Subject: Computing (Using Purple Mash)

<table>
<tr><th colspan="3">National Curriculum links</th></tr>
<tr><td colspan="3">Aims
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.</td></tr>
<tr><th>Early Years Foundation Stage (EYFS)</th><th>Key Stage One (KS1)</th><th>Key Stage Two (KS2)</th></tr>
<tr><td>There are no early learning goals that directly relate to computing objectives, though it is still expected that children will be introduced to appropriate technology and use it within their provision.</td><td>Pupils should be taught to:
understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
create and debug simple programs
use logical reasoning to predict the behaviour of simple programs
use technology purposefully to create, organise, store, manipulate and retrieve digital content
recognise common uses of information technology beyond school
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.</td><td>Pupils should be taught to:
design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
use sequence, selection, and repetition in programs; work with variables and various forms of input and output
use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
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</td></tr>
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		• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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 • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Year group: EYFS

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	All About Me	Being A Hero	Me and My World	Super Creatures	Once Upon a time	All at Sea
Online Safety (Education for a Connected World)	Self-image and identity Online Relationships	Online Reputation	Online Bullying Managing online information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership
Skills *There are no early learning*	**Nursery** *To show an interest in technological toys such as toys	**Nursery** *To show an interest in technological toys such as toys	**Nursery** *To access, understand and interact with a range of technology within	**Nursery** *To access, understand and interact with a range of technology within	**Nursery** *To access, understand and interact with a range of technology within	**Nursery** *To show an interest in technological toys such as IWB, iPads, toys

goals that directly relate to computing objectives, though it is still expected that children will be introduced to appropriate technology and use it within their provision.	with knobs, pulleys and buttons **Reception** *To learn about e-safety	with knobs, pulleys and buttons **Reception** *To know how to operate simple equipment *To learn about e-safety	the Nursery environment **Reception** *To access, understand and interact with a range of technology within the Reception environment *To learn about e-safety	the Nursery environment **Reception** *To use the IWB *To learn about e-safety	the Nursery environment **Reception** *To explore how a Bee-Bot works *To use the internet with adult supervision to find and retrieve information *To learn about e-safety	with knobs, pulleys and buttons **Reception** *To begin to give reasons why we need to stay safe online *To use the BeeBots *To learn about e-safety
Key knowledge	Know how different toys equipment works Know some ways to be safe when using devices Know they should tell a grown up if they see something on a device they do not like	Know how different toys equipment works Know some ways to be safe when using devices Know they should tell a grown up if they see something on a device they do not like	Know how different toys equipment works Know some ways to be safe when using devices Know they should tell a grown up if they see something on a device they do not like	Know simple ways to use the IWB Know some ways to be safe when using devices Know they should tell a grown up if they see something on a device they do not like	Know how a Beebot works Know how to use the internet (with supervision) Know some ways to be safe when using devices Know they should tell a grown up if they see something on a device they do not like	Know how a Beebot works Know some ways to be safe when using devices and why Know they should tell a grown up if they see something on a device they do not like
Key vocabulary						
Assessment of progress	Ongoing throughout the year using Tapestry. End of year EYFS assessment.					

Subject: Computing

Year group: Year 1

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Intro to Purple Mash (1.1)	Grouping & sorting (1.2) Pictograms (1.3)	Lego builders (1.4) Maze explorers (1.5)	Animated story books (1.6)	Coding (1.7)	Spreadsheets (1.8) Technology outside school (1.9)
Online Safety (Education for a Connected World)	Self-image and identity Online Relationships	Online Reputation	Online Bullying Managing online information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership
Skills	**Intro to Purple Mash** To log in safely. To learn how to find saved work in the Online 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.	**Grouping and sorting** To sort items using a range of criteria. • To sort items on the computer using the 'Grouping' activities in Purple Mash. **Pictograms** 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	• 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. • 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	• 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 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.	• To understand what instructions are and predict what might 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.	• To know what a spreadsheet program looks like. • To locate 2Calculate in Purple Mash. • 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. • To walk around the local community and find examples of where technology is used. • To record examples of

	To understand the importance of logging out.		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			technology outside school.
Key knowledge		**Grouping and sorting** Knows how to sort items using a range of criteria. Knows how to use software for grouping items such as tools within Purple Mash **Pictograms** Knows that data can be represented in a picture format e.g. pictogram. Knows how to contribute to a class pictogram. Knows how to use a software such as 2Count to record results of an experiment into a pictogram format.	**Lego Builders** Knows how to compare the effects of adhering strictly to instructions when completing tasks without complete instructions. Knows how to follow and create simple instructions on the computer. Knows that the order of instructions affects the end result for a given instructional task. **Maze Explorers** Knows the functionality of the direction keys in 2GO. Knows how to create and debug a set of simple instructions (algorithm).	Knows what e-books are. Knows of software such as 2Create a Story that allows users to create interactive stories. Knows how to add animation to an interactive story. Knows how to add sound, including voice recordings and music to a story they have created using software. Beginning to know how to work on more complex digital stories, including adding backgrounds, copying and pasted pages. Knows how to share digital stories with others such	Knows what instructions are and can predict what might happen when they are followed. Knows how to plan and make a simple computer program e.g. fish moves right, crab moves up. Knows what objects, actions and backgrounds are within a coding environment. Knows what an event is and knows how to use an event to control an object. Beginning to know how code executes when a program is run.	**Spreadsheets** Knows what a spreadsheet program environment looks like including cells, rows and columns. Knows basically what a spreadsheet program can help do. Knows how to enter data into spreadsheet cells. Knows how to add images to cells. Knows how to use some tools within spreadsheets e.g. with 2Calulate can use lock cell, move cell, speak and count. **Technology outside school**

			Knows how to use the additional direction keys within 2Go as part of an algorithm. Knows how to change and extend the algorithm list in 2Go.	as using Digital Display Boards.		Knows that technology is a use of knowledge to invent new devices or tools. Knows that throughout history, technology has made people's lives easier. Knows that technology is used within school and outside of school. Knows where examples of technology can be found both in and out of school.
Key vocabulary	Alert Avatar Button Device File name Icon Log in Log out Notification Menu My work area Private Password Purple mash tools Saving search	**Grouping and sorting** Criteria Groups sort **Pictograms** Collect data Compare Data Pictogram Record results title	**Lego builders** Algorithm Code Computer Debugging Instructions Program **Maze explorers** Algorithm Challenge Command Direction Instruction Left and right Route Undo unit	Animation Background Clip-art gallery e-book edit font sound sound effect text	Action Algorithm Background Code Coding Command Debug/debugging Event Execute Instruction Object Output Plan Programmer Properties run	**Spreadsheets** Button Calculations Cell Clip-art Column Count tool *Data* Delete Image Lock cell Move cell Row Speak tool Spreadsheet Value **Technology outside school** Computer

						technology
Assessment of progress	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers End of year assessment

Subject: Computing

Year group: Year 2

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Creating pictures (2.6)	Making music (2.7)	Coding (2.1)	Spreadsheets (2.3)	Questioning (2.4) Effective searching (2.5)	Presenting ideas (2.8)
Online Safety (Education for a Connected World)	Self-image and identity Online Relationships	Online Reputation	Online Bullying Managing online information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership
Skills	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	To explore, edit and combine sounds using 2Sequence. To add sounds to a tune to improve it. To think about how music can be used to express feelings and create tunes which depict feelings. To upload a sound from a bank of sounds into the Sounds section.	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	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	**Questioning** 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	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.

	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.	To record their own sound and upload it into the Sounds section. To create their own tune using the sounds which they have added to the Sounds section.	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	tool to check calculations. To use 2Calculate to collect data and produce a graph.	database) to answer questions. To use a database to answer more complex search questions. To use the Search tool to find information **Effective searching** 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.	
Key knowledge	Knows the purpose and benefits of painting software tools such as 2Paint a Picture. Knows how to recreate Impressionism, surrealism and Pointillism using features within 2Paint a Picture. Knows how to reproduce the style of William Morris	Knows how to make forms of music (digitally) using age-appropriate software such as 2Sequence. Knows how to edit and combine sounds using 2Sequence. Knows how to refine composed music. Knows how to upload/import and record sounds	Knows what an algorithm is and can explain that it is a set of instructions and that algorithms follow a sequence. Knows how to create a computer program using an algorithm. Knows how to create a computer program from a given design.	Knows how to use prior learning to perform composite task of creating a counting machine using software such as 2Calculate (image, lock move cell, speak and count tools). Knows how to copy, cut and paste in spreadsheet software such as 2Calculate.	**Questioning** Knows that pictograms provide limited information. Knows that there are other data handling tools that can give more information than pictograms. Knows how to use yes/no questions to separate information.	Know that digital content can be presented in many different forms e.g. stories. Know how to use presentational or interactive software such as a quiz, making improvements to it based on people feedback. Know that data can be structured in tables to make

	by using repeating patterns, manipulating patterns and adding multiple effects in painting software such as 2Paint a picture.	beyond the software environment.	Knows that collision detection is an event type in coding. Knows how to design an algorithm that follows a timed sequence. Knows that different objects within the coding environment have different properties. Knows that there are different events in coding and knows what some of these events are. Knows the function of buttons in the coding environment. Knows how to interpret and debug simple programs	Knows what totalling tools are and how to use them. Knows how to use a spreadsheet to perform calculations for purpose. For example, adding and totalling money. Knows how to use some tools within a spreadsheet to support calculations. For example, using the equals tool in 2Calculate to check calculations. Knows how to create a manual block graph within a spreadsheet from data.	Knows how to construct a binary tree to identify items. Knows how to use a binary tree database (such as 2Question), to answer questions. Knows how to use a database to answer more complex search questions. Knows how to use a search feature at a basic level when trying to locate data within a database such as 2Investigate. **Effective Searching** Knows the meaning of key Internet and searching terms. Knows the basic parts of a web search engine page. Knows how to navigate a web search results page. Knows how to search the Internet to some degree for answers to a quiz.	it useful for an audience. Know how to add images such as clipart and photos to presentational software. Know how to collect, organise and present data and information in digital format.

					Knows the premise of what effective Internet searching is.	
Key vocabulary	Impressionism Palette Pointillism Share Surrealism template	Bpm Composition Digitally Instrument Music Sound effects (sfx) Soundtrack Tempo volume	Action Algorithm Background Button Collision detection Debug/debugging Design mode Event Key pressed Nesting Object Predict Properties Run Scale Scene Sequence Sound Test Text Timer When clicked/swiped	Backspace key Cells Columns Copy and paste Count tool Equals tool Image toolbox Lock tool Move cell tool Rows Speak tool Spreadsheet	**Questioning** Avatar Binary tree Collate Data database Pictogram question **Effective searching** Internet Search Search engine	Animated Audience Concept Map (mind map) Narrative Node Non-fiction presentation
Assessment of progress	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers End of year assessment

Subject: Computing

Year group: Year 3

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Spreadsheets (3.3)	Touch typing (3.4) Email (3.5)	Simulations (3.7)	Coding (3.1) Branching databases (3.6)	Graphing (3.8)	Presenting (3.9)
Online Safety (Education for a Connected World)	Self-image and identity Online Relationships	Online Reputation	Online Bullying Managing online information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership
Skills	To add and edit data in a table layout. To find out how spreadsheet programs can automatically create graphs from data To use the 'more than', 'less than' and 'equals' tools. To use the 'spin' tool and show how it can be used to count through times tables To describe cells	**Touch typing** To use 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. **Email** 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 consider what simulations are. To explore a simulation. To analyse and evaluate a simulation.	**Coding** 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 use coding knowledge to create a range of programs. To understand the importance of nesting. To design and create an interactive scene. **Branching databases**	To enter data into a graph and answer questions. To solve an investigation and present the results in graphic form.	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

		To explore a simulated email scenario.		To sort objects using just YES/NO questions. To complete a branching database using 2Question. To create a branching database of their choice		
Key knowledge	Know how to create tables of data within a spreadsheet. Know how to use a spreadsheet program to automatically create charts and graphs from data. Know how to use various features within a spreadsheet to support solutions to calculations. For example, 'more than', 'less than', and 'equals'. Know how to describe a cell location in a spreadsheet. Know how to find specified locations in a spreadsheet.	**Touch typing** Know typing terminology including names of fingers. Know the home, top and bottom row sections on a keyboard. Knows the keys typed with left hand. Knows the keys typed with right hand. Knows the correct way to sit at a keyboard. **Email** Know the different methods of communication and know the strengths and weaknesses of his form.	Know that a computer simulation can represent real and imaginary situations. Know advantages and problems of using simulations. Know how to use a simple simulation to try out different options and test predictions. Begin to know how to evaluate simulations by comparing them with real simulations and considering their usefulness.	**Coding** Knows what a flowchart is and how flowcharts are used in computer programming. Knows how to use a flowchart to create a computer program. Knows that there are different types of timers used in coding environments such as 2Code. Knows which timer should be used for a given purpose. Know what a repeat command is and how to use the repeat command. Know how to create a range of programs using coding knowledge.	Know how to set up a graph with a given number of fields using graphing software (2Graph). Know how to enter data for a graph. Know how to select the most appropriate chart type for their data and explain reasoning. Know how to sort data in graphing software to enable easier analysis.	Know what presentation is and how it can be used. Know how to add pages/slides, text and shapes to pages, and also format them. Know how to add media such as images, audio and videos. Know how to use effects and features such as animations and slide transitions. Know how timings can help when presenting and know how to include them in presentations. Know how to effectively present to an audience using presentation software.

		Know how to open and responding to email. Know how to use an address book to write an email. Know how to use an email environment safely including the importance of the draft feature. Know how to add attachments to an email. Know what CC means and how to use it.		Know how to run, test and debug their own programs. Know what nesting is and that this should be considered when debugging. Know how to change attributes/ properties of any objects in a program they have made. **Branching databases** Know how to sort objects using just YES/NO. Know how YES/NO questions are structured and answered. Know how to complete a branching database. Know how to edit and adapt a branching database. Know how to create a branching database including debugging it.		
Key vocabulary	Advance mode Bar graph Cell address Columns	**Touch typing** Posture Keys Space bar	Analysis Decision Evaluation Modelling	**Coding** Action Alert Algorithm	Axis Chart Column Data	Animation Border properties Font formatting Layer

	Data Equals Less than More than More than, less than, equal tool Pie chart Quiz tool Rows Spin tool Spreadsheet table	Typing **Email** Address book Attachment BCC CC Communication Compose Email Inbox Password Personal information Save to draft Trusted contact	Simulation	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 **Branching databases** Binary tree Branching database Data Database Debugging	Graph Investigation Row Sorting Tally chart	Media Presentation Slide Slideshow Text box Transition WordArt
Assessment of progress	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers

						End of year assessment

Subject: Computing

Year group: Year 4

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Hardware investigators (4.8)	Coding (4.1)	Spreadsheets (4.3)	Writing for different audiences (4.4)	Logo (4.5) Animation (4.6)	Effective search (4.7) Making music (4.9)
Online Safety (Education for a Connected World)	Self-image and identity Online Relationships	Online Reputation	Online Bullying Managing online information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership
Skills	To understand the different parts that make up a desktop computer. To recall the different parts that make up a computer	To create a simple computer program. To begin to understand selection in computer programming. To understand how an IF statement works. To understand how to use coordinates in computer programming. To understand the Repeat until command. To begin to understand selection in computer programming.	To explore how the numbers entered into cells can be set to either currency or decimal. To explore the use of the display of decimal places. To find out how to add formulae to a cell. To explore how tools can be combined to use 2Calculate to make number games. To explore the use of the timer, random number and spin button tools To use the line graphing tool in	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.	**Logo** 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. **Animation** To decide and discuss what makes a good animated film or cartoon. To learn how animations are	**Effective search** 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. **Making Music** To understand and experiment with rhythm and tempo electronically To create a melodic phrase. To electronically compose a piece of music.

		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.	2Calculate with appropriate data. To interpret a line graph to estimate values between data readings To use the currency formatting tool in 2Calculate. To use 2Calculate to create a model of a real-life situation To use the functions of allocating value to images in 2Calculate to make a resource to teach place value.		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.	
Key knowledge	Know there are key parts that make up a computer. Know what each of the key parts is called and the function of them.	Begin to know what selection is in computer programming. Know how an IF statement works. Know how to interpret an IF statement and therefore know how to create a program that includes an IF statement. Know how to use co-ordinates in computer programming.	Know what cell formatting is. Know how to format cells as currency, percentage, decimal or fraction. Know how to use formula wizard tools. Know how to combine spreadsheet tools to create a purposeful spreadsheet e.g. a timed times table test. • Know how to use a spreadsheet to model a real-life	Know how font size and style can affect the impact of a text. Know how to use a simulated scenario to produce a news report and campaign using technology	**Logo** Know the structure of the coding language of Logo. Know how to input simple instructions in Logo language environment. Know how to create letter shapes using Logo. Know what the repeat function in Logo is and its usefulness. Use it to create shapes such as squares.	**Effective searching** Know how to find information from a search results page. Know how to search effectively to find out information. Know how to identify if an information source is true and reliable. **Making music** Know the main elements of music.

		Know what the 'repeat until' command is. Know how an IF/ELSE statement works. Know what a variable is in programming. Know how to use variables within their programs. To know how to create a playable game using a block coding environment.	situation e.g. budget planner. • Know how to add a formula to a cell in order to create automatic calculations		Know what procedures are and use this knowledge to build procedures in Logo. **Animation** Know how animations are created by hand. Know how animations are created using computers. Know what onion skinning is when referring to animation. Know that animations can be enhanced using features in software such as background and sounds. Know what 'stop motion' animation is	Know what rhythm and tempo is and able to use this knowledge to experiment with it. Know that computers can be used to create music compositions. Know how to apply knowledge of music to create own composition using software.
Key vocabulary	Components CPU Graphics card Hard drive Input Motherboard Network card Output Peripherals RAM Software	Action Alert Algorithm Background Button Code blocks Command Debug/debugging Design Execute Event Flowchart 'If' statement	Average Budget Chart Column Data Decimal place Equals tool Format cell Formula Formula wizard Line graph Percentage Place value	Campaign Format Font Genre Opinion Reporter Viewpoint	**Logo** Debugging Grid LOGO LOGO commands Multi line mode Pen down Pen up Prediction Procedure Repeat Run speed SETPC	**Effective searching** Balanced view Easter eggs Internet Key words Reliability Results page Search engine **Making music** BPM Dynamics Harmonious

		'If/else' statement Implement Input Nest Object Prompt Predict Properties Repeat Repeat until Run Selection Sequence Timer Variable	Random number tool Row Spin tool Spreadsheet timer		SETPS **Animation** Animation FPS (frames per second) Frame Onion skinning Pause Stop motion	Melody Pitch Pulse Rhythm Tempo Texture synths
Assessment of progress	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers End of year assessment

Subject: Computing

Year group: Year 5

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Concept maps (5.7)	Coding (5.1)	Spreadsheets (5.3)	Databases (5.4)	Game Creating (5.5) 3D Modelling (5.6)	Word processing (5.8) External Devices (5.9)
Online Safety (Education for a Connected World)	Self-image and identity Online Relationships	Online Reputation	Online Bullying Managing online information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership

Skills	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 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.	To review existing coding knowledge. To begin to be able 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 use decomposition to make a plan of a real-life situation. To understand how to use friction in code. To begin to understand what a function is and how functions work in code. To understand what the different variable types are and how they are used differently.	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.	To learn how to search for information in a Database To contribute to a class database. To create a database around a chosen topic.	**Game creator** To Introduce the 2DIY 3D tool. To begin planning a game. To design the game environment. To design the game quest to make it a playable game. To finish and share the game. To self- and peer evaluate. **3D Modelling** To be introduced to the 2Design and Make tool. To explore the effect of moving points when designing. To design a 3D model to fit certain criteria. To refine and print a model.	**Word processing** 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 use a letter template **External Devices** To understand what Purple Chip is. To be able to upload a program to an external device. To adapt a program and operate it using Purple Chip To understand how a device can be programmed to be used as a game controller.

		To understand how to create a string. To begin to explore text variables when coding. To understand what concatenation is and how it works.				To explore the text functions available and appraise their uses. To create a simple quiz program that can be answered using an external device. To create a program in which an external device can be used to monitor real world conditions.
Key knowledge	Know the need for visual representations when generating and discussing complex ideas. Know the uses of a 'concept map'. Know what is meant by 'concept map', 'stage', 'nodes' and 'connections.' Know how to create a concept map using software such as 2Connect. Know that concept maps can be used to retell stories and information.	Begin to know how to simplify code in order to make own programming more efficient. Know how to create a simple simulation using 2Code. For example, a traffic light sequence. Know what decomposition and abstraction are in computer science. Know the need to start coding at a basic level of abstraction to remove superfluous details from own programs. Know how to use decomposition to make a plan of a real-life situation.	Know how to use formulae within a spreadsheet to convert measurements of length and distance. Know how to use more advanced formulae effectively. For example, to use formulae to calculate area and perimeter of shapes. Know how to create formulae that use text variables. Know how to use tools within a spreadsheet e.g. 2Calculate and the count tool to answer	Know how to search for information within a database. Know the different ways to search for information in a database. Know how to add information into a shared database. Know how to create own database. Know how to create new records. Know what fields are and know how to correctly add information. Know how to phrase questions so they can be	**Game creator** Know what some of the main elements are that make a successful game. Know how to plan a playable game. Know how to incorporate media such as sound and images. Know how to manipulate media including adding animation. Know how to successfully evaluate games. **Modelling** Know what modelling software is and the skills of	**Word processing** Know what a word processing tool is for. Know how to create a word processing document. Know how to alter the look of text and navigate around a document. Know how to alter page layout including heading and columns. Know how to add and edit images. Know how to add features to enhance look and usability within a document. For example:

	Know how to present a concept map to an audience	Know what a function is in coding and know how to use a function in own program to make it more efficient. Know what different variable types are. Know what strings are and how to use them. Know how to set and change variable values in code. Know some of the common ways that text variables can be used in programming. Know and use concatenation in own programs.	hypotheses. For example, to answer hypotheses about common letters in use	correctly answered using a search of database.	computer aided design. Know the effect of moving points when designing. Know how to design a 3D model to fit certain criteria. Know how to refine and print a model.	textboxes, hyperlinks, contents pages. Know how to use tables to present information. **External devices** Know what a host means in the context of 2Code Purple Chip and relate this to everyday technology e.g. console and wireless controller. Know what is meant by external device in relation to a host device. Know what is meant by an application (App). Know that a program can be created that will interact with an external device based on inputs and outputs available on the device and what has been coded on the host device. E.g. sound detection on the device sends input to the program triggering

						code to output alert noise to the device (Simple intruder alarm). Know how interaction between an external device and host can be related to real world scenarios, recognising its usefulness. Know the extent of functionality with Purple Chip including the code blocks available. Know how to utilise the functionality of Purple Chip when designing own program.
Key vocabulary	Collaborate Concept Concept map Connection Node Presentation mode Story mode	Abstraction Action Algorithm Concatenation Debug/debugging Decomposition Efficient Flowchart Event Function Input Nesting Object Output Physical system Properties Repeat Selection	'How many' tool Advance mode Columns Data Format Formula Formula bar Formula wizard Rows Spreadsheet Totalling tool variable	Arrange Avatar Chart Collaborative Data Database Database report Field Group Record Search Sort statistics	**Game creator** Evaluation Feedback Image Instructions Promotion Quest Scene Screenshot Texture Theme **3D modelling** 2D 3D 3D printing CAD – computer aided design	**Word Processing** Bulleted lists Caps lock Captions Copy and paste Copyright Creative commons Cursor Document Font Formatting Hyperlink Merge cells Page orientation Readability Text wrapping Word art

		Sequence Simplify Timer variable			Design brief Net Pattern fill Points template	Word processing tool **Using External devices** Algorithm Emulator/ simulator External device Host Input output QR code Sensor
Assessment of progress	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers End of year assessment

Subject: Computing

Year group: Year 6

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Coding (6.1)	Blogging (6.4)	Spreadsheets (6.3)	Text adventures (6.5)	Binary (6.8) Networks (6.6)	Quizzing (6.7)
Online Safety (Education for a Connected World)	Self-image and identity Online Relationships	Online Reputation	Online Bullying Managing online information	Health, well-being and lifestyle	Privacy and security	Copyright and ownership
Skills	To design a playable game with a timer and a score. To plan and use selection and	To identify the purpose of writing a blog. To identify the features of	To use a spreadsheet to investigate the probability of the	To find out what a text-based adventure game is and to explore	**Binary** To examine how whole numbers are used as the basis for representing all	To create a picture-based quiz for young children.

	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 test and debug a program. To create a simulation of a room in which devices can be controlled. To understand the different options of generating user input in 2Code. To understand how user input can be used in a program.	successful blog writing. 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 the importance of commenting on blogs. To peer-assess blogs against the agreed success criteria. To understand how and why blog posts and comments are approved by the teacher	results of throwing many dice. To use a spreadsheet to calculate the discount and final prices in a sale. Create a formula to help work out the prices of items in the sale. To use a spreadsheet to plan how to spend pocket money and the effect of saving money. To use a spreadsheet to plan a school charity day to maximise the money donated to charity.	an example made in 2Create a Story. To use 2Connect to plan a 'Choose your own Adventure' type story. To use 2Connect plans for a story adventure to make the 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	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. **Networks** To share existing knowledge about the internet To find out what a LAN and WAN are. To find out how we access the internet in school. To research and find out about the age of the internet. To think about what the future might hold.	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.

Knowledge	Know how to implement a game which includes timers and a score. Know what the launch command is. Build on knowledge of functions. Know how to use multiple functions in own program. Know how to arrange code in multiple tabs. Know how to develop creativity when coding to generate novel effects. Know the different options of generating user input in 2Code. Know how to attribute variables to user input. Know the need to code for all possibilities when using user inputs. Know how 2Code can be used to make a textbased adventure game. Know with improving understanding of how they can alter	**Blogging** Know the purpose of writing a blog. Know the features of successful blog writing. Know how to plan a blog. Know how to write a blog. Know how to write a blog post. Know that the way information is presented within a blog has an impact upon the audience. Know how to contribute to others' blogs. Know the importance of having an approval process when creating blog content or modifying it. Know from Online Safety knowledge that content within blogs applies. For example, children know the issues surrounding inappropriate posts and cyberbullying.	Know how to create a spreadsheet to help answer a mathematical question relating to probability. Know how to take 'copy' and 'paste' shortcuts. Know how to problem solve during mathematical investigations when using spreadsheets by using tools such as the 'Count tool'. Know how to create a spreadsheet to produce computational models. For example, creating a spreadsheet that works out discounts and final price sales. Children will know how to use advanced formula to assist with this. Know how to use a spreadsheet to help plan actions. For example, create a spreadsheet to plan	Know what a text based adventure is. Know how to convert a simple story with 2 or 3 levels of decision making into a logical design. Know how to use the functionality of 2Create a Story Adventure mode to create, test and debug using plans. Know the difference between a map-based game and a sequential story-based game. Know how to use written plans to code a mapbased adventure using 2Code. Know how to recall existing knowledge to support coding a map-based adventure game. For example, using functions, two-way selection (IF/ELSE statements) and repetition	**Binary** Know that all data in a computer is saved in the computer memory in a binary format. Know that binary uses only the integers 0 and 1. Know that we can relate 0 as an 'off' switch and 1 to an 'on' switch. Know how to count up from 0 in binary using visual aids if required. Know that bits are related to computer storage. Know how to convert numbers to binary using the division by two method. Know how to use a converter tool to check binary conversions. **Networks** Know the difference between the World Wide Web and the Internet. Know what a WAN and LAN is and the key differences between them.	Know how to use create activities for younger children using software such as 2DIY. Know about different question types within quizzing software tools such as 2Quiz. Know how to give and respond to feedback based on quizzes made. Know how to create their own grammar games. Know how to use multiple pieces of software to enhance a quiz. For example, creating a quiz that requires children to look up information on a database.

	existing programs to reflect their own ideas. Building on existing knowledge of debugging, children know how to debug more effectively.		how to spend pocket money and the effect of saving.		Know how a school network accesses the Internet. Know the history of the Internet. Know some of the major changes in technology which have taken place in their lifetime.	
Key vocabulary	Action Algorithm Command Co-ordinates Debug/debugging Decomposition Event Execute/run Flowchart Function Input Launch command Object Output Predict Procedure Properties Repeat Selection Sequence Simulation Tab Timer Variable	Approval Archive Blog Blog post Collaborate Commenting Vlog	Advance mode Budget Chart Columns Count (how many tool) Data Dice tool Expense Format cell Formula Formula bar Formula wizard Move cell tool Probability Profit Rows Spreadsheet	Text-based adventure Debug/debugging Sprite Selection Function	**Binary** Base 2 Bit Base 10 Digit Integer Transistor Switch Machine code Variable Megabyte Terabyte Nibble **Networks** Hub/switch Internet Local area network (LAN) Network Wide area network (WAN) World wide web Router Wi-fi	Audience Audio Case-sensitive Clone Cloze Preview Quiz
Assessment of progress	Unit Assessment activities on Purple Mash	Unit Assessment activities on Purple Mash	Unit Assessment activities on Purple Mash	Unit Assessment activities on Purple Mash	Unit Assessment activities on Purple Mash Key questions on Knowledge Organisers	Unit Assessment activities on Purple Mash

	Key questions on Knowledge Organisers	Key questions on Knowledge Organisers	Key questions on Knowledge Organisers	Key questions on Knowledge Organisers		Key questions on Knowledge Organisers End of year assessment