

## 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
<b>Reception</b>	<p><b><u>Navigating simple programs</u></b>  <b>Vocabulary:</b> Ipad, computer, keyboard, key, screen, mouse, program, app, click, drag, close/open  <b>*Know the names of some parts of the computer</b>  <b>*Know that the mouse moves the pointer on the screen</b>  <b>*Know how to 'click' the mouse button to make things happen</b>  <b>*Know how to open or close an app/program</b></p> <p><b>Project Evolve:</b>  <b>*Self-image &amp; identity</b>  <b>*Online Bullying</b></p>	<p><b><u>Online safety</u></b>  <b>Vocabulary:</b> device, internet, online safety, passwords, trusted adult, screen time  <b>Key knowledge:</b>  <b>*Why we use passwords to keep our information safe</b>  <b>*Not to share passwords with anyone (other than a trusted adult)</b>  <b>*To be kind when using technology</b>  <b>*Know who to speak to if they are upset by something online</b></p> <p><b>Project Evolve:</b>  <b>*Online Relationships</b>  <b>*Online Reputation</b>  <b>*Managing online information</b></p>	<p><b><u>Bee-bots</u></b>  <b>Vocabulary:</b> Bee-Bot, program, instruction, forward, backward, turn right, turn left,  <b>Key knowledge:</b>  <b>*Know how to turn the Bee-Bot on</b>  <b>*know the functions of each button on the Bee-Bot</b>  <b>*Know how to control a Bee-Bot by programming it</b></p> <p><b>Project Evolve:</b>  <b>*Health, Well-being &amp; Lifestyle</b>  <b>*Privacy &amp; Security</b>  <b>*Copyright &amp; Ownership</b></p>			
<b>Year 1</b>	<p><b>Name of unit:</b>  <b>Online Safety and Exploring Purple Mash</b>  <b>Vocabulary:</b>  Alert, Avatar, Button, Device, File Name, Icon, Log in/out, Menu, Notification, Password, My Work Area, Private, Saving, Search, Tools  <b>Key knowledge:</b>  <b>*To log in safely.</b>  <b>*To learn how to find saved work in the Online</b></p>	<p><b>Name of unit:</b>  <b>Pictograms</b>  <b>Vocabulary:</b>  Collect, Data, compare, Pictogram, Record, Results, Title  <b>Key knowledge:</b>  <b>*To understand that data can be represented in picture format.</b>  <b>*To contribute to a class pictogram.</b>  <b>*To use a pictogram to record the results of an experiment.</b></p>	<p><b>Name of unit:</b>  <b>Maze Explorers</b>  <b>Vocabulary:</b>  Algorithm, Challenge, Command, Direction, Instruction, Left and Right, Route, Undo, Unit  <b>Key knowledge:</b>  <b>*To understand the functionality of the direction keys.</b>  <b>*To understand how to create and debug a set of instructions (algorithm).</b>  <b>*To use the additional</b></p>	<p><b>Name of unit:</b>  <b>Spreadsheets</b>  <b>Vocabulary:</b>  Button, Calculations, Cell, Column, Count tool, Data, Delete, Image, Lock cell, Move cell, Row, Speak tool, Spreadsheet, Value  <b>Key knowledge:</b>  <b>*To know what a spreadsheet program looks like.</b>  <b>*To locate 2Calculate in Purple Mash.</b></p>	<p><b>Name of unit:</b>  <b>Coding</b>  <b>Vocabulary:</b>  Action, Algorithm, Background, Code, Coding, Command, Debug/Debugging, Event, Execute, Instruction, Object, Output, Plan, Programmer, Properties, Run  <b>Key knowledge:</b>  <b>*To understand what instructions are and predict what might</b></p>	<p><b>Name of unit:</b>  <b>Animated Story books</b>  <b>Vocabulary:</b>  Animation, Background, Clip art gallery, E-book, Edit, Font, Sound, Sound Effect, Text  <b>Key knowledge:</b>  <b>*To introduce e-books and the 2Create a Story tool.</b>  <b>*To add animation to a story.</b>  <b>*To add sound to a story, including voice recording</b></p>

	<p>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.</p> <p><b>Name of unit:</b>  <b>Grouping and Sorting</b></p> <p><b>Vocabulary:</b>          Criteria, groups, sort</p> <p><b>Key knowledge:</b>          *To sort items using a range of criteria.          *To sort items on the computer using the 'Grouping' activities in Purple Mash.</p>	<p><b>Name of unit:</b>  <b>Lego builders</b></p> <p><b>Vocabulary:</b>          Algorithm, Code, Computer, Debugging, Instructions, Program</p> <p><b>Key knowledge:</b>          *To compare the effects of adhering strictly to instructions to completing tasks without complete instructions.          *To follow and create simple instructions on the computer.          *To consider how the order of instructions affects the result.</p> <p><b>Project Evolve:</b>          *Self-image &amp; identity          *Online Reputation</p>	<p>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.</p> <p><b>Name of unit:</b>  <b>Technology outside school</b></p> <p><b>Vocabulary:</b>          Computer, Technology</p> <p><b>Key knowledge:</b>          *To walk around the local community and find examples of where technology is used.          *To record examples of technology outside school.</p> <p><b>Project Evolve:</b>          *Online Relationships</p>	<p>*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.</p> <p><b>Project Evolve:</b>          *Managing Online information          *Online Bullying</p>	<p>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.</p> <p><b>Project Evolve:</b>          * Privacy &amp; Security          *Health, well-being &amp; Lifestyle</p>	<p>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.</p> <p><b>Project Evolve:</b>          *Copyright &amp; Ownership</p>
<p><b>Year 2</b></p>	<p><b>Name of unit:</b>  <b>Coding</b></p> <p><b>Vocabulary:</b>          Action, Algorithm, Background, Bug, Button, Click events, Collision detection, Command, Debug/debugging, Event, Execute, Implement, Instructions, Interaction,</p>	<p><b>Name of unit:</b>  <b>Spreadsheets</b></p> <p><b>Vocabulary:</b>          Block graph, Cell, Column, Copy, Count tool, Data, Drag, Equals, Equals tool, Label, Row, Speak tool, Table, Total</p> <p><b>Key knowledge:</b></p>	<p><b>Name of unit:</b>  <b>Questioning</b></p> <p><b>Vocabulary:</b>          Binary tree, Data, Database, Field, Pictogram, Question, Record, Search, Sort</p> <p><b>Key knowledge:</b>          *To learn about data handling tools that can</p>	<p><b>Name of unit:</b>  <b>Making Music</b></p> <p><b>Vocabulary:</b>          Beat, Compose, Note, Tune, Sound Effect, Soundtrack, Speed, Tempo, Volume</p> <p><b>Key knowledge:</b>          *To make music digitally using 2Sequence.</p>	<p><b>Name of unit:</b>  <b>Creating Pictures</b></p> <p><b>Vocabulary:</b>          Art, Fill, Impressionism, Palette, Pointillism, Style, Surrealism</p> <p><b>Key knowledge:</b>          *To learn the functions of the 2Paint a Picture tool.</p>	<p><b>Name of unit:</b>  <b>Presenting ideas</b></p> <p><b>Vocabulary:</b>          E-book, Fact File, Fiction, Mind Map, Node, Non-Fiction, Presentation, Quiz</p> <p><b>Key knowledge:</b>          *To explore how a story can be presented in different ways.</p>

	<p>Interval, Object, Output, Properties, Run</p> <p><b>Key knowledge:</b></p> <ul style="list-style-type: none"> <li>*To understand what an algorithm is.</li> <li>*To create a computer program using an algorithm.</li> <li>*To create a program using a given design.</li> <li>*To understand the collision detection event.</li> <li>*To understand that algorithms follow a sequence.</li> <li>*To design an algorithm that follows a timed sequence.</li> <li>*To understand that different objects have different properties.</li> <li>*To understand what different events do in code.</li> <li>*To understand the function of buttons in a program.</li> <li>*To understand and debug simple programs.</li> </ul> <p><b>Project Evolve:</b></p> <ul style="list-style-type: none"> <li>*Managing Online information</li> </ul>	<ul style="list-style-type: none"> <li>*To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine.</li> <li>*To learn how to copy and paste in 2Calculate.</li> <li>*To use the totalling tools.</li> <li>*To use a spreadsheet for money calculations.</li> <li>*To use the 2Calculate equals tool to check calculations.</li> <li>*To use 2Calculate to collect data and produce a graph.</li> </ul> <p><b>Name of unit:</b> Effective Searching</p> <p><b>Vocabulary:</b> Digital Footprint, Domain, Internet, Network, Search Engine, Web Address, Web Page, World Wide Web, Web Site</p> <p><b>Key knowledge:</b></p> <ul style="list-style-type: none"> <li>*To understand the terminology associated with searching.</li> <li>*To gain a better understanding of searching on the Internet.</li> <li>*To create a leaflet to help someone search for information on the Internet.</li> </ul> <p><b>Project Evolve:</b></p> <ul style="list-style-type: none"> <li>*Online Relationships</li> </ul>	<p>give more information than pictograms.</p> <ul style="list-style-type: none"> <li>*To use yes/no questions to separate information.</li> <li>*To construct a binary tree to identify items.</li> <li>*To use 2Question (a binary tree database) to answer questions.</li> <li>*To use a database to answer more complex search questions.</li> <li>*To use the Search tool to find information.</li> </ul> <p><b>Project Evolve:</b></p> <ul style="list-style-type: none"> <li>*Online Reputation</li> <li>*Online Bullying</li> </ul>	<ul style="list-style-type: none"> <li>*To explore, edit and combine sounds using 2Sequence.</li> <li>*To edit and refine composed music.</li> <li>*To think about how music can be used to express feelings and create tunes which depict feelings.</li> <li>*To upload a sound from a bank of sounds into the Sounds section.</li> <li>*To record and upload environmental sounds into Purple Mash.</li> <li>*To use these sounds to create tunes in 2Sequence.</li> </ul> <p><b>Project Evolve:</b></p> <ul style="list-style-type: none"> <li>*Health, Well-being &amp; Lifestyle</li> <li>*Copyright &amp; Ownership</li> </ul>	<ul style="list-style-type: none"> <li>*To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir).</li> <li>*To recreate Pointillist art and look at the work of pointillist artists such as Seurat.</li> <li>*To learn about the work of Piet Mondrian and recreate the style using the lines template.</li> <li>*To learn about the work of William Morris and recreate the style using the patterns template.</li> <li>*To explore surrealism and eCollage.</li> </ul> <p><b>Project Evolve:</b></p> <ul style="list-style-type: none"> <li>*Self-image &amp; identity</li> </ul>	<ul style="list-style-type: none"> <li>*To make a quiz about a story or class topic.</li> <li>*To make a fact file on a non-fiction topic.</li> <li>*To make a presentation to the class.</li> </ul> <p><b>Project Evolve:</b></p> <ul style="list-style-type: none"> <li>*Privacy &amp; Security</li> </ul>
Year 3	<p><b>Name of unit:</b> <i>Learning to log on using personal passwords and then unit 1 Touch Typing.</i></p>	<p><b>Name of unit:</b> <b>Name of unit:</b> Graphing</p> <p><b>Vocabulary:</b></p>	<p><b>Name of unit:</b> Spreadsheets</p> <p><b>Vocabulary:</b></p>	<p><b>Name of unit:</b> Email (including email safety)</p> <p><b>Vocabulary:</b></p>	<p><b>Name of unit:</b> Branching Databases</p> <p><b>Vocabulary:</b></p>	<p><b>Name of unit:</b> Presenting with Microsoft PowerPoint</p> <p><b>Vocabulary:</b></p>

	<p><b>Touch typing</b>  <b>Vocabulary:</b>  Posture, Keys, Space bar, Typing  <b>Key knowledge:</b>  *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.</p> <p><b>Project Evolve:</b>  *Managing Online information</p>	<p>Axis, Chart, Column, Data, Graph, Investigation, Row, Sorting, Tally Chart  <b>Key knowledge:</b>  *To enter data into a graph and answer questions.  *To solve an investigation and present the results in graphic form.</p> <p><b>Coding</b>  <b>Vocabulary:</b>  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  <b>Key knowledge:</b>  *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.</p>	<p>Advance mode, Bar graph, Equals, Data, Cell Address, Rows, Columns, More than, Less than, Pie Chart, Quiz tool, Spin tool, Spreadsheet, Table  <b>Key knowledge:</b>  *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.  *To use the advanced mode of 2Calculate to learn about cell references.</p> <p><b>Name of unit:</b>  <b>Simulations</b>  <b>Vocabulary:</b>  Analysis, Simulation, Evaluation, Decision, Modelling  <b>Key knowledge:</b>  *To consider what simulations are.  *To explore a simulation.  *To analyse and evaluate a simulation.</p> <p><b>Project Evolve:</b>  *Health, Well-being &amp; Lifestyle  *Self-image &amp; identity</p>	<p>Address book, Attachment, BCC, CC, Communication, Compose, Email, Inbox, Password, Personal Information, Save to draft, Trusted Contact  <b>Key knowledge:</b>  *To think about different methods of communication.  *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</p> <p><b>Project Evolve:</b>  *Online Reputation</p>	<p>Binary tree, Branching database, Data, Database, Debugging  <b>Key knowledge:</b>  *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.</p> <p><b>Project Evolve:</b>  *Privacy &amp; Security</p>	<p>Animation, Border Properties, Font formatting, Layer, Media, Presentation, Slide, Slideshow, Text box, Transition, WordArt  <b>Key knowledge:</b>  *To understand the uses of PowerPoint.  *To create a page in a presentation.  *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.</p> <p><b>Project Evolve:</b>  *Online bullying  *Copyright &amp; Ownership</p>
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		<b>Project Evolve:</b> *Online relationships				
<b>Year 4</b>	<b>Name of unit:</b> <b>Coding</b> <b>Vocabulary:</b> Action, Alert, Algorithm, Background, Button, Code blocks, Command, Debug/Debugging, Design, Execute, Event, Flowchart, 'If' Statement, 'If/Else' statement, Input, Nest, Object, Prompt, Implement, Repeat, Repeat Until, Predict, Run, Properties, Selection, Sequence, Timer, Variable <b>Key knowledge:</b> *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.  <b>Project Evolve:</b>	<b>Name of unit:</b> <b>Spreadsheets</b> <b>Vocabulary:</b> Average, Budget, Chart, Column, Formula, Spreadsheet, Row, Data, Decimal Place, Equals tool, Format Cell, Formula Wizard, Line graph, Percentage, Place Value, Random Number Tool, Timer, Spin tool <b>Key knowledge:</b> *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.  <b>Project Evolve:</b> *Privacy & Security	<b>Name of unit:</b> <b>Animation</b> <b>Vocabulary:</b> Animation, FPS (Frames Per Second), Frame, Onion Skinning, Pause, Stop Motion <b>Key knowledge:</b> *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.  <b>Name of unit:</b> <b>Effective Search</b> <b>Vocabulary:</b> Balanced View, Easter Eggs, Internet, Key Words, Reliability, Results Page, Search Engine <b>Key knowledge:</b> *To locate information on the search results page. *To use search effectively to find out information.	<b>Name of unit:</b> <b>Making Music</b> <b>Vocabulary:</b> BPM, Dynamics, Harmonious, Melody, Pitch, Pulse, Tempo, Rhythm, Synths, Texture <b>Key knowledge:</b> *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.  <b>Project Evolve:</b> *Self-image & identity	<b>Name of unit:</b> <b>Writing for different audiences</b> <b>Vocabulary:</b> Campaign, Format, Font, Genre, Opinion, Reporter, Viewpoint <b>Key knowledge:</b> *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.  <b>Project Evolve:</b> *Online Bullying *Health, Well-being & Lifestyle	<b>Name of unit:</b> <b>Hardware Investigators</b> <b>Vocabulary:</b> Components, CPU, Graphics Card, Hard Drive, Input, Motherboard, Network Card, Output, Peripherals, RAM, Software <b>Key knowledge:</b> *To understand the different parts that make up a computer. *To recall the different parts that make up a computer  <b>Name of unit:</b> <b>Logo</b> <b>Vocabulary:</b> Debugging, Grid, LOGO, LOGO Commands (FD, BK, RT, LT), Multi Line mode, Pen down/up, Prediction, Procedure, Repeat, Run Speed, SETPC, SETPS <b>Key knowledge:</b> *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.

	*Managing online information		*To assess whether an information source is true and reliable.  <b>Project Evolve:</b> *Online Reputation *Online Relationships			<b>Project Evolve:</b> *Copyright & Ownership
<b>Year 5</b>	<p><b>Name of unit:</b> <b>Coding</b></p> <p><b>Vocabulary:</b> Abstraction, Action, Algorithm, Concatenation, Debug/Debugging, Decomposition, Efficient, Flowchart, Event, Function, Input, Nesting, Object, Output, Physical system, Properties, Repeat, Sequence, Selection, Simplify, Timer, Variable</p> <p><b>Key knowledge:</b> *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 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</p>	<p><b>Name of unit:</b> <b>Word Processing using Microsoft Word</b></p> <p><b>Vocabulary:</b> 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</p> <p><b>Key knowledge:</b> *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.</p>	<p><b>Name of unit:</b> <b>Spreadsheets</b></p> <p><b>Vocabulary:</b> Rows, Spreadsheet, Columns, Data, Formula, Format, Formula Bar, Advance Mode, Formula Wizard, 'How Many?' tool, Totalling tool, Variable</p> <p><b>Key knowledge:</b> *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.</p> <p><b>Project Evolve:</b> *Online bullying</p>	<p><b>Name of unit:</b> <b>Game Creator</b></p> <p><b>Vocabulary:</b> Evaluation, Feedback, Image, Instructions, Promotion, Quest, Scene, Screenshot, Texture, Theme</p> <p><b>Key knowledge:</b> *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.</p> <p><b>Project Evolve:</b> *Health, Well-being &amp; Lifestyle</p>	<p><b>Name of unit:</b> <b>Databases</b></p> <p><b>Vocabulary:</b> Arrange, Avatar, Chart, Collaborative, Data, Database, Field, Group, Record, Search, Database Report, Statistics, Sort</p> <p><b>Key knowledge:</b> *To learn how to search for information in a database. *To contribute to a class database. *To create a database around a chosen topic.</p> <p><b>Project Evolve:</b> *Online Relationships</p>	<p><b>Name of unit:</b> <b>3D Modelling</b></p> <p><b>Vocabulary:</b> 2D, 3D, 3D Printing, CAD (computer Aided Design), Design Brief, Net, Points, Pattern Fill, Template</p> <p><b>Key knowledge:</b> *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.</p> <p><b>Project Evolve:</b> *Online Reputation *Self-image &amp; identity</p>

	<p>how functions work in code.</p> <p>*To understand what the different variables types are and how they are used differently.</p> <p>*To understand how to create a string.</p> <p>*To understand what concatenation is and how it works.</p> <p><b>Project Evolve:</b></p> <p>*Privacy &amp; Security</p> <p>*Copyright &amp; Ownership</p>	<p><b>Project Evolve:</b></p> <p>*Managing Online information</p>				
<b>Year 6</b>	<p><b>Name of unit:</b></p> <p><b>Coding</b></p> <p>(6 lessons)</p> <p><b>Vocabulary:</b></p> <p>Action, Algorithm, Command, Co-ordinates, Decomposition, Event, Execute/Run, Debug/Debugging, Flowchart, Function, Input, Launch Command, Output, Object, Properties, Predict, Procedure, Sequence, Repeat, Repeat Until, Selection, Simulation, Variable, Timer, Tab</p> <p><b>Key knowledge:</b></p> <p>*To design a playable game with a timer and a score.</p> <p>*To plan and use selection and variables.</p> <p>*To understand how the launch command works.</p> <p>*To use functions and</p>	<p><b>Name of unit:</b></p> <p><b>Spreadsheets using Excel</b></p> <p>(8 lessons)</p> <p><b>Vocabulary:</b></p> <p>Autofit, Cell, Cell Reference, Chart, Column, Computational Model, Conditional Formatting, Data, Delimiter, Formula(e), Formula Bar, Graph, Horizontal axis, Vertical axis, Range, Row, Spreadsheet, Text Wrapping</p> <p><b>Key knowledge:</b></p> <p>*To know what a spreadsheet looks like.</p> <p>*To navigate and enter data into cells.</p> <p>*To introduce some basic data formulae in Excel for percentages, averages and max and min numbers.</p> <p>*To demonstrate how the use of Excel can save time and effort when</p>	<p><b>Name of unit:</b></p> <p><b>Text Adventures</b></p> <p>(4 lessons)</p> <p><b>Vocabulary:</b></p> <p>Text-based Adventure, Debug/Debugging, Sprite, Selection, Function</p> <p><b>Key knowledge:</b></p> <p>*To find out what a text adventure is.</p> <p>*To use 2Connect to plan a story adventure.</p> <p>*To make a story-based adventure using 2Create a Story.</p> <p>*To introduce an alternative model for a text adventure which has a less sequential narrative.</p> <p>*To use written plans to code a map-based adventure in 2Code.</p> <p><b>Project Evolve:</b></p> <p>*Privacy &amp; Security</p>	<p><b>Name of unit:</b></p> <p><b>Understanding Binary</b></p> <p>(4 lessons)</p> <p><b>Vocabulary:</b></p> <p>Base 2, Bit, Base 10, Digit, Integer, Switch, Transistor, Machine Code, Switch, Variable,</p> <p><b>Words used to describe numbers of bits and the computer memory space used:</b></p> <p>Nibble – 4 bits</p> <p>Byte – 8 bits</p> <p>Kilobyte (KB) – 1024 bytes</p> <p>Megabyte (MB) – 1024 KB</p> <p>Gigabyte (GB) – 1024 MB</p> <p>Terabyte (TB) – 1024 GB</p> <p><b>Key knowledge:</b></p> <p>*To examine how whole numbers are used as the basis for representing all types of data in digital systems.</p> <p>*To recognise that digital systems represent all</p>	<p><b>Name of unit:</b></p> <p><b>Networks</b></p> <p>(3 lessons)</p> <p><b>Vocabulary:</b></p> <p>Hub/Switch, Internet, Local Area Network (LAN), Network, Router, World Wide Web, Wi-Fi, Wide Area Network (WAN)</p> <p><b>Key knowledge:</b></p> <p>*To learn about what the Internet consists of.</p> <p>*To find out what a LAN and a WAN are.</p> <p>*To find out how the Internet is accessed in school.</p> <p>*To research and find out about the age of the Internet.</p> <p>*To think about what the future might hold.</p> <p><b>Project Evolve:</b></p> <p>*Online Bullying</p>	<p><b>Name of unit:</b></p> <p><b>Quizzing</b></p> <p>(6 lessons)</p> <p><b>Vocabulary:</b></p> <p>Audience, Audio, Case-Sensitive, Clone, Cloze, Preview, Quiz</p> <p><b>Key knowledge:</b></p> <p>*To create a picture-based quiz for young children.</p> <p>*To learn how to use the question types within 2Quiz.</p> <p>*To explore the grammar quizzes.</p> <p>*To make a quiz that requires the player to search a database.</p> <p>*To make a quiz to test your teachers or parents.</p> <p><b>Project Evolve:</b></p> <p>*Online Reputation</p>

	<p>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.</p> <p><b>Project Evolve:</b>          *Managing Online information (Carry on into Autumn 2)</p>	<p>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.</p> <p><b>Project Evolve:</b>          *Health, Well-being &amp; Lifestyle</p>		<p>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.</p> <p><b>Project Evolve:</b>          *Online Relationships</p>	<p>*Copyright &amp; Ownership</p>	<p>*Self-image &amp; identity</p>
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<p><b>SEND – Adaptive Teaching</b></p>	<ul style="list-style-type: none"> <li>➤ Adjust the level of challenge – <b>e.g provide question prompts to support thinking, provide partially completed versions of work (code, spreadsheets etc. that the children have to finish)</b></li> <li>➤ Targeted support from a TA</li> <li>➤ Clarify/simplify a task or provide numbered steps with visual representations (objects, pictures, signs, photos)</li> <li>➤ Provide worked (completed) and partially completed examples.</li> <li>➤ Re-explain a concept or explain it in a different way</li> <li>➤ Give additional (or revisit) examples</li> <li>➤ Use peer tutoring/collaborative learning (everyone must participate – give them roles)</li> <li>➤ Provide additional scaffolds <b>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</b></li> <li>➤ Set clear targets/expectations</li> <li>➤ Improve accessibility <b>e.g. proximity to speaker, visibility of whiteboard When researching, use child appropriate websites</b></li> <li>➤ Consider pace - (extra time for responses to questions, contributing to class discussions and to complete activities)</li> <li>➤ Provide vocabulary with visual images <b>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</b></li> <li>➤ check understanding and reinforcing as needed through repetition, rephrasing, explaining and demonstration <b>e.g use of mini-plenaries to check understanding (quick quizzes)</b></li> </ul>
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	➤ Pre-teach vocabulary, key content etc.
<b>Strategies to stretch and challenge</b>	<ul style="list-style-type: none"> <li>➤ <b>Identify and account for prior knowledge</b> – 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 - <b>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'</b></li> <li>➤ <b>Depth of content</b> - 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? <b>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.</b></li> <li>➤ <b>Use questioning techniques to boost thinking</b> – ask open-ended questions which require higher-order thinking <b>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?</b></li> <li>➤ <b>Mastery</b> - more intensive teaching, tutoring, peer-assisted learning, small group discussions, or additional homework <b>e.g. challenging them to create a more complex algorithm, including a wider range of variables.</b></li> <li>➤ <b>Feedback</b> – framing feedback so pupils must take responsibility for improving their own learning <b>e.g extend more able learners through open-ended questions when providing feedback</b></li> </ul>