Year 1: Autumn

1.1 Online Safety

Enquiry Question	Why is it important to keep information such as your usernames and passwords private?			
	Required Prior Knowledge		**Knowledge to be taught**	
Declarative Knowledge	• Understand what it means for something to be 'private'. • Talk about how my body feels when I am not comfortable with something. • Know who can help me when I am feeling worried.		• It is important to log in to a site safely and to keep passwords safe. • Some online sites have an area for their work that is accessible only to the user and their teacher. • An avatar is a virtual representation of them suitable for use online. • Different icons in a tools bar carry out different functions. • It is important to log out when you have finished working as a way of securing personal accounts.	
Procedural Knowledge	• Show that I understand how to be kind to others. • Get to the Purple Mash page on my device at school and at home. • Log-in to Purple Mash using the shortcut icon. • Log-in to Purple Mash using my username and password. • Save work when I am using Purple Mash and open work that I have done earlier. • Find and complete 2Dos that my teacher has set for me.		• Save work in their folder. • Make and edit their own avatar. • Locate work they have done previously in their work folder. • Open the file by double clicking on it. • Locate the search bar. • Search for a given resource and double click to load the resource up. • Add images. • Save their work in their work folder using an appropriate file name.	
Vocabulary	**alert, avatar, button, device, filter, home screen, icon, menu, notification, password, private, saving, search, shared folder,**			
Learning Questions	**How do you log in safely?**	**What is my work area?**	**What resources are available on Purple Mash?**	**Can I log in to Purple Mash and save my work?**
Mastery Key	➢ Can log-in and save work on Purple Mash.			

Year 1: Autumn

1.2 Grouping and Sorting

Enquiry Question	How can the computer help us with grouping and sorting?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• Objects can be sorted depending on a range of variables (size, colour, shape) • The same object can be sorted in different ways depending on the criteria.	• Items can be sorted using a range of criteria. When sorting items, a logical process should be used. • An algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective. • Computer programs near clear instructions, in steps, to follow. • The instructions written for a computer program are called algorithms.
Procedural Knowledge	• Recognise equal and unequal groups. • Sort objects by colour, shape or size.	• Explain how items have been sorted. • Check that items sorted into two categories are correct using the criteria decided upon. • Follow a human algorithm to sort shapes. • Follow a computer program algorithm checking shapes have been sorted correctly. • Identify what each criterion container is. • Drag objects into the correct criterion container. • Recognise some objects may fit into an overlap criterion.
Vocabulary	**algorithm, criteria, describe, equal, groups, less than, more than, sort**	
Learning Questions	**How do you categorise objects?**	**Can I sort some objects on the computer?**
Mastery Key	➢ Can use a computer to sort items into three clearly defined groups using given criteria.	

Year 1: Autumn

1.3 Pictograms

Enquiry Question	What is a pictogram and what are they for?		
	Required Prior Knowledge	**Knowledge to be taught**	
Declarative Knowledge	• Pictograms use pictures or symbols to show amounts. • A picture or symbol in a pictogram represents a number.	• Data is a collection of information, used to help answer questions. • A pictogram is a visual way of representing data. • We can look at the data represented in pictograms and ask questions as a way of interrogating data. • Programs such as 2Count enable people to create pictograms on a computer. This has the advantage of being able to easily modify data and share it with lots of people.	
Procedural Knowledge	• Create a simple pictogram using pictures to record the amount of something (eg. classmates' pets).	• Collect data on a common theme such as how children travel to school. • When collecting data, recognise that there are efficient ways of collecting data such as writing it down or entering it into a computer program. • Represent data collected as a class using physically created pictograms. • Interpret a pictogram by comparing amounts of different categories. • Interrogate a pictogram by thinking of questions. • Identify the totals in each category. • Increase or decrease amounts of items from a column by using the plus or minus buttons. • Change an image representing a piece of data. • Create a suitable title for a pictogram and save it.	
Vocabulary	collect data, compare, data, pictogram, record results, title, totals, visual		
Learning Questions	**How can data be represented in picture format?**	**How do you make a class pictogram?**	**Can I create a pictogram (2Count)?**
Mastery Key	➢ Can represent simple collected data in an appropriate pictogram by using 2Count.		

Year 1: Autumn

1.4 Lego Builders

Enquiry Question	What is an algorithm?		
	Required Prior Knowledge	**Knowledge to be taught**	
Declarative Knowledge	• An instruction is something you follow to complete a task.	• Achieve a specific effect when building something, accurate instructions must be followed. • Computer programs need precise instructions to follow, and these are called algorithms. If instructions are vague, outcomes will vary for any given task. • The order of instructions for a task affects the results. • Correcting errors in an algorithm or program is called debugging.	
Procedural Knowledge	• Follow multi-step instructions. • Talk about where I am moving a toy vehicle whilst I am moving it. • Follow directions to make a route for a toy vehicle. • Plan a route for a toy vehicle. • Make a floor robot move. • Control the forwards, backwards and rotation of a floor robot one step at a time. • Program a 3 step route for a floor turtle.	• Recognise how important it is to have clear, precise and concise instructions. • Follow the simple instruction of painting given animals and compare the finished results, recognising differences due to limited instructions given. • Follow a set list of instructions that everyone uses to paint a bird, recognising that the instructions have resulted in everyone's finished pieces are very similar. • Identify why a sequence of instructions for making a sandwich is incorrect. • Explore the possible outcomes of following incorrectly sequenced instructions. • Find simple errors in a simple algorithm for making a sandwich. • Correct the algorithm sequence by re-ordering it and recognise when it has been debugged.	
Vocabulary	**algorithm, code, computer, debugging, instructions, machine, program, recipe, sequence**		
Learning Questions	**Why is it important to follow instructions?**	**What is an algorithm?**	**Can I organise some instructions to create a successful algorithm?**

Year 1: Spring

1.5 Maze Explorers

Enquiry Question	How do you change an algorithm to create a different outcome?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• Commands tell something or someone what to do. • Technology can be used in a variety of ways.	• You can move a character (turtle) within specific computer programs around a computer screen such as 2Go by using direction keys. When a direction key is used it is known as a command. • On screen direction keys have eight possible directions which includes diagonal movements. Number keys can be combined with direction keys to give a program more accurate instructions and avoid less command clicks. Each square on a grid relates to 1 unit and that when using number keys this should be referenced. • Lists can be made with directional instructions within 2Go and these are known as algorithms. These lists can be changed to improve the instructions which is known as debugging.
Procedural Knowledge	• Talk about where I am moving a toy vehicle whilst I am moving it. • Follow directions to make a route for a toy vehicle. • Plan a route for a toy vehicle. • Make a floor robot move. • Control the forwards, backwards and rotation of a floor robot one step at a time. • Program a 3 step route for a floor turtle.	• Use the direction keys to make a character (turtle) on the screen move in different directions. Combine with diagonal commands. • In 2Go use the direction keys combined with number keys to get an object to a specific place on a screen. Use the undo button when needed. • Reference an onscreen grid with number keys when creating commands and formulate a list of instructions to move the character from the start to end point. • Debug by modifying the instructions so that the character moves to the correct location. • Use the extend algorithm button when more than five commands are needed.
Vocabulary	**algorithm, challenge, command, delete, direction, instruction, left and right, route, undo, unit**	
Learning Questions	**What are direction keys and how do they work?**	**How do you create and debug algorithms?** / **Can I create a successful algorithm (2Go)?**
Mastery Key	➢ Can change an algorithm to create a different outcome when using 2Go.	

Year 1: Spring

1.6 Animated Stories

Enquiry Question	How do you create an animated story?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• Stories have pictures in to help support the narrative. •	• Images can be created within e-book software. Animations can be included in e-books. • E-book software allows pages to be added and overwriting of work. • Audio such as sound effects, voice recordings and music can be included within e-books. • Text fonts and sizes can be changed in e-books to suit an intended audience. • Copy and paste features in e-book software can be used to speed up creation of additional pages.
Procedural Knowledge	• Select colours when painting on the computer. • Draw pictures on the computer. • Draw with different widths of pen. • Try different tools. • Use the undo and erase buttons.	• Identify the animation tool and test each animation effect within the animation tool for a selected image. • Apply an animation effect and use the play button to see the effect of the animation within the e-book. • Record sound using the microphone and apply to a page. • Insert a piece of music created from the piano synthesiser and apply to a page. • Locate the clip art gallery icon. Select a background for a page from the gallery. • Create a background for a page using the pen tools. Apply text changes. • Use the next page button to locate where the copied page should be pasted. • Locate the paste button and click to insert the copied page.
Vocabulary	**animation, background, category, clip-art gallery, copy, drop-down menu, E-book, edit, eraser, features, font, sound, overwrite, paint tools, paste, play mode, redo, save, sound effect, text, undo, voice recording**	
Learning Questions	**What are the differences between traditional books and e-books?**	**How is a picture animated?**	**How do you add sound to a picture?**	**What do the cut and paste tools do?**	**Can I create a story on the computer (2Create a Story)?**
Mastery Key	➢ Can manipulate the properties of their story by changing the images and adding animations and sound.				

Year 1: Summer

1.7 Coding

Enquiry Question	What is a computer program?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge	• Buttons can make something move. • Arrows on a robot control which way it will move.	• Computer programs work by following instructions called code known as algorithms. • There are objects and action code block in the 2Code environment and that you can make a simple program using these. Each single instruction such as 'Object Right' is called a command. • An event is something that makes a block of code run such as a user pressing a key or clicking a screen. Event, object and action code blocks can be used together. • When code is run this is known as being executed. • Debugging is when we fix code that isn't working how it was designed to. • Scenes can be made using backgrounds and objects. Backgrounds can be changed as well as objects and that these have attributes (properties) that can be modified.
Procedural Knowledge	• Make a floor robot move. • Control the forwards, backwards and rotation of a floor robot one step at a time. • Program a 3 step route for a floor turtle. •	• Recognise **When Clicked** code block as an event block. Arrange a **When Clicked** code block in front of an object. Give an object code block an action when it is clicked. • Run code with a **When Clicked** event and observe what happens when the event occurs. • Execute code by clicking the Run & Stop buttons. Arrange blocks into different places. • Change actions attributed to objects. Switch to design view. • Select a background using the background icon. • Draw a plan of a scene with objects. Plan what the objects in the scene will do. • Create a program from a plan that includes objects, actions and a **When Clicked** event. • Execute the program and test if it is doing what is intended in the plan. • Debug the program if the program isn't working how it was planned.
Vocabulary	**action, algorithm, background, click, code, code blocks, coding, code view, command, debug, event, execute, instruction, object, output, plan, programmer, properties, run, scale, scene, software, sound, When clicked,**	
Learning Questions	**How do computer programs work?** / **What are objects and actions?** / **What is an event?** / **What happens when code executes?** / **What are background and objects?** / **Can I make a short computer program (2Code)?**	
Mastery Key	➢ Can construct a code purposefully to make objects interact and manipulate how their program looks by adding and changing objects.	

Year 1: Summer

1.9 Technology outside school

Enquiry Question	What is technology?	
	Required Prior Knowledge	**Knowledge to be taught**
Declarative Knowledge		• Technology is science and engineering knowledge put into practical use to solve problems or invent useful tools. • Technology is used both within and outside school.
Procedural Knowledge	• Identify the technology used around me. • Knows a range of technological devices	• Recognise technology. • Identify common types of technological devices. • Describe the function of technology examples within school and explain how it is helpful. • Describe the function of technology examples outside school and explain how they are helpful.
Vocabulary	computer, technology	
Learning Questions	**Where is technology used in the local community?**	**What technology is used outside school?**