in 2Paint a Picture to enhance their patterns? • Can I describe surrealist art? • Can I use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart? **Making Music** • Can I understand what 2Sequence is and how it works? • Can I use the different sounds within 2Sequence to create a tune? • Can I explore how to speed up and slow down tunes? • Can I understand what happens to the tune when sounds are moved? • Can I add sounds to a tune you've already created to change it? • Can I change the volume of the background sounds? • Can I create two tunes which depict two feelings? • Can I upload and use my own sound chosen from a bank of sounds? • Can I create, upload and use my own recorded sound? • Can I create my own tune using some of the chosen sounds? **Presenting Ideas** • Can I examine a traditional tale presented as a mind map, as a quiz, as an e-book and as a fact file?

	• Can I open and send an email to a 2Respond character? • Can I discuss your own experiences and understanding of what email is used for? • Can I say what makes us feel happy and what makes us feel sad? • Can I what a digital footprint is? • Can I give examples of things that I wouldn't want to be in your digital footprint? **Spreadsheets** • Can you explain what rows and columns are in a spreadsheet? • Can you open, save and edit a spreadsheet? • Can I add images from the image toolbox and allocate them a value? • Can I add the count tool to count items? • Can I use copying a pasting to help make spreadsheets? • Can I use tools in a spreadsheet to automatically total rows and columns? • Can I use a spreadsheet to solve a mathematical puzzle? • Can I use images in a spreadsheet? • Can I work out how much I need to pay using coins by using a spreadsheet to help calculate? • Can I create a table of data on a spreadsheet? •Can I use the data to create a block graph?		• Can I know that digital content can be represented in many forms? • Can I make a quiz about a story using 2Quiz? • Can I talk about my work and make improvements to solutions based on feedback received? • Can I extract information from a 2Connect file to make a publisher fact file on a nonfiction topic? • Can I add appropriate clipart? • Can I add an appropriate photo? • Can I know that data can be structured in tables to make it useful? • Can I use a variety of software to manipulate and present digital content and information? • Can I collect, organise and present data and information in digital content? • Can I create digital content to achieve a given goal by combining software packages?
Year 3	**Coding** • Can I review coding vocabulary from KS1?	**Typing** • Can I understand some typing terminology?	Emails • Can I think about different methods of communication?

	• Can I design and write a programme that simulates a physical system? • Can I introduce selection in programming and combine a timer? • Can I understand what a variable is in programming and use this to create a timer? • Can I create a program with an object that repeats actions indefinitely and use a timer to repeat actions? • Can I understand what debugging means and why it must be done? • Can I debug simple programmes? **Online Safety** • Can I know what makes a safe password, how to keep a password safe and the consequences of giving your passwords away? • Can I understand how the internet can be used to help us to communicate effectively? • Can I understand how a blog can be used to help us communicate with a wider audience? • Can I consider if what I read on websites is always true and think about why 'spoof' sites might exist and how to check if they are accurate? • Can I learn about the meaning of age restriction symbols on digital media and devices and discuss why PEGI restrictions exist? • Can I understand where to turn for help if I see inappropriate	• Can I understand the correct way to sit at the keyboard? • Can I learn how to use the home, top and bottom row keys? • Can I practice and improve typing for home, bottom, and top rows? • Can I practice the keys typed with the left hand? • Can I practice the keys typed with the right hand? **Spreadsheets** • Can I create pie charts and bar charts? • Can I use the 'more than', 'less than' and 'equals' tools? • Can I understand some of the Advanced mode of 2Calculate and use coordinates?	• Can I open and respond to an email? Can I write an email to someone using an address book? • Can I learn how to use email safely? • Can I add an attachment to an email? • Can I explore a simulated email scenario? **Branching Databases** • Can I sort objects using just 'yes' or 'no' questions? • Can I complete a branching database using 2question? • Can I create a branching database of the pupils' choice? **Simulations** • Can I consider what simulations are? • Can I explore a simulation? • Can I analyse and evaluate a simulation? Graphing • Can I enter data into a graph and answer questions? • Can I solve an investigation and present the results in graphic form?

	content or have inappropriate contact from others?		
Year 4	**Coding** • Can I review the design, code, test, debug process? • Can I understand and use if/else statements? • Can I create a program that repeats actions? • Can I make a timer? • Can I make a control simulation? • Can I understand what decomposition and abstraction are in computer science? **Online Safety** • Can I understand how to protect myself online and understand what a digital footprint is? • Can I identify the risks and benefits of installing software including apps? • Can I understand 'plagiarism' and consider the consequences? • Can I identify the positive and negative influence of technology on health and the environment? • Can I understand the importance of balancing screen time with other parts of my life?	**Spreadsheets** • Can I use number formatting tools to format numbers and explore formatting cells? • Can I use the timer, random number and spin button tools? • Can I use a series of data in a spreadsheet to create a line graph? • Can I use a spreadsheet for budgeting? • Can I explore place value with a spreadsheet? **Writing for different audiences** • Can I explore how font size and style can affect the impact of a text? • Can I use a simulated scenario to produce a news report? • Can I use a simulated scenario to write for a community campaign? **Logo** • Can I learn the structure of the language of Logo? Can I input simple instructions? • Can I use 2logo to create letter shapes? • Can I use the repeat function in Logo to create shapes? • Can I use and build procedures in Logo?	**Animation** • Can I learn how animations are created by hand and find out how 2Animate can be created in a similar way using the computer? • Can I learn about onion skinning in animation? Can I add backgrounds and sounds to animations? • Can I understand what a 'stop motion' animation is? Can I share animation by blogging? **Effective Searching** • Can I locate information on the search results page? • Can I use search effectively to find our information? • Can I assess whether an information source is true and reliable? **Hardware Investigators** • Can I understand the different parts that make up a computer? • Can I recall the different parts that make up a computer and create a leaflet to show the function of each part?
Year 5	**Coding** • Can I use sketching to design a program and reflect upon my design. • Can I create code that imitates my design?	**Spreadsheets** • Can I create a formula in a spreadsheet to convert m to cm? • Can I apply this to creating a spreadsheet that converts miles to km and vice versa?	**3D Modelling** • Can I understand what the 2Design and Make tool is for? • Can I explore the different viewpoints in 2Design and Make whilst designing a building?

	• Can I explain how my program simulates a physical system? • Can I select the relevant features of a situation to incorporate into my simulation by using decomposition and abstraction? • Can I reflect upon the effectiveness of their simulation? • Can I explain what a variable is in programming? • Can I create a game which has a timer and score pad? • Can I use variables to control the objects in the game? • Can I can create loops using the timer and If/else statements? • Can I include buttons and objects that launch windows to websites and programs? • Can I code a program that informs others? **Online Safety** • Can I think critically about the information shared online both about myself and others and know who to tell if I am upset by something that happens online?	• Can I use a spreadsheet to work out which letters appear most often? • Can I use the 'how many' tool? • Can I use a spreadsheet to work out the area and perimeter of rectangles? • Can I use these calculations to solve a real-life problem? • Can I create simple formulae that use different variables? • Can I create a formula that will work out how many days there are in x number of weeks or years? • Can I use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied? **Databases** • Can I understand the different ways to search a database? •Can I search a database to answer questions correctly? • Can I design an avatar for a class database? • Can I successfully enter information into a class database? •Can I create my own database on a chosen topic? • Can I add records to a database? • Can I undertand what a database field is and can correctly add field information? • Can I understand how to word questions so that they can be effectively answered using a search of their database? **Game Creator**	• Can I adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form? • Can I explore how to edit the polygon 3D models to design a 3D model for a purpose? • Can I refine one of my designs to prepare it for printing? • Can I print my design as a 2D net and then create a 3D model? • Can I explore the possibilities of 3D printing? **Concept Maps** • Can I make connections between thoughts and ideas? • Can I see the importance of recording concept maps visually? • Can I understand what is meant by 'concept maps', 'stage', 'nodes' and 'connections'? • Can I create a basic concept map? • Can I use 2Connect Story Mode to create an informative text? • Can I use 2Connect collaboratively to create a concept map? • Can I use Presentation Mode to present my/their concept maps to an audience? **Word Processing (Microsft Word)** • Can I understand what a word processing tool is for? Can I add and edit images to a word document? Can I use word wrap with images and text? Can I change the look of text within a document?

	• Can I understand the ideas of what makes a good passwords? • Can I see how I can use images and digital technology to create effects not possible without technology? • Can I understand how image manipulation could be used to upset me or others even using simple, freely available tools and little specialist knowledge? • Can I cite all sources when researching and explain the importance of this? • Can I select keywords and search techniques to find relevant information and increase reliability? • Can I understand the advantages and disadvantages of different forms of communication and when it is appropriate to use each?	• Can I review and analyse a computer game? • Can I describe some of the elements that make a successful game? • Can I begin the process of designing my own game? • Can I design the setting for my game so that it fits with the selected theme? • Can I upload images or use the drawing tools to create the walls, floor, and roof? • Can I design characters for my game? • Can I decide and change, the animations and sounds that the characters make? • Can I make my game more unique by selecting the appropriate options to maximise the playability? • Can I write informative instructions for my game so that other people can play it? • Can I evaluate my own and peers' games to help improve my/their design for the future?	• Can I add features to a document to enhance its look and usability? • Can I use tables within MS Word to present information? • Can I familiarise myself with different templates?
Year 6	**Coding** • Can I design programs using their choice of objects, attributing specific actions to each using their new programming knowledge? • Can I use variables within a game to keep track of the properties of objects?	**Spreadsheets** • Can I use a spreadsheet to plan how to spend pocket money and the effect of saving money? • Can I use a spreadsheet to plan a school charity day to maximise the money donated to charity? **Blogging** • Can I identify the purpose of writing a blog?	**Text Adventures (continued from Spring term)** • Can I use the full functionality of 2Create a Story Adventure mode to create, test and debug using my plan? • Can I split my adventure-game design into appropriate sections to facilitate creating it?

	• Can I use functions and understand why they are useful in 2Code? • Can I debug a program and organise the code into tabs? • Can I organise code into functions and call functions to eliminate surplus code in the program? • Can I explore the options for getting text input from the user in 2Code? • Can I include interactivity in programming? • Can I use flowcharts to test and debug a program? • Can I create a simulation of a room in which devices can be controlled? • Can I explore how 2Code can be used to make a text-based adventure game? **Online Safety** • Can I identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g. apps accessing location? • Can I identify secure sites by looking for privacy seals of approval, e.g. https, padlock icon? • Can I identify the benefits and risks of giving personal information and device access to different software? • Can I review the meaning of a digital footprint and understand how and why people use their information and online presence to	• Can I identify the features of successful blog writing? • Can I plan the theme and content for a blog? • Do I understand how to write a blog? • Can I consider the effect upon the audience of changing the visual properties of the blog? • Do I understand the importance of regularly updating the content of a blog? • Do I understand how to contribute to an existing blog? • Do I understand how and why blog posts are approved by the teacher? • Do I understand the importance of commenting on blogs? • Can I peer-assess blogs against the agreed success criteria? **Text Adventures** • Can I find out what a text-based adventure game is and to explore an example made in 2Create a Story? • Can I use 2Connect to plan a 'Choose your own Adventure'-type story?	• Can I map out an existing text adventure? • Can I contrast a map-based game with a sequential story-based game? • Can I create their own text-based adventure based upon a map? • Can I use coding concepts of functions, two-way selection (if/else statements) and repetition in conjunction with one another to code my game? • Can I make logical attempts to debug my code when it does not work correctly? **Networks** • Do I know the difference between the World Wide Web and the internet? • Do I know about my school network and can I explain the differences between more than two network types such as: LAN, WAN, WLAN and SAN? • Can I research and find out about Tim Berners-Lee? • Can I consider some of the major changes in technology which have taken place during my lifetime and the lifetime of my teacher/another adult? **Quizzing** • Can I use the 2DIY activities to create a picture-based quiz? • Can I considered the audience's ability level and interests when setting the quiz?

	create a virtual image of themselves as a user? • Do I have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour? • Can I begin to understand how information online can persist and give away details of those who share or modify it? • Do I understand the importance of balancing game and screen time with other parts of their lives, e.g. explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health? • Can I identify the positive and negative influences of technology on health and the environment? **Spreadsheets** • Can I use a spreadsheet to investigate the probability of the results of throwing many dice? • Can I use a spreadsheet to calculate the discount and final prices in a sale? • Can I create a formula to help work out the prices of items in the sale?		• Can I share my quiz and respond to feedback? • Do I understand the different question types within 2Quiz? • Do I have ideas about what sort of questions are best suited to the different question types? • Can I use 2Quiz to make and share a science quiz? • Can I consider the audience's ability level and interests when setting the quiz? • Can I share my quiz with my peers as well as give and responded to feedback? • Can I collaborate on a class quiz? • Can I try out the different types of Text Toolkit grammar games? • Can I choose an appropriate Text Toolkit tool to make their own grammar game? • Can I use a 2Investigate quiz to answer quiz questions? • Can I design their own quiz based on one of the 2Investigate example databases? • Can I use my knowledge of quiz types to create a quiz show quiz based on a curriculum area? • Can I give and responded to feedback and in response can I edit and re-design my quizzes appropriately?