Year	Unit Number	Unit Title	Lesson	Lesson Title	Aims	Success Criteria	Vocabulary	Tools used	National Curriculum Links													Strand	Education for a Connected World	KCSIE 4C's - Content, Contact, Conduct, Commerce	Assessment Statements Statements are given for the unit as a whole - see Lesson 1 of the unit.
									1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	2.5	2.6	2.7				
1	1.1	Online Safety & Exploring Purple Mash	1	Safe Logins	• 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.	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.	Login password private home screen work area avatar icon typing	Paint Projects														IT	Online Reputation Managing online information Privacy and security Copyright & ownership Self-image and identity	Content, Conduct.	**Emerging** With support, children demonstrate an awareness of online safety using their own private usernames and passwords for Purple Mash (Unit 1.1 Lesson 1). This can be assisted by using printed login cards. Children take ownership of their work and save this in their own private space (Unit 1.1 Lesson 1). **Expected** Children demonstrate an understanding of the importance of online safety, using their own private usernames and passwords for Purple Mash (Unit 1.1 Lesson 1). Most children will be able to demonstrate an understanding of the reasons for keeping their password private including talking about the meaning of 'private information' (Lesson 1) and actively demonstrate this in lessons (Throughout all lessons in Unit 1.1). Children take ownership of their work and will be able to save their work, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later Unit 1.1 Lesson 1. Most children will be able to add their name to their picture in lesson 1. In lesson 2, most children will be able to explain that their teacher was able to connect with them online to leave a message in Purple Mash. They could contribute to the class discussion relating this to other forms of digital communication. Most children will be able to give a simple explanation of the way to word comments online when given the example of their teacher commenting upon their work. Throughout this unit most children will be able to contribute their ideas about communicating appropriately and relate online and off-line appropriate behaviour. Most children will be able to open Purple Mash and use the search bar within Purple Mash to find resources (lesson 2). They can suggest appropriate words to search with to find the results that they are looking for. **Exceeding** Children demonstrate an understanding of the importance of online safety using their own private usernames and passwords for Purple Mash. Children understand the importance of keeping information, such as their usernames and passwords private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space. Children demonstrating greater depth understand the principle but not the terminology of 'intellectual property' e.g., children might say 'I am saving my work, in my folder because I have created it and it belongs to me'.
1	1.1	Online Safety & Exploring Purple Mash	2	My Work Area	• 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. • To learn how to search Purple Mash to find resources.	• 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.	alert notification communication device search filter shared folders	2Connect														IT	Online Reputation Managing online information Privacy and security Copyright & ownership Self-image and identity	Content, Conduct. Contact.	
1	1.1	Online Safety & Exploring Purple Mash	3	Purple Mash Topics	• 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.	• 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	Topic Area writing template textbox toolbar menu	Writing template (2Publish)														IT	Online Reputation Managing online information Privacy and security Copyright & ownership Self-image and identity	Content, Conduct	
1	1.1	Online Safety & Exploring Purple Mash	4	Purple Mash Tools	• 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. • To understand the importance of logging out when they have finished.	• 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	Purple Mash Tools button	2Count 2Explore														IT	Online Reputation Managing online information Privacy and security Copyright & ownership Self-image and identity	Content, Conduct	
1	1.2	Grouping & Sorting	1	Sorting Away from the Computer	To sort items using a range of criteria.	Children can sort various items offline using a variety of criteria.	sort criteria describe more than less than equal															IT			**Emerging** With support, children can physically sort items using a limited number of given criteria (Unit 1.2 Lesson 1). Using Purple Mash, children can sort items into two clearly defined groups using given criteria (Unit 1.2 Lesson 2). **Expected** With support, children can physically sort items using a limited number of given criteria (Unit 1.2 Lesson 1). Using Purple Mash, children can sort items into two clearly defined groups using given criteria (Unit 1.2 Lesson 2). **Exceeding** Children demonstrate their depth of understanding by creating their own criteria for items against which they can physically sort, collate, edit, present, search through, re-order and re-structure and explain their reasoning (Unit 1.2 Lesson 1). Using Purple Mash, children can also sort items into Venn diagrams using given criteria (Unit 1.2 Lesson 2).
1	1.2	Grouping & Sorting	2	Sorting on the Computer	To sort items on the computer using the 'Grouping' activities in Purple Mash.	Children have used Purple Mash activities to sort various items online using a variety of criteria.	groups activities	2DIY														CS			
1	1.3	Pictograms	1	Data in Pictures	To understand that data can be represented in picture format.	Children can discuss and illustrate the transport used to travel to school. Children can contribute to the collection of class data. Children have used these illustrations to create a simple pictogram.	data pictogram visual	2Count														IT			**Emerging** With support, children can organise a limited set of data into a physical pictogram (Unit 1.3 Lesson 1) and a virtual pictogram (Unit 1.3 Lesson 2). With support, children use this data to answer given questions. Working as a group, children can create, store, retrieve and share their pictograms (Unit 1.3 Lesson 3). **Expected** Children can collate and organise class data into a physical pictogram (Unit 1.3 Lesson 1) and a virtual pictogram (Unit 1.3 Lesson 2) Children can then interrogate this data to answer given questions. Children can create, store, retrieve and share their own pictograms (Unit 1.3 Lesson 3). Most children will be able to save their pictograms, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later (Unit 1.3 Lesson 3.) Children can represent simple collected data in an appropriate pictogram by using 2Count (Unit 1.3. Lesson 3). Most children can collate data from rolling a die and record the results within 2Count. They demonstrate that they can use 2Count to group collated data into pictorial representations (Pictograms) Unit 1.3, Lesson 3).
1	1.3	Pictograms	2	Class Pictogram	To contribute to a class pictogram.	Children can contribute to a class pictogram. Children can discuss what the pictogram shows.	title	2Count														IT			
1	1.3	Pictograms	3	Recording Results	To use a pictogram to record the results of an experiment.	Children can collect data from rolling a die 20 times and recording the results. Children can represent the results as a pictogram.	collect data record results compare	2Count														IT			
1	1.4	Lego Builders	1	Following Instructions	To emphasise the importance of following instructions.	Children know that to achieve the effect they want when building something, they need to follow accurate instructions. Children know that by following the instructions correctly, they will get the correct result. Children know that an algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective.	instructions algorithm <a variety of prepositional language>															CS			**Emerging** Children understand that to achieve the effect they want when building something, they need to follow instructions. They can give another child instruction to build a simple model, but their instructions might not anticipate all possibilities. Children know that computers need instructions to operate. Children can attempt to write instructions for a simple recipe but might not include all required steps. **Expected** Children can assimilate a set of simple Lego model instructions and look at the outcomes produced from these instructions. They can state where an error has occurred on one of the models from the instructions given (Unit 1.4. Lesson 1). Children understand the effect that accuracy of the instructions has on the outcome. Children can give each other precise simple instructions and follow them to create the desired outcomes for their Lego model (Unit 1.4. Lesson1). They can give another child instruction to build a simple model, anticipating the information that the other child will need to make an accurate replica. Children can compare their digital paintings within 2Paint and show an understanding as to why they are different. They can consider that instructions are needed to give the pictures uniformity and as such are able to follow a set of instructions (Algorithm) to achieve this (Unit 1.4. Lesson 2). Children know that an algorithm is a set of instructions used to solve a problem or achieve an objective. Children know that an algorithm written for a computer to follow is called a program. Children can debug a very simple set of printed instructions for a recipe, the approach they use should entail breaking the instructions into
1	1.4	Lego Builders	2	Following and Creating Simple Instructions on the Computer.	To follow and create simple instructions on the computer.	Children can follow instructions in a computer program. Children can explain the effect of carrying out a task with no instructions. Children know that computers need precise instructions to follow. Children know that an algorithm written for a computer to follow is called a program.	program machine computer	Paint Projects														CS			
1	1.4	Lego Builders	3	To consider how the order of instructions affects the result.	To consider how the order of instructions affects the result.	Children understand how the order in which the steps of a recipe are presented affects the outcome. Children can organise instructions for a simple recipe. Children know that correcting errors in an algorithm or program is called	recipe debugging code sequence	2Quiz														CS			
1	1.5	Maze Explorers	1	Challenges 1 and 2	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.	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.	direction forwards backwards left right keys challenge undo reset	2Go														CS			**Emerging** Children can use the buttons to move their character purposefully. They move one step at a time towards the goal rather than anticipating several steps. In (Unit 1.5 Lesson 2), they needed support with challenges 4 and 5 which require anticipating several steps. Children can tackle challenges 4-6 with support, though they might not complete all challenges. They are starting to be able to work out why their program doesn't work as they expect and know that it is due to the instructions which they are inputting rather than a fault with the computer understanding the instructions. With support, children can explain the possible ways to make their turtle move. When looking at a program they can 'read' the code one line at a time but might not be able to envision the bigger picture of the overall effect of the program. When presented with an example from challenges 4-6, they will struggle to work out where the turtle will end up at the end of the program but will know that it will move. **Expected** Children can use the buttons to move their character purposefully. They can plan their moves several steps at a time towards the goal rather than one step at a time. In (Unit 1.5 Lessons 2 & 3), they were able to complete challenges 4 and 5 which require anticipating several steps. In (Unit 1.5 Lessons 2 & 3), children can complete challenges 4 and 5 which require anticipating several steps to build a program. They know that any unexpected outcome is due to the code that they have created and make logical attempts to try to fix this code rather than attributing it to a fault with the computer understanding the instructions. Children can explain the possible ways to make their turtle move in the different levels of 2Go. When looking at a program they can 'read' the code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. When presented with an example from challenges 4-6, they can sometimes work out where the turtle will end up at the end of the program and when they are incorrect, they will make good attempts to work out why. Most children will be able to save their 2go maze files, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later Unit 1.5 Lesson 4. Using 2Go, children can use simple direction keys in conjunction with a number pad (add a unit of measurement) to move an on-screen character to specific locations on a screen. They demonstrate that their sequence of buttons relates to their thinking of how to solve a problem of getting character from point A to point B (Unit 1.5. Lesson 1). As children move through this unit, they demonstrate an ability to successfully use diagonal direction keys combined with number pad to refine their solution for solving a problem (Unit 1.5. Lessons 2 to 3). Most children can make a screen character 'sprite' navigate to a specific place using 2Go. Using strategies such as drawing the route with their finger, counting squares with a grid and testing how many squares each command moves the character, the children have broken down a problem to solve a solution (Unit 1.5. Lesson 1). Children can use the 'list' feature in 2Go to generate an algorithm to solve a given problem. They test their instructions until they finally make an algorithm which works (Unit 1.5. Lesson 2). Their skill of breaking down a problem to solve it is evident in their ability to create increasingly longer and more complex algorithms, including number of units moved and diagonal controls (Unit 1.5. Lessons 3 & 4). Most children can change an algorithm to create a different outcome when using 2Go. Their skill at debugging an algorithm and then changing it to perform an intended outcome is secure. Children use alternative algorithms to achieve the same outcomes, beginning to understand refinement of instruction (Unit 1.5. Lesson 3). **Exceding** Children choose to plan their moves several steps at a time towards the goal even reaching the goal in one 'run' of the program rather than one step at a time.
1	1.5	Maze Explorers	2	Challenges 3 and 4	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).	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.	algorithm debug	2Go														CS			
1	1.5	Maze Explorers	3	Challenges 5 and 6	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.	Children can use the additional direction keys to create a new algorithm. Children can challenge themselves by using the longer algorithm to complete challenges.		2Go														CS			
1	1.5	Maze Explorers	4	Setting More Challenges	To provide an opportunity for the children to set challenges for each other. To provide an opportunity for the teacher to add these challenges to a display board for the class to try.	Children can change the background images in their chosen challenge and save their new challenge. Children have tried each other's challenges.		2Go														CS			
1	1.6	Animated Story Books	1	Drawing and Creating	To understand the differences between 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.	Children know the difference between a traditional book and an e-book. Children can use the different drawing tools to create a picture on the page. Children can add text to a page.	e-book sound eraser undo redo paint tools	2Create a Story														IT			**Emerging** With support, children use the 'My Simple Story' aspect of 2Create a Story to create a simple interactive story (Unit 1.6 Lesson 1). With limited success, children can manipulate the properties of their story by changing the images, adding animations (Unit 1.6 Lesson 2) and sound (Unit 1.6 Lesson 3) as well as typing, copying and pasting pages (Unit 1.6 Lesson 5). Children are taught the importance of saving their work, overwriting saved files and retrieving their saved work (Unit 1.6 Lesson 1). **Expected** Children can use the 'My Story' aspect of 2Create a Story to create an interactive story (Unit 1.6 Lesson 1). They can manipulate the properties of their story by changing the images, adding animations (Unit 1.6 Lesson 2) and sound (Unit 1.6 Lesson 3) as well as typing, copying and pasting pages (Unit 1.6 Lesson 5). Children are taught the importance of saving their work, overwriting saved files and retrieving their saved work.
1	1.6	Animated Story Books	2	Animation	To add animation to a picture. To play the pages created so far. To save the additional changes and overwrite the file.	Children can open previously saved work. Children can add an animation to a page. Children can play the pages created.	overwrite animation play mode	2Create a Story														IT			

1	1.6	Animated Story Books	3	Sounds and More!	To add a sound effect to a picture. To add a voice recording to the picture. To add created music to the picture.	Children can add a sound to the page. Children can add voice recording to the page. Children can create music for a page.	sound effect voice recording drop-down menu category	2Create a Story													IT				Children can include their name and date within the text of their e-books. Children demonstrate their understanding by discussing e-books and by sharing their own book with others on a class displayboard. Children make valid comparisons between paper book and e-books. They can apply their knowledge of paper book when developing their e-books. Most children will be able to save their animated story files, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later Unit 1.6 Lesson 1. **Exceeding** Children can use the 'My Story' aspect of 2Create a Story to create a detailed interactive story (Unit 1.6 Lesson 1). This demonstrates their ability to combine all the aspects available within the software e.g. recording their own sounds and importing backgrounds, to enhance their narrative. Children are taught the importance of saving their work, overwriting saved files and retrieving their saved work (Unit 1.6 Lesson 1).
1	1.6	Animated Story Books	4	Making a Story	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 these successfully to create their own story.	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.	background clip-art gallery font	2Create a Story													IT				
1	1.6	Animated Story Books	5	Copy and Paste	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	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.	copy paste features	2Create a Story Display Boards													IT				
1	1.7	Coding	1	Instructions	To understand what instructions are. To predict what will happen when instructions are followed. To understand that computer programs work by following instructions called code.	Children can give and follow instructions. Children can draw symbols to represent instructions. Children can arrange code blocks to create a set of instructions.	instructions algorithm code programmer coding software code blocks object	2Code													CS				**Emerging** Children have a basic understanding that coding involves writing instructions that a computer can follow. They are developing their understanding that these instructions must be precise and carefully structured through their work making simple one and two Stage programs (for example in programs where they make an object move when clicked on). With support, children can create a simple one Stage program that achieves a specific purpose. (In Unit 1.7 Lesson 2, they can make a fish object move). With support, they can create a scene (Unit 1.7 Lesson 5) and plan to make objects move (Unit 1.7 Lesson 6). Children are beginning to understand that they can correct unexpected outcomes by changing the code and they make attempts to identify the source of bugs. With support, children can explain the possible actions of objects including movement and sound. When looking at a simple program they can 'read' the code one line at a time and predict what will happen but might not be able to envision the bigger picture of the overall effect of the program. With support, children can manipulate how their program looks using the 2Code design mode, by adding and changing objects (Unit 1.7 Lesson 5). They can create a program that controls an object. **Expected** Children can both give and receive verbal instruction to achieve a simple outcome such as getting from one point of the classroom to the other whilst avoiding obstacles. Furthermore, they can use printed block-based code to also articulate a simple set of instructions (Unit 1.7 Lesson 1). Children can apply off-screen block code to on-screen block code within 2Code (Unit 1.7 Lessons 2, 3). Children can consider a variety of factors when coding, including the way that the program is designed (Unit 1.7 Lesson 5). They can then design programs that control the look and the actions of objects. Their designs show that they have thought about the need for precise, purposeful, ordered instructions. For example, (Unit 1.7 Lesson 6), they consider the kinds of actions they know to be possible when designing their program. Children think about the program they are making with reference to the objects, the actions and the output e.g. they know that an object will get clicked on and then an object will do something in response (Unit 1.7 Lesson 6). They can then construct their code purposefully to make objects interact. Using the 2Code design mode, children can manipulate how their program looks by adding and changing objects. They can break a problem down into small chunks and then combine it to see an outcome e.g. combine two parts of code "When we click the red bubble, red bubble hides."
1	1.7	Coding	2	Objects and Actions	To use code to make a computer program. To understand what objects and actions are.	Children can create a program using code blocks. Children can use object and action code blocks.	2Do command Design View Code view debug debugging	2Code													CS				
1	1.7	Coding	3	Events	To understand what an event is. To use an event to control an object.	Children can create a simple program using code blocks. Children can use event, object and action code blocks.	event click sound when clicked	2Code													CS				
1	1.7	Coding	4	When Code Executes	To understand what an event is. To begin to understand how code executes when a program is run.	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.	execute	2Code													CS				
1	1.7	Coding	5	Setting the Scene	To understand what backgrounds and objects are. To understand how to use the scale property.	Children can edit a scene by adding, deleting and moving objects. Children can change the size of objects using the properties table.	background scale scene properties	2Code													CS				
1	1.7	Coding	6	Using a Plan	To plan a computer program. To make a computer program.	Children can create a design plan for their Free Code Scene program. Children can use code to make the program they have designed work.	plan	2Code													CS				
1	1.8	Spreadsheets	1	Introduction to Spreadsheets	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.	Children can navigate around a spreadsheet. Children can enter data into cells. Children can explain what rows and columns are. Children can save and open sheets.	spreadsheet data row column cell delete	2Calculate													IT				**Emerging** With support, children can save and open sheets (Unit 1.8 Lesson 1), enter a limited quantity of data into cells (Unit 1.8 Lesson 1), manipulate data using the 'move cell' tool (Unit 1.8 Lesson 2) and use the image toolbox to add clipart (Unit 1.8 Lesson 2). **Expected** Using the 2Calculate spreadsheet, children can save and open sheets (Unit 1.8 Lesson 1). Most Children will be able to save their 2Calculate files, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later. They can enter data into cells (Unit 1.8 Lesson 1), manipulate data using the 'move cell' tool (Unit 1.8 Lesson 2) and use the image toolbox to add clipart (Unit 1.8 Lesson 2). **Exceding** Using the 2Calculate spreadsheet, children can save and open sheets (Unit 1.8 Lesson 1), enter data into cells (Unit 1.8 Lesson 1), manipulate data using the 'move cell' tool (Unit 1.8 Lesson 2) and use the image toolbox to add clipart (Unit 1.8 Lesson 2). Children will demonstrate greater depth by explaining the data and sorting it (suggested extension).
1	1.8	Spreadsheets	2	Adding Images to a Spreadsheet and Using the Image Toolbox	To add clipart images to a spreadsheet. To use the 'move cell' and 'lock' tools.	Children can open the Image toolbox and find and add clipart. Children can use the 'lock' tool to prevent changes to cells. Children can use the 'move cell' tool so that images can be dragged around the spreadsheet.	button clip-art image move cell lock cell	2Calculate													IT				
1	1.8	Spreadsheets	3	Using the 'Speak' and 'Count' Tools in 2Calculate to Count Items.	To use the 'speak' and 'count' tools in 2Calculate to count items.	Children can give images a value that the spreadsheet can use to count them. Children can add the speak tool so that the items are counted out loud. Children can add the count tool to count items. Children can use a spreadsheet to help work out a fair way to	count tool speak tool value	2Calculate													IT				
1	1.9	Technology outside school	1	What is Technology?	To find and understand examples of where technology is used in the local community	Children understand what is meant by 'technology'. Children have considered types of technology used in school and out of school.	technology computer	Writing template (2Publish)													DL	Health, wellbeing and lifestyle			**Emerging** With support, children understand what is meant by technology and can identify a limited number of examples both in and out of school. Children record this using (Unit 1.9 Lesson 1. Worksheet 1) & (Unit 1.9 Lesson 2. Worksheet 1). **Expected** Children understand what is meant by technology and can identify a variety of examples both in and out of school. Children record this using (Unit 1.9 Lesson 1. Worksheet 1) & (Unit 1.9 Lesson 2. Worksheet 1). Children' discussion shows that they have a good understanding about the technological devices in use in their daily lives and how some of these facilitate communication of a variety of formats. Children can explain at a basic level that we should treat others politely regardless of the means of communication. Children can compare the speed and ease of technology to non-technological actions e.g., e-mail, buying an app or painting on screen. **Exceding** Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can explain why a certain technology has been chosen as a solution to a specific problem. Children record this using (Unit 1.9 Lesson 1. Worksheet 1) & (Unit
1	1.9	Technology outside school	2	Technology outside school.	To record examples of technology outside school.	Children have recorded 4 examples of where technology is used away from school.															DL	Health, wellbeing and lifestyle			
2	2.1	Coding	1	Algorithms	To understand what an algorithm is. To create a computer program using an algorithm.	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.	instruction algorithm event object action command scene background properties scale	2Code													CS				**Emerging** Children know that an algorithm is related to giving instructions. They can relate a simple one-step algorithm to the outcome of code in Free code Chimp. For example, in Lesson 1 they have been able to make a program that follows the algorithm e.g. 'when the helicopter is clicked it takes off'. With support, children can create a simple one step program that achieves a specific purpose. With support, children can identify and correct errors (Unit 2.1 Lesson 6). With support, children can identify the parts of an algorithm that control and initiate specific actions. Based on this, with support, children can predict what will happen in a program (Unit 2.1 Lesson 4). **Expected** Children can explain that an algorithm is a set of instructions to complete a task. They have turned algorithms of more than one step into code using free code Chimp. For example, in Lesson 4 and 5 they have been able to make a program that follows their algorithm e.g. 'when the animal is clicked it moves forward then turns right'. Children show an awareness of the need to be precise in their designs so that algorithms can be successfully translated into code. (Unit 2.1 Lesson 5). Children use a planning format on paper before implementing on screen within 2Code as they recognise this is the best approach for designing a solution. They can use the Design Mode within 2Code to carefully see how their planned program will look and are able to switch into Code Mode to apply movements to objects (Unit 2.1. Lesson 4). They confidently include objects, actions, events and outputs successfully within their 2Code programs. Children can talk through code which contains a timer command, explaining where this command is positioned and what will happen (Unit 2.1. Lesson 3). Children can predict program outcomes and attempt to debug. For example, (Unit 2.1 Lesson 6). Children can identify the parts of a program that respond to specific events and initiate specific actions. Based on this, children can predict and describe, using a cause and effect sentence, what will happen in a program. (Unit 2.1 Lesson 6). Children can debug their own and other's programs using design documentation to test against (Unit 2.1 Lesson 6). **Exceeding** Children can explain and give examples that an algorithm is a set of instructions to complete a specific task. They can create complex and sequential algorithms of several steps that accomplish the aim of the task that can be easily utilized to create executable code. Children show an
2	2.1	Coding	2	Collision Detection	To create a program using a given design. To understand the collision detection event.	Children can plan an algorithm that includes collision detection. Children can create a program using collision detection. Children read blocks of code and predict what will happen when it is run.	interaction collision detection event collision detection action image	2Code													CS				
2	2.1	Coding	3	Using a Timer	To understand that algorithms follow a sequence. To design an algorithm that follows a timed sequence.	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	timer interval sequence	2Code													CS				
2	2.1	Coding	4	Different Object Types	To understand that different objects have different properties. To understand what different events do in code.	Children can create a computer program that includes different objects types. Children can modify the properties of an object. Children can use different events in their program to make objects move.	properties turtle object when key event when swiped event	2Code													CS				
2	2.1	Coding	5	Buttons	To create a program using a given design. To understand the function of buttons in a program.	Children can create a computer program that includes a button object. Children can explain what a button does in their program.	button object name	2Code													CS				
2	2.1	Coding	6	'Smelly Code' Debugging	To know what debugging means. To understand the need to test and debug a program repeatedly.	Children can explain what debug (debugging) means. Children can use a design document to start debugging a program.	bug debugging	2Code													CS				
2	2.2	Online Safety	1	Searching and Sharing	To know how to refine searches using the Search tool. To know how to share work electronically using the display boards. To use digital technology to share work on Purple Mash to communicate and connect with others locally. To have some knowledge and understanding about sharing more globally on the Internet.	Children can use the search facility to refine searches on Purple Mash by year group and subject. Children can share the work they have created to a display board. Children understand that the teacher approves work before it is displayed. Children are beginning to understand how things can be shared electronically for others to see both on Purple Mash and the Internet.	search filter internet sharing display board	Writing template (2Publish)													DL	Self-image and identity Online relationships Online reputations Privacy and security	Content, Contact, Conduct	**Emerging** With support, children are beginning to understand how to use the Purple Mash search bar and know the implications of inappropriate searches (Unit 2.2 Lesson 1). With support, they can share their work using the display board (Unit 2.2 Lesson 1). Furthermore, using 2Respond activities, the children develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2). They also know how to report inappropriate content to their teacher. **Expected** Children understand how to use the Purple Mash search bar and know the implications of inappropriate searches (Unit 2.2 Lesson 1). Most children will be able to explain what a digital footprint is, that it is permanent and their online behaviour influences what it shows (lesson 3). Most children will be able to give reasons for keeping their password safe that include protecting their personal information. Most children will be able to express the good and bad sides of digital technology. In lesson 3, they can give examples of positive effects on life as well as negative. Children add their name to work but show a differentiation between full name and first name only when information is to be shared online. Most children will be able to share their work to a Display Board (lesson 1). By sharing their work using the display board, children begin to understand how things are shared electronically (Unit 2.2 Lesson 1). Most children will be able to open and respond to simulated emails in 2Email (lesson 2) Most children will be able to open and send email responses to simulated emails in 2Email (Unit 2.2 Lesson 2). Furthermore, using 2Respond activities the children develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2). They also know how to report inappropriate content to their teacher. **Exceeding** Children understand how to use the Purple Mash search bar (Unit 2.2 Lesson 1) and for greater depth can refine searches using Boolean
2	2.2	Online Safety	2	Email using 2Respond	To introduce Email as a communication tool using 2Respond simulations. To understand how we talk to others when they are not there in front of us. To open and send simple online communications in the form of email.	Children know that Email is a form of digital communication. Children understand how 2Repond can teach them how to use email. Children can open and send an email to a 2Respond character. Children have discussed their own experiences and understanding of what email is used for. Children have discussed what makes us feel happy and what makes us feel sad.	email attachment reply personal information private information	2Email													DL	Self-image and identity Online relationships Online reputations Privacy and security	Content, Contact, Conduct	
2	2.2	Online Safety	3	Digital Footprint	To understand that information put online leaves a digital footprint or trail. To begin to think critically about the information they leave online. To identify the steps that can be taken to keep personal data and hardware secure	Children can explain what a digital footprint is. Children can give examples of things that they would not want to be in their digital footprint.	digital footprint protection identifying secure	2Quiz													DL	Self-image and identity Online relationships Online reputations Privacy and security	Content, Contact, Conduct	
2	2.3	Spreadsheets	1	Reviewing the Use of Spreadsheets	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.	Children can explain what rows and columns are in a spreadsheet. Children can open, save and edit a spreadsheet. Children can include images from the image toolbox and allocate them a value. Children can use the count tool to count items.	<row column cell toolbox drag image value> count tool	2Calculate													IT				**Emerging** With support, children can open, edit and save sheets in 2Calculate (Throughout Unit 2.3). Children can enter a small set of data into cells (Throughout Unit 2.3). With support, they can allocate a value to an image (Unit 2.3 Lesson 1) and manipulate data using copying, cutting and pasting allowing them to solve puzzles (Unit 2.3 Lesson 2) - support in the form of a visual prompt may be given here to aid children in using keyboard short cuts). Children use images and can present data in a variety of ways (Unit 2.3 Lesson 4). **Expected** Using the 2Calculate spreadsheet, children can open, edit and save sheets (Throughout Unit 2.3), Children can enter data into cells (Throughout Unit 2.3). allocate a value to an image (Unit 2.3 Lesson 1) and manipulate data using copying, cutting and pasting allowing

2	2.3	Spreadsheets	2	Copying, Cutting and Pasting Totals	To use copying, cutting and pasting shortcuts in 2Calculate. To use 2Calcuate totalling tools. To use 2Calculate to solve a simple puzzle	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.	cut copy paste total	2Calculate														IT			them to solve puzzles (Unit 2.3 Lesson 2). Children use images and can present data in a variety of ways (Unit 2.3 Lesson 4). Most children will be able to create a spreadsheet which includes a graph based on simple data collected. Their planned spreadsheet and graph are likely to contain pre-compiled shared data. They can add colour and appropriate labels to their spreadsheet and graph respectively (Unit 2.3. Lesson 4). Most children will be able to produce a spreadsheet which can help them solve simple mathematical puzzles, calculate how many coins are required to pay for an amount and present data graphically. Using spreadsheets, the children can model an idea through them (Unit 2.3.). Children can utilise spreadsheets both own and pre-made to manipulate data e.g. create a manual graph from a table, produce desired calculations on numerical data e.g. simple addition calculations (Unit 2.3. Lesson 3). Children can answer questions on data e.g. the most and least popular flavours (Unit 2.3. Lesson 4). Most children will be able to use 2Calculate to record collected data into a table and use this data to create a block graph manually (Unit 2.3. Lesson 4).
2	2.3	Spreadsheets	3	Using a Spreadsheet to Add Amounts	To explore the capabilities of a spreadsheet in adding up coins to match the prices of objects	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.	price coins equals addition	2Calculate														IT			
2	2.3	Spreadsheets	4	Creating a Table and Block Graph	To add and edit data in a table layout. To use the data to manually create a block graph.	Children can create a table of data on a spreadsheet. Children can use the data to create a block graph manually.	data table block graph	2Calculate														IT			
2	2.4	Questioning	1	Using and Creating Pictograms	To show that the information provided on pictograms is of limited use beyond answering simple questions	Children understand that the information on pictograms cannot be used to answer more complicated questions.	pictogram data	2Count														IT			**Emerging** With support, children can create basic pictograms using 2Count to represent a simple data set (Unit 2.4 Lesson 1). Children may need concrete representation to understand how to organise and search for data. With support, this physical representation can then be transferred into 2Investigate and used to answer simple questions on a data set (Unit 2.4 Lesson 5). Using 2Question, children use a binary tree to sort information and can manipulate their data, answering questions relating to this (Unit 2.4 Lesson 4). With support, children can store and retrieve data throughout Unit 2.4. **Expected** Using 2Count, children can create pictograms to represent data (Unit 2.4 Lesson 1). Children demonstrate their ability to organise data using a database in 2Investigate and can run simple searches on their data set (Unit 2.4 Lesson 5). Using 2Question, children use a binary tree to sort information and can manipulate their data, answering questions relating to this (Unit 2.4 Lesson 4). Children will store and retrieve data throughout Unit 2.4. Most children will be able to design their own physical binary tree to sort pictures of children (Unit 2.4 Lesson 3). They will be able to apply this skill into using 2Question to answer questions.
2	2.4	Questioning	2	Asking Yes / No Questions	To use yes/no questions to separate information	Children have used a range of yes/no questions to separate different items.	sort avatar															IT			
2	2.4	Questioning	3	Binary Trees	To construct a binary tree to separate different items.	Children understand what is meant by a binary tree. Children have designed a binary tree to sort pictures of children or animals.	binary tree															IT			
2	2.4	Questioning	4	Using 2Question	Use 2Question (a binary tree) to answer questions	Children understand that answers are limited to 'yes' and 'no' in a binary tree. Children understand that the user cannot use 2Question to answer more complicated questions. Children have matched the 2Simple item pictures to names, using a binary tree.		2Question														IT			
2	2.4	Questioning	5	Using 2Investigate: a Non-Binary Database	To use a database to answer more complex search questions. To use the Search tool to find information.	Children understand what is meant by a database. Children have used a database to answer simple and more complex search questions.	database record field search	2Investigate														IT			
2	2.5	Effective Searching	1	Understanding the Internet and Searching	To understand the terminology associated with the Internet and searching.	Children can recall the meaning of key Internet and searching terms. Children have successfully completed a quiz about the Internet.	Internet World Wide Web network device web page browser website domain web address	Internet Browser														DL	Managing online information	Conduct (primarily)	**Emerging** With support, children can retrieve relevant digital content using a search engine. Children understand the basic terminology of internet, such as: internet, search, webpage and world wide web (Unit 2.5 Lesson 1). Furthermore, they can identify the layout points and features of a search engine (Unit 2.5 Lesson 2) such as- 'search bar', 'number of results' and 'key information'. Using this knowledge, they can attempt a simple quiz about the internet (Unit 2.5 Lesson 1). Using 2Publish+, children can create a leaflet to demonstrate what they have learned- this may demonstrate a limited understanding but is factually correct (Unit 2.5 Lesson 3). Children can apply their learning of effective searching beyond the classroom. **Expected** Children can effectively retrieve relevant, purposeful digital content using a search engine. Children understand the terminology (Unit 2.5 Lesson 1), layout and features of a search engine (Unit 2.5 Lesson 2). Using this knowledge, they can answer a quiz about the internet (Unit 2.5 Lesson 1). Children can apply their learning of effective searching beyond the classroom. In lesson 2, children can relate the creation of a digital footprint to their search history and make contributions to the class discussion about
2	2.5	Effective Searching	2	Searching the Internet	To gain a better understanding of searching the Internet.	Children can identify the basic parts of a web search engine search page. Children learnt to read a web search results page.	Digital Footprint	Internet Browser														DL	Managing online information	Conduct (primarily)	
2	2.5	Effective Searching	3	Sharing Knowledge of the Internet and Effective Searching	To create a leaflet to help someone search for information on the Internet.	Children have created a leaflet to consolidate knowledge of effective Internet searching.		Internet Browser														DL	Managing online information	Conduct (primarily)	
2	2.6	Creating Pictures	1	Introduction and Impressionism	To explore 2Paint A Picture. To look at the work of Impressionist artists and recreate them using the Impressionism template.	Children can describe the main features of impressionist art. Children can use 2Paint A Picture to create their own art based upon this style.	Art Impressionism palette	2Paint a Picture Writing Templates														IT			**Emerging** Teachers may wish to allocate tablets to children who have difficulty in controlling a mouse. With support children can create an image on 2Paint a Picture replicating an established style e.g. pointillism (Unit 2.6 Lesson 2). Children can enhance a picture using the tools within 2Paint a Picture which demonstrates their ability to manipulate a digital image (Throughout all lessons in Unit 2.6). Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash. **Expected** Using 2Paint a Picture, children can create an image replicating an established style e.g. pointillism (Unit 2.6 Lesson 2). Children can enhance a picture using the tools within 2Paint a Picture which demonstrates their ability to manipulate a digital image (Throughout all lessons in Unit 2.6). They can combine and use multiple effects & features to enhance their patterns, such as rotational effects, repeat style buttons and size slider (Unit 2.6. Lesson 4). Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash. Most children will be able to successfully create their own pieces of inspired art using 2Paint a Picture. They will be able to use a range of effects and functions, such as e-collage, in 2Paint a Picture (Unit 2.6. Lesson 4) & (Unit 2.6. Lesson 5). **Exceeding** To demonstrate greater depth, children achieve expected outcomes. In addition to this, using the eCollage (Unit 2.6 Lesson 5) tool on 2Paint a Picture, they can upload a background image of their choice and manipulate this using the tools and ability to layer images to create a
2	2.6	Creating Pictures	2	Pointillist Art	To look at the work of pointillist artists such as Seurat. To recreate pointillist art using the Pointillism template.	Children can explain what pointillism is. Children can use 2Paint a Picture to create art based upon this style.	Pointillism dilute	2Paint a Picture Writing														IT			
2	2.6	Creating Pictures	3	Piet Mondrian	To look at the work of Piet Mondrian and recreate it using the Lines template.	Children can describe the main features of Piet Mondrian's work. Children can use 2Paint a Picture to art based upon his style.	line fill vertical	2Paint a Picture Writing Templates														IT			
2	2.6	Creating Pictures	4	William Morris and Pattern	To look at the work of William Morris and recreate it using the Patterns template.	Children can describe the main features of art that uses repeating patterns. Children can use 2Paint a Picture to create art by repeating patterns in a variety of ways. Children can combine more than one effect in 2Paint a Picture to enhance patterns.	repeating pattern parallel diagonal rotated	2Paint a Picture Writing Templates														IT			
2	2.6	Creating Pictures	5	Surrealism and eCollage	To look at some surrealist art and create your own using the eCollage function in 2Paint A Picture.	Children can describe surrealist art. Children can use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart.	Surrealism e-collage stamps clip-art	2Paint a Picture Writing Templates														IT			
2	2.7	Making Music	1	Introducing 2Sequence	To be introduced to making music digitally using 2Sequence. To explore, edit and combine sounds using 2Sequence.	Children understand what 2Sequence is and how it works. Children have used the different sounds within 2Sequence to create a tune. Children have explored how to speed up and slow down tunes. Children understand what happens to the tune when sounds are moved.	tune compose note speed beats	2Sequence														IT			**Emereging** With support, children use the sounds within 2Sequence to create a simple composition (Unit 2.7 Lesson 1). They demonstrate their ability to manipulate digital content by editing and amending their composition (Unit 2.7 Lesson 1). Throughout this unit, with support, children show that they can store and retrieve their work from their saved area on Purple Mash. **Expected** Children use the sounds within 2Sequence to create a composition (Unit 2.7 Lesson 1). They demonstrate their ability to manipulate digital content by editing and amending their composition (Unit 2.7 Lesson 1). They will have explored different sounds to utilise within their tune and functions such as tempo (Unit 2.7 Lesson 1). Children create, upload and use their own sounds as part of this (Unit 2.7 Lesson 3). Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash. **Exceeding** Children achieve all expected outcomes.
2	2.7	Making Music	2	Making Music	To add sounds to a tune to improve it. To think about how music can be used to express feelings and create tunes which depict feelings.	Children have added sounds to a tune to change it. Children have considered how music can be used to express feelings. Children can change the volume of the background sounds. Children have created two tunes which depict two feelings.	tempo sound effect repeat bars	2Sequence Display Board														IT			
2	2.7	Making Music	3	Soundtracks	To upload a sound from a bank of sounds into the Sounds section. To record their own sound and upload it into the Sounds section. To create their own tune using the sounds which they have added to the	Children have uploaded and used their own sound chosen from a bank of sounds. Children have created, uploaded and used their own recorded sound. Children have created their own tune using some of the chosen sounds.	soundtrack	2Sequence 2Beat														IT			
2	2.8	Presenting Ideas	1	Presenting a Story Three Ways	To explore how a story can be presented in different ways.	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.	e-book mind map node	2Connect														IT	Managing online information	Conduct (Children learnning about how information can be managed online).	**Emerging** With support throughout, children use the software 2Create a Story on Purple Mash to create a simple narrative (Unit 2.8 Lesson 4). An emerging child will be able to explain their narrative to the teacher whilst referring to their 2Create a Story file. Throughout this unit, with support, children show that they can store and retrieve their work from their saved area on Purple Mash. **Expected** Children use the software 2Quiz (Unit 2.8 Lesson 2) 2Publish+, 2Connect (Unit 2.8 Lesson 3) and 2Create a Story on Purple Mash to create and present a narrative (Unit 2.8 Lesson 4). This demonstrates the children's understanding of how digital content can be represented in many forms. Throughout this unit, children show that they can efficiently store and retrieve their work from their saved area on Purple Mash. Throughout this unit, children are presenting ideas in different formats for different audiences. Most children can adapt their content to suit the audience and format. When children feedback to others whether face-to-face or online, their input shows consideration for the other person's feelings. Most children will be able to use Purple Mash as a platform for collaboration. Specifically, they will create a presentation for their class using a tool of their choice (Unit 2.8 Lesson 4). Most children can plan their own presentation which will utilise either: 2Connect, 2Create a Story or a Publishing Template (Unit 2.8 Lesson 4). They will effectively select the most appropriate tool to use during the planning and resource gathering stage of the task (Unit 2.8 Lesson 4). Most children can make improvements to their quizzes they have made in 2Quiz, fully able to select the most appropriate question out of the 8 choices (Unit 2.8. Lesson 2). Children can utilise a variety of software to manipulate and present digital content and information (Unit 2.8. Lesson 3).
2	2.8	Presenting Ideas	2	Presenting Ideas as a Quiz	To make a quiz about a story or class topic.	Children have made a quiz using 2Quiz. Children can talk about their work and make improvements based on feedback received.	quiz multiple-choice	2Quiz														IT	Managing online information	Conduct (Children learnning about how information can be managed online).	
2	2.8	Presenting Ideas	3	Making a Non-Fiction Fact File	To make a fact file on a non-fiction topic.	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.	fiction non-fiction fact file	2Connect Writing Template														IT	Managing online information	Conduct (Children learnning about how information can be managed online).	
2	2.8	Presenting Ideas	4	Making a Presentation	To make a presentation to the class.	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	presentation	Various														IT	Managing online information	Conduct (Children learnning about how information can be managed online).	
3	3.1	Coding	1	Using Flowcharts	To review previous coding knowledge. To understand what a flowchart is and how flowcharts are used in computer programming.	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.	algorithm background object implement predict run flowchart properties	2Code														CS			**Emerging** Children can design and code a program that follows a simple sequence (Unit 3.1 Lessons 1 and 2). Children can make good attempts to 'read' code and predict what will happen in a program which can help them to correct errors (Unit 3.1 Lessons 2 and 3). Children's designs for their programs, show that they are thinking of the structure of a simple program in logical, achievable steps (lessons 5 and 6). **Expected** Children have a clear idea of how to design and code a program that follows a simple sequence (Unit 3.1 Lessons 2 and 3). Children experiment with the use of timers to achieve delay effects in their programs – they understand the difference between timer-after and timer-every commands. (Unit 3.1 Lesson 2) Children' designs for their programs, show that they are thinking of the structure of a simple program in logical, achievable steps with attention to specific events that initiate specific actions. (Unit 3.1 Lessons 5 & 6). Most children can explain the choice of commands they have included in their program and what they achieve (Unit 3.1 Lessons 5 & 6). Children are able to use the repeat command to program a turtle to draw a square (Unit 3.1 Lesson 3) Children are beginning to understand how code is structured and are able to apply this knowledge when debugging (Unit 3.1 Lesson 4). Most children can integrate multimedia components such as sounds, animation and images into their coding. They can apply specific actions to these objects to animate them as part of the overall process of creating their own program (Unit 3.1. Lessons 5 and 6). They can be reflective on how successful they are at creating their programs and how the previous learning has helped them (Unit 3.1.). **Exceeding** Children's designs show that they are thinking of the required task and how to accomplish this in code (Unit 3.1 Lessons 5 & 6). Children can identify an error within a program that prevents it following the desired algorithm and then fix it (Unit 3.1). Children make intuitive attempts to debug their own programs as they increase in complexity (Unit 3.1 Lesson 4). Children are able to use the repeat command to produce outcomes beyond the set task (Unit 3.1 Lesson 3) Children have a good understanding of timers within timers in a program (Unit 3.1 Lessons 2 and 4) and this is evidenced in their program
3	3.1	Coding	2	Using Timers	To understand that there are different types of timers. To be able to select the right type of timer for a purpose.	Children can create a program that uses a timer-after command. Children can create a program that uses a timer-every command.	timer sequence	2Code														CS			
3	3.1	Coding	3	Using Repeat	To understand how to use the repeat command.	Children understand how the turtle object moves. Children can use the repeat command with an object. Children can create a computer program that includes use of the repeat command.	repeat input command button right-angle	2Code														CS			
3	3.1	Coding	4	Code, Test and Debug	To use coding knowledge to create a range of programs. To understand the importance of nesting.	Children can create computer programs using prior knowledge. Children can run, test and debug their programs.	Nesting test	2Code														CS			
3	3.1	Coding	5	Design and Make an Interactive Scene	To design and create an interactive scene.	Children can use the properties table to set the properties 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.	actions object type alert	2Code														CS			
3	3.1	Coding	6	Design and Make an Interactive Scene	To design and create an interactive scene.	Children can use the properties table to set the properties 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.	actions object type alert	2Code														CS			
3	3.2	Online Safety	1	Safety in Numbers	To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away. To understand how the Internet can be used to help us to communicate effectively. To understand how a blog can be used to help us communicate with a wider	Children understand what makes a good password for use on the Internet. Children are beginning to realise the outcomes of not keeping passwords safe. Children can contribute to a concept map of all the different ways they know that the Internet can help us to communicate. Children have contributed to a class blog with clear and appropriate messages.	password personal information blog permission vlogs	2Connect 2Blog														DL	Online relationships Online reputation Managing online information Health, wellbeing and lifestyle Privacy and security	Content, Contact, Conduct,	**Emerging** With prompting, children can understand that it is important to have a secure password that is not shared with anyone else (Unit 3.2 Lesson 1). Children can give a negative example of failure to keep passwords secure (Unit 3.2 Lesson 1). Children are beginning to identify some of the main things to look for when deciding whether the information on a website is trustworthy or not (Unit 3.2 Lesson 2). **Expected** Children understand the importance of a secure password and not sharing this with anyone else (Unit 3.2 Lesson 1). Furthermore, children understand the negative implications of failure to keep passwords safe and secure and can suggest examples of good and poor passwords (Unit 3.2 Lesson 1). When using the internet, children can appraise the accuracy of the information on a website and make decisions on whether it is a trustworthy source of information (Unit 3.2 Lesson 2). In lesson 1, children have a choice of topics about which to blog. Most children will have gained an understanding that it is not acceptable to
3	3.2	Online Safety	2	Fact or Fiction?	To consider if what can be read on websites is always true. To look at a 'spoof' website. To create a 'spoof' webpage. To think about why these sites might exist and how to check that the information is accurate.	Children understand that some information held on websites may not be accurate or true. Children are beginning to understand how to search the Internet and how to think critically about the results that are returned. Children have accessed and assessed a 'spoof' website. Children have created their own 'spoof' webpage mock-up. Children have shared their 'spoof' web page on a class display board.	Internet website spoof verify reputable source	Writing template (2Publish)														DL	Online relationships Online reputation Managing online information Health, wellbeing and lifestyle Privacy and security	Content (Primarily), Contact, Conduct and Commerce (Primarily)	

3	3.2	Online Safety	3	Appropriate Content & Ratings	To learn about the meaning of age restrictions symbols on digital media and devices. To discuss why PEGI restrictions exist. To know where to turn for help if they see inappropriate content or have inappropriate contact from others.	Children can identify some physical and emotional effects of playing/watching inappropriate content/games. Children relate cyberbullying to bullying in the real-world and have strategies for dealing with online bullying including screenshot and reporting.	Inappropriate Permission	2Write												DL	Online relationships Online reputation Managing online information Health, wellbeing and lifestyle Privacy and security	Conduct (primarily)	use the work of others or post images of others without consent. Most children recognise the PEGI ratings and can give examples of why content is rated and how this protects them (lesson 3) Most children can contribute to a class collaborative file about the effects of inappropriate content with useful suggestions (lesson 3). Most children can answer the quiz questions in lesson 3, their answers demonstrating that they are developing their understanding of the features of online communication. In lesson 1, their blog posts and comments are appropriate. Most children can express the need to tell a trusted adult if they are upset by anything online, in lesson 3 their responses illustrate that they have taken this message onboard. Most children will be able to use Purple Mash as a platform for collaboration. Specifically, they will create a spoof website for other children
3	3.3	Spreadsheets	1	Creating Pie Charts and Bar Graphs	To add and edit data in a table layout. To find out how spreadsheet programs can automatically create graphs from data.	Children can create a table of data on a spreadsheet. Children can use a spreadsheet program to automatically create charts and graphs from data.	pie chart data table bar graph	2Calculate												IT			**Emerging** Children know that they can use a spreadsheet to present their collected data as a chart or graph (lesson 1). With support, they can create and begin to interpret graphs of simple data. They are beginning to understand the use of symbols to represent more than, less than and equals to and use the spreadsheet tools to explore the outcome of comparing numbers and calculations (lesson 2). Children can find specific cell locations within a spreadsheet (lesson 3).
3	3.3	Spreadsheets	2	Using more than and Spin Button Tools	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.	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.	Spinner tool More than, less than & equal tool	2Calculate												IT			**Expected** Most children can create a table of data on a spreadsheet and can use this to automatically create charts/graphs from data. Children will be able to select the most suitable type of chart to use for their data, edit headers and apply axis labels (Unit 3.3. Lesson 1). Children can create their own number lines within 2Calculate including 'more than', 'less than' and 'equal' tools (Unit 3.3. Lesson 2).
3	3.3	Spreadsheets	3	Advanced Mode and Cell Addresses	To introduce the Advanced mode of 2Calculate. To learn about describing cells using their addresses.	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.	advanced mode cell address	2Calculate												IT			Children can collect and enter data within 2Calculate, they are able to use the graphing tool to create suitable graphical representations of the data they have within a table (Unit 3.3. Lesson 1).
3	3.4	Touch Typing	1	Home, Top and Bottom Row Keys	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.	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.	posture typing keys	2Type												IT			**Emerging** Children are developing their touch-typing skills and recognise the importance of positioning of their hands in relation to 'home, bottom and top row. They are beginning to use both hands when typing with improving typing accuracy and speed. Children can reflect on their progress and where they need to improve (Unit 3.4 All lessons).
3	3.4	Touch Typing	2	Home, Top and Bottom Row Keys	To practice and improve typing for home, bottom, and top rows.	Children can use two hands to type the letters on the keyboard.		2Type												IT			**Expected** Most children can create a table of data on a spreadsheet and can use this to automatically create charts/graphs from data. Children will be able to select the most suitable type of chart to use for their data, edit headers and apply axis labels (Unit 3.3. Lesson 1). Children can create their own number lines within 2Calculate including 'more than', 'less than' and 'equal' tools (Unit 3.3. Lesson 2).
3	3.4	Touch Typing	3	Left Keys	To practice the keys typed with the left hand.	Children can touch type using the left hand.		2Type												IT			Children can collect and enter data within 2Calculate, they are able to use the graphing tool to create suitable graphical representations of the data they have within a table (Unit 3.3. Lesson 1).
3	3.4	Touch Typing	4	Right Keys	To practice the keys typed with the right hand.	Children can touch type using the right hand.		2Type												IT			**Exceeding** Children demonstrating greater depth will explore more complex functioning of the 2Calculate tools to create their own spreadsheets to
3	3.5	Email	1	Communication	To think about the different methods of communication.	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	communication mind mapping node link	2Connect												DL	Online relationships		**Emerging** With prompting, children can list a range of ways the internet can be used to provide different methods of communication. Using 2Connect (Unit 3.5 Lesson 1) they can identify the disadvantages and advantages of each method. With some support, children can open, respond, and send emails to others in the class (Unit 3.5 Lesson 2) and demonstrate a basic
3	3.5	Email	2	Composing Emails	To open and respond to an email. To write an email to someone from an address book.	Children can open an email and respond to it. Children have sent emails to other children in the class. Extension: Children can use the search option in the address book to find a classmate when sending an email.	email compose address book inbox	2Email												DL	Online relationships	Content, Conduct	understanding of email conventions and safety (Unit 3.5 Lesson 3 & 4). They are aware of how to attach files to an email (Unit 3.5 Lesson 6). With support throughout, children will use 2Email and 2Quiz to develop their understanding and knowledge of email systems. Using the software, children will create a simple quiz with a limited number of questions (Unit 3.5 Lesson 4) and attach this file in a guided situation (Unit 3.5 Lesson 5) to an email. Children will demonstrate some understanding about how this information needs to be presented (Unit 3.5 Lesson 2).
3	3.5	Email	3	Using Email Safely - Part 1	To learn how to use email safely.	Children have written rules about how to stay safe using email. Children have contributed to classmates' rules. Extension: Children understand the importance of draft.	trusted contact personal information password	2Email												DL	Online relationships	Content, Conduct, Commerce (Phising risks)	With support, children understand the importance of staying safe (Unit 3.5 Lesson 3) when using email and will partially demonstrate this knowledge during the unit. As part of a small, guided group, children apply their knowledge of email safety through the creation of a quiz on staying safe when emailing (Unit 3.5 Lesson 4).
3	3.5	Email	4	Using Email Safely - Part 2	To learn how to use email safely.	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.		2Quiz												DL	Online relationships	Content, Conduct	**Expected** Children can list a range of ways the internet can be used to provide different methods of communication. Using 2Connect (Unit 3.5 Lesson 1) they can explain and compare each communication method. Most children will be able to exchange email communications using 2Email. This will take the form of both simulated email communication scenarios and real email communication with their peers. (Unit 3.5 Lessons 2-6)
3	3.5	Email	5	Attachments	To add an attachment to an email.	Children can attach work to an email. Children know what CC means and how to use it.	attachment CC - carbon copy	2Email												DL	Online relationships	Content, Conduct	Most children will be able to open and respond to an email, altering the size of the font, as well as the formatting of the text. They will be able to select a person from their address book and compose a suitable email to send them (Unit 3.5. Lesson 2). Children will be able to add attachments to an email they compose and use the CC functionality correctly (unit 3.5. Lesson 5). They will recognise obvious errors such as spelling due to the inbuilt wizard and will use their editing skills to address such errors. Children understand the importance of staying safe (Unit 3.5 Lesson 3) when using email and have demonstrated knowledge of this through the writing of class rules for their conduct when using email systems (Unit 3.5 Lesson 3). Children apply their knowledge of email safety
3	3.5	Email	6	Email Simulations	To explore a simulated email scenario.	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	BCC - blind carbon copy	2Email												DL	Online relationships	Content, Conduct	through the creation of a quiz on staying safe when emailing (Unit 3.5 Lesson 4). In lesson 3, children can suggest why they need to seek permission before sharing photos. In lesson 1, children can refer to what they learnt in Unit 3.2 regarding Online Safety when suggesting the way to communicate appropriately online. Children's email messages illustrate that they have taken on board messages about appropriate communication with a regard for their
3	3.6	Branching Databases	1	Introducing Databases	To sort objects using just YES/NO questions.	Children understand how YES/NO questions are structured and answered. Children have used YES/NO questioning to play a simple game with a friend. Children can explain why they choose a particular question to split their database. Extension: Children can begin to use 'or more' and 'or less' in their questioning	data database branching database binary tree													IT			**Emerging** With support and using concrete paper resources, children will begin to understand what a branching database is (Unit 3.6 Lesson 1). In a small, supported group, they will collect, sort, and present their information using the paper resources. Children will then turn their paper branching database into a digital version using 2Question (Unit 3.6 Lesson 2, 3 and 4). The resulting
3	3.6	Branching Databases	2	Branching Databases	To complete a branching database using 2Question.	Children have contributed to a class branching database about fruit. Children have completed a branching database about vegetables. Extension: Children can edit and adapt a branching database to accommodate new entries.		2Question												IT			branching database will demonstrate a limited number of branches. **Expected** Using 2 Question, children will learn how to create a branching database that accomplishes a given goal. They will understand how to collect, analyse, evaluate, and present their data and information throughout the unit initially as a paper Yes/No game (Unit 3.6 Lesson 1)
3	3.6	Branching Databases	3	Creating a Branching Database on the Computer	To create a branching database of the children's choice.	Children can choose a suitable topic for a branching database. Children can select and save appropriate images. Children can create a branching database. Children know how to use and debug their own and others branching databases.	debugging	2Question												IT			and then as a digital version of a branching database (Unit 3.6 Lesson 2, 3 and 4). Most children can create a branching database and are able to successfully debug it to improve the quality of their digital content creation. Their branching database would have been carefully planned before utilising 2Question (Unit 3.6. Lessons 3 & 4). Most children will be able to create a branching database which includes suitable text, titles and gathering of appropriate images from
3	3.6	Branching Databases	4	Creating a Branching Database on the Computer	To create a branching database of the children's choice.	Children can choose a suitable topic for a branching database. Children can select and save appropriate images. Children can create a branching database. Children know how to use and debug their own and others branching databases.	debugging	2Question												IT			online and importing them (Unit 3.6. Lessons 3 &4). Children can make their own branching databases, collating and organising data by sets of questions they have considered appropriate (Unit 3.6 Lesson 1 . Children analyse each other's branching databases and can make further suggestions for improvement (Unit 3.6 Lessons 3 & 4). **Exceeding**
3	3.7	Simulations	1	What Are Simulations?	To find out what a simulation is and understand the purpose of simulations.	•Children know that a computer simulation can represent real and imaginary situations. •Children can give some examples of simulations used for fun and for work.	simulation modelling advantages	2Publish template												IT			**Emerging** With support throughout, children are beginning to analyse and evaluate information relating to the situations in the activities within 2Simulate (Unit 3.7 Lesson 2 and 3). They can verbally present their findings as part of a discussion (Unit 3.7 Lesson 2 and 3). Although
3	3.7	Simulations	2	Exploring a Simulation	To explore a simulation, making choices and discussing their effects.	•Children can explore a simulation. •Children can use a simulation to try out different options and to test predictions. •Children can begin to evaluate simulations by comparing them with real situations and considering their usefulness. •Children can analyse choices made using a branching database.	point-of-view solution realistic unrealistic	2Simulate Extension: 2Question												IT			there understanding may be limited, they are beginning to understand the importance of simulations in relation to real and hypothetical situations (Unit 3.7 Lesson 1). **Expected** Using 2Simulate, children can analyse and evaluate information relating to the situations in the activities (Unit 3.7 Lesson 2 and 3). They present their findings as part of a discussion and give reasons for the choices they made (Unit 3.7 Lesson 2 and 3). They will understand the
3	3.7	Simulations	3	Analysing and Evaluating a Simulation	To work through and evaluate a more complex simulation.	•Children can recognise patterns within simulations and make and test predictions. •Children can identify the relationships and rules on which the simulations are based. •Children can evaluate a simulation to determine its usefulness for purpose. •Children can create their own simple simulation (extension).	analysis decision evaluation	2Simulate 2Publish template Extension: 2Create a Story												IT			importance of simulations to replicate events that could occur in real and hypothetical situations (Unit 3.7 Lesson 1). Most children can effectively assess their own and others' progress and achievements through a simulation. Additionally, they can evaluate the effectiveness of the simulation (Unit 3.7. Lesson 3). **Exceeding** Children demonstrating greater depth will use 2Simulate to analyse, evaluate, identify patterns, and predict the outcomes of simulated
3	3.8	Graphing	1	Introducing 2Graph	• To enter data into a graph and answer questions.	• Children can set up a graph with a given number of fields. • Children can enter data for a graph. • Children can produce and share graphs made on the computer. • Extension: Children can select most appropriate style of graph for their data and explain their reasoning.	graph chart title sort axis data row column	2Graph												IT			**Emerging** With support throughout, children use 2Graph to enter a simple data range on a limited number of fields. Children can then present their data as a simple bar chart (Unit 3.8 Lesson 1). In a small, supported group, children will complete an investigation of an everyday event, linked, where possible to the curriculum (Unit 3.8 Lesson 2).
3	3.8	Graphing	2	Using 2Graph to Solve an Investigation	• To solve an investigation and present the results in graphic form.	• Children have solved a maths investigation. • Children can present the results in a range of graphical formats. • Children can use the sorting option to make analysis of their data easier. • **Extension**: Children can select most appropriate style of graph for their data and explain their reasoning.	investigation tally chart survey	2Graph, 2Publish template (Optional: 2Survey, 2Email, Blog, Displayboard)												IT			**Expected** Children use 2Graph to enter data on a given number of fields and then present their data as a graph (Unit 3.8 Lesson 1). Children can select the most appropriate graph format to present their data. Independently, children can apply their graphical knowledge to an investigation of an everyday event, linked, where possible to the curriculum (Unit 3.8 Lesson 2). Furthermore, children present their graph by sharing it on a class blog (Unit 3.8 Lesson 2). Most children can set up a graph within 2Graph with a given number of fields, enter data and manipulate the presentation of it using: Sort, block size, additional rows and editing of labels (Unit 3.8. Lesson 1). They can create further digital content within the context of the data they have collected by importing it into a pre-made writing template (Unit 3.8. Lesson 2). Most children can present information in a range of graphical formats which includes attention to detail regarding appropriate labelling and block sizing (Unit 3.8. Lesson 2). Children can use 2Graph to enter collected data and represent it using an appropriate graph type. They can sort data using sort features for easier analysis (Unit 3.8 Lesson 1) and can share their graphs with other children via 2Blog, appropriately commenting on their results e.g., from a maths investigation, particularly any surprising results (Unit 3.8 Lesson 2).
3	3.9	Presenting (MS PowerPoint - Desktop version)	1	Making a Presentation from a Blank Page	• To create a page in a presentation.	• Children know what PowerPoint is. • Children can open PowerPoint. • Children can add text to a page and format it.	textbox presentation font formatting	Microsoft PowerPoint												IT			**Exceeding** Children know that presentation software allows the user to put together a file made of slides to present. Slides can include text, images, animations and sounds.
3	3.9	Presenting (MS PowerPoint - Desktop version)	2	Adding Media	• To add media to a presentation	• Children can change the design of the slides. • Children can insert a new slide. • Children can insert pictures. • Children can edit pictures.	media slide editing audio	Microsoft PowerPoint												IT			With support children can add text, pictures and shapes to a slide. Children can insert slides into a presentation though they might not be able to anticipate the order of the slides. Children know that slides can have animations and can add transition animations with support.
3	3.9	Presenting (MS PowerPoint - Desktop version)	3	Adding Animation	• To add animations into a presentation	• Children can use animations in a presentation. • Children can use transitions in a presentation.	animation transition	Microsoft PowerPoint												IT			**Expected** Children can add text. pictures and shapes to a slide and format them with tools such as shadows and borders. Children can insert slides into a presentation. Children can use transition effects between slides and animations of the objects in slides.
3	3.9	Presenting (MS PowerPoint - Desktop version)	4	Presenting with Timings	• To add timings into a presentation.	• Children can add timings to a presentation. • Children can present effectively using PowerPoint.	sound effect durarion	Microsoft PowerPoint												IT			Children can explore the use of timings to a presentation (version dependant). **Exceeding** Children can incorporate video and audio into slideshows.
3	3.9	Presenting (MS PowerPoint - Desktop version)	5	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can include different media. • Children can add transitions and animations. • Children can add timings to the presentation.	review	Microsoft PowerPoint												IT			Children appraise the animation effects available to them and make decisions about what to include and what to leave out for the most effective presentation.

3	3.9	Presenting (MS PowerPoint - Desktop version)	6	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can include different media. • Children can add transitions and animations. • Children can add timings to the presentation.	review	Microsoft PowerPoint	IT			
3	3.9	Presenting (MS PowerPoint - Online version)	1	Making a Presentation from a Blank Page	• To create a page in a presentation.	• Children know what PowerPoint is. • Children can open PowerPoint. • Children can add text to a page and format it.	textbox presentation font formatting	Microsoft PowerPoint	IT			**Emerging** Children know that presentation software allows the user to put together a file made of slides to present. Slides can include text, images, animations and sounds. With support children can add text, pictures and shapes to a slide. Children can insert slides into a presentation though they might not be able to anticipate the order of the slides. Children know that slides can have animations and can add transition animations with support. **Expected** Children can add text. pictures and shapes to a slide and format them with tools such as shadows and borders. Children can insert slides into a presentation. Children can use transition effects between slides and animations of the objects in slides. Children can explore the use of timings to a presentation (version dependant). **Exceeding** Children can incorporate video and audio into slideshows. Children appraise the animation effects available to them and make decisions about what to include and what to leave out for the most effective presentation.
3	3.9	Presenting (MS PowerPoint - Online version)	2	Adding Media	• To add media to a presentation	• Children can change the design of the slides. • Children can insert a new slide. • Children can insert pictures. • Children can edit pictures.	media slide editing video	Microsoft PowerPoint	IT			
3	3.9	Presenting (MS PowerPoint - Online version)	3	Adding Animation	• To add animations into a presentation	• Children can use animations in a presentation. • Children can use transitions in a presentation.	animation transition	Microsoft PowerPoint	IT			
3	3.9	Presenting (MS PowerPoint - Online version)	4	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can include different media. • Children can add transitions and animations.	review	Microsoft PowerPoint	IT			
3	3.9	Presenting (MS PowerPoint - Online version)	5	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can include different media. • Children can add transitions and animations.	review	Microsoft PowerPoint	IT			
3	3.9	Presenting (Google Slides - Online version)	1	Making a Presentation from a Blank Page	• To create a page in a presentation.	• Children know what Google Slides is. • Children know how to open Google Slides. • Children can add text and format it.	textbox presentation font formatting	Google Slides	IT			**Emerging** Children know that presentation software allows the user to put together a file made of slides to present. Slides can include text, images, animations* and sounds*. With support children can add text, pictures and shapes to a slide. Children can insert slides into a presentation though they might not be able to anticipate the order of the slides. Children know that slides can have animations* and can add transition animations* with support. **Expected** Children can add text. pictures and shapes to a slide and format them with tools such as shadows and borders. Children can insert slides into a presentation Children can use transition effects* between slides and animations* of the objects in slides. **Exceeding** Children can incorporate video* and audio* into slideshows. Children appraise the animation effects available to them and make decisions about what to include and what to leave out for the most effective presentation. *video, animations, transition, animations and sounds are only available in the non-tablet version.
3	3.9	Presenting (Google Slides - Online version)	2	Adding Media	• To add media to a presentation	• Children can change the design of the slides. • Children can insert a new slide. • Children can insert pictures. • Children can edit pictures.	media slide editing audio	Google Slides	IT			
3	3.9	Presenting (Google Slides - Online version)	3	Adding Shapes and Lines	• To add shapes and lines to a presentation.	• Children can add shapes to a presentation. • Children can add lines into a presentation.	border weight border dash fill colour	Google Slides	IT			
3	3.9	Presenting (Google Slides -	4	Adding Animation	• To add animations into a presentation.	• Children can use animations in a presentation.	transition	Google Slides	IT			
3	3.9	Presenting (Google Slides - Online version)	5	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can add objects including text and pictures. • Children can add transitions and animations.	review	Google Slides	IT			
3	3.9	Presenting (Google Slides - Online version)	6	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can add objects including text and pictures. • Children can add transitions and animations.	review	Google Slides	IT			
3	3.9	Presenting (Google Slides - App version)	1	Making a Presentation from a	• To create a page in a presentation.	• Children know what Google Slides is. • Children know how to open Google Slides on a tablet.	textbox presentation	Google Slides	IT			**Emerging** Children know that presentation software allows the user to put together a file made of slides to present. Slides can include text, images, animations* and sounds*. With support children can add text, pictures and shapes to a slide. Children can insert slides into a presentation though they might not be able to anticipate the order of the slides. Children know that slides can have animations* and can add transition animations* with support. **Expected** Children can add text. pictures and shapes to a slide and format them with tools such as shadows and borders. Children can insert slides into a presentation Children can use transition effects* between slides and animations* of the objects in slides. **Exceeding** Children can incorporate video* and audio* into slideshows. Children appraise the animation effects available to them and make decisions about what to include and what to leave out for the most
3	3.9	Presenting (Google Slides - App version)	2	Adding Images	• To add images to a presentation.	• Children can change the design of the slides. • Children can insert a new slide. • Children can insert pictures.	media slide theme	Google Slides	IT			
3	3.9	Presenting (Google Slides - App version)	3	Adding Shapes and Lines	• To add shapes and lines to a presentation.	• Children can add shapes to a presentation. • Children can add lines into a presentation.	border weight border dash fill colour	Google Slides	IT			
3	3.9	Presenting (Google Slides - App version)	4	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can add objects including text and pictures.	review	Google Slides	IT			
3	3.9	Presenting (Google Slides - App version)	5	Create a Presentation	• To use the skills learnt in previous weeks to design and present an effective presentation.	• Children can create a presentation including formatted text. • Children can add objects including text and pictures.	review	Google Slides	IT			
4	4.1	Coding	1	Design, Code, Test and Debug	• To review coding vocabulary and knowledge. • To create a simple computer program.	• 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.	background button object properties code block predict event	2Code	CS			**Emerging** Children's designs for their programs show that they are thinking of the structure of a simple program in logical, achievable steps (Unit 4.1 Lesson 1). Children can make good attempts to 'read' code and predict what will happen in a program which can help them to correct errors in their code. With support, children can turn a real-life situation into an algorithm for a program that has cause and effect (Unit 4.1 Lesson 2) and use their algorithm to write simple programs using 2Code (Unit 4.1 Lesson 2). Furthermore, they can identify errors within their programs and make logical attempts to fix it (Unit 4.1). Children attempt to introduce selection into their code using simple 'if statements' (Unit 4.1 Lesson 2). Children's use of these structures is experimental; they cannot always predict the outcome accurately or anticipate the structures required when planning their code. They have a developing idea that a variable can be used to store information in a program, in lesson 5 they can follow the examples but might struggle when applying this with their own ideas. **Expected** Children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition (Unit 4.1 Lessons 1 and 6). Children can identify an error within a program that prevents it following the desired algorithm and then fix it (Unit 4.1), they apply these techniques to their own code to fix bugs. Children understand IF and IF/ ELSE statements for selection and combine these with other coding structures including variables to achieve the effects that they design in their programs (Unit 4.1 Lesson 4). Their design demonstrates their growing understanding of when a coded solution will require repetition e.g. in Lesson 4 'Reginal Rocket' children can see that the position of the rocket is changed repeatedly until it is in line with the rocket launch pad. They can explain the new command 'Repeat Until'. They make use of user input (Unit 4.1 Lesson 2) and outputs such as 'print to screen' (Unit 4.1 Lesson 4) as well as sound and movement of objects. They understand how variables can be used to store information while a program is executing (Unit 4.1 Lesson 5) and make attempts to use and manipulate the value of variables.
4	4.1	Coding	2	IF Statements	• To begin to understand selection in computer programming. • To understand how an IF statement works.	• Children can create a program that includes an IF statement. • Children can interpret a flowchart that depicts an IF statement.	selection if statement decision	2Code	CS			
4	4.1	Coding	3	Co-ordinates	• To understand how to use co-ordinates in computer programming. • To understand how an IF statement works.	• Children can make use of the X and Y properties of objects in their coding. • Children can create a program that includes an IF statement.	coordinate flowchart	2Code 2Chart	CS			
4	4.1	Coding	4	Repeat Until and IF/ELSE Statements	• To understand the Repeat until command. • To begin to understand selection in computer programming. • To understand how an IF/ELSE statement works.	• 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.	repeat until if/else statement inputs	2Code	CS			
4	4.1	Coding	5	Number Variables	• To understand what a variable is in programming. • To use a number variable.	• Children can explain what a variable is in programming. • Children can create and use variables when programming.	variable number variable	2Code	CS			
4	4.1	Coding	6	Making a Playable Game	• To review vocabulary and concepts learnt in Year 4 Coding. • To create a playable game.	• 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.	alert prompt	2Code	CS			
4	4.2	Online Safety	1	Going Phishing	• To understand how children can protect themselves from online identity theft. • To understand that information put online leaves a digital footprint or trail and that this can aid identity theft.	• Children know that security symbols such as a padlock protect their identity online. • Children know the meaning of the term 'phishing' and are aware of the existence of scam websites. • Children can explain what a digital footprint is and how it relates to identity theft. • Children can give examples of things that they would not want to be in their digital footprint.	report SMART rules Spam attachment phishing digital footprint	2Email 2Connect	DL	Self-image and identity Online relationships Online reputations Online bullying Managing online informarion	Content, Contact, Conduct (primarily), Commerce.	**Emerging** Children contribute their ideas to discussion of spam email (lesson 1), malware (lesson 2) and plagiarism (lesson 3). They have included appropriate content in their Top Tips for Online Safety publication (lesson 2). They have been able to share their work online. With support throughout, children show an understand what online safety is. In a small group, they can use 2Connect (Unit 4.2 Lesson 1) to map out the key features of online safety. Children produce a simple leaflet, postcard, or slideshow etc about online safety, which can then be used as part of presentation to parents (Unit 4.2 Lesson 1). **Expected** Children have decided upon the most important online safety messages to communicate and have shared these ideas in their Top Tips for Online Safety publication (lesson 2). They put this knowledge into action in their own online activity. Children can explore key concepts relating to online safety using 2Connect Unit 4.2 Lesson 1). They help others to understand the importance of online safety (Unit 4.2 Lesson 2) and apply their knowledge through the creation of online safety resources which are then used as part of presentation to parents (Unit 4.2 Lesson 1). Using the example from lesson 1, children can give some examples of things to look out for in an email to ensure that it from a valid source and is not a phishing scam email. They can explain what can be learnt by looking at the padlock details for a website (lesson 1). Most children can reflect upon positive and negative aspects of a digital footprint and can give examples of the care they would take when sharing online in relation to their and others' digital footprint (lesson 1). Most children can give reasons for taking care when installing apps or software. They know what Malware is and the possible impact of computer viruses and can give recommendations for how best to ensure that they only install valid software as part of their top tips document in lesson 2. Most children can give reasons for limiting screen time that include the effect on physical and mental health. In lesson 4, they were able to reflect on their own screen time and collective class screen time and begin to make informed decisions about when to limit their own screen time.
4	4.2	Online Safety	2	Beware Malware	• To identify the risks and benefits of installing software including apps.	• Children can identify possible risks of installing free and paid for software. • Children know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. • Children know what a computer virus is.	malware software virus AdFly ransomware	2Publish template Extension: 2Quiz	DL	Self-image and identity Online relationships Online reputations Online bullying Managing online informarion	Commerce (Primarily)	
4	4.2	Online Safety	3	Plagiarism	• To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. • To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.	• Children can determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it • Children know about citing sources that they have used.	plagiarism watermark citation copyright collaborating	Internet 2Publish template 2Quiz	DL	Self-image and identity Online relationships Online reputations Online bullying Managing online informarion	Content, Conduct	
4	4.2	Online Safety	4	Healthy Screen-Time	• To identify the positive and negative influences of technology on health and the environment. • To understand the importance of balancing game and screen time with other parts of their lives.	• Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. • Children can give reasons for limiting screen time.	data analysis collaborative database	2Investigate 2Publish template	DL	Self-image and identity Online relationships Online reputations Online bullying Managing online informarion	Contact, Conduct (primarily)	
4	4.3	Spreadsheets	1	Formula Wizard and Formatting Cells	• 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.	• 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.	formula wizard percentages decimal place format cell	2Calculate	IT			**Emerging** With support throughout, children will use 2Calculate and a limited data set to design a simple graph to solve a mathematical problem (Unit 4.3 Lesson 3). Children will present their data and information using 2Calculate (Unit 4.3 Lesson 5). **Expected** Children will use 2Calculate to design a graph to solve a mathematical problem (Unit 4.3 Lesson 3). Children will present, format and analyse their data and information in a variety of ways and use their spreadsheets to solve and check mathematical problems and concepts (Unit 4.3 Lesson 5). Most children can use the number formatting tools within 2Calculate to appropriately format numbers (Unit 4.3. Lesson 1). Children can add a formula to a cell to automatically make a calculation in that cell using the 'formula wizard' (Unit 4.3. Lesson 1). They will be fluent in copying and pasting contents between cell(s) (Unit 4.3. Lesson 1). Children can use spreadsheets to collate data and extract information from it to answer questions e.g. children can create line graphs and can use it to identify when something will happen using 2Calculate (Unit 4.3 Lesson 3). **Exceeding** Children demonstrating greater depth will explore more complex functioning of the 2Calculate tools to create their own spreadsheets to
4	4.3	Spreadsheets	2	Using the Timer and Spin Buttons	• 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.	• Children can use the timer, random number and spin button tools. • Children can combine tools to make fun ways to explore number.	equal tool random number tool spinner tool	2Calculate	IT			
4	4.3	Spreadsheets	3	Line Graphs	• To use the line graphing tool in 2Calculate with appropriate data. • To interpret a line graph to estimate values between data readings.	• 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.	line graph data chart	2Calculate	IT			
4	4.3	Spreadsheets	4	Using a Spreadsheet	• To use the currency formatting tool in 2Calculate. • To use 2Calculate to create a model of a real-life situation.	• Children can make practical use of a spreadsheet to help them plan actions. • Children can use the currency formatting in 2Calculate.	budget totals	2Calculate	IT			
4	4.3	Spreadsheets	5	Exploring Place Value with	• To use the functions of allocating value to images in 2Calculate to make a resource to teach place value.	• 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	place value 'is equals to' tool	2Calculate	IT			
4	4.4	Writing for Different Audiences	1	Font Styles	• To explore how font size and style can affect the impact of a text.	• Children can look at and discussed 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.	genre format font	2Publish Plus	IT			**Emerging** With support throughout, children will use 2Connect (Unit 4.4 Lesson 4 and 5) and 2 Publish+ (Unit 4.4 Lesson 4 and 5) to create limited content in small groups linked to a 2Simulate scenario (Unit 4.4 Lesson 2, 3, 4 and 5). Using the variety of software, children change the font style to make it appropriate for their audience (Unit 4.4 Lesson 1). **Expected** Children will use 2Connect (Unit 4.4 Lesson 4 and 5) and 2 Publish+ (Unit 4.4 Lesson 4 and 5) to create content linked to a 2Simulate scenario (Unit 4.4 Lesson 2, 3, 4 and 5) for a select audience. Using the variety of software, children must make informed choices about the best way to present their information e.g. appropriate font and text formatting (Unit 4.4 Lesson 1). Most children can alter font types, styles and sizes to suit an intended audience for digital content using 2Publish and incorporate, with ease, images from clipart banks and internet sources (Unit 4.4. Lesson 1).
4	4.4	Writing for Different Audiences	2	Using a Simulated Scenario to Produce a News Report	• To use a simulated scenario to produce a news report.	• Children can role-played 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.	reporter viewpoint opinion	2Simulate 2Publish Templates	IT			
4	4.4	Writing for Different Audiences	3	Using a Simulated Scenario to Produce a News Report	• To use a simulated scenario to produce a news report.	• Children can role-played 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.	reporter viewpoint opinion	2Simulate 2Publish Templates	IT			

4	4.4	Writing for Different Audiences	4	Writing for a Campaign	• To use a simulated scenario to write for a community campaign.	• 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	campaign	2Simulate 2Connect 2Publish Templates												IT				images from clipart banks and internet sources (Unit 4.4, Lesson 1). **Exceeding** Children demonstrating greater depth will seamlessly use a variety of software including 2Connect (Unit 4.4 Lesson 4 and 5) and 2 Publish+ (Unit 4.4 Lesson 4 and 5) to create content linked to a 2Simulate scenario (Unit 4.4 Lesson 2, 3, 4 and 5) for a variety of different audiences. Using the variety of software, children must make informed choices about the best way to present their information e.g. appropriate font and text formatting and give reasons for their choices (Unit 4.4 Lesson 1).
4	4.4	Writing for Different Audiences	5	Writing for a Campaign	• To use a simulated scenario to write for a community campaign.	• 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	campaign	2Simulate 2Connect 2Publish Templates												IT				
4	4.5	Logo	1	Introduction to 2Logo	• To learn the structure of the language of 2Logo. • To input simple instructions in 2Logo	• Children know what the common instructions are in 2Logo and how to type them. • Children can follow simple 2Logo instructions to create shapes on paper. • Children can follow simple instructions to create shapes in 2Logo.	2Logo grid run speed Logo commands (e.g. FD BK RT LT) prediction	2Logo												CS				**Emerging** Children can 'read' small 2Logo programs and predict the outcome using some logical reasoning although they might not always be correct (Unit 4.5 Lesson 1). Children think about the 2Logo commands that they need in small steps, one or two commands at a time. When their code does not execute as they expect, they can sometimes find the error independently but as the code becomes longer, they need support to do so (Unit 4.5 Lesson 2). They understand that the repeat command makes things happen more than once but might not be able to plan the repeat; they work out a solution using trial-and-error that includes some logic (Unit 4.5 Lesson 3). They can create a procedure but might not realise the full value of creating a procedure to make quality code and save coding the same thing many times over (Unit 4.5 Lesson 4). **Expected** Children can 'read' 2Logo programs with several steps and predict the outcome accurately (Unit 4.5 Lesson 1) & (Unit 4.5 Lesson 3). Children can think about the 2Logo commands that they need steps of two or more commands at a time before executing the code to check the result e.g. fd 4 rt 90 fd 6 rt 90. When their code does not execute as they expect, they can sometimes find the error independently but as the code becomes longer, they need support to do so (Unit 4.5 Lesson 2). They understand the repeat command and can plan simple repeat structures before executing rather than relying on trial-and-error (Unit 4.5 Lesson 3). They experiment with repeating procedures to make more complex patterns (Unit 4.5 Lesson 4). They understand the value of a procedure in making code more efficient and call these procedures appropriately (Unit 4.5 Lesson 4). Most children can manipulate instructions within 2Logo to create common shapes using repeat functions (Unit 4.5. Lesson 3). They can edit instructions to produce shapes created in the most efficient way including using the Procedures function (Unit 4.5. Lesson 4). In (Unit 4.5 Lesson 4), they can use some knowledge of mathematics to understand how the patterns are formed. **Exceeding** Children enjoy and challenge themselves to think about the 2Logo commands that they need in long steps of several commands at a time before executing the code to check the result e.g. fd 4 rt 90 fd 6 rt 90 fd 5 lt 90 fd 9.
4	4.5	Logo	2	Creating Letters using Logo	• To use 2Logo to create letter shapes.	• Children can create 2Logo instructions to draw patterns of increasing complexity. • Children understand the pu and pd commands. • Children can write 2Logo instructions for a word of four letters.	Pen up Pen down multi line mode debugging	2Logo												CS				
4	4.5	Logo	3	Using the 'Repeat' Command in 2Logo	• To use the Repeat command in 2Logo to create shapes.	• Children can follow 2Logo code to predict the outcome. • Children can create shapes using the Repeat function. • Children can find the most efficient way to draw shapes.	Repeat	2Logo												CS				
4	4.5	Logo	4	Using Procedures	• To use and build procedures in 2Logo.	• Children can use the Procedure feature. • Children can create 'flowers' or 'crystals' using 2Logo.	Procedure SETPC SETPS	2Logo												CS				
4	4.6	Animation	1	Animating an Object	• 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	• 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	animation frame fps (frames per second) pause	2Animate												IT				**Emerging** With support throughout, children will use a pencil and paper flip book to understand the basics of stop motion animation (Unit 4.6 Lesson 1). Children begin to transfer this knowledge and create their own basic animation using 2Animate (Unit 4.6 Lesson 3). This animation may lack detail and lack smoothness of transition. Children share their learning by displaying their animation on a blog or display board (Unit 4.6 Lesson 3). **Expected** Initially children will use a pencil and paper flip book to understand the basics of stop motion animation (Unit 4.6 Lesson 1). Children transfer this knowledge and create their own animation using 2Animate (Unit 4.6 Lesson 3). Children know, understand, and use the onion skin animation tool within 2Animate to show movement across the screen (Unit 4.6 Lesson 2). Furthermore, they select backgrounds and sounds to make their animation more immersive (Unit 4.6 Lesson 2). Children share their learning by displaying their animation on a display board or blog (Unit 4.6 Lesson 3).
4	4.6	Animation	2	2Animate Tools	• To learn about onion skinning in animation. • To add backgrounds and sounds to animations.	• 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	onion skinning	2Animate												IT				
4	4.6	Animation	3	Stop Motion Animation	• Introducing 'stop motion' animation. • To share animation the class blog.	• Children know what 'stop motion' animation is and how it is created. • Children have used some of the ideas from existing 'stop motion' films to recreate their own animation. • Children have shared their animations and commented on each other's work using	stop motion	2Animate												IT				
4	4.7	Effective Searching	1	Using a Search Engine	• To locate information on the search results page.	• Children can structure search queries to locate specific information.	search engine results page Internet	Internet Browser												DL	Managing online information	Conduct, Content,	**Emerging** With support throughout, children will use a pencil and paper flip book to understand the basics of stop motion animation (Unit 4.6 Lesson 1). Children begin to transfer this knowledge and create their own basic animation using 2Animate (Unit 4.6 Lesson 3). This animation may lack detail and lack smoothness of transition. Children share their learning by displaying their animation on a blog or display board (Unit 4.6 Lesson 3). **Expected** Initially children will use a pencil and paper flip book to understand the basics of stop motion animation (Unit 4.6 Lesson 1). Children transfer this knowledge and create their own animation using 2Animate (Unit 4.6 Lesson 3). Children know, understand, and use the onion skin animation tool within 2Animate to show movement across the screen (Unit 4.6 Lesson 2). Furthermore, they select backgrounds and sounds to make their animation more immersive (Unit 4.6 Lesson 2). Children share their learning by displaying their animation on a display board or blog (Unit 4.6 Lesson 3). **Exceeding**
4	4.7	Effective Searching	2	Use Search Effectively to Answer Questions	• To use search effectively to find out information.	• Children have used search to answer a series of questions. • Children have written search questions for a friend to solve.	key words	Internet Browser												DL	Managing online information	Conduct, Content,	
4	4.7	Effective Searching	3	Reliable Information Sources	• To assess whether an information source is true and reliable.	• Children can analyse the contents of a web page for clues about the credibility of the information.	reliability easter eggs	Internet Browser												DL	Managing online information	Content (Primarily).	
4	4.8	Hardware Investigators	1	Hardware	• To understand the different parts that make up a desktop computer.	• Children can name the different parts of a desktop computer. • Children know what the function of the different parts of the computer is.	hardware software components peripherals motherboard CPU RAM hard drive graphics card network card monitor mouse	2Connect Pairs game												CS				**Emerging** Children understand what hardware is and that specific components allow computers to join and form a network. Children can recognise some hardware parts that relate to networking (Unit 4.8 Lesson 1). With some support, children can create their own hardware leaflet. **Expected** Children recognise the main component parts of hardware which allow computers to join and form a network (Unit 4.8 Lesson 1). Children can create their own leaflet to share their understanding of Computer Hardware (Unit 4.8 Lesson 2). **Exceeding** Children recognise the components parts of hardware which allow computers to join and form a network (Unit 4.8 Lesson 1). They are also able to explain that there are different types of network and how they are connected. Children can create their own leaflet to share their understanding of Computer Hardware and can compare physical network connections with wireless connections. (Unit 4.8 Lesson 2).
4	4.8	Hardware Investigators	2	Parts of a Computer	• To recall the different parts that make up a computer.	• Children have created a leaflet to show the function of computer parts.		2Publish												CS				
4	4.9	Making Music	1	Understanding Music	• To identify and discuss the main elements of music: Pulse, Rhythm, Tempo, Pitch, Texture	• Children can use appropriate musical language to discuss a piece of music. • Children can identify sounds in a piece of music. • Children can explain how a piece of music makes them feel.	pulse rhythm tempo pitch texture	Busy Beats 2Publish template												IT				**Emerging** Children are able to understand the concept of rhythm and tempo. They attempt to create a simple rhythm using within 'Busy Beats' and experiment with the BPM tool (Lesson 1 and 2). Children create a simple composition that considers pitch, rhythm and melody using 'Busy Beats' (Lesson 3 and 4). **Expected** Children distinguish between rhythm and tempo, they are able to create a simple rhythm, experimenting with BPM in 'Busy Beats' (Lesson 2). Children can utilise the tools within Busy Beats to create a melodic phrase experimenting with pitch (Lesson3). Through experimentation, children are able to compose a piece of electronic musing where they have considered pitch, rhythm and melody, successfully utilising the tools within 'Busy Beats' (Lesson 4). **Exceeding** Children create more complex rhythms. They added additional elements into their composition and utilising BPM aptly within 'Busy Beats' (Lesson 2). Children are able to form more complex compositions where pitch, rhythm and melody have been considered. They experiment with adding key parts to their compositions to create an intro, chorus and outro. (Lesson 3 and 4).
4	4.9	Making Music	2	Rhythm and Tempo	• To understand and experiment with rhythm and tempo.	• Children can identify and recall a simple rhythm. • Children can explain what tempo is and how changing it can change the mood of a piece of music.	bpm	Busy Beats												IT				
4	4.9	Making Music	3	Melody and Pitch	• To create a melodic phrase.	• Children can show an understanding of melody. • Children can create a simple melodic pattern using 2Sequence and Busy Beats. • Children can use a variety of notes, experimenting with pitch.	synth harmonious	Busy Beats 2Sequence												IT				
4	4.9	Making Music	4	Creating Music	• To compose a piece of electronic music.	• Children can explore and understand how music is created. • Children can experiment with pitch, rhythm and melody to create a piece of		Busy Beats 2Publish												IT				
4	4.1O	Artificial Intelligence	1	What is Artificial Intelligence?	•To understand the basic concept of artificial intelligence. •To identify real-life examples of artificial intelligence. •To recognise the impact of artificial intelligence in daily life.	•Children can define artificial intelligence in their own words. •Children can identify at least three examples of artificial intelligence.	Algorithm Artificial Intelligence Data	2Quiz												IT				**Emerging** Children demonstrate a basic understanding of artificial intelligence (AI). They can define AI as a technology that helps machines do tasks that humans usually do. However, their knowledge is limited to simple examples like voice assistants or robots. They may need support to explain how AI works or identify other AI applications. With additional guidance and simplified explanations, they have the potential to expand their understanding and develop a broader perspective on AI and its impact on daily life. This child shows some awareness of how artificial intelligence affects society. They may not fully grasp the concept of AI's potential benefits and risks. They struggle to recognise the influence of AI in areas such as transportation, entertainment, or education. By providing relatable examples and engaging them in discussions about how AI is changing the world, we can encourage their curiosity and help them develop a deeper understanding of AI's impact on various aspects of life. **Expected** Children demonstrate a fundamental understanding of artificial intelligence. They can explain that AI is a technology that helps machines think and learn like humans. They recognise basic AI applications, such as voice recognition and automated recommendations. With further exploration and exposure to age-appropriate AI topics, they can deepen their knowledge and comprehension of AI's capabilities and limitations, enabling them to understand more complex concepts. Children show an ability to identify artificial intelligence in everyday situations. They can recognise AI-powered technologies like voice assistants, smart devices, or personalised recommendations. They understand how AI enhances convenience and efficiency in these contexts. By encouraging them to observe and reflect on AI's presence in their surroundings, we can strengthen their awareness and foster a deeper appreciation for the role of AI in shaping their experiences. **Exceeding** Children exhibit a secure comprehension of artificial intelligence concepts. They can articulate a detailed explanation of AI, including its ability to analyse data, make decisions, and improve over time. Children showcase strong critical thinking skills when evaluating AI systems and their impact. They can identify potential biases or ethical concerns related to AI applications. They enjoy exploring different perspectives and engaging in thoughtful discussions about AI's implications for society. By exposing them to real-world AI use cases, ethical considerations, and encouraging them to think critically about the consequences of AI technology, we can further develop their analytical abilities and nurture their capacity for responsible AI
4	4.1O	Artificial Intelligence	2	How Artificial Intelligence can	•To recap what is meant by the terminology artificial intelligence. •To explore how artificial intelligence can assist and benefit us in various	•Children can define artificial intelligence. •Children can understand where AI can help us in our daily lives.	Algorithm Artificial Intelligence	2Publish Template												IT				
4	4.1O	Artificial Intelligence	3	The future of Artificial Intelligence	•To understand the potential applications and impact of AI in the future. •To encourage critical thinking and creativity when thinking about the future of AI.	•Children can use critical thinking and creativity in envisioning the future of AI. •Children can express their ideas about the future of AI in a creative manner. •Children can collaborate effectively in paired activities.	Algorithm Artificial Intelligence Data	2Publish Template												IT				
4	4.1O	Artificial Intelligence	4	Artificial Intelligence in action	•To understand how artificial intelligence is being used to create music and art. •To use artificial intelligence to create music and art.	•Children can try and establish which creative compositions are done by humans and which are done by artificial intelligence. •Children can use artificial intelligence to create images and music.	Algorithm Artificial Intelligence Data													IT				
5	5.1	Coding	1	Coding Efficiently	• To review existing coding knowledge. • To be able to simplify code. • To create a playable game.	• 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.	event key press collision object action variable selection if/else statements coordinates simplify efficient	2Code												CS				**Emerging** With support, children can begin to create more complex programs that include different types of events in their code (Unit 5.1 Lesson 1). They are beginning to understand what simulations are and with support they have formulated an algorithm for a simple traffic light sequence (Unit 5.1 Lesson 2). As their coding becomes more complex, they will require support to tackle debugging in a logical rather than a trial-and-error method. Children are beginning to understand how decomposition and abstraction are used in computer programming and with support can break a given process down into parts. (Unit 5.1 Lesson 3) They will usually require support to make use of co-ordinates and variables in their code (Unit 5.1 Lesson 4-6). **Expected** Children can create more complex programs and are beginning to understand that there are ways to simplify code to make their programming more efficient. They are able to recall and apply previous coding knowledge in their code. (Unit 5.1 Lessons 1 and 4).
5	5.1	Coding	2	Simulating a Physical System	• To understand what a simulation is. • To program a simulation using 2Code.	• 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.	simulation physical system algorithm	2Code 2Chart												CS				Children understand what simulations are and can formulate and program an algorithm for an observed traffic light sequence. (Unit 5.1 Lesson 2). Children understand the processes of decomposition and abstraction and can apply this knowledge when planning algorithms for a program. (Unit 5.1 Lesson 3).

5	5.1	Coding	3	Decomposition and Abstraction	•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.	•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.	decomposition abstraction	2Code													CS			Children can include sequence, selection and repetition into code as well as use functions to make their programming more efficient. (Unit 5.1 Lesson 4). Children understand what a physical system is and can consider how they can program objects to behave like the would in 'real life'.
5	5.1	Coding	4	Friction and Functions	•To understand how to use friction in code. •To begin to understand what a function is and how functions work in code.	•Children can create a program which represents a physical system. •Children can create and use functions in their code to make their programming more efficient.	friction function predict	2Code													CS			Children test and debug their program as they go and can use logical methods to identify the approximate cause of any bugs but might need support to identify the specific line of code that is causing the problem. Children begin to understand how functions work (Unit 5.1 Lesson 4). Children understand that there are different variable types and begin to explore how they can be used (Unit 5.1 Lesson 5). Children can 'read' others' code and predict what will happen in a program which helps them to correct errors. They can also make good attempts to fix their own bugs as their coding becomes more complex (Unit 5.1 Lesson 6). Throughout this unit, children will demonstrate that they are open to feedback from both the teacher and fellow peers on their programs, specifically where they are expected to improve or create a game. **Exceeding** Children can create more complex programs and understand that there are ways to simplify code to make their programming more efficient. With ease, they are able to recall and apply previous coding knowledge in their code (Unit 5.1 Lesson 1). Children can write algorithms for and program simulations, they easily adapt their code to (Unit 5.1 Lesson 2).
5	5.1	Coding	5	Introducing Strings	•To understand what the different variable types are and how they are used differently. •To understand how to create a string.	•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.	string variables values tabs text variable collision when key	2Code													CS			Children understand the processes of decomposition and abstraction and naturally apply this knowledge when planning algorithms for programs beyond the point at which it was taught (Unit 5.1 Lesson 3). Children intuitively grasp the concepts of selection, repetition and variables. They like to challenge themselves to combine these with other coding structures to personalise and to improve their programs. They understand how to use functions to improve efficiency (Unit 5.2
5	5.1	Coding	6	Text Variables and Concatenation	•To begin to explore text variables when coding. •To understand what concatenation is and how it works.	•Children can create a string and use it in their program. •Children can use strings to produce a range of outputs in their program.	concatenation print to screen tabs 'if' statement	2Code													CS			
5	5.9	Using External Devices	1	Introducing Purple Chip	•To understand what Purple Chip is. •To be able to upload a program to an external device. •To adapt a program and operate it using Purple Chip	•Children can upload programs to Purple Chip. •Children can adapt code, test it using the emulator and then upload it to an external device.	QR code design view code view input output URL external device	2Code													CS			**Emerging** With support, children can connect an external device to a 2Code program using the QR code. They can control a simple program using the device though they might not be able to 'read' the origin code to work out the required commands (lesson 1). Children experiment with making programs that interact with the Purple Chip; they are more likely to do this through experimentation than planning a full algorithm in advance (all lessons). Children can create program that use the Purple Chip functionality, but these may lack a full appreciation of the purpose of an external device used separately from the host (lessons 5 & 6). Children can give some real-world examples of the use of external devices (lesson 4). **Expected** Children understand the purpose of some external devices. They can connect the Purple Chip and host device to run programs making use of the Purple Chip external device (lesson 1). Children know which code blocks to use to effect changes on the Purple Chip (all lessons). Children can write and code simple algorithms involving an external device. Children can create programs that make use of the functionality of the external device. However, sometimes their practical application might not be fully thought through requiring, for example, the user to interact with both the host and the external device for a program to run, thereby negating the usefulness of the device (lessons 5 & 6). Children can give some real-world examples of the use of external devices (lesson 4). **Exceeding** Children can relate the interaction of the host and Purple Chip to a range of systems that use external devices building upon their own experience with the Purple Chip to envision other uses (all lessons). Children understand the design, code, test, debug process and use this to code, appraise, and further refine their programs. Children understand the practical setup of using an external device and design accordingly, for example, they determine whether a program's function is enhanced using the chip or whether certain programs lend (or do
5	5.9	Using External Devices	2	Operating a program using device movement	• To understand how a device can be programmed to be used as a game controller.	• Children can make a program that responds to an external device being tilted and shaken with visual effects and sounds.	algorithm event debug	2Code													CS			
5	5.9	Using External Devices	3	Text functions with an external device	• To explore the text functions available and appraise their uses. • To create a simple quiz program that can be answered using an external device.	• Children understand how they can program in text-based interactions between a program and an external device. • Children can adapt a simple quiz.	print to screen alert function if/else	2Code													CS			
5	5.9	Using External Devices	4	Interacting with the	• To create a program in which an external device can be used to monitor	• Children can write a program that uses the sounds and motion sensors of an	sensor	2Code													CS			
5	5.9	Using External Devices	5	Extended Project (1)	• To design a program for the Purple Chip	• Children can design a program of their choosing that make use of the Purple Chip		2Code													CS			
5	5.9	Using External Devices	6	Extended Project (2)	• To code, test, debug and share a program for the Purple Chip	• Children can design, code, test and debug a program of their choosing that make		2Code													CS			
5	5.2	Online Safety	1	Responsibilities and Support when Online	•To gain a greater understanding of the impact that sharing digital content can have. •To review sources of support when using technology. •To review children' responsibility to one another in their online behaviour.	•Children think critically about the information that they share online, both about themselves and others. •Children know who to tell if they are upset by something that happens online. •Children can use the SMART rules as a source of guidance when online.	responsibility SMART rules	Internet Browser													DL	Self-image and identity Online bullying Managing information online Privacy and security	Conduct, Content, Contact,	**Emerging** Children demonstrate a developing understanding of their responsibility to others as well as to themselves when communicating and sharing content online. They know what to do if they are upset by online content and know that there are rules such as the SMART rules to protect them (lesson 1).
5	5.2	Online Safety	2	Protecting Privacy	•To know how to maintain secure passwords. •To understand the advantages, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this. •To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.	•Children think critically about what they share online, even when asked by a usually reliable person to share something. •Children have clear ideas about good passwords. •Children can see how they can use images and digital technology to create effects not possible without technology. •Children have experienced how image manipulation could be used to upset them or	encrypt critical thinking image manipulation avatar	Internet Browser 2Paint a Picture													DL	Self-image and identity Online bullying Managing information online Privacy and security	Conduct, Content, Contact,	With support throughout, children demonstrate an understanding of what the SMART rules are but may find it difficult to apply all of these to using technology safely and respectfully (Unit 5.1 Lesson 1). They can create a simple comic strip to teach other children about online safety (Unit 5.2 Lesson 2). **Expected** Children demonstrate an understanding of their responsibility to others as well as to themselves when communicating and sharing content online.
5	5.2	Online Safety	3	Citing Sources	•To learn about how to reference sources in their work. •To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.□	•Children can cite all sources when researching and explain the importance of this. •Children select keywords and search techniques to find relevant information and increase reliability.	citation validity reliability plagiarism bibliography	Internet Browser													DL	Self-image and identity Online bullying Managing information online Privacy and security	Conduct, Content	Children demonstrate a clear understanding of what the SMART rules are and how they should be applied to using technology safely and respectfully (Unit 5.1 Lesson 1). In lesson 1, children demonstrate that they are developing critical thinking skills in their online experience and know what sorts of inappropriate content should be reported. They can apply their knowledge in the creation of a comic strip to teach other children about online safety (Unit 5.2 Lesson 2). When doing image editing in lesson 2, they were able to see both the positive and negative consequences of technological developments including altering images both in terms of impact upon themselves and impact upon others.
5	5.2	Online Safety	4	Reliability	•Ensuring reliability through using different methods of communication.	•Children show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each.	communication	Internet Browser													DL	Self-image and identity Online bullying Managing information online Privacy and security	Conduct	In lesson 3, children can explain why citations must be considered when using the work of others. They know that there is a convention for recording citations and can put this into practice in their work. In lesson 3, children's contributions demonstrate a growing awareness of the context of communication and an ability to view the communication from the intended audience's point-of-view. Most children will be able demonstrate that they understand what is meant by reliable and can build on their ability to identify reliable
5	5.3	Spreadsheets	1	Conversions of Measurements	•To use formulae within a spreadsheet to convert measurements of length and distance.	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.	formula formulae conversion advanced mode	2Calculate													IT			**Emerging** With support throughout, children can create a simple formula with limited success using 2Calculate that converts metres into centimetres (Lesson 1). Children understand what a variable is and can program a variable that converts weeks into years (Lesson 4). Furthermore, they can represent their data as a simple graph (Lesson 2).
5	5.3	Spreadsheets	2	The Count Tool	•To use the count tool to answer hypotheses about common letters in use.	Children can use a spreadsheet to work out which letters appear most often. Children can use the 'how many' tool.	advanced mode 'How many?' tool Variable	2Calculate													IT			**Expected** Children can create a formula using 2Calculate that converts metres into centimetres (Lesson 1). Children can program different variables to convert data from one format and present it in an alternative way (Lesson 4). Furthermore, they can convert their data into a graphical format (Lesson 2). Throughout this unit, children will be tasked with creating spreadsheets which are contextualised and evaluating them. Most children can use suitable layouts and content (and explain this) which achieve a specific goal, such as creating a spreadsheet to work out the area and perimeter of rectangles (Lesson 3). Their layouts and contents will be fit for purpose for their intended audience, such as applying graphs to represent data (Lesson 2). Children will use, manipulate, and create spreadsheets within this unit. Their improving skill of using text variables to perform calculations, advanced mode and count tools will lead to the creation of their own purposeful spreadsheet. Children will invite feedback through sharing their spreadsheets, focusing on the functionality, layout, clear purpose and whether it achieve it. Most children can use 2Calculate to produce functional spreadsheets with clear purpose and their spreadsheets are set up so that interrogation of data is easily achieved. They demonstrate they can use formulae such as converting between measures and incorporating text variables to perform calculations. Automatic graph creation from data sets is easily achieved by the children, including appropriate labelling and graph type for data type. **Exceeding**
5	5.3	Spreadsheets	3	Formulae Including the Advanced Mode	•To use a spreadsheet to model a real-life problem. •To use formulae to calculate area and perimeter of shapes.	Children can use a spreadsheet to work out the area and perimeter of rectangles. Children can use these calculations to solve a real-life problem.	perimeter area modelling	2Calculate													IT			
5	5.3	Spreadsheets	4	Using Text Variable s to Perform Calculati	•To create formulae that use text variables.	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.	text variables cell format totalling tool	2Calculate													IT			
5	5.3	Spreadsheets	5	Event Planning with a Spreadsheet	•To use a spreadsheet to help plan a school cake sale.	Children can use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied.	budget profit	2Calculate													IT			
5	5.4	Databases	1	Searching a Database	To learn how to search for information in a database.	•Children understand the different ways to search a database. •Children can search a database to answer questions correctly.	database search record field sort group arrange statistics	2Investigate													IT			**Emerging** With support, children can contribute to the design of a collaborative (Unit 5.4 Lesson 2) and individual database, although this may be with limited success (Unit 5.4 Lesson 3 and 4). They can design and enter information accurately into their own simple database and create basic questions about their database for their classmates to answer. Furthermore, they can use the search functionalities to answer simple questions (Unit 5.4 Lesson 1, Lesson 3 and 4). **Expected** Children can contribute to the design of a collaborative (Unit 5.4 Lesson 2) and individual database (Unit 5.4 Lesson 3 and 4). They can design and enter information accurately into their own database and create questions about their database for their classmates to answer. Furthermore, they can use the search functionalities to answer questions (Unit 5.4 Lesson 1 and Lesson 3 and 4). Most children will be able to create a database within 2Investigate which contains contextualised information relating to a topic. They can add fields which are appropriate for the topic choice and present data using graphical tools, table views, and search for appropriate content to be displayed to answer a question (Unit 5.4. Lessons 3 & 4). Throughout this unit, children will be learning how to effectively utilise a database. They will respond to feedback from peers and the class teacher. **Exceeding** Most children can interrogate a database, including the different ways the data can be sorted and displayed – Table view, Find, Sort, Charts (Unit 5.4 Lesson 1). They can use more advanced features such as the 'statistics tool' to display multiple pieces of statistical information at the same time and produce reports on specific criterion (Unit 5.4 Lesson 1 & 2). **Exceeding** Children demonstrating greater depth will lead a small group in the design and creation of a collaborative (Unit 5.4 Lesson 2) database. They can create an individual database with a greater number of fields and create complex search questions about their database for their classmates to answer (Questions using and/or statements). Furthermore, they can seamlessly use the search functionalities to answer complex questions (Unit 5.4 Lesson 1 and lesson 3 and 4.)
5	5.4	Databases	2	Creating a Class Database	•To contribute to a class database.	•Children can design an avatar for a class database. •Children can successfully enter information into a class database.	avatar collaborative	2Investigate													IT			
5	5.4	Databases	3	Creating a Topic Database	To create a database around a chosen topic.	•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		2Investigate various (choice)													IT			
5	5.4	Databases	4	Creating a Topic Database	To create a database around a chosen topic.	•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		2Investigate various (choice)													IT			
5	5.5	Game Creator	1	Setting the scene.	•To Introduce the 2DIY 3D tool. •To begin planning a game.	•Children can review and analyse a computer game. •Children can describe some of the elements that make a successful game. •Children can begin the process of designing their own game.	evaluation theme scene textures	2DIY 3D 2Publish template													IT			**Emerging** When creating their games, children think about the component parts and design these as components in a theme rather than completely isolated parts. They increase playability through trial-and-error methods rather than a planned strategy for the design. With support and in small groups, children can use a given success criteria to verbally review and analyse what makes a successful computer game (Unit 5.5 Lesson 1). When creating their own game, limited consideration is given to the end user, but the game does demonstrate simple functionality (Unit 5.5 Lesson 2/3). Furthermore, children can say what they like and do not like about a game (Unit 5.5 Lesson 5). **Expected** Most children can plan a computer game (2DIY3D) using a template. They carefully use the 'Think about' feature in the planning templates to assess their progress against the tasks and how well they have considered key criteria (Unit 5.5. All lessons). When creating their games, children think about the component parts and design these as components in a theme rather than completely isolated parts. They consider aspects such as the movement of the characters and goal objects to increase playability. When designing the game environment, they do this with the end-user experience in mind. Most children can combine text, sound, and graphic components within a 2DIY3D game. Their games demonstrate a well-planned approach, with appropriate use of text, sound, and graphic components. They easily mix their approaches for image use such as uploading and using the drawing tools. Successful application of animation features to objects is applied to enhance their games (Unit 5.5. Lessons 2, 3 & 4). Children can use a given success criteria to review and analyse what makes a successful computer game (Unit 5.5 Lesson 1). Children consider the end user of their game by designing appropriate settings and characters that maintain the user's interest and engagement levels (Unit 5.5 Lesson 2/3). Furthermore, children demonstrate the ability to objectively review and evaluate a range of completed games (Unit 5.5 Lesson 5). Children can evaluate their own and others' games with 2DIY3D for content and design. They use this peer and self-assessment opportunity to make improvements to their own game (Unit 5.5. Lesson 5). Feedback which focuses on the design elements of their game
5	5.5	Game Creator	2	Creating the Game Environment	• To design the game environment.	•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.	screenshot	2DIY 3D 2Publish template													IT			
5	5.5	Game Creator	3	The Game Quest	•To design the game quest to make it a playable game.	•Children can design characters for their game. •Children can decide upon, and change, the animations and sounds that the characters make.	quest	2DIY 3D 2Publish template													IT			
5	5.5	Game Creator	4	Finishing and Sharing	•To finish and share the game.	•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.	instructions	2DIY 3D 2Publish template													IT			

5	5.5	Game Creator	5	Evaluation	•To self- and peer-evaluate.	•Children can evaluate my their own and peers' games to help improve their design for the future.	feedback promotion	2DIY 3D 2Publish template														IT					**Emerging** against key criteria such as playability, challenge, engagement, use of advanced features and suitability for intended audience. **Exceeding** Children think about the entirety of their game at the design stage and can consider the game environment, objects and characters and the
5	5.6	3D Modelling	1	Introducing 2Design and Make	•To be introduced to the 2Design and Make tool.	•Children know what the 2Design and Make tool is for. •Children can explore the different viewpoints in 2Design and Make whilst designing a building.	net template 3D view pattern fill	2Design and Make														IT					**Emerging** With support, children can use the ready-made templates within using 2Design and Make to design the recognisable form of a building (Lesson 1). They will evaluate, refine, edit, and adapt models to suit a design brief (Lesson 2, 3 & 4). **Expected**
5	5.6	3D Modelling	2	Moving Points	•To explore the effect of moving points when designing.	•Children can adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form.	points	2Design and Make														IT					Children will use the ready-made templates within 2Design and Make to design the recognisable form of a building (Lesson 1). They will evaluate, refine, edit, and adapt models to suit a design brief (Lessons 2, 3 and 4). Most children can design a 3D model to fit certain criteria using a template from 2Publish. They can present their work making use of screenshots incorporated within their template (Lesson 3).
5	5.6	3D Modelling	3	Designing for a Purpose	•To design a 3D model to fit certain criteria.	•Children can explore how to edit the polygon 3D models to design a 3D model for a purpose.	design brief	2Design and Make														IT					Children designs demonstrate that they have considered the brief and can discuss changes they intend to make to their designs to refine them for printing (Lesson 4). Most children will invite feedback which focuses on how well their designs meet an intended purpose, explicitly, the skill of editing existing polygons.
5	5.6	3D Modelling	4	Printing and Making	•To refine and print a model.	•Children can refine one of their designs to prepare it for printing. •Children can print their design as a 2D net and then created a 3D model.	3D Printing	2Design and Make														IT					**Exceeding**
5	5.7	Concept Maps	1	Introduction to Concept Mapping	•To understand the need for visual representation when generating and discussing complex ideas.	•Children can make connections between thoughts and ideas. •Children can see the importance of recording concept maps visually.	concept	2Connect														IT					**Emerging** With support and in a small group, children can use 2Connect to design and create concept maps that collect and present a range of ideas, although at times these might not be linked (Lessons 1 and 2).
5	5.7	Concept Maps	2	Using 2Connect	•To understand and use the correct vocabulary when creating a concept map.	•Children understand what is meant by 'concept maps', 'stage', 'nodes' and 'connections.'	node connections	2Connect														IT					With help, children can use the additional features of the software in 2Connect to present their concept maps as a visual whole class presentation (Lesson 4) and as simple written text (Lesson 3).
5	5.7	Concept Maps	3	2Connect Story Mode	•To understand how a concept map can be used to retell stories and information.	•Children have used 2Connect Story Mode to create an informative text.	story mode heading	2Connect														IT					**Expected** Children can use 2Connect to design and create concept maps that collect and present a range of linked ideas (Lessons 1 and 2). Children
5	5.7	Concept Maps	4	Collaborative Concept Maps	•To create a collaborative concept map and present this to an audience.	•Children have used 2Connect collaboratively to create a concept map. •Children have used Presentation Mode to present their concept maps to an	collaborate presentation mode	2Connect														IT					can use the additional features of the software in 2Connect to present their concept maps as a visual whole class presentation (Lesson 4) and as written text (Lesson 3).
5	5.8	Word Processing with MS Word	1	Making a Document from a Blank Page	To know what a word processing tool is for	Children know what a word processing tool is for. Children will be able to create a word processing document altering the look of the text and navigating around the document.	Word Processing Tool document front screen zoom selecting/highlighting font	MS Word														IT					**Emerging** Children know what a word processing tool is for and they can create a word processing document. They can alter the look of the text and navigate around the document (lesson 1). They might need support when navigating the various menus and icons. With support and guidance, children can add an image to a word document, they can resize the image but will find it harder to visualise the effect of using the wrap options (lesson 2 & 3). They make good attempts to include other objects such as shapes (lesson 5) and tables (lesson 7), though they might struggle to achieve the effect that they want.
5	5.8	Word Processing with MS Word	2	Inserting Images: Considering Copyright	To add and edit images to a word document.	Children know how to add images to a word document. Children can edit images to reduce their file size. Children know the correct way to search for images that they are permitted to reuse. Children know how to attribute the original artist of an image.	page orientation copy and paste copyright creative commons attribution	MS Word														IT					Children understand that they should not simply copy images from the internet but that the correct way is to consider copyright and attribute the creator for images used. They will need support to find and include such citations (lesson 2). Children can add page breaks to their document but might need to print the document, mark-up the printed file with edits and then effect the changes to their file.
5	5.8	Word Processing with MS Word	3	Editing Images in Word	To know how to edit images and use word wrap with images and text.	Children can edit their images within Word. Children understand wrapping of images and text.	image editing cropping image transparency	MS Word														IT					**Expected** Children know what a word processing tool is for and they can create a word processing document. They can alter the look of the text and navigate around the document. They pay attention to the readability of the text and its function when formatting text (lesson 1). They know how to find icons for the functionality that they wish to use.
5	5.8	Word Processing with MS Word	4	Adding the Text	To change the look of text within a document.	Children can add appropriate text to their document, formatting in a suitable way. Children can use a style set in Word. Children can use bullet points and numbering.	styles bulleted list numbered list	MS Word														IT					Children can use bullet points and numbering (lesson 4). They consider the overall structure of the document using paragraph formatting, page breaks, headers and footers to increase the usefulness and visual appeal of a document (lesson 5).
5	5.8	Word Processing with MS Word	5	Finishing Touches	To add features to a document to enhance its look and usability.	Children can add text boxes and shapes. Children can consider paragraph formatting such as line spacing, drop capitals. Children can add hyperlinks to an external website.	drop capital text box caption	MS Word														IT					Children can add images (lesson 2), text boxes and shapes (lesson 5) to a word document, they can resize and reposition objects using wrapping options (lesson 2 & lesson 3). Children understand that they should not simply copy images from the internet and routinely consider copyright and attributions when they use images created by others (lesson 2).
5	5.8	Word Processing with MS Word	6	Presenting Information Using Tables	To use tables within MS Word to present information.	Children can add tables to present information. Children can edit properties of tables including borders, colours, merging cells, adding and removing rows and columns. Children can add word art for a heading.	WordArt merge cells column row distribution columns	MS Word														IT					Children can insert tables and edit the properties to include the information that they wish to; they can add and delete rows with guidance. Children know that word processors have template documents that can be used to same time, improve visual aspects and support writing (lessons 7 & 8).
5	5.8	Word Processing with MS Word	7	Writing a Letter Using a Template	To introduce children to templates.	Children can use a Word template and edit it appropriately.	grammar check spell check	MS Word														IT					**Exceeding** Children demonstrating exceeding expectations explore the full functionality of the word processor realising that there is often a function that will help them to perform the task that the wish to accomplish.
5	5.8	Word Processing with MS Word	8	Presenting Information -	To consider page layout including heading and columns.	Children can format a page using a combination of images, headers and columns.	columns	MS Word														IT					Children experiment with different ways to wrap images and text so that they can achieve the effect that they have visualised for their work (lesson 3). When using images or text, children have a well-developed understanding of the correct way to use any material created by another person (lesson 2).
5	5.8	Word Processing with Google Docs	1	Making a Document from a Blank Page	To know what a word processing tool is for.	•Children know what a word processing tool is for. •Children will be abla to create a word processing document, altering the look of the text and navigating around the document.	Word Processing Tool document front screen caps lock cursor selecting/highlighting	Google Docs														IT					**Emerging** Children know what a word processing tool is for, and they can create a word processing document. They can alter the look of the text and navigate around the document (lesson 1). They might need support when navigating the various menus and icons. With support and guidance, children can add an image to a word document, they can resize the image but will find it harder to visualise the effect of using the wrap options (lesson 2 & 3). They make good attempts to include other objects such as text boxes and shapes (lesson 5) and drawings and tables (lesson 7), though they might struggle to achieve the effect that they want.
5	5.8	Word Processing with Google Docs	2	Inserting Images: Considering Copyright	To add and edit images to a document.	•Children know how to add images to a document. •Children know the correct way to search for images that they are permitted to reuse.	page orientation copyright creative commons	Google Docs														IT					Children understand that they should not simply copy images from the internet but that the correct way is to consider copyright and attribute the creator for images used. They will need support to find and include such citations (lesson 2). Children can add page breaks to their document but might need to print the document, mark-up the printed file with edits and then effect the changes to their file.
5	5.8	Word Processing with Google Docs	3	Editing Images	To know how to use word wrap with images and text.	•Children can edit their images within Docs to best present them alongside text. •Children understand wrapping of images and text.	cropping text wrapping	Google Docs														IT					**Expected** Children know what a word processing tool is for, and they can create a word processing document. They can alter the look of the text and navigate around the document. They pay attention to the readability of the text and its function when formatting text (lesson 1). They know how to find icons for the functionality that they wish to use.
5	5.8	Word Processing with Google Docs	4	Adding the Text	To change the look of text within a document.	•Children can add appropriate text to their document, formatting in a suitable way. •Children can use styles to format a document. •Children can use bullet points and numbering.	text styles bulleted lists numbered lists	Google Docs														IT					Children can use bullet points and numbering (lesson 4). They consider the overall structure of the document using page breaks, headers and footers to increase the usefulness and visual appeal of a document (lesson 5).
5	5.8	Word Processing with Google Docs	5	Finishing Touches	To add features to a document to enhance its look and usability.	•Children can add text boxes and shapes. •Children can use page breaks, headers and footers. •Children can add hyperlinks to places in the document and to an external website. •Children can add an automated contents page.	text boxes captions breaks hyperlinks	Google Docs														IT					Children can add images (lesson 2) and drawings and tables (lesson 7) to a word document, they can resize and reposition objects using wrapping options (lesson 2 & lesson 3). Children understand that they should not simply copy images from the internet and routinely consider copyright and attributions when they use images created by others (lesson 2).
5	5.8	Word Processing with Google Docs	6	Sharing Files	To use the sharing capabilities in Google docs	•Children can share their documents with selected users. •Children understand the different permissions when sharing in Google docs.	editor options sharing	Google Docs														IT					Children can insert tables and edit the properties to include the information that they wish to; they can add and delete rows with guidance (lesson 7).
5	5.8	Word Processing with Google Docs	7	Presenting Information Using Tables	To use tables within Google Docs to present information.	•Children can create a vector drawing in their document. •Children can add tables to present information. •Children can edit properties of tables including borders, colours, merging cells,	merge cells column row	Google Docs														IT					Children know that word processors have template documents that can be used to same time, improve visual aspects and support writing (lesson 8).
5	5.8	Word Processing with Google Docs	8	Writing a Letter Using a Template	To introduce children to templates.	•Children can use a template and edit it appropriately. •Children can use the spelling and grammar tools built into Google docs. •(Optional) Children know how to save a document as a pdf and the reasons for doing this. •(Optional) Children know how to print their documents and can print copies of	template spell check grammar check	Google Docs														IT					**Exceeding** Children demonstrating exceeding expectations explore the full functionality of the word processor realising that there is often a function that will help them to perform the task that the wish to accomplish. Children experiment with different ways to wrap objects and text so that they can achieve the effect that they have visualised for their work (lesson 3). When using images or text, children have a well-developed understanding of the correct way to use any material created by another person
6	6.1	Coding	1	Designing and Making a more Complex Program	To design a playable game with a timer and a score. To plan and use selection and variables. To understand how the launch command works.	•Children can plan a program which includes a timer and a score. •Children can follow their plans to create a program. •Children can debug when things do not run as expected.	algorithm action output selection variables repeat timer launch command debug alert string x and y properties coordinates	2Code														CS					**Emerging** Children are beginning to be able to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way with support (Unit 6.1 Lessons 1 and 2). They can then use this design to write a program using 2Code. Children understand sequence, selection and repetition in programs and can use them in their simplest forms. They will require support when combing these aspects e.g. using selection within a repeat in a game (Unit 6.1 Lessons 1, 2 and 6). With support, children can plan, design and create a simple program that includes a single variable relating to timing. They can also include a button which will launch another program (Unit 6.1 Lessons 1 and 2). They will usually require support to make use of variables and manipulate variables in their code and in understanding the way that functions are beneficial (Unit 6.1 Lessons 1 -4). As their coding becomes more complex, they will require support to tackle debugging in a logical rather than a trial-and-error method. Children can make good attempts to 'read' code and predict what will happen in a program (Unit 6.1 Lessons 4-6). They can usually interpret a program in parts but will need support to put the separate parts of a complex algorithm or program together to explain the program as a whole (Unit 6.1 Lesson 6).
6	6.1	Coding	2	Designing and Making a more Complex Program	To design a playable game with a timer and a score. To plan and use selection and variables. To understand how the launch command works.	•Children can plan a program which includes a timer and a score. •Children can follow their plans to create a program. •Children can debug when things do not run as expected.	algorithm action output selection variables repeat timer launch command debug alert string x and y properties coordinates	2Code														CS					**Expected** Children are beginning to be able to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. They can then use this design to write a program using 2Code (Unit 6.1 Lessons 1 and 2). Children can translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures including nesting structures within each other (Unit 6.1 Lessons 1-6). Children can plan, design and create a program that includes variables relating to timing and scoring along with buttons which launch other programs (Unit 6.1 Lessons 1 and 2). Furthermore, children will consider how to organise their code using multiple tabs (Unit 6.1 Lessons 1, 2, 3 and 5). They use functions within their code to eradicate unnecessary code and make their programming more efficient (Unit 6.1 Lesson 3).
6	6.1	Coding	3	Using Functions	To use functions and understand why they are useful. To understand how functions are created and called.	•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.	function turtle object text object execute function call	2Code														CS					Their coding displays an understanding of the function of variables in coding (Unit 6.1 Lessons 1 and 2 and Lesson 6), outputs such as sound and movement (Unit 6.1 Lessons 1 and 2), inputs from the user of the program such as button clicks (Unit 6.1 Lessons 3, 4 & 5) and the value of Functions (Unit 6.1 Lesson 3). Children can make good attempts to 'read' code and predict what will happen in a program (Unit 6.1 Lessons 4 and 6). They can usually interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm or program together to explain the program as a whole (Unit 6.1 Lesson 6).
6	6.1	Coding	4	Flowcharts and Control Simulations	To use flowcharts to test and debug a program. To create a simulation of a room in which devices can be controlled.	•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.	flowchart simulation procedure	2Code 2Chart														CS					Children test and debug their program as they go and can use logical methods to identify the approximate cause of any bugs but might need support to identify the specific line of code that is causing the problem as the complexity of the programs increases. They try to improve and debug their own programs (Unit 6.1 All Lessons). Within their programs, they can use features such as interactivity with the end users with the desired effect of adding greater impact. (Unit 6.1. Lesson 5 and 6).

6	6.1	Coding	5	User Input	To understand the different options of generating user input in 2Code. To understand how user input can be used in a program.	• 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.	input concatenation	2Code	CS			Most children demonstrate a secure understanding of the impact of changing the position of instructions within 2Code. With this knowledge, they can demonstrate use of the tabs feature to carefully section code for the intention of easier debugging and less code error, as their coding becomes more complex. **Exceeding** Children can turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. They can then use this design to write a program using 2Code (Unit 6.1 Lessons 1 and 2). Children's designs show that they are thinking both of the required task, and of how to accomplish this in code. Children test and debug their program as they go and can use logical
6	6.1	Coding	6	Using Text-based Adventures	To understand how 2Code can be used to make a text-based adventure game.	• 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.	text adventure	2Code	CS			
6	6.2	Online Safety	1	Message in a Game	• To identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location. • To identify secure sites by looking for privacy seals of approval, e.g., https, padlock icon. • To identify the benefits and risks of giving personal information and device access to different software.	• Children have used the example game and further research to refresh their memories about risks online including sharing location, secure websites, spoof websites, phishing, and other email scams. • Children have used the example game and further research to refresh their memories about the steps they can take to protect themselves including protecting their digital footprint, where to go for help, smart rules and security software.	secure websites location sharing spoof websites phising password PEGI	2DIY 3D	DL	Self-image and identity Online reputation Online relationships Health, wellbeing and lifestyle Privacy and security	Content, Conduct, Contact, Commerce.	**Emerging** Children can refer to the SMART rules to guide them online. They can navigate networks within Purple Mash (Work folders, class folders and group folders), the local network (school) and the Internet (using as a source for research or leisure time). They use these networks to collaborate with support using Purple Mash tools such as 2Write and 2Connect. They can use search tools and have an awareness of the need to select sources carefully. They can recognise features online that are risks and those that exist to protect them (lesson 1). Children are aware that their actions online have an impact not only on themselves but on others as well. They know to ask for help if they are worried or distressed by something online. **Expected** Children have a good knowledge of the benefits and risks to working collaboratively. They have no trouble navigating networks within Purple Mash (Work folders, class folders and group folders), the local network (school) and the Internet (using as a source for research or leisure time). They use these networks to collaborate using Purple Mash tools such as 2Write, 2Connect and 2Blog and can use a variety of networked devices such as webcams, online tools, printers, and tablets in a connected way for their educational benefit. Children can use search tools and routinely try to verify the validity and reliability of their sources. They look for corroborating sources for information and enter keywords that help them to choose the best results. Children demonstrate an understanding of their responsibility to others as well as to themselves when communicating and sharing content online. They can identify a variety of risks and benefits of technology (lessons 1 and 3). They feel confident in having strategies to help them promote a positive online image of themselves in their digital footprint. Children can identify location sharing as a risk to online safety in lesson 1 and could relate this to work done on protecting their identifying private information. Children were able to identify the padlock and https as aids to the online safety in lesson 1 and could explain what these means referring to the work that they did on this in previous years' online safety units. Children' work in lesson 1, indicates that they have a clear understanding of terms such as Computer virus, Location sharing, phishing scams, spam email, Malware and Identity theft. In lesson 2, they make sensible contributions to the question of what risks there are when installing an App and the possible risks hidden in the small print. Children's work as digital footprint detectives in lesson 2 demonstrates that they understand the impact of a positive and negative digital footprint and how to take control of their own online virtual image.
6	6.2	Online Safety	2	Online Behaviour	• To review the meaning of a digital footprint and understand how and why people use their information and online presence to create a virtual image of themselves as a user. • To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour. • To begin to understand how information online can persist and give away details of those who share or modify it.	• Children understand how what they share impacts upon themselves and upon others in the long-term. • Children know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour when they experience it or witness it as a bystander. • Extension: Children' actions demonstrate that they also feel a responsibility to others when communicating and sharing content online.	digital footprint inappropriate	2Publish template 2Investigate	DL	Self-image and identity Online reputation Online relationships Health, wellbeing and lifestyle Privacy and security	Content, Conduct, Contact, Commerce.	
6	6.2	Online Safety	3	Screen Time	• To 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. • To identify the positive and negative influences of technology on health and the environment.	• Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. • Children can give reasons for limiting screen time. • Children can talk about the positives and negative aspects of technology and balance these opposing views. • Extension: Children have an internalised in-depth understanding of the risks and	print screen screen time data analysis	2Publish template 2Investigate	DL	Self-image and identity Online reputation Online relationships Health, wellbeing and lifestyle Privacy and security	Content, Conduct, Contact, Commerce.	
6	6.3	Spreadsheets	1	Exploring Probability	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.	count tool dice tool chart	2Calculate	IT			**Emerging** With support throughout, children can create a simple spreadsheet and collect a limited set of data using 2Calculate that answers a mathematical problem relating to probability (Unit 6.3 Lesson 1). Children can use a spreadsheet to model a real-life situation (Unit 6.3 Lesson 3). Children can represent data in a given format (Unit 6.3 Lesson 1) and turn this data into a graph (Unit 6.3 Lesson 1). **Expected** Children can create a spreadsheet and collect data using 2Calculate that answers a mathematical problem relating to probability (Unit 6.3 Lesson 1). Children can use a spreadsheet to model a real-life situation (Unit 6.3 Lesson 3). Most children will be able to create spreadsheets which contain visual elements such as suitable graphs which represent their data (Unit 6.3. Lesson 1). They will select an appropriate graphical representation of their data from the available choice. They can create a computational model which successfully solves a given problem (Unit 6.3. Lesson 2). Their use of tools and features to maximise spreadsheet content is secure such as: 'How many', 'function', 'format' and 'image toolbar' (Unit 6.3). They interrogate and refine data with increasing efficiency. For example, children create a spreadsheet to answer a mathematical question, creating a computational model or to support with planning a school event. They utilise advanced features such as the 'formula wizard' for efficiency and know the best layouts to use to support easier interrogations of data (Unit 6.3).
6	6.3	Spreadsheets	2	Creating a Computational Model	• 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.	• 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.	computational model percentage format	2Calculate	IT			
6	6.3	Spreadsheets	3	Use a Spreadsheet to Plan Pocket	• To use a spreadsheet to plan how to spend pocket money and the effect of saving money.	• Children can use a spreadsheet to model a real-life situation and come up with solutions.	budget Advanced mode	2Calculate	IT			
6	6.3	Spreadsheets	4	Planning a School Event	• To use a spreadsheet to plan a school charity day to maximise the money donated to charity.	• Children can use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life.	profit expenses	2Calculate	IT			
6	6.3	Spreadsheets	5	Planning a School Event	• To use a spreadsheet to plan a school charity day to maximise the money donated to charity.	• Children can use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life.	profit expenses	2Calculate	IT			
6	6.4	Blogging	1	What is a Blog?	• To identify the purpose of writing a blog. • To identify the features of successful blog writing.	• Children understand how a blog can be used as an informative text. • Children understand the key features of a blog	blog vlog archive blog post	2Blog	IT	Online relationships	Content, Conduct, Contact	**Emerging** Children can identify some of the key features of a blog and share these using 2Write (Unit 6.4 Lesson 1). With limited support, they can create a suitable blog for a purpose and can post comments on an existing class blog (Unit 6.4 Lessons 3 & 4). Children are aware there is an approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying (Unit 6.4 Lessons 3 & 4). Children understand the importance of being respectful on the internet. Children understand the basic features of a blog and some of the differences between a blog page and a blog post (Unit 6.4 Lesson 1). Children work collaboratively (Unit 6.4 Lesson 2) and individually (Unit 6.4 Lesson 3) to plan, design and create a simple blog. Children become contributors to a blog, their responses to blog posts may be basic (Unit 6.4 Lesson 4). Most children will be able to create a blog with multimedia content and format it appropriately using 2Blog (Unit 6.4. Lessons 2 & 3). They can post comments and blog posts to existing blogs with a complete awareness of how information is presented has an impact on the audience (Unit 6.4). **Expected** Children can identify the key features of a blog and share these using 2Write (Unit 6.4 Lesson 1). They can create a blog for a specific purpose and can post comments on an existing class blog (Unit 6.4 Lesson 2 & 3). Children recognise the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying (Unit 6.4 Lesson 4). Children understand the features of a blog and the differences between a blog page and a blog post (Unit 6.4 Lesson 1). Children work collaboratively (Unit 6.4 Lesson 2) and individually (Unit 6.4 Lesson 3) to plan, design and create a blog. Children become active contributors to a blog, carefully considering their responses to blog posts (Unit 6.4 Lesson 4).
6	6.4	Blogging	2	Planning a Blog	• To plan the theme and content for a blog.	Children can work collaboratively to plan a blog.	collaborate nodes connections	2Blog 2Connect	IT	Online relationships	Content, Conduct, Contact	
6	6.4	Blogging	3	Writing a Blog	• 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 contribute to an existing blog.	• 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.		2Blog	IT	Online relationships	Content, Conduct, Contact	
6	6.4	Blogging	4	Sharing Posts and Commenting	• 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 can post comments and blog posts to an existing class blog. • 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.	commenting approval	2Blog	IT	Online relationships	Content, Conduct, Contact	
6	6.5	Text Adventures	1	What Is a Text Adventure? Planning a Story Adventure	• 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.	• 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	text adventure	2Connect 2Create a Story	IT\CS	Self-image and identity	Conduct	**Emerging** Children can turn a simple story with at least one decision into a logical design using 2Connect (Unit 6.5 Lesson 1). They might need support when completing the decision tree. Children can create individual pages in 2Create a Story (Unit 6.5 Lesson 2) but will need support to link these parts in a logical way. In (Unit 6.5 Lesson 3), they can design a simple map with a sequence of rooms and one item to collect. In (Unit 6.5 Lesson 4), they will need support to turn their designs into code but can succeed in representing the player navigating to different rooms. They can debug a simple program with support. In (Unit 6.5 Lesson 4), they will need support to relate the examples to their own design, especially when using variables, but will be able to code some of the elements of their own design independently and can write code that take input from the user. Children can relate the example design to the example program and can predict what will happen in the program using the design document. In (Unit 6.5 Lesson 4), they can use their design to test whether their program has bugs but will need support to identify where these bugs are in their code and to fix them. **Expected** Children can turn a simple story with 2 or 3 levels of decision making into a logical design using 2Connect (Unit 6.5 Lesson 1). Having seen an example, they can use this to make the story their own. Children can create the pages for the component parts of the design in 2Create a Story (Unit 6.5 Lesson 2) and make good attempts to link these parts in a logical way. They might need support when debugging the linked pages if things do not proceed as expected. In (Unit 6.5 Lesson 3), they can make a design map with a sequence of rooms including rooms in which the player needs to make a choice to complete the game and collect items. In (Unit 6.5 Lesson 4), they can use the example code to turn their own designs into code. Children will debug as they code and might need some support in identifying the cause of some bugs. Children can relate the example design to the example program and can predict what will happen in the program using the design document. In their own program, they can use their design algorithm to debug their adventure story. In (Unit 6.5 Lesson 4), they can use their design to test whether their program has bugs and identify where in their code, their bugs occur. Most children apply their knowledge of coding and the fundamental order of instructions through creating their own story-based adventure
6	6.5	Text Adventures	2	Making a Story-based Adventure Game	• To use 2Connect plans for a story adventure to make the adventure using 2Create a Story.	• 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.	sprite link	2Create a Story 2Connect Displayboards	IT\CS	Self-image and identity	Conduct	
6	6.5	Text Adventures	3	Introducing Map-Based Text Adventures	• To introduce an alternative model for a text adventure which has a less sequential narrative.	• Children can map out an existing text adventure. • Children can contrast a map-based game with a sequential story-based game. • Extension: Children can make a comprehensive design map with a sequence of rooms including rooms in which the player needs to make a choice and collect items in a certain order to complete the game.	functions selection variables repeat	2Publish template 2Code 2Chart (extension)	IT\CS	Self-image and identity	Conduct	
6	6.5	Text Adventures	4	Coding a Map-Based Text Adventure	• To use written plans to code a map-based adventure in 2Code.	• Children can create their own text-based adventure based upon a map. • Children can use coding concepts of functions, two-way selection (if/else statements) and repetition in conjunction with one another to code their game. • Children make logical attempts to debug their code when it does not work correctly.	functions selection variables repeat debugging	2Publish template 2Code 2Chart (extension)	IT\CS	Self-image and identity	Conduct	
6	6.6	Networks	1	The World Wide Web and the Internet	• To discover what the children know about the Internet.	• Children know the difference between the World Wide Web and the internet. • Extension: Children can provide examples of the difference between the World Wide Web and the Internet.	Internet World Wide Web website network web server web page	2Connect 2Write 2Quiz	IT			**Emerging** Children are aware there is a difference between the Internet and the World Wide Web and can show all the things they use the internet for using 2Connect (Unit 6.6 Lesson 1). Children know there are different network types such as WAN and LAN and can provide some insight into how they access the internet at school (Unit 6.6 Lesson 2). **Expected** Children can explain the difference between the Internet and the World Wide Web and can show all the things they use the internet for using 2Connect (Unit 6.6 Lesson 1). Children know what a WAN and LAN are and can describe how they access the internet in school (Unit 6.6 Lesson 2). **Exceeding** Children know difference between the Internet and the World Wide Web and can provide examples. They can show the main uses for the internet using 2Connect (Unit 6.6 Lesson 1). Children can explain the differences between more than two network types such as: LAN, WAN, WLAN and SAN. In greater detail, children can describe how they access the internet at school and the hypothetical connections their computing device makes (Unit 6.6 Lesson 2).
6	6.6	Networks	2	Our School Network and Accessing the Internet	• To find out what a LAN and WAN are. • To find out how we access the internet in school.	• Children know about their school network. • Extension: Children can explain the differences between more than two network types such as: LAN, WAN, WLAN and SAN.	LAN WAN WLAN router switch hub	2Connect 2Chart	IT			
6	6.6	Networks	3	Research	• To research and find out about the age of the internet. • To think about what the future might hold.	• Children have researched and found out about Tim Berners-Lee. • Children have considered some of the major changes in technology which have taken place during their lifetime and the lifetime of their teacher/another adult.	search engine ip address ISP	2Connect 2Publish template	IT			
6	6.7	Quizzing	1	Introducing 2DIY	• To create a picture-based quiz for young children.	• Children have used the 2DIY activities to create a picture-based quiz. • Children have considered the audience's ability level and interests when setting the quiz. • Children have shared their quiz and responded to feedback.	quiz audience copy\paste selfie undo\redo audio clipart image	2DIY Displayboard	IT			**Emerging** With support throughout, children can plan, design and create simple quizzes using given software- 2DIY, 2Quiz and 2Investigate. Throughout the unit, children begin to consider their audience, their ability and interests and make decisions based upon this. Children sometimes choose appropriate software for the questions that they want to ask (Unit 6.7 Lesson 2 and 3). Children give and respond to feedback, although this may be at a basic level, and they can make simple edits to their quizzes (Unit 6.7 Lesson 1). **Expected** Children can plan, design and create various quizzes using a variety of software- 2DIY, 2Quiz and 2Investigate. Throughout the unit, children consider their audience, their ability and interests and make decisions based upon this. Children choose appropriate software for

6	6.7	Quizzing	2	Using 2Quiz	•To learn how to use the question types within 2Quiz.	•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.	preview case-sensitive clone	2Quiz 2Blog												IT			the questions that they want to ask (Unit 6.7 Lesson 2 and 3). Children give and respond to feedback; they edit and redesign their quizzes accordingly (Unit 6.7 Lesson 1). Most children can create purposeful online quizzes for an intended audience using the 2DIY suite of applications. With ease, they combine text with images and audio to enhance their quizzes. The question types used are fit for audience and serve to add additional enhancements for the intended user. Extra features such as using the instruction window and time limit are applied aptly (Unit 6.7. Lessons 1 to 3). **Exceeding** Children demonstrating greater depth see the links between the variety of software- 2DIY, 2Quiz and 2Investigate. They select the software based on whether it is appropriate for the task and can give reasons to justify their choice (Unit 6.7 Lesson 2 and 3). Children give and respond to feedback; they edit and redesign their quizzes accordingly (Unit 6.7 Lesson 1).
		Quizzing	3	Using 2Quiz	•To learn how to use the question types within 2Quiz.	•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.	preview case-sensitive	2Quiz 2Blog												IT			
6	6.7	Quizzing	4	Exploring Grammar Quizzes	•To explore the grammar quizzes.	•Children have tried out the different types of grammar games. •Children have chosen an appropriate grammar tool to make their own grammar game(s).	cloze	Word Spot Cloze (Optional: Sentence Pairs, Word Combos												IT			
6	6.7	Quizzing	5	A Database Quiz	•To make a quiz that requires the player to search a database.	•Children have used a 2Investigate quiz to answer quiz questions. •Children have designed their own quiz based on one of the 2Investigate example databases.	database record field statistics	2Investigate Displayboard												IT			
6	6.7	Quizzing	6	Are you Smarter than a 10- (or 11-)	•To make a quiz to test your teachers or parents.	•Children have used their knowledge of quiz types to create a quiz show quiz based on a curriculum area.		2Quiz												IT			
6	6.8	Understanding Binary	1	What is Binary?	**Overarching Aim** Examine how whole numbers are used as the basis for representing all types of data in digital systems through: •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.	**Overarching Criteria** Children understand binary as a number system and its purpose and application in computing. •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.	input decimal binary integer denary base 10 base 2 transistor microprocessor chip nanotechnology bit nibble byte	2Connect 2Write 2Quiz 2Question												CS			**Emerging** With support throughout, children will begin to understand how within digital systems, whole numbers are used as the basis of representing all types of data and that this is known as a binary format. Children will begin to know that binary codes contain only the digits 0 and 1. When looking at binary, children will begin to be able to relate 0 to an 'off' switch and 1 to an 'on' switch (Lesson 1). Some children will show an understanding of the system in order to be able to count up from 0 in binary, as well as converting simple decimal numbers into binary, using visual aids and support (Lesson 2 &3). **Expected** Throughout the unit, children will examine and understand how within digital systems, whole numbers are used as the basis of representing all types of data and that this is known as a binary format. Children will know that binary codes contain only the digits 0 and 1. When looking at binary, children will be able to relate 0 to an 'off' switch and 1 to an 'on' switch and know that these represent the on and off electrical states respectively in hardware and robotics (Lesson 1). Most children will show an understanding of the system in order to be able to count up from 0 in binary, as well as converting decimal numbers into binary, using visual aids if necessary (Lessons 2&3). Children will understand the 'division by two' method as a way of converting numbers from decimal to binary (Lesson 3). Children will be able to use their knowledge of binary and of code to make their own program which represents the state of an object as active or inactive, using the respective binary values or 1 or 0 (Lesson 4). **Exceeding** Children demonstrating greater depth will understand and confidently explain how the binary system works within a wide variety of digital systems. Children will show a deep understanding of the system in order to be able to count up from 0 in binary, as well as converting decimal numbers into binary using the 'division by two' method. (Lesson 3). Children will be able to use their knowledge of binary and of code to design, make and evaluate their own programs which represents the state of an object as active or inactive, using the respective binary values or 1 or 0 (Lesson 4).
6	6.8	Understanding Binary	2	Counting in Binary	**Overarching Aim** Examine how whole numbers are used as the basis for representing all types of data in digital systems through:	**Overarching Criteria** Children understand binary as a number system and its purpose and application in computing. •Children can count up from 0 in binary using visual aids if needed.	sequence switch	2Code 2Publish template												CS			
6	6.8	Understanding Binary	3	Converting from Decimal to Binary	**Overarching Aim** Examine how whole numbers are used as the basis for representing all types of data in digital systems through: •To examine how whole numbers are used as the basis for representing all 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	**Overarching Criteria** Children understand binary as a number system and its purpose and application in computing. •Children can convert numbers to binary using the division by two method. •Children can check their own answers using the converter tool.	remainder	2Quiz 2Code												CS			
6	6.8	Understanding Binary	4	Game States	**Overarching Aim** Examine how whole numbers are used as the basis for representing all types of data in digital systems through: •To examine how whole numbers are used as the basis for representing all types of data in digital systems. •To examine the state of an object in a game or action or inaction using the	**Overarching Criteria** Children understand binary as a number system and its purpose and application in computing. •Children can make use of a variable set to 0 or 1 to control game states.	game states variable	2Code 2Quiz												CS			
6	6.9	Spreadsheets with MS Excel	1	What is a Spreadsheet?	•To know what a spreadsheet looks like. •To navigate and enter data into cells.	•Children know some uses of a spreadsheet tool. •Children can navigate around a spreadsheet using cell references. •Children can enter data into cells. •Children understand new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook.	spreadsheet cell cell reference data column row workbook	MS Excel												IT			**Emerging** With support, children can save and open workbooks and navigate to different sheets within a workbook (Lesson 1). Children can enter data into cells (Lesson 1) and find specific cell locations within a spreadsheet (lesson 1). Children understand some of the new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook. Children might need support navigating the different menus and icons within the software. With specific guidance, children can use a spreadsheet to carry out basic calculations including some of the operators (addition, subtraction, multiplication and division) using formulae (lesson 2). They might need support when deciding where to use them and what the information shows. With step-by-step assistance, children can create a spreadsheet to model a specific situation and calculate the answer to a one-step problem (lesson 3 & lesson 7). Children have explored features such as flash fill, convert text to tables and splitting cells and have an understanding that this can make data clearer. They need support to use these functions and interpret the data (lesson 4). Children know that a spreadsheet can create graphs from data. With specific instructions, children can make a graph from data and use it to answer a simple question (lesson 6). NB Lesson 8 provides an opportunity for children to demonstrate many of the skills taught in the previous lessons and can be useful as the basis for assessment. **Expected** Children have a good understanding of a variety of purposes for using spreadsheets. Children appreciate the advantage of using a spreadsheet for certain tasks over a paper-based method. Children understand and use the new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook. They can locate frequently used functions and tools and know how to find the functions that they need. Children can use a spreadsheet to carry out basic calculations including all the operators (addition, subtraction, multiplication and division) using formulae (lesson 2). Children know that tools such as series fill exist and can make use of the assistance they provide. Children understand the idea of using a spreadsheet to model a situation. Given a precise situation and guidance on layout, they can create a useful model. They can use it to answer questions (lesson 3 & lesson 7). With direction, children can use flash fill, convert text to tables, splitting cells and sorting for organising and presenting their data in a spreadsheet (lesson 4). Children know how to incorporate formulae for percentages, averages, max and min into their spreadsheets (lesson 5). They are beginning to develop a critical eye when it comes to the conclusions that can be made from data (lesson 5, step 2.1). Children can use graphic functionality within a spreadsheet program to make their data clearer and use this to answer questions (lesson 6). NB Lesson 8 provides an opportunity for children to demonstrate many of the skills taught in the previous lessons and can be useful as the basis for assessment. **Exceeding**
6	6.9	Spreadsheets with MS Excel	2	Basic Calculations	•To introduce some basic data formulae in Excel. •To demonstrate how the use of Excel can save time and effort when performing calculations.	•Children can use a spreadsheet to carry out basic calculations including addition, subtraction, multiplication and division formulae. •Children can use the series fill function. •Children recognise how using formulae allows the data to change and the	formula formulae calculation formula bar	MS Excel												IT			
6	6.9	Spreadsheets with MS Excel	3	Modelling	•To use a spreadsheet to model a situation.	•Children can use a spreadsheet to model a situation. •Children can use a spreadsheet to solve a problem. •Children can use the SUM function	computational model template budget expense formatting	MS Excel												IT			
6	6.9	Spreadsheets with MS Excel	4	Organising Data	•To demonstrate how Excel can make complex data clear by manipulating the way it is presented.	•Children can use a variety of methods including flash fill, convert text to tables and splitting cells for organising and presenting their data in a spreadsheet. •Children know what is meant by a delimiter.	delimiter sorting flash fill	MS Excel												IT			
6	6.9	Spreadsheets with MS Excel	5	Advanced Formulae and Big Data	•To use formulae for percentages, averages, max and min in spreadsheets.	•Children know how to incorporate formulae for percentages, averages, max and min into their spreadsheets. •Children gain familiarity with range notation in Excel. •Children know some shortcuts that help to make data meaningful. •Children begin to develop a critical eye when it comes to the conclusions that can be	filter average minimum maximum	MS Excel												IT			
6	6.9	Spreadsheets with MS Excel	6	Charts and Graphics	•To create a variety of graphs in Excel.	•Children know that there are ways to represent their data graphically and that Excel can make these calculations for them. •Children gain an understanding of how a graphical representation can make data easier to interpret. •Children make a chart using Excel recommendations.	graph chart horizontal axis vertical axis conditional formatting	MS Excel												IT			
6	6.9	Spreadsheets with MS Excel	7	Using a Spreadsheet to Plan a Cake Sale	•To use a spreadsheet to model a real-life situation.	•Children can understand how a spreadsheet can be used to plan an event. •Children understand the advantages of using formulae when data is subject to change	budget profit	MS Excel												IT			
6	6.9	Spreadsheets with MS Excel	8	Using a Spreadsheet to	•To apply spreadsheet skills to solving problems.	•To apply all new spreadsheet skills to solving problems and presenting data. •To explore printing spreadsheets.		MS Excel												IT			
6	6.3	Spreadsheets with Google Sheets	1	What is a Spreadsheet?	•To know what a spreadsheet looks like. •To navigate and enter data into cells.	•Children know some uses of a spreadsheet tool. •Children can navigate around a spreadsheet using cell references. •Children can enter data into cells. •Children understand new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook.	spreadsheet cell cell reference data column row	Google Sheets												IT			**Emerging** With support, children can save and open workbooks and navigate to different sheets within a workbook (Lesson 1). Children can enter data into cells (Lesson 1) and find specific cell locations within a spreadsheet (lesson 1). Children understand some of the new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook. Children might need support navigating the different menus and icons within the software. With specific guidance, children can use a spreadsheet to carry out basic calculations including some of the operators (addition, subtraction, multiplication and division) using formulae (lesson 2). They might need support when deciding where to use them and what the information shows. With step-by-step assistance, children can create a spreadsheet to model a specific situation and calculate the answer to a one-step problem (lesson 3 & lesson 7). Children have explored features such as flash fill, convert text to tables and splitting cells and have an understanding that this can make data clearer. They need support to use these functions and interpret the data (lesson 4). Children know that a spreadsheet can create graphs from data. With specific instructions, children can make a graph from data and use it to answer a simple question (lesson 6). NB Lesson 8 provides an opportunity for children to demonstrate many of the skills taught in the previous lessons and can be useful as the basis for assessment. **Expected** Children have a good understanding of a variety of purposes for using spreadsheets. Children appreciate the advantage of using a spreadsheet for certain tasks over a paper-based method. Children understand and use the new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook. They can locate frequently used functions and tools and know how to find the functions that they need. Children can use a spreadsheet to carry out basic calculations including all the operators (addition, subtraction, multiplication and division) using formulae (lesson 2). Children know that tools such as series fill exist and can make use of the assistance they provide. Children understand the idea of using a spreadsheet to model a situation. Given a precise situation and guidance on layout, they can create a useful model. They can use it to answer questions (lesson 3 & lesson 7). With direction, children can use flash fill, convert text to tables, splitting cells and sorting for organising and presenting their data in a spreadsheet (lesson 4). Children know how to incorporate formulae for percentages, averages, max and min into their spreadsheets (lesson 5). They are beginning to develop a critical eye when it comes to the conclusions that can be made from data (lesson 5). Children can use graphic functionality within a spreadsheet program to make their data clearer and use this to answer questions (lesson 6). NB Lesson 8 provides an opportunity for children to demonstrate many of the skills taught in the previous lessons and can be useful as the basis for assessment. **Exceeding**
6	6.9	Spreadsheets with Google Sheets	2	Basic Calculations	•To introduce some basic data formulae in Sheets. •To demonstrate how the use of Sheets can save time and effort when performing calculations.	•Children can use a spreadsheet to carry out basic calculations including addition, subtraction, multiplication and division formulae. •Children can use the series fill function. •Children recognise how using formulae allows the data to change and the	formula formulae calculation formula bar	Google Sheets												IT			
6	6.9	Spreadsheets with Google Sheets	3	Modelling	•To use a spreadsheet to model a situation.	•Children can use a spreadsheet to model a situation. •Children can use a spreadsheet to solve a problem. •Children can use the SUM function	computational model template budget expense formatting	Google Sheets												IT			
6	6.9	Spreadsheets with Google Sheets	4	Organising Data	•To demonstrate how spreadsheets can make complex data clearer by manipulating the way it is presented.	•Children can use a variety of methods including flash fill, convert text to tables and splitting cells for organising and presenting their data in a spreadsheet. •Children know what is meant by a delimiter.	delimiter flash fill auto-fit	Google Sheets												IT			
6	6.9	Spreadsheets with Google Sheets	5	Advanced Formulae and Big Data	•To use formulae for percentages, averages, max and min into spreadsheets.	•Children know how to incorporate formulae for percentages, averages, max and min into their spreadsheets. •Children gain familiarity with range notation. •Children know some shortcuts that help to make data meaningful. •Children begin to develop a critical eye when it comes to the conclusions that can be	filter	Google Sheets												IT			
6	6.9	Spreadsheets with Google Sheets	6	Charts and Graphics	•To create a variety of charts and graphs to understand data.	•Children know that there are ways to represent their data graphically and that spreadsheets can make the process of representing data easier. •Children gain an understanding of how a graphical representation can make data easier to interpret. •Children make a variety of charts using Sheets.	graph chart horizontal vertical axislayers	Google Sheets												IT			
6	6.9	Spreadsheets with Google Sheets	7	Using a Spreadsheet to Plan a Cake Sale	•To use a spreadsheet to model a real-life situation.	•Children can understand how a spreadsheet can be used to plan an event. •Children understand the advantages of using formulae when data is subject to change.	budget profit	Google Sheets												IT			
6	6.3	Spreadsheets with Google Sheets	8	Using a Spreadsheet to	•To apply spreadsheet skills to solving problems.	•To apply all new spreadsheet skills to solving problems and presenting data. •To explore printing spreadsheets.		Google Sheets												IT			