Computing Long term plan

Scope:

- Computer Science - data representation, algorithms, data structures and programming
- Information Technology - use of computers within society
- Digital literacy - knowledge and ability to use technology confidently, competently and in a safe way

Computing	AU1	AU2	SP1	SP2	SU1	SU2
Reception	**Navigating simple programs** **Vocabulary: Ipad, computer, keyboard, key, screen, mouse, program, app, click, drag, close/open** *Know the names of some parts of the computer *Know that the mouse moves the pointer on the screen *Know how to 'click' the mouse button to make things happen *Know how to open or close an app/program **Project Evolve:** *Self-image & identity *Online Bullying		**Online safety** **Vocabulary: device, internet, online safety, passwords, trusted adult, screen time** **Key knowledge:** *Why we use passwords to keep our information safe *Not to share passwords with anyone (other than a trusted adult) *To be kind when using technology *Know who to speak to if they are upset by something online **Project Evolve:** *Online Relationships *Online Reputation *Managing online information		**Bee-bots** **Vocabulary: Bee-Bot, program, instruction, forward, backward, turn right, turn left,** **Key knowledge:** *Know how to turn the Bee-Bot on *know the functions of each button on the Bee-Bot *Know how to control a Bee-Bot by programming it **Project Evolve:** *Health, Well-being & Lifestyle *Privacy & Security *Copyright & Ownership	
Year 1	**Name of unit:** Online Safety and Exploring Purple Mash **Vocabulary:** Alert, Avatar, Button, Device, File Name, Icon, Log in/out, Menu, Notification, Password, My Work Area, Private, Saving, Search, Tools **Key knowledge:** *To log in safely. *To learn how to find saved work in the Online	**Name of unit:** Grouping and Sorting **Vocabulary:** Criteria, groups, sort **Key knowledge:** *To sort items using a range of criteria. *To sort items on the computer using the 'Grouping' activities in Purple Mash. **Name of unit:** Pictograms **Vocabulary:**	**Name of unit:** Lego builders **Vocabulary:** Algorithm, Code, Computer, Debugging, Instructions, Program **Key knowledge:** *To compare the effects of adhering strictly to instructions to completing tasks without complete instructions. *To follow and create simple instructions on the computer.	**Name of unit:** Coding **Vocabulary:** Action, Algorithm, Background, Code, Coding, Command, Debug/Debugging, Event, Execute, Instruction, Object, Output, Plan, Programmer, Properties, Run **Key knowledge:** *To understand what instructions are and predict what might	**Name of unit:** Spreadsheets **Vocabulary:** Button, Calculations, Cell, Column, Count tool, Data, Delete, Image, Lock cell, Move cell, Row, Speak tool, Spreadsheet, Value **Key knowledge:** *To know what a spreadsheet program looks like. *To locate 2Calculate in Purple Mash.	**Name of unit:** Animated Story books **Vocabulary:** Animation, Background, Clip art gallery, E-book, Edit, Font, Sound, Sound Effect, Text **Key knowledge:** *To introduce e-books and the 2Create a Story tool. *To add animation to a story. *To add sound to a story, including voice recording

	Work area and find teacher comments. *To learn how to search Purple Mash to find resources. *To become familiar with the icons and types of resources available in the Topics section. *To start to add pictures and text to work. *To explore the Tools and Games section of Purple Mash. *To learn how to open, save and print. *To understand the importance of logging out.	Collect, Data, compare, Pictogram, Record, Results, Title **Key knowledge:** *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. **Project Evolve:** *Self-image & identity *Online Reputation	*To consider how the order of instructions affects the result. **Name of unit:** <mark>Maze Explorers</mark> **Vocabulary:** Algorithm, Challenge, Command, Direction, Instruction, Left and Right, Route, Undo, Unit **Key knowledge:** *To understand the functionality of the direction keys. *To understand how to create and debug a set of instructions (algorithm). *To use the additional direction keys as part of an algorithm. *To understand how to change and extend the algorithm list. *To create a longer algorithm for an activity. *To set challenges for peers. *To access peer challenges set by the teacher as 2Dos. **Project Evolve:** *Online Relationships	happen when they are followed. *To use code to make a computer program. *To understand what object and actions are. *To understand what an event is. *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 plan and make a computer program. **Project Evolve:** *Managing Online information *Online Bullying	*To enter data into spreadsheet cells. *To use 2Calculate image tools to add clipart to cells. *To use 2Calculate control tools: lock, move cell, speak and count. **Name of unit:** <mark>Technology outside school</mark> **Vocabulary:** Computer, Technology **Key knowledge:** *To walk around the local community and find examples of where technology is used. *To record examples of technology outside school. **Project Evolve:** * Privacy & Security *Health, well-being & Lifestyle	and music the children have composed. *To work on a more complex story, including adding backgrounds and copying and pasting pages. *To share e-books on a class display board. **Project Evolve:** *Copyright & Ownership
Year 2	**Name of unit:** <mark>Coding</mark> **Vocabulary:** Action, Algorithm, Background, Bug, Button, Click events, Collision detection, Command, Debug/debugging, Event,	**Name of unit:** <mark>Spreadsheets</mark> **Vocabulary:** Block graph, Cell, Column, Copy, Count tool, Data, Drag, Equals, Equals tool, Label, Row, Speak tool, Table, Total	**Name of unit:** <mark>Questioning</mark> **Vocabulary:** Binary tree, Data, Database, Field, Pictogram, Question, Record, Search, Sort **Key knowledge:**	**Name of unit:** <mark>Online Safety</mark> **Vocabulary:** Attachment, Digital Footprint, Email, Filter, Internet, Personal Information, Private	**Name of unit:** <mark>Creating Pictures</mark> **Vocabulary:** Art, Fill, Impressionism, Palette, Pointillism, Style, Surrealism **Key knowledge:**	**Name of unit:** <mark>Presenting ideas</mark> **Vocabulary:** E-book, Fact File, Fiction, Mind Map, Node, Non-Fiction, Presentation, Quiz **Key knowledge:**

Execute, Implement, Instructions, Interaction, Interval, Object, Output, Properties, Run **Key knowledge:** *To understand what an algorithm is. *To create a computer program using an algorithm. *To create a program using a given design. *To understand the collision detection event. *To understand that algorithms follow a sequence. *To design an algorithm that follows a timed sequence. *To understand that different objects have different properties. *To understand what different events do in code. *To understand the function of buttons in a program. *To understand and debug simple programs. **Project Evolve:** *Managing Online information	**Key knowledge:** *To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. *To learn how to copy and paste in 2Calculate. *To use the totalling tools. *To use a spreadsheet for money calculations. *To use the 2Calculate equals tool to check calculations. *To use 2Calculate to collect data and produce a graph. **Name of unit:** Effective Searching **Vocabulary:** Digital Footprint, Domain, Internet, Network, Search Engine, Web Address, Web Page, World Wide Web, Web Site **Key knowledge:** *To understand the terminology associated with searching. *To gain a better understanding of searching on the Internet. *To create a leaflet to help someone search for information on the Internet. **Project Evolve:** *Online Relationships	*To learn about data handling tools that can give more information than pictograms. *To use yes/no questions to separate information. *To construct a binary tree to identify items. *To use 2Question (a binary tree database) to answer questions. *To use a database to answer more complex search questions. *To use the Search tool to find information. **Project Evolve:** *Online Reputation *Online Bullying	Information, Search, Secure, Sharing **Key knowledge:** *To know how to refine searches using the Search tool. *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. *To introduce Email as a communication tool using 2Respond simulations. *To understand how we should talk to others in an online situation. *To open and send simple online communications in the form of email. *To understand that information put online leaves a digital footprint or trail. *To identify the steps that can be taken to keep personal data and hardware secure. **Name of unit:** Making Music **Vocabulary:** Beat, Compose, Note, Tune, Sound Effect, Soundtrack, Speed, Tempo, Volume **Key knowledge:**	*To learn the functions of the 2Paint a Picture tool. *To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). *To recreate Pointillist art and look at the work of pointillist artists such as Seurat. *To learn about the work of Piet Mondrian and recreate the style using the lines template. *To learn about the work of William Morris and recreate the style using the patterns template. *To explore surrealism and eCollage. **Project Evolve:** *Self-image & identity	*To explore how a story can be presented in different ways. *To make a quiz about a story or class topic. *To make a fact file on a non-fiction topic. *To make a presentation to the class. **Project Evolve:** *Privacy &Security

				*To make music digitally using 2Sequence. *To explore, edit and combine sounds using 2Sequence. *To edit and refine composed music. *To think about how music can be used to express feelings and create tunes which depict feelings. *To upload a sound from a bank of sounds into the Sounds section. *To record and upload environmental sounds into Purple Mash. *To use these sounds to create tunes in 2Sequence. **Project Evolve:** *Health, Well-being & Lifestyle *Copyright & Ownership		
Year 3	**Name of unit:** Touch typing **Vocabulary:** Posture, Keys, Space bar, Typing **Key knowledge:** *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. *To practise typing with the left and right hand.	**Name of unit:** Coding **Vocabulary:** Action, Alert, Algorithm, Background, Bug, Button, Click Event, Code, Collision Detection Event, Command, Debug/Debugging, Event, Flowchart, Implement, Input, Interval, Nesting, Object, Predict, Properties, Repeat, Run, Scene, Sequence, Test, Timer, Turtle Object **Key knowledge:**	**Name of unit:** Spreadsheets **Vocabulary:** Advance mode, Bar graph, Equals, Data, Cell Address, Rows, Columns, More than, Less than, Pie Chart, Quiz tool, Spin tool, Spreadsheet, Table **Key knowledge:** *To use the symbols more than, less than and equal to, to compare values. *To use 2Calculate to collect data and produce a variety of graphs.	**Name of unit:** Email (including email safety) **Vocabulary:** Address book, Attachment, BCC, CC, Communication, Compose, Email, Inbox, Password, Personal Information, Save to draft, Trusted Contact **Key knowledge:** *To think about different methods of communication.	**Name of unit:** Branching Databases **Vocabulary:** Binary tree, Branching database, Data, Database, Debugging **Key knowledge:** *To sort objects using just 'yes' or 'no' questions. *To complete a branching database using 2Question. *To create a branching database of the children's choice. **Name of unit:**	**Name of unit:** Presenting with Microsoft PowerPoint **Vocabulary:** Animation, Border Properties, Font formatting, Layer, Media, Presentation, Slide, Slideshow, Text box, Transition, WordArt **Key knowledge:** *To understand the uses of PowerPoint. *To create a page in a presentation.

	Name of unit: ==Online Safety== **Vocabulary:** Appropriate, Blog, Inappropriate, Password, Personal Information, Internet, Permission, Reputable Source, Reliable source, Spoof, Verify, Vlog, Website **Key knowledge:** *To know what makes a safe password. *To learn methods for keeping passwords safe. *To understand how the Internet can be used in effective communication. *To understand how a blog can be used to communicate with a wider audience. *To consider the truth of the content of websites. *To learn about the meaning of age restrictions symbols on digital media and devices. **Project Evolve:** *Online Relationships	*To understand what a flowchart is and how flowcharts are used in computer programming. *To understand that there are different types of timers and select the right type for purpose. *To understand how to use the repeat command. *To understand the importance of nesting. *To design and create an interactive scene. **Project Evolve:** *Managing Online information	*To use the advanced mode of 2Calculate to learn about cell references. **Name of unit:** ==Simulations== **Vocabulary:** Analysis, Simulation, Evaluation, Decision, Modelling **Key knowledge:** *To consider what simulations are. *To explore a simulation. *To analyse and evaluate a simulation. **Project Evolve:** *Self-image & identity	*To open and respond to an email using an address book. *To learn how to use email safely. *To add an attachment to an email. *To explore a simulated email scenario **Project Evolve:** *Online Reputation	==Graphing== **Vocabulary:** Axis, Chart, Column, Data, Graph, Investigation, Row, Sorting, Tally Chart **Key knowledge:** *To enter data into a graph and answer questions. *To solve an investigation and present the results in graphic form. **Project Evolve:** *Online bullying *Health, Well-being & Lifestyle	*To add media to a presentation. *To add animations to a presentation. *To add timings to a presentation. *To use the skills learnt to design and create an engaging presentation. **Project Evolve:** *Privacy & Security *Copyright & Ownership
Year 4	**Name of unit:** ==Coding== **Vocabulary:** Action, Alert, Algorithm, Background, Button, Code blocks, Command, Debug/Debugging, Design, Execute, Event, Flowchart, 'If' Statement, 'If/Else'	**Name of unit:** ==Spreadsheets== **Vocabulary:** Average, Budget, Chart, Column, Formula, Spreadsheet, Row, Data, Decimal Place, Equals tool, Format Cell, Formula Wizard, Line graph,	**Name of unit:** ==Animation== **Vocabulary:** Animation, FPS (Frames Per Second), Frame, Onion Skinning, Pause, Stop Motion **Key knowledge:**	**Name of unit:** ==Logo== **Vocabulary:** Debugging, Grid, LOGO, LOGO Commands (FD, BK, RT, LT), Multi Line mode, Pen down/up, Prediction, Procedure, Repeat, Run Speed, SETPC, SETPS	**Name of unit:** ==Making Music== **Vocabulary:** BPM, Dynamics, Harmonious, Melody, Pitch, Pulse, Tempo, Rhythm, Synths, Texture **Key knowledge:**	**Name of unit:** ==Writing for different audiences== **Vocabulary:** Campaign, Format, Font, Genre, Opinion, Reporter, Viewpoint **Key knowledge:**

statement, Input, Nest, Object, Prompt, Implement, Repeat, Repeat Until, Predict, Run, Properties, Selection, Sequence, Timer, Variable

Key knowledge:
*To begin to understand selection in computer programming.
*To understand how an IF statement works.
*To understand how to use co-ordinates in computer programming.
*To understand the 'repeat until' command.
*To understand how an IF/ELSE statement works.
*To understand what a variable is in programming.
*To use a number variable.
*To create a playable game.

Project Evolve:
*Managing online information

Percentage, Place Value, Random Number Tool, Timer, Spin tool

Key knowledge:
*To format cells as currency, percentage, decimal to different decimal places or fraction.
*To use the formula wizard to calculate averages.
*To combine tools to make spreadsheet activities such as timed times tables tests.
*To use a spreadsheet to model a real-life situation.
*To add a formula to a cell to automatically make a calculation in that cell.

Name of unit:
Online Safety (Lessons 1 and 2)
Vocabulary:
Adfly, Attachment, Cookies, Digital Footprint, Malware, Phishing, Ransomware, Spam, SMART Rules, Virus
Key knowledge:
*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.

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*To discuss what makes a good animated film or cartoon.
*To learn how animations are created by hand.
*To find out how animation can be created in a similar way using the computer.
*To learn about onion skinning in animation. *To add backgrounds and sounds to animations.
*To be introduced to 'stop motion' animation.
*To share animation on the class display board and by blogging.

Name of unit:
Effective Search
Vocabulary:
Balanced View, Easter Eggs, Internet, Key Words, Reliability, Results Page, Search Engine
Key knowledge:
*To locate information on the search results page.
*To use search effectively to find out information.
*To assess whether an information source is true and reliable.

Project Evolve:
*Online Reputation
*Online Relationships

Key knowledge:
*To learn the structure of the coding language of Logo.
*To input simple instructions in Logo.
*Using 2Logo to create letter shapes.
*To use the Repeat function in Logo to create shapes.
*To use and build procedures in Logo.

Name of unit:
Online Safety (Lessons 3 and 4)
Vocabulary:
Citation, Collaborate, Copyright, Plagiarism, SMART Rules, Watermark
Key knowledge:
*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.
*To identify the positive and negative influences of technology on health and the environment.
*To understand the importance of balancing game and screen time

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*To identify and discuss the main elements of music.
*To understand and experiment with rhythm and tempo.
*To create a melodic phrase.
*To electronically compose a piece of music.

Name of unit:
Hardware Investigators
Vocabulary:
Components, CPU, Graphics Card, Hard Drive, Input, Motherboard, Network Card, Output, Peripherals, RAM, Software
Key knowledge:
*To understand the different parts that make up a computer.
*To recall the different parts that make up a computer

Project Evolve:
*Online Bullying
*Health, Well-being & Lifestyle

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*To explore how font size and style can affect the impact of a text. *To use a simulated scenario to produce a news report.
*To use a simulated scenario to write for a community campaign.

Project Evolve:
*Copyright & Ownership

		*To identify the risks and benefits of installing software including apps. **Project Evolve:** *Privacy & Security		with other parts of their lives. **Project Evolve:** *Self-image & identity		
Year 5	**Name of unit:** Coding **Vocabulary:** Abstraction, Action, Algorithm, Concatenation, Debug/Debugging, Decomposition, Efficient, Flowchart, Event, Function, Input, Nesting, Object, Output, Physical system, Properties, Repeat, Sequence, Selection, Simplify, Timer, Variable **Key knowledge:** *To begin to simplify code. *To create a playable game. *To understand what a simulation is. *To program a simulation using 2Code. *To know what decomposition and abstraction are in computer science. *To a take a real-life situation, decompose it and think about the level of abstraction. *To understand how to use friction in code. *To begin to understand what a function is and how functions work in code.	**Name of unit:** Word Processing using Microsoft Word **Vocabulary:** Bulleted Lists, Caps Lock, Captions, Copy and Paste, Copyright, Creative Commons, Cursor, Document, Font, Hyperlink, Formatting, Merge Cells, Page Orientation, Readability, Text Wrapping, Word Processing tool, Word Art **Key knowledge:** *To know what a word processing tool is for. *To add and edit images to a word document. *To know how to use word wrap with images and text. *To change the look of text within a document. *To add features to a document to enhance its look and usability. *To use tables within MS Word to present information. *To introduce children to templates. *To consider page layout including heading and columns.	**Name of unit:** Spreadsheets **Vocabulary:** Rows, Spreadsheet, Columns, Data, Formula, Format, Formula Bar, Advance Mode, Formula Wizard, 'How Many?' tool, Totalling tool, Variable **Key knowledge:** *To use formulae within a spreadsheet to convert measurements of length and distance. *To use the count tool to answer hypotheses about common letters in use. *To use a spreadsheet to model a real-life problem. *To use formulae to calculate area and perimeter of shapes. *To create formulae that use text variables. *To use a spreadsheet to help plan a school cake sale. **Project Evolve:** *Online bullying	**Name of unit:** Game Creator **Vocabulary:** Evaluation, Feedback, Image, Instructions, Promotion, Quest, Scene, Screenshot, Texture, Theme **Key knowledge:** *To plan a game. *To design and create the game environment. *To design and create the game quest. *To finish and share the game. *To self and peer evaluate. **Name of unit:** Online Safety (Lesson 2) **Vocabulary:** Password, Personal Information, Encrypt **Key knowledge:** *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	**Name of unit:** Databases **Vocabulary:** Arrange, Avatar, Chart, Collaborative, Data, Database, Field, Group, Record, Search, Database Report, Statistics, Sort **Key knowledge:** *To learn how to search for information in a database. *To contribute to a class database. *To create a database around a chosen topic. **Name of unit:** Online Safety (Lesson 3) **Vocabulary:** Citation, Copyright, Ownership, Creative Commons Licence (CCL) **Key knowledge:** *To learn about how to reference sources in their work. **Project Evolve:** *Online Relationships	**Name of unit:** Online Safety (Lesson 4) **Vocabulary:** Validity, Reliable Source, Collaborate **Key knowledge:** *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. *To ensure reliability through using different methods of communication. **Name of unit:** Concept Maps **Vocabulary:** Concept, Concept Map, Connection, Collaborate, Node, Presentation Mode, Story Mode **Key knowledge:** *To understand the need for visual representation when generating and discussing complex ideas. *To understand the uses of a 'concept map'. *To understand and use the correct vocabulary when creating a concept map.

	*To understand what the different variables types are and how they are used differently. *To understand how to create a string. *To understand what concatenation is and how it works. **Name of unit:** <mark>Online Safety (Lesson 1)</mark> **Vocabulary:** SMART Rules, Communication, Identity theft, PEGI Ratings, Malware, Phishing, Spoof, **Key knowledge:** *To gain a greater understanding of the impact that sharing digital content can have. *To review sources of support when using technology and children's responsibility to one another in their online behaviour. **Project Evolve:** *Privacy & Security *Copyright & Ownership	**Project Evolve:** *Managing Online information		inappropriate text, photographs and videos and the impact of sharing these online. **Project Evolve:** *Health, Well-being & Lifestyle		*To create a concept map. *To understand how a concept map can be used to retell stories and information. *To create a collaborative concept map and present this to an audience. **OR** **Name of unit:** <mark>3D Modelling</mark> **Vocabulary:** 2D, 3D, 3D Printing, CAD (computer Aided Design), Design Brief, Net, Points, Pattern Fill, Template **Key knowledge:** *To be introduced to 2Design and Make and the skills of computer aided design. *To explore the effect of moving points when designing. *To design a 3D Model to fit certain criteria. *To refine and print a model. **Project Evolve:** *Online Reputation *Self-image & identity
Year 6	**Name of unit:** <mark>Coding</mark> **Vocabulary:** Action, Algorithm, Command, Co-ordinates, Decomposition, Event, Execute/Run,	**Name of unit:** <mark>Spreadsheets using Excel</mark> **Vocabulary:** Autofit, Cell, Cell Reference, Chart, Column, Computational Model, Conditional Formatting,	**Name of unit:** <mark>Text Adventures</mark> **Vocabulary:** Text-based Adventure, Debug/Debugging, Sprite, Selection, Function **Key knowledge:**	**Name of unit:** <mark>Understanding Binary</mark> **Vocabulary:** Base 2, Bit, Base 10, Digit, Integer, Switch, Transistor, Machine Code, Switch, Variable,	**Name of unit:** <mark>Networks</mark> **Vocabulary:** Hub/Switch, Internet, Local Area Network (LAN), Network, Router, World	**Name of unit:** <mark>Quizzing</mark> **Vocabulary:** Audience, Audio, Case-Sensitive, Clone, Cloze, Preview, Quiz **Key knowledge:**

Debug/Debugging, Flowchart, Function, Input, Launch Command, Output, Object, Properties, Predict, Procedure, Sequence, Repeat, Repeat Until, Selection, Simulation, Variable, Timer, Tab **Key knowledge:** *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. *To use functions and understand why they are useful. *To understand how functions are created and called. *To use flowcharts to create and debug code. *To create a simulation of a room in which devices can be controlled. *To understand how user input can be used in a program. *To understand how 2Code can be used to make a text-adventure game. **Project Evolve:** *Managing Online information (Carry on into Autumn 2)	Data, Delimiter, Formula(e), Formula Bar, Graph, Horizontal axis, Vertical axis, Range, Row, Spreadsheet, Text Wrapping **Key knowledge:** *To know what a spreadsheet looks like. *To navigate and enter data into cells. *To introduce some basic data formulae in Excel for percentages, averages and max and min numbers. *To demonstrate how the use of Excel can save time and effort when performing calculations. *To use a spreadsheet to model a real-life situation. *To demonstrate how Excel can make complex data clear by manipulating the way it is presented. *To create a variety of graphs in Excel. *To apply spreadsheet skills to solving problems. **Project Evolve:** *Health, Well-being & Lifestyle	*To find out what a text adventure is. *To use 2Connect to plan a story adventure. *To make a story-based adventure using 2Create a Story. *To introduce an alternative model for a text adventure which has a less sequential narrative. *To use written plans to code a map-based adventure in 2Code. **Project Evolve:** *Privacy & Security	**Words used to describe numbers of bits and the computer memory space used:** Nibble – 4 bits Byte – 8 bits Kilobyte (KB) – 1024 bytes Megabyte (MB) – 1024 KB Gigabyte (GB) – 1024 MB Terabyte (TB) – 1024 GB **Key knowledge:** *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. **Name of unit:** <mark>Online Safety</mark> **Vocabulary:** Data Analysis, Digital Footprint, Inappropriate, Location Sharing, Password, PEGI Rating, Phishing, Print Screen, Screen Time, Spoof, Secure Websites	Wide Web, Wi-Fi, Wide Area Network (WAN) **Key knowledge:** *To learn about what the Internet consists of. *To find out what a LAN and a WAN are. *To find out how the Internet is accessed in school. *To research and find out about the age of the Internet. *To think about what the future might hold. **Project Evolve:** *Online Bullying	*To create a picture-based quiz for young children. *To learn how to use the question types within 2Quiz. *To explore the grammar quizzes. *To make a quiz that requires the player to search a database. *To make a quiz to test your teachers or parents. ## OR **Name of unit:** Blogging **Vocabulary:** Approval, Archive, Blog, Blog Post, Collaborate, Commenting, Vlog **Key knowledge:** *To identify the purpose of writing a blog. *To identify the features of a successful blog. *To plan the theme and content for 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. *To understand how and why blog posts are approved by the teacher.

				Key knowledge:		*To understand the importance of commenting on blogs.
				*To identify benefits and risks of mobile devices broadcasting the location of the user/device.		
				*To identify secure sites by looking for privacy seals of approval.		**Project Evolve:**
				*To identify the benefits and risks of giving personal information.		*Online Reputation
				*To review the meaning of a digital footprint.		*Self-image & identity
				*To have a clear idea of appropriate online behaviour.		
				*To begin to understand how information online can persist.		
				*To understand the importance of balancing game and screen time with other parts of their lives.		
				*To identify the positive and negative influences of technology on health and the environment.		
				Project Evolve:		
				*Online Relationships		
				*Copyright & Ownership		

SEND – Adaptive Teaching	➢ Adjust the level of challenge – **e.g provide question prompts to support thinking, provide partially completed versions of work (code, spreadsheets etc. that the children have to finish)**
	➢ Targeted support from a TA
	➢ Clarify/simplify a task or provide numbered steps with visual representations (objects, pictures, signs, photos)
	➢ Provide worked (completed) and partially completed examples.
	➢ Re-explain a concept or explain it in a different way
	➢ Give additional (or revisit) examples
	➢ Use peer tutoring/collaborative learning (everyone must participate – give them roles)

	- Provide additional scaffolds **e.g – pre-teach vocabulary, 'I do, we do, you', chunk learning into smaller chunks and break learning down into key knowledge, provide worked examples and hands on resources** - Set clear targets/expectations - Improve accessibility **e.g. proximity to speaker, visibility of whiteboard When researching, use child appropriate websites** - Consider pace - (extra time for responses to questions, contributing to class discussions and to complete activities) - Provide vocabulary with visual images **e.g - explicitly teach vocabulary at the beginning of a unit alongside a picture of the key word, use photographs to represent the word when using it during the unit** - check understanding and reinforcing as needed through repetition, rephrasing, explaining and demonstration **e.g use of mini-plenaries to check understanding (quick quizzes)** - Pre-teach vocabulary, key content etc.
Strategies to stretch and challenge	**Identify and account for prior knowledge** – a child who has extensive prior knowledge could be asked to present some of the knowledge they have to the class; explain something they understand easily to a child who doesn't 'get it' so quickly - **peer modelling; more confident pupils could model how they created a code or inputted data on a spreadsheet to less confident pupils or give them the first section of code or data to 'get them started'** **Depth of content** - consider what you can add to create depth, e.g. digging into an area more deeply, going laterally with a concept. Can the child take the learning a step further? **Give them a different context to the rest of the class e.g In spreadsheets plan costs for a school dinner instead of a party or costs of baking 5 cakes instead of 1.** **Use questioning techniques to boost thinking** – ask open-ended questions which require higher-order thinking **e.g – How……..Why……..What does this data tell us? Why must we add code in using this order? Why is it important to keep personal information private?** **Mastery** - more intensive teaching, tutoring, peer-assisted learning, small group discussions, or additional homework **e.g. challenging them to create a more complex algorithm, including a wider range of variables.** **Feedback** – framing feedback so pupils must take responsibility for improving their own learning **e.g extend more able learners through open-ended questions when providing feedback**