



Bowdon Church School
Subject Overview for Computing
Adapted for BCS from the Purple Mash Scheme of work

Reception	Across the year with main focus in Summer 2				
Understanding the World	<i>Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children’s personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children’s vocabulary will support later reading comprehension.</i>				
End Points	<ul style="list-style-type: none"> - can select colours - can mark make purposefully on the screen. - can choose tools to experiment with. - can use the undo button. - can erase parts of pictures 	<ul style="list-style-type: none"> - can look at photos and identify features. - can take photos using a device 	<ul style="list-style-type: none"> - can explain what ‘private’ means when using technology. - can express how it feels to be uncomfortable with something. - can think about how to show kindness to others. - is aware of the impact of a lot of screen time. 	<ul style="list-style-type: none"> - can describe a route that is in progress. - can describe a route taken by another person while it is being enacted. - can plan routes for toy vehicles. 	<ul style="list-style-type: none"> - can use the buttons on a floor robot to make it move. - can purposefully use the buttons on a floor robot to make it move one step at a time. - can input a program of 2 or 3 steps into a floor robot and then run the program to make it move.
Skills	<ul style="list-style-type: none"> -Use a paint programme to draw ourselves on the IWB 	<ul style="list-style-type: none"> - use games on the IWB - use ipads to take pictures. 	<ul style="list-style-type: none"> - know how to keep ourselves safe online. 	<ul style="list-style-type: none"> - understand and explain how objects work in different ways 	<ul style="list-style-type: none"> - explore direction and ½ step instructions using beebots.
Vocabulary	Button, device, screen, icon, menu, click, tap, move, drag, delete, erase, undo, forwards, backwards, turn				



Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of lessons	1.1 Online safety, exploring purple mash x 4 1.2 Grouping and sorting	1.3 Pictograms x3	1.4 Lego Builders x3 1.5 Maze explorers x4	1.6 Animated stories x5 1.9 Technology outside school x2	1.7 Coding 6-7 (L5/6 could merge).	1.8 Spreadsheets
Lesson Focus	<p><u>Online safety and exploring purple mash</u></p> <ol style="list-style-type: none"> To log in and out safely and understand why that is important. To learn how to find saved work in the Online Work area. To become familiar with the types of resources available in the Topics and Tools section. To start to add pictures and text to work. <p><u>Grouping and sorting</u></p> <ol style="list-style-type: none"> To sort items using a range of criteria. To use the 'grouping' activities and understand the term 'algorithm'. 	<ol style="list-style-type: none"> To understand that data can be represented in picture format. To contribute to a class pictogram. To use a pictogram to record the results of an experiment. 	<p><u>Lego builders</u></p> <ol style="list-style-type: none"> To emphasise the importance of following instructions. To follow and create simple instructions on the computer. To consider how the order of instructions affects the result. <p><u>Maze explorers</u></p> <ol style="list-style-type: none"> To be able to use the direction keys to complete the challenges successfully. To understand how to create and debug a set of instructions (algorithm). Children set challenges for each other. 	<p><u>Animated stories</u></p> <ol style="list-style-type: none"> To create and save a story page on 2Create. To add animation to a picture To add a sound effect and voice recording to a picture To add a background to a picture. Copy and paste to create additional pages. <p><u>Technology outside school</u></p> <ol style="list-style-type: none"> To find and understand examples of where technology is used in the local community To record examples of technology outside school. 	<ol style="list-style-type: none"> To understand that computer programs work by following instructions called code. To understand what objects and actions are. To use an event to control an object. To begin to understand how code executes when a program is run. To understand what backgrounds and objects are. To understand how to use the scale property. Create own computer programme 	<ol style="list-style-type: none"> To be able to navigate around a spread sheet and enter data. Add clip art images to spreadsheet. Use move cell tool Use the lock tool. To use the 'speak' and 'count' tools in 2Calculate to count items.
End Points	<p><u>Online safety and exploring purple mash</u></p> <ul style="list-style-type: none"> - log in to Purple Mash using their own login. - find their saved work in the Online Work area of Purple Mash. - are familiar with some of the key icons: Save, Print, Open and New. 	<ul style="list-style-type: none"> - can discuss and illustrate the transport used to travel to school and show in a simple pictogram. - can discuss what the pictogram shows. - can collect data from rolling a die 20 times and recording the results. - can represent the results as a pictogram. 	<p><u>Lego builders</u></p> <ul style="list-style-type: none"> - know that an algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective. - know that an algorithm written for a computer to follow is called a program. - know that correcting errors in an algorithm or 	<p><u>Animated stories</u></p> <ul style="list-style-type: none"> - use different drawing tools and add text - open and save work, add an animation - adds sound and recordings using the correct tools. - select a background picture using saved pictures and clip art. 	<ul style="list-style-type: none"> - can arrange code blocks to create a set of instructions. - create a programme using object and action code blocks. - use the event block in their programme. - can notice when their code executes when their program is run. 	<ul style="list-style-type: none"> - explain what rows and columns are and enter data into cells. - open the Image toolbox and find and add clipart. - use the 'move cell' tool so that images can be dragged around the spreadsheet. - use the 'lock' tool to prevent changes to cells.



	<p>- 4. Children will know how to use the different icons and writing cues to add pictures and text to their work.</p> <p>Grouping and sorting</p> <p>- can follow a logical process to categorise objects.</p> <p>- logical sorting where items either fit a category or do not.</p>		<p>program is called 'debugging'.</p> <p>Maze explorers</p> <p>- move forwards, backwards, left, right, undo and go back to the starting point.</p> <p>- use diagonal direction keys to move the characters in the right direction and correct it when it goes wrong.</p>	<p>- copy and paste to create additional pages, share class story.</p> <p>Technology outside school</p> <p>- know types of technology used in school and out of school.</p> <p>- have recorded 4 examples of where technology is used away from school.</p>	<p>- can edit a scene by adding, deleting and moving objects.</p> <p>- can change the size of objects using the properties table.</p> <p>- use code to make the programme they designed work.</p>	<p>- give images a value that the spreadsheet can use to count them.</p>
Coverage of NC	1.1, 1.6	1.4	1.1, 1.2, 1.3	1.4, 1.5	1.1, 1.2, 1.3, 1.6	1.6
Vocabulary	Alert, Saving, Avatar Search Button, Shared Folder, Device, Textbox File Name, box, Filter, Topic, Area, Home Screen, Tool Area, Typing Icon, Login, Log out, Menu, My Work Area, Notification, Password, private Algorithm, Criteria, Describe, Equal, Groups: Less than, More than, Sort	Collect Data, Compare, Data, Pictogram, Record, Results, Title, Totals, Visual	Algorithm, Code, Computer, Debugging, instructions, Machine, Programme, Sequence	Animation, Background, Category, Clip-art gallery, Copy, Drop-down menu, E-book, Edit, Eraser, Features, Font, Sounds, Overwrite, Paint tool, Paste, Play Mode, Save, Sound effect, text, Undo, Voice recording	Action, Algorithm, Background, Click, Code, Code blocks, Coding, Code view, Command, Debug, Debugging, Design View, Event, Execute, Instruction, Object, Output, Plan, Programmer, Properties, Run, Scale, Software, Sound	Button, calculations, cell, Clip-art, Column, Count tool, Data, Delete, Image, Lock cell, Move cell, Row, Select, Speak tool
Relevant prior learning	In reception children used the IWB to draw pictures, they took photos on the ipad and they also used Beebots to practise navigation and following instructions. They discussed the need for online safety in an age appropriate capacity.					
Useful links/ CPD	Purple Mash by 2Simple					
Cross curricular links	PSHE - cyberbullying. Maths - grouping/sorting,	Maths: statistics - pictograms	English - writing instructions	English - story telling/drama	Maths - problem solving skills	Maths - data collection and presentation



Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of lessons	Logging on using individual usernames 2.6 Creating pictures	2.1 Coding x6	2.2 Online Safety x6	2.4 Questioning x6	2.7 Making music x5	2.5 Effective Searching x3-4 2.3 Spreadsheets x4
Lesson Focus	<p>1. Log on using personal login details. 2. Log on using personal login details (with password) 3. Login to personal files and save work into their own school file.</p> <p>Creating pictures</p> <p>1. Look at impressionist artwork and recreate using a template. 2. Look at some surrealist artwork and recreate in 2paint.</p>	<p>1. Create a computer program using an algorithm. 2. Understand the collision detection event. 3. Design an algorithm that follows a timed sequence. 4. Understand what different events do in code. 5. Understand the function of buttons in a program. 6. Understand the need to test and debug a program repeatedly.</p>	<p>1. How to refine searches using the Search tool. 2. How to share work electronically using the display boards. 3. Have some knowledge and understanding about sharing more globally on the Internet. 4. Introduce Email as a communication tool using 2Respond simulations. 5. Understand that information put online leaves a digital footprint or trail. 6. Identify the steps taken to keep personal data and hardware secure.</p>	<p>1. Know that pictograms answer limited questions 2. Use yes./no questions to separate information 3. Construct a binary tree/branching database to sort pictures. 4. Use 2question to answer binary tree questions 5. Use a non binary database to answer more complex questions 6. Use the search tool to find information</p>	<p>1. Explore and combine sounds using 2sequence 2. Add sounds to a tune to improve it. 3. Think about how music can be used to express feelings and create tunes which depict feelings. 4. Upload a sound from a bank of sounds into the Sounds section. 5. Record their own sound and upload it into the Sounds section.</p>	<p>Effective Searching</p> <p>1. Understand internet and searching terminology. 2. Read a web search results page. 3. Share knowledge about effective searching.</p> <p>Spreadsheets</p> <p>1. Review prior use of spreadsheets. 2. Use copying, cutting and pasting shortcuts and totalling tools in 2Calculate. 3. Use spreadsheets to add amounts. 4. Create a table and block graph manually</p>
End Points	<p>- to understand why they need their own personal log on that is password protected. - to be able to log onto the school system with their own username/password</p> <p>Creating pictures.</p> <p>- Create an impressionist digital picture using the main features.</p>	<p>- Can explain that for the computer to make something happen, it needs to follow clear instructions (algorithm). - Can create a program using collision detection. - Can predict what will happen in a program that includes a timer-after command.</p>	<p>- Use the search facility to refine searches on Purple Mash by year group and subject. - Can share the work they have created to a display board. - Children are beginning to understand how things can be shared electronically for others to</p>	<p>- Understand that the information on pictograms cannot be used to answer more complicated questions. - Give a range of yes/no questions to separate items. - Children have designed a binary tree to sort pictures of children.</p>	<p>- Use the different sounds within 2Sequence to create a tune. - Children have added sounds to a tune they have already created to change it. - Created two tunes which depict two feelings.</p>	<p>Effective Searching</p> <p>- Complete a quiz about internet and search terms - Search the internet for answers to a quiz. - Create a leaflet with information to help someone search on the internet.</p> <p>Spreadsheets</p> <p>- Use some 2Calculate tools that were introduced in year</p>



	- Create surrealist artwork in 2paint using 2Paint.	- Can use different events in their program to make objects move. - Can modify the properties of a button to fit their program design. - Can use a design document to start debugging a program.	see both on Purple Mash and the Internet. - Can open and send an email to a 2Respond character. - Can explain what a digital footprint is. - Can give examples of things that they would not want to be in their digital footprint.	- Understand that questions are limited to 'yes' and 'no' in a binary tree. - Understand that the user cannot use 2Question to find out answers to more complicated questions. - Children have used a database to answer simple and more complex search questions.	- Created, uploaded and used their own recorded sound. - Created their own tune using some of the chosen sounds.	1. - Use copying, cutting and pasting shortcuts and totalling tools to automatically calculate totals of rows and columns. - Can work out how much they need to pay using coins by using a spreadsheet to help calculate. - Can create a table of data on a spreadsheet and can use the data to create a block graph manually.
Coverage of NC	1.4	1.1, 1.2, 1.3	1.6	1.4	1.4	1.4, 1.5
Vocabulary	E collage, fill, palette rotated, style, symmetry	Action , Algorithm, Background, Bug, Button, click events, collision, detection action, sequence, test, scale timer, command, debug, debugging, event, execute, image, instructions, implement interaction, output, run, properties	Attachment, Digital footprint, Display Board, Email, Filter, Identifying, Internet, Personal information, Private information, Protection, Reply, Search, Secure, Sharing	Avatar, Binary tree/branching database, Data, Database, Field, Information, Pictogram, Question, Record, Search, sort	Bars, Beat, Compose, Note, Tune, Repeat, Sound effect, Soundtrack, Speed, Tempo, volume	Browser, Device, Digital footprint, Domain, Internet, Network, Search engine, URL, Web address, Web page, World wide web. Addition Block graph, cell, column, copy, cut, Data, drag, equals,image, value, Label, Paste, Price, Row, tool table,toolbox total
Relevant prior learning	Unit 1.7 summer 2.	Unit 1.7 summer 2.	Unit 1:1 online safety	Unit 1.3 pictograms	Unit 1.6 stories - similar skills	Unit 1.8 spreadsheets y1 Unit 1.9 searching within a spreadsheet
Useful links/ CPD	Purple Mash by 2Simple					
Cross curricular links	Art - Impressionists	Maths - problem solving skills	PSHE - bullying, respect, trusted adults.	Maths - data collection Science - sorting/ classifying	Music - beat, tempo	Maths - addition, totalling, PSHE - keeping ourselves safe



Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of lessons	3.2 Internet safety x3 3. 4 Touch typing x3	3.1 Coding x6	3.3 Spreadsheets x3 3.8 Graphing x3	3.6 Branching databases x6	3.5 Email x3 3.7 Simulations x3	3.9 Multimedia x6
Lesson Focus	<p><u>Internet safety</u></p> <ol style="list-style-type: none"> 1. What makes a safe password and how to keep it safe. 2. Consider if what can be read on websites is always true. 3. Know where to find help if they see inappropriate content. <p><u>Touch typing</u></p> <ol style="list-style-type: none"> 1. Understand how to sit at the keyboard. 2. Know the names of the fingers. 3. Use fingers correctly for top, home and bottom keys. 	<ol style="list-style-type: none"> 1. Understand what a flowchart is and how flowcharts are used in computer programming. 2. Be able to select the right type of timer for a purpose. 3. Understand how to use the repeat command. 4. Understand the importance of nesting. 5. Design and plan code for their own interactive scene. 6. Create their scene. 	<p><u>Spreadsheets</u></p> <ol style="list-style-type: none"> 1. Find out how spreadsheet programs can automatically create graphs from data. 2. Introduce the 'more than', 'less than' and 'equals' and 'spin' tools. 3. Learn about describing cells using their addresses. <p><u>Graphing</u></p> <ol style="list-style-type: none"> 1. Enter data into a graph and answer questions. 2. Investigate in order to answer a question. 3. Present the results in graphic form. 	<ol style="list-style-type: none"> 1. Sort objects using just YES/NO questions. 2. Complete a branching database using 2Question. 3. Create a branching database of the children's choice using yes/no questions. 4. Input images into the database. 5. Test the branching database on a friend. 	<p><u>Email</u></p> <ol style="list-style-type: none"> 1. Understand methods of communication online. 2. Open and respond to email. 3. Know how to use email safely. <p><u>Simulations</u></p> <ol style="list-style-type: none"> 1. Find out what a simulation is and understand the purpose of simulations. 2. Explore a simulation, making choices and discussing their effects. 3. Work through and evaluate a more complex simulation. 	<ol style="list-style-type: none"> 1. Create a page in a presentation. 2. Add media to a presentation 3. Add animations into a presentation 4. Add timings into a presentation. 5&6. Use skills learnt in previous weeks to design and present an effective presentation.
End Points	<p><u>Internet Safety</u></p> <ul style="list-style-type: none"> - Understand what makes a good password for use on the Internet and realise the outcomes of not keeping passwords safe. - Have accessed and assessed a 'spoof' website. - Identify some physical and emotional effects of playing/ watching inappropriate content/ games. 	<ul style="list-style-type: none"> - Create a computer program that uses click events and timers. - Create a program that uses a timer-every command - Create a computer program that includes use of the repeat command. - Consider nesting when debugging their programs. 	<p><u>Spreadsheets</u></p> <ul style="list-style-type: none"> - Use a spreadsheet program to automatically create charts and graphs from data. - Use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to calculations. - Describe a cell location in a spreadsheet using the 	<ul style="list-style-type: none"> - Understand how YES/NO questions are structured and answered. - Completed a branching database about vegetables. - Choose a suitable topic for a branching database. - Select and save appropriate images. - Know how to use and debug their own and 	<p><u>Email</u></p> <ul style="list-style-type: none"> - Identify pros and cons to different means of communication. - Send emails to others in class using 2connect. - Create rules and know how to respond to various incoming emails. <p><u>Simulations</u></p> <ul style="list-style-type: none"> - Know that a computer simulation can represent real and imaginary 	<ul style="list-style-type: none"> - Add text to a page and format it. - Insert and edit pictures, video and audio. - Use animations and transitions in a presentation. - Add timings to a presentation to present effectively. - Include formatted text, media, transitions,



	<ul style="list-style-type: none"> - Relate cyberbullying to bullying in the real-world and have strategies for dealing with online bullying <u>Touch typing.</u> - Sit with a good posture. - Use fingers correctly for top, home and bottom keys. - Increase speed with practice. 	<ul style="list-style-type: none"> - Plan their scene and code before they create their program. - Confidently make several different things happen in a program. 	<p>notation of a letter for the column followed by a number for the row, and then find them.</p> <p><u>Graphing</u></p> <ul style="list-style-type: none"> - Set up a graph with a given number of fields and input data. - Solve a maths question using graphing. - Present the results in a range of graphical formats. 	<p>others branching databases.</p>	<p>situations.</p> <ul style="list-style-type: none"> - Begin to evaluate simulations by comparing them with real situations and considering their usefulness. - Identify the relationships and rules on which the simulations are based. 	<p>animations and use this to present effectively.</p>
Coverage of NC	2.5, 2.7	2.1, 2.3, 2.6	2.7	2.7	2.2, 2.5, 2.7	2.5, 2.7
Vocabulary	Appropriate, Blog, Internet, Password, Personal information, Permission, Reliable source, Reputable source, Vlogs, website, Keys, space bar, typing	Action, alert, background, bug, button, click, events. Collision, detection, command, debug, degrees, implement, Interval, nest, object, predict, properties, input, flowchart, code, algorithm.	Axis, Chart, Column, graph, Investigation, Row, Title, Equals, Less than, More than, Pie chart, Spinner tool	Binary tree, Branching database, Debugging, closed / open questions.	Address, Attachment, BCC and CC, Communication, Compose, Email, Inbox, Password, Trusted contact, Analysis, Decision, Realistic, Advantages and disadvantages.	Animation, audio, media, video, picture, border, properties, slide, Editing, font, formatting, design, preview, slideshow, sound, effects, text box, wordart, timing, transition.
Purposeful enrich opportunities	E-Safety day, quizzes, assemblies.	Bebras challenge				
Relevant prior learning	Unit 1.7 summer	Unit 1.7 summer Unit 2.1 autumn	2.3 Graphing Spreadsheets	2.4 questioning, binary trees.	2.2 online safety - introduction to email. 1.9 technology outside school	2.2 Online safety display boards 2.6 Creating pictures (inputting and pasting).
Useful links/ CPD	Purple Mash by 2Simple					
Cross curricular links	PSHE -cyberbullying, keeping safe	Maths- problem solving and logical thinking.	Maths- graphs and charts, times tables.	Maths- data management Science - classifying	Science - use of technology in science.	Drama - presentation skills



Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of lessons	4.1 Coding x6 4.2 Online safety x1	4.3 Spreadsheets x5 4.2 Online safety x1	4.7 Effective searching x3 4.2 Online safety x1	4.4 Writing for diff audiences x5 4.2 Online safety x1	4.6 Animation x4-5	4.10 Artificial intelligence x4 4.8 - Hardware Investigators x2
Lesson Focus	<p>1. Create a simple computer program -design, code, test, debug.</p> <p>2. Understand selection using 'IF' statements.</p> <p>3. Understand how to use coordinates in computer programming.</p> <p>4. Understand the Repeat until command and use IF/ESLE statements</p> <p>5. To use a number variable.</p> <p>6. To create a playable game.</p> <p>Online safety To understand that information put online leaves a digital footprint or trail and that this can aid identity theft.</p>	<p>1. Explore the use of the display of decimal places.</p> <p>2. Explore the use of the timer, random number and spin button tools.</p> <p>3. Interpret a line graph to estimate values between data readings.</p> <p>4. Use the currency formatting tool in 2Calculate.</p> <p>5. Use the functions of allocating value to images in 2Calculate to make a resource to teach place value.</p> <p>Online safety to identify the risks and benefits of installing software including apps.</p>	<p>1. Locate information on the search results page.</p> <p>2. Use search effectively to find out information.</p> <p>3. Assess whether an information source is true and reliable.</p> <p>Online safety To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.</p>	<p>1. Explore how font size and style can affect the impact of a text.</p> <p>2. Use a simulated scenario to produce a news report.</p> <p>3. Role-play the job of a journalist in a newsroom.</p> <p>4. Use a simulated scenario to write for a community campaign.</p> <p>5. Mind-map ideas for a community campaign.</p> <p>Online safety To understand the importance of balancing game and screen time with other parts of their lives.</p>	<p>1. Learn how animations are created by hand.</p> <p>2. Find out how 2Animate animations can be created in a similar way using technology.</p> <p>3. Learn about onion skinning in animation.</p> <p>4. Add backgrounds and sounds to animations.</p> <p>5. Understand 'stop motion' animation</p>	<p>1. What is Artificial Intelligence?</p> <p>2. How Artificial Intelligence can help us</p> <p>3. The future of Artificial Intelligence</p> <p>4. Artificial Intelligence in action</p> <p>6. Hardware</p> <p>7. Parts of a computer</p>
End Points	<ul style="list-style-type: none"> - Plan an algorithm for their scene and use 2Code to program it. - Create a program that includes an IF statement. - Make use of the X and Y properties of objects in their coding. 	<ul style="list-style-type: none"> - Add a formula to a cell to automatically make a calculation in that cell. - Use the timer, random number and spin button tools and combine them to make fun ways to explore number. - Use a line graph to find out when the temperature 	<ul style="list-style-type: none"> - Structure search queries to locate specific information. - Use search to answer a series of questions. - Analyse the contents of a web page for clues about the credibility of the information. <p>Online safety</p>	<ul style="list-style-type: none"> - Use text formatting to make a piece of writing fit for its audience and purpose. - Use information to write their own newspaper report. - Use their ideas to write a persuasive letter or poster as part of the campaign. 	<ul style="list-style-type: none"> - Put together a simple animation using paper to create a flick book. - Made a simple animation using 2Animate. - Use the Onion Skin tool to create an animated image. - Use backgrounds and sounds to make more 	<ul style="list-style-type: none"> - define artificial intelligence in their own words. - identify at least three examples of artificial intelligence - define artificial intelligence. - understand where AI can help us in our daily lives.



	<ul style="list-style-type: none"> - Read code that includes repeat until and IF/ ELSE and explain how it works. - Create and use variables when programming. - Create a program that includes and IF/ ELSE statement to make a game that works. <p>Online safety</p> <ul style="list-style-type: none"> - Explain what a digital footprint is and how it relates to identity theft. 	<p>in the playground will reach 20°C.</p> <ul style="list-style-type: none"> - Make practical use of a spreadsheet to help them plan actions. - Allocate values to images and use these to explore place value. <p>Online safety</p> <ul style="list-style-type: none"> - Know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. 	<ul style="list-style-type: none"> - Determine whether activities that they undertake online, infringe another's' copyright - Cite sources 	<ul style="list-style-type: none"> - Assess texts using criteria to judge their suitability for the intended audience. <p>Online safety</p> <ul style="list-style-type: none"> - 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. - Give reasons for limiting screen time. 	<p>complex and imaginative animations.</p> <ul style="list-style-type: none"> - Use ideas from existing 'stop motion' films to recreate their own animation. 	<ul style="list-style-type: none"> - use critical thinking and creativity in envisioning the future of AI. - express their ideas about the future of AI. - use artificial intelligence to create images and music. -name the different parts of a desktop computer - know what the function of the different parts of a computer is
Coverage of NC	2.1, 2.2, 2.3, 2.6, 2.7	2.2, 2.7	2.2	2.2, 2.7	2.2, 2.7	2.1, 2.2, 2.4
Vocabulary	Action Alert Algorithm Background Button Command Co-ordinates, debug, design, event, execute, flowchart, 'If' 'Else' statements, nest, object, prompt, variable, implement, repeat, run, properties	Average, budget, chart, column, data, decimal place, equals to tool, Formula, line graph, random number tool, resize, row, set image.	Balanced view, Internet Key words, reliability, easter eggs, search engine	Campaign, genre, reporter, viewpoint	animation , FPS (frame per second) onion skinning, stop motion	components, CPU: graphics card, hard drive: hardware, input: motherboard, network card, output, peripherals: RAM, software, artificial Intelligence, algorithm, data
Relevant prior learning	3.1 coding autumn. 2.1 coding autumn 1.7 coding summer term 2.2 internet safety - digital footprint. 3.2 internet safety - passwords and privacy.	3.3 spring 1 2.3 summer 2 1.8 summer 3.2 internet safety 3.5 using email safely (phishing).	2.5 effective searching.	3.9 Multimedia presentations.	3.9 multimedia presentations, animations and inserting pictures and videos 2.6 creating pictures 1.6 animated stories	
Useful links/ CPD	Purple Mash by 2Simple					
Cross curricular links	Maths - problem solving skills	Maths - place value & decimals, money	Research for history/geography	English - persuasive writing Drama/presentation skills.	Story telling Art	Art/ Music



Year 5	Autumn 1 -	Autumn 2 -	Spring 1 -	Spring 2 -	Summer 1 -	Summer 2 -
No of lessons	5.2 Online safety x6	5.1 Coding x6	5.5 Game creator x5-6	5.4 Databases x4	5.6 3D modelling x4	5.7 Concept maps x6
Lesson Focus	<ol style="list-style-type: none"> 1. To understand the impact that sharing digital content can have. 2. To know their responsibility to one another - online behaviour. 3. To know how to maintain secure passwords. 4. To understand the advantages, disadvantages, permissions/ purposes of altering an image digitally and why. 5. To know appropriate and inappropriate text, photos and videos/ the impact of sharing these online. 6. To learn how to reference sources in their work. 	<ol style="list-style-type: none"> 1. To begin to be able to simplify code. 2. To program a simulation using 2Code by planning an algorithm. 3. To know what decomposition and abstraction are in Computer Science. 4. To understand how to use friction in code. 5. To understand how to create a string. 6. To understand what concatenation is and how it works. 	<ol style="list-style-type: none"> 1. To Introduce the 2DIY 3D tool. 2. To design the game environment. 3. To design the game quest to make it a playable game. 4. To finish and share the game. 5. To self- and peer evaluate. 	<ol style="list-style-type: none"> 1. To learn how to search for information in a database. 2. To contribute to a class database. 3. To create a database around a chosen topic. 4. Understand how to word questions so that they can be effectively answered using a search of their database. 	<ol style="list-style-type: none"> 1. To be introduced to the 2Design and Make tool. 2. To explore the effect of moving points when designing. 3. To design a 3D model to fit certain criteria. 4. To refine and print a model. 	<ol style="list-style-type: none"> 1. To understand the need for visual representation when generating and discussing complex ideas. 2. To understand the uses of a 'concept map'. 3. To understand and use the correct vocabulary when creating a concept map. 4. To create a concept map. 5. To understand how a concept map can be used to retell stories and information. 6. To create a collaborative concept map and present this to an audience.
End Points	<ol style="list-style-type: none"> 1. Children think about the information that they share online both about themselves and others. 2. Children know who to tell if they are upset by something that happens online. 3. Children think critically about what they share online, even when asked by 	<ol style="list-style-type: none"> 1. Children can use simplified code to make their programming more efficient. 2. Children can select the right images to reflect the simulation they are making. 3. Children recognise the need to start coding at a basic level of abstraction to remove superfluous details 	<ol style="list-style-type: none"> 1. Children can describe some of the elements that make a successful game. 2. Children can upload images or use the drawing tools to create the walls, floor, and roof. 3. Children can design characters for their game with their sounds and animations. 	<ol style="list-style-type: none"> 1. Children can search a database to answer questions correctly. 2. Design an avatar and enter information into a database. 3. Create their own database, selecting a topic. 4. Children know what a database field is and can correctly 	<ol style="list-style-type: none"> 1. Children can explore the different viewpoints in 2Design and Make whilst designing a building. 2. Children can adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form. 3. Children can explore 	<ol style="list-style-type: none"> 1. Children can make connections between thoughts and ideas. 2. Children can see the importance of recording concept maps visually. 3. Children understand what is meant by 'concept maps', 'stage', 'nodes' and 'connections.' 4. Children can create a



	a usually reliable person to share something. 4. Children can see how they can use images and digital technology to create effects not possible without technology. 5. Children have experienced how image manipulation could be used to upset them or others even using simple, freely available tools and little specialist knowledge. 6. Children cite sources for research and explain why	from their program that do not contribute to the aim of the task. 4. Children can create a program which represents a physical system. 5. Children know some ways that text variables can be used in coding. 6. Children can use strings to produce a range of outputs in their program.	4. Children can make their game more unique by selecting the appropriate options to maximise the playability. 5. Children can evaluate their own and peers' games to help improve their design for the future.	add field information.	how to edit the polygon 3D models to design a 3D model for a purpose. 4. Children can print their design as a 2D net and then created a 3D model.	basic concept map. 5. Children have used 2Connect Story Mode to create an informative text. 6. Children have used 2Connect collaboratively to create a concept map. 7. Children have used Presentation Mode to present their concept maps to an audience.
Coverage NC	2.2, 2.5	2.1, 2.3, 2.6	2.1, 2.7	2.7	2.7	2.7
Vocabulary	Appropriate Avatar, bibliography, collaborate, communication copyright, digital footprint, encrypt, image manipulation, malware, ownership Phishing, plagiarism, reference reliability, spoof	Abstraction, action, command, concatenation, coordinates, debug, event, flowchart, function, input, nest, object, output, physical system, predict, repeat, selection, sequence, simulation, variable	Evaluation, Feedback, image, promotion, quest, scene, texture, theme,	Arrange, chart, collaborative, data, database, report, field, record, sort	2D, CAD - computer aided design, Design brief, Net Points, template	Concept map, Healing, Subheading, Presentation mode, Collaborate, connection
Purposeful enrich opps	E-Safety day, quizzes, assemblies.	Bebras challenge				
Relevant prior learning	4.2 plagiarism 3.2 secure passwords	4.1 coding autumn 3.1 coding autumn.	4.1 coding 4.6 animation 3.7 simulations	Y4 4.3 spreadsheets, 4.7 effective searching Y3 branching databases	Year 3 graphing. Year 4 animation Year 3 multimedia	4.4 writing for different audiences 3.6 presenting
Useful links/ CPD	Purple Mash by 2Simple					
Cross curricular links	PSHE cyber bullying, English - plagiarism	Maths -PS skills Computational thinking	English - writing	Maths data handling.	Maths shape.	Mind mapping in science



Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
No of lessons	6.2 Internet safety x6	6.1 coding x6	6.3 spreadsheets x4-5	6.5 text adventures x6	6.4 Blogging x6	6.7 Quizzing x6
Lesson Focus	<p>1. Identify benefits/ risks of mobile devices broadcasting the location of the user/device</p> <p>2. Identify the benefits/ risks of giving personal information away</p> <p>3. Have a clear idea of appropriate online behaviour - how this can protect them and others from online dangers.</p> <p>4. Understand how information online can persist and give away details of those who share or modify it.</p> <p>5. Understand the importance of balancing game/ screen time with other parts of their lives.</p> <p>6. Identify the positive and negative influences of technology on health and the environment.</p>	<p>1. Design a playable game with a timer and a score.</p> <p>2. Understand how functions are created and called.</p> <p>3. Use flowcharts to test and debug a program.</p> <p>4. Create a simulation of a room in which devices can be controlled.</p> <p>5. Understand the different options of generating user input in 2Code.</p> <p>6. Understand how 2Code can be used to make a text-based adventure game.</p>	<p>1. Use a spreadsheet to investigate the probability of the results of throwing many dice.</p> <p>2. 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.</p> <p>3. Use a spreadsheet to plan how to spend pocket money and the effect of saving money.</p> <p>4 Use a spreadsheet to plan a school charity day to maximise the money donated to charity.</p>	<p>1. Find out what a text-based adventure game is and to explore an example made in 2Create a Story.</p> <p>2. Use 2Connect to plan a 'Choose your own Adventure' type story.</p> <p>3. Use 2Connect plans for a story adventure to make the adventure using 2Create a Story.</p> <p>4. Read and understand given code for a text adventure game.</p> <p>5. Debug a text adventure.</p> <p>6. Independently design and implement improvements to a text adventure game.</p>	<p>1. Identify the features of successful blog writing.</p> <p>2. Plan the theme and content for a blog.</p> <p>3. Consider the effect upon the audience of changing the visual properties of the blog.</p> <p>4. Understand how to contribute to an existing blog.</p> <p>5. Understand the importance of commenting on blogs.</p> <p>6. Understand how and why blog posts and comments are approved by the teacher.</p>	<p>1. Create a picture-based quiz for young children.</p> <p>2. Learn how to use the question types within 2Quiz.</p> <p>3. Explore the grammar quizzes</p> <p>4. Make a quiz that requires the player to search a database.</p> <p>5. Make a quiz to test your teachers or parents.</p>
End Points	<ul style="list-style-type: none"> - Used the example game about risks online - sharing a location, secure websites, spoof websites, phishing, and other email scams. - Used the example game about the steps they can 	<ul style="list-style-type: none"> - Plan a program which includes a timer and a score and debug when needed. - Create a program that uses multiple functions 	<ul style="list-style-type: none"> - Create a spreadsheet to answer a mathematical question relating to probability. - Problem solve using the count tool. 	<ul style="list-style-type: none"> - Map out a story-based text adventure. - Use 2Connect to record their ideas. - Use the full functionality of 2Create a Story Adventure mode to create, 	<ul style="list-style-type: none"> - Understand the key features of a blog. - Work collaboratively to plan a blog. - Create a blog or blog post with a specific purpose. 	<ul style="list-style-type: none"> - Consider the audience's ability level and interests when setting the quiz. - Ideas about what sort of questions are best suited to the different question types.



	<p>take to protect themselves</p> <ul style="list-style-type: none"> - protecting their digital footprint, where to go for help, smart rules and security software. - Understand how what they share impacts upon themselves and upon others in the long-term. - Know about the consequences of promoting inappropriate content online/ how to stop such behaviour when they experience it or witness it as a bystander. - Can give reasons for limiting screen time. 	<p>with the code arranged in tabs.</p> <ul style="list-style-type: none"> - Create flowcharts for procedures. - Be creative with the way they code to generate novel visual effects. - Can attribute variables to user input. - Can design their own textbased adventure game based on one they have played. 	<ul style="list-style-type: none"> - Create a machine to help work out the price of different items in a sale. - Use a spreadsheet to model a real-life situation and come up with solutions. - Use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life. 	<p>test and debug using their plan.</p> <ul style="list-style-type: none"> - Explain the features and purpose of code within a given text adventure. - Make logical attempts to debug more complex code involving a combination of functions, variables and a loop. - Suggest and implement ideas to further develop the program. 	<ul style="list-style-type: none"> - Understand that the way in which information is presented has an impact upon the audience. - Post comments and blog posts to an existing class blog. - Understand the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying. 	<ul style="list-style-type: none"> - Choose an appropriate tool to make their own grammar game(s). - Use a 2Investigate quiz to answer quiz questions. - Use their knowledge of quiz types to create a quiz show quiz based on a curriculum area.
Coverage of NC	2.2, 2.4, 2.5	2.6, 2.7	2.7	2.1, 2.3	2.2	2.7
Vocabulary	Data analysis, Digital footprint, Inappropriate, Sharing, Password, PEGI rating, Print screen, Screen time, Secure, websites, spoof	Action, command, debug, decomposition, event, execute, run, input, launch command, object, output, predict, procedure, sequence, tabs, timer,	Advanced mode, budget, columns, data, dice tool, expense, format cell, formula, formula wizard, move cell tool, percentage, probability, profit, rows, spreadsheet.	Debug, Flow of control, Function, Link, QR code, Repeat, Selection, Sprite, Text adventure	Approval, Blog post, Collaborate, Commenting, Nodes, vlog	Audience, Audio, Case-sensitive clipart, Clone. Cloze, Database record, image, Selfie, Statistics, undo/redo, Preview, quiz
Relevant prior learning	<p>5.2 secure passwords, permissions, inappropriate content.</p> <p>4.2 plagiarism</p> <p>3.2 secure passwords</p> <p>2.2 digital footprint</p>	<p>5.1 abstraction, simplifying code, strings.</p> <p>4.1 coding autumn</p> <p>3.1 coding autumn.</p> <p>2.1 coding autumn</p> <p>1.7 coding summer term</p>	<p>4.3 spreadsheets.</p> <p>3.3 spring 1</p> <p>2.3 summer 2</p> <p>1.8 summer</p>	<p>5.1 coding</p> <p>5.5 game creator</p>	<p>5.6 and previous online safety - responsibility when sharing.</p> <p>4.7 effective searching.</p>	<p>5.5 game creator</p> <p>4.4 writing for diff audiences</p> <p>3.6 branching databases yes/no questions</p>
Useful links/ CPD	Purple Mash by 2Simple					
Cross curricular links	PSHE- cyber-bullying, respect,	Maths - problem solving	Maths - data presentation, money and budgeting.	Maths - problem solving.	English - writing for different audiences.	English - writing for audiences



National Curriculum Statutory requirements (referenced in the above table)			
Aims	<p><i>The national curriculum for computing aims to ensure that all pupils: can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems are responsible, competent, confident and creative users of information and communication technology</i></p>		
KS1	understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions (1.1)	use logical reasoning to predict the behaviour of simple programs (1.3)	recognise common uses of information technology beyond school (1.5)
	create and debug simple programs (1.2)	use technology purposefully to create, organise, store, manipulate and retrieve digital content (1.4)	use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies (1.6)
KS2	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts (2.1)	use sequence, selection, and repetition in programs; work with variables and various forms of input and output (2.3)	use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (2.6)
	understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration (2.2)	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (2.4)	select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information (2.7)
		use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (2.5)	