




# TEACHING SEQUENCE



## COMPUTING

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	Autumn	Spring	Summer	Curriculum Enhancements
<b>EYFS</b>	<p><b><u>Nursery</u></b> Introduction to Minimash -Logging on with adult -Complete basic skills such as touch screen, drag effect and selection</p> 	<p><b><u>Nursery</u></b> To follow simple algorithms Using directional language and Bee Bots</p> 	<p><b><u>Nursery</u></b> Complete basic skills such as touch screen, drag effect and selection And use simple app. For Example” Puzzle pieces and art</p> 	
	<p><b><u>Reception</u></b> Use a basic paint program on An ipad. Know that a touchpad represents our finger. Move the arrow around using a touchpad Draw simple marks and shapes using a touchpad Save to tray (Folder)</p>	<p><b><u>Reception</u></b> To follow simple algorithms For Example” recipe’s , instructions and ordering activities</p>	<p><b><u>Reception</u></b> To log on using my password To follow a simple app on Mini Mash For Example” Painting, puzzle match Number games etc</p>	<p><b>*Online Safety</b></p>

# Year 1

## **1.1 Online Safety & Exploring Purple Mash**

To log in safely and understand why that is important.

To learn how to find saved work in the Online Work area.

To become familiar with the types of resources available in the Topics section.

To explore the Tools area of Purple Mash and to learn about the common icons used in Purple Mash for Save, Print, Open, New.

**Vocabulary:** Alert, Avatar, Button, Device, File Name, Filter, Home Screen, Icon, Login, Log out, Menu, My Work Area, Notification, Password, Private, Purple Mash Tools, Saving, Search, Shared Folder, Textbox, Think About Box, Topic Area, Tool bar, Typing, Writing Template

## **1.2 Grouping and Sorting**

To sort items using a range of criteria.

To sort items on the computer using the 'Grouping' activities in Purple Mash.

**Vocabulary:** Activities, Criteria, Describe, Equal, Groups, Less than, More than, Sort

## **1.3 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.

## **1.5 Maze Explorers**

To be able to use the direction keys to complete the challenges successfully.

To understand how to create and debug a set of instructions (algorithm).

To use the additional direction keys as part of their algorithm

To provide an opportunity for the children to set challenges for each other.

**Vocabulary:** Algorithm, Challenge, Command, Delete, Direction, Instruction, Left and Right, Route, Undo, Unit

## **1.6 Animated Story Books**

To understand the differences between traditional books and ebooks.

To add animation to a picture.

To add effects to a picture.

To add a background to the story.

To use the copy and paste feature to create additional pages.

**Vocabulary:** Animation, Background, Category, Clip-art gallery, Copy, Drop-down menu, E-book, Edit, Eraser, Features, Font, Sound, Overwrite, Paint tools, Paste, Play

## **1.7 Coding**

To understand what instructions are.

To use code to make a computer program.

To understand what an event is.

To begin to understand how code executes when a program is run.

To understand what backgrounds and objects are.

To plan a computer program.

**Vocabulary:** Action, Algorithm, Background, Click, Code, Code blocks, Coding, Code view, Command, Debug/ Debugging, Design View, Event, Execute, Instruction, Object, Output, Plan, Programmer/coder, Properties. Run, Scale, Scene, Software, Sound, When Clicked

## **1.8 Spreadsheets**

To understand what a spreadsheet looks like.

To add clipart images to a spreadsheet.

To use the 'speak' and 'count' tools in 2Calculate to count items.

**Vocabulary:** Button, Calculations, Cell, Clipart, Column, Count tool, Data, Delete, Image, Lock cell, Move cell, Row, Select, Speak tool, Spreadsheet, Value

	<p><b>Vocabulary:</b> Collect Data, Compare, Data, Pictogram, Record Results, Title, Totals, Visual</p> <p><b><u>1.4 Lego Builders</u></b>          To emphasise the importance of following instructions.          To follow and create simple instructions on the computer.          To consider how the order of instructions affects the result.</p> <p><b>Vocabulary:</b> Algorithm, Code, Computer, Debugging, Instructions, Machine, Program, Recipe, Sequence</p>	<p>Mode, Redo, Save, Sound effect, Text, Undo, Voice recording,</p>		<p><b>*Online Safety</b>  <b>*Safer Internet Day</b></p>
	<p><b><u>2.2 Online Safety</u></b>          To know how to refine searches using the Search tool.          To introduce Email as a communication tool using 2Respond simulations.          To understand that information put online leaves a digital footprint or trail.</p> <p><b>Vocabulary:</b> Attachment, Filter, Private information, Digital footprint, Internet, Search, Email, Personal information, Secure, Sharing</p> <p><b><u>2.3 Spreadsheet</u></b>          To use copying, cutting and pasting shortcuts in 2Calculate.</p>	<p><b><u>2.5 Effective Searching</u></b>          To understand the terminology associated with the Internet and searching.          To gain a better understanding of searching the Internet.          To create a leaflet to help someone search for information on the Internet.</p>	<p><b><u>2.6 Creating Pictures</u></b>          To explore 2Paint A Picture.          To look at the work of pointillist artists such as Seurat.          To look at the work of Piet Mondrian and recreate it using the Lines template.          To look at the work of William Morris and recreate it using the Patterns template.          To look at some surrealist art and create your own using the eCollage function in 2Paint A Picture.</p> <p><b>Vocabulary:</b> Art, Fill, Impressionism, Palette, Pointillism, Style, Surrealism</p> <p><b><u>2.7 Making Music</u></b></p>	

# Year 2

To explore the capabilities of a spreadsheet in adding up coins to match the prices of objects.  
To add and edit data in a table layout.

**Vocabulary:** Block graph, Copy, Cells, Column, Count tool, Data, Drag, Equals, Equals tool, Label, Row, Speak tool, Table, Total

### 2.1 Coding

To understand what an algorithm is.  
To create a program using a given design.  
To understand that algorithms follow a sequence.  
To understand that different objects have different attributes (properties).  
To create a program using a given design.  
To understand the need to test and debug a program repeatedly.

**Vocabulary:** Action, Algorithm, Background, Bug, Button, Click events, Collision detection, Command, Debug/Debugging, Event, Execute, Implement, Instructions, Interaction, Interval, Object, Output, Properties, Run

**Vocabulary:** Digital footprint, Domain, Internet, Network, Search engine, Web address, Web page, World Wide Web, Website

### 2.4 Questioning

To show that the information provided on pictograms is of limited use beyond answering simple questions.  
To use yes/no questions to separate information.  
To construct a binary tree to separate different items.  
Use 2Question (a binary tree) to answer questions.  
To use a database to answer more complex search questions.

**Vocabulary:** Binary tree, Data, Database, Field, Pictogram, Question, Record, Search, Sort

To be introduced to making music digitally using 2Sequence.  
To add sounds to a tune to improve it.  
To upload a sound from a bank of sounds into the Sounds section.

**Vocabulary:** Beat, Compose, Note, Tune, Sound effect, Soundtrack, Speed, Tempo, Volume

### 2.8 Presenting Ideas

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.

**Vocabulary:** E-book, Fact file, Fiction, Mind map, Node, Non-fiction, Presentation, Quiz

**\*Online Safety**  
**\*Safer Internet Day**

End of phase skills:

- 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.

# Year 3

### 3.2 Online Safety

To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.

To consider if what can be read on websites is always true.

To learn about the meaning of age restrictions symbols on digital media and devices.

**Vocabulary:** Appropriate, Blog, Inappropriate, Password, Personal information, Internet, Reputable source, Permission, Spoof, Reliable Source, Verify

### 3.1 Coding

To understand what a flowchart is and how flowcharts are used in computer programming.

To understand that there are different types of timers.

To understand how to use the repeat command.

To use coding knowledge to create a range of programs.

To design and create an interactive scene.

**Vocabulary:** Action, Alert, Algorithm, Background, Bug, Button, Click events, Code, Collision detection event, Command, Debug\ Debugging, Degrees, Event, Flowchart, Implement, Input, Interval, Nest, Object, Predict, Properties, Repeat, Right-Angle, Run, Scene, Sequence, Test, Timer, Turtle Object,

### 3.3 Spreadsheets

To add and edit data in a table layout.

### 3.5 Email

To think about the different methods of communication.

To open and respond to an email.

To learn how to use email safely.

To add an attachment to an email.

To explore a simulated email scenario.

**Vocabulary:** Address book, Attachment, BCC, CC, Communication, Compose, Email, Inbox, Password, Personal Information, Save to draft, Trusted contact

### 3.6 Branching Databases

To sort objects using just YES/NO questions.

To complete a branching database using 2Question.

To create a branching database of the children's choice.

**Vocabulary:** Binary tree, Database, Branching database, Data, Debugging

### 3.7 Simulations

To find out what a simulation is and understand the purpose of simulations.

To explore a simulation, making choices and discussing their effects.

To work through and evaluate a more complex simulation.

**Vocabulary:** Analysis, Simulation, Evaluation, Modelling, Decision

### 3.8 Graphing

To enter data into a graph and answer questions.

To solve an investigation and present the results in graphic form.

**Vocabulary:** Axis, Chart, Column, Data, Graph, Investigation, Row, Sorting, Survey, Tally Chart, Title

### 3.9 Presenting

To create a page in a presentation.

To add media to a presentation.

To add animations into a presentation.

To add timings into a presentation.

To use the skills learnt in previous weeks to design and present an effective presentation.

**Vocabulary:** Animation, Border properties, Font formatting, Layer, Media, Presentation, Slide, Slideshow, Text box, Transition, WordArt

	<p>To introduce the 'more than', 'less than' and 'equals' tools</p> <p>To introduce the Advanced mode of 2Calculate.</p> <p><i><b>Vocabulary:</b> Advance mode, Bar graph, Equals, Data, Cell address, Rows, Less than, Columns, More than, Pie Chart, Quiz tool, Spin Tool, Spreadsheet</i></p> <p><b>3.4 Touch Typing</b></p> <p>To introduce typing terminology.</p> <p>To practice and improve typing for home, bottom, and top rows.</p> <p>To practice the keys typed with the left hand.</p> <p>To practice the keys typed with the right hand.</p> <p><i><b>Vocabulary:</b> Posture, Keys, Space bar, Typing</i></p>			<p>*Online Safety *Safer Internet Day *STEM links/enrichment</p>
<p><b>Year 4</b></p>	<p><b>3.2 Online Safety</b></p> <p>To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.</p> <p>To consider if what can be read on websites is always true.</p> <p>To learn about the meaning of age restrictions symbols on digital media and devices.</p>	<p><b>4.2 Online Safety</b></p> <p>To understand how children can protect themselves from online identity theft.</p> <p>To identify the risks and benefits of installing software including apps.</p> <p>To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.</p>	<p><b>4.7 Effective Searching</b></p> <p>To locate information on the search results page.</p> <p>To use search effectively to find out information.</p> <p>To assess whether an information source is true and reliable.</p> <p><i><b>Vocabulary:</b> Balanced view, Easter eggs, Internet, Key words, Reliability, Results page, Search engine</i></p> <p><b>3.7 Simulations</b></p>	

**Vocabulary:** *Appropriate, Blog, Inappropriate, Password, Personal information, Internet, Reputable source, Permission, Spoof, Reliable Source, Verify*

### **3.5 Email**

To think about the different methods of communication.

To open and respond to an email.

To learn how to use email safely.

To add an attachment to an email.

To explore a simulated email scenario.

**Vocabulary:** *Address book, Attachment, BCC, CC, Communication, Compose, Email, Inbox, Password, Personal Information, Save to draft, Trusted contact*

### **3.3 Spreadsheets**

To add and edit data in a table layout.

To introduce the 'more than', 'less than' and 'equals' tools

To introduce the Advanced mode of 2Calculate.

**Vocabulary:** *Advance mode, Bar graph, Equals, Data, Cell address, Rows, Less than, Columns, More than, Pie Chart, Quiz tool, Spin Tool, Spreadsheet*

To identify the positive and negative influences of technology on health and the environment.

**Vocabulary:** *AdFly, Attachment, Citation, Collaborate, Cookies, Copyright, Digital footprint, Malware, Phishing, Plagiarism, Ransomware, Spam, SMART rules, Virus, Watermark*

### **4.8 Hardware Investigators**

To understand the different parts that make up a desktop computer.

To recall the different parts that make up a computer.

**Vocabulary:** *Components, CPU, Graphics card, Hard drive, Input, Motherboard, Network card, Output, Peripherals, Software*

### **4.3 Spreadsheets**

To explore how the numbers entered into cells can be set to either currency or decimal.

To explore how tools can be combined to use 2Calculate to make number games.

To use the line graphing tool in 2Calculate with appropriate data.

To use the currency formatting tool in 2Calculate.

To use the functions of allocating value to images in 2Calculate to make a resource to teach place value.

**Vocabulary:** *Average, Spreadsheet, Formula, Column, Budget, Chart, Data, Decimal place, Equals*

To find out what a simulation is and understand the purpose of simulations.

To explore a simulation, making choices and discussing their effects.

To work through and evaluate a more complex simulation.

**Vocabulary:** *Analysis, Simulation, Evaluation, Modelling, Decision*

### **4.6 Animation**

To decide what makes a good, animated film or cartoon and discuss favourite animations.

To learn about onion skinning in animation.

To introduce 'stop motion' animation.

**Vocabulary:** *Animation, FPS (Frames per second), Frame, Onion Skinning, Pause, Stop motion.*

**\*Online Safety**  
**\*Safer Internet Day**  
**\*STEM links/enrichment**

		<p><i>tool, Format cell, Formula wizard, Line graph, Percentage, Place value, Random number tool, Timer, Spin tool</i></p>		
<p>End of phase skills:</p>	<ul style="list-style-type: none"> <li>- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>- use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</li> <li>- 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</li> <li>- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</li> <li>- 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</li> <li>- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>			
<p>Year 5/6</p>	<p style="text-align: center;"><b><u>Cycle A</u></b> <b><u>5.2 Online Safety</u></b></p> <p>To gain a greater understanding of the impact that sharing digital content can have.</p> <p>To know how to maintain secure passwords.</p> <p>To learn about how to reference sources in their work.</p> <p>Ensuring reliability through using different methods of communication.</p> <p><b><i>Vocabulary:</i></b> Citation, Collaborate, Communication, Copyright, Creative Commons Licence, Encrypt, Identity theft, Malware, Ownership, PEGI ratings, Phishing, Password, Personal information, Spoof, SMART rules, Reliable source</p> <p style="text-align: center;"><b><u>5.4 Databases</u></b></p>	<p style="text-align: center;"><b><u>Cycle A</u></b> <b><u>6.2 Online Safety</u></b></p> <p>To identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location.</p> <p>To review the meaning of a digital footprint and understand how and why people use their information and online presence to create a virtual image of themselves as a user.</p> <p>To understand the importance of balancing game and screen time with other parts of their lives, e.g., explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health.</p>	<p style="text-align: center;"><b><u>Cycle A</u></b> <b><u>6.3 Spreadsheets</u></b></p> <p>To use a spreadsheet to investigate the probability of the results of throwing many dice.</p> <p>To use a spreadsheet to calculate the discount and final prices in a sale.</p> <p>Create a formula to help work out the prices of items in the sale.</p> <p>To use a spreadsheet to plan how to spend pocket money and the effect of saving money.</p> <p>To use a spreadsheet to plan a school charity day to maximise the money donated to charity.</p> <p><b><i>Vocabulary:</i></b> Rows, Spreadsheet, Columns, Data, Formula, Advance mode, Budget, Chart, Count tool, Dice tool, Expense, Format cell, Formula bar, Formula wizard, Move cell tool, Probability, Profit</p>	



	<p>To learn how to search for information in a database.</p> <p>To contribute to a class database.</p> <p>To create a database around a chosen topic.</p> <p><i>Vocabulary: Arrange, Avatar, Chart, Collaborative, Data, Database, Field, Group, Record, Database report, Search</i></p> <p><b>5.3 Spreadsheets</b></p> <p>To use formulae within a spreadsheet to convert measurements of length and distance.</p> <p>To use the count tool to answer hypotheses about common letters in use.</p> <p>To use a spreadsheet to model a real-life problem.</p> <p>To create formulae that use text variables.</p> <p>To use a spreadsheet to help plan a school cake sale.</p> <p><i>Vocabulary: Rows, Spreadsheet, Columns, Data, Format, Formula, Advance mode, Formula Bar, Formula wizard, 'How many?' tool, Totalling tool, Variable</i></p>	<p><b>Vocabulary:</b> Data analysis, Digital footprint, Inappropriate, Location sharing, Password, PEGI rating, Phishing, Print screen, Screen time, Secure websites, Spoof</p> <p><b>5.6 3D Modelling</b></p> <p>To be introduced to the 2Design and Make tool.</p> <p>To explore the effect of moving points when designing.</p> <p>To design a 3D model to fit certain criteria.</p> <p>To refine and print a model.</p> <p><i>Vocabulary: 2D, 3D, 3D printing, CAD (Computer aided design), Design brief, Pattern fill, Points, Net, Template</i></p> <p><b>6.6 Networks</b></p> <p>To discover what the children know about the Internet.</p> <p>To find out what a LAN and WAN are.</p> <p>To research and find out about the age of the internet.</p> <p><b>Vocabulary:</b> Hub/ Switch, Internet, Local area network (LAN), Network, World Wide Web, Router, Wide area network (WAN), Wi-Fi</p>	<p><b>5.5 Game Creator</b></p> <p>To Introduce the 2DIY 3D tool.</p> <p>To design the game environment.</p> <p>To design the game quest to make it a playable game.</p> <p>To finish and share the game.</p> <p>To self- and peer- evaluate.</p> <p><i>Vocabulary: Animation, Image, Texture, Computer game, Instructions, Perspective, Customise, Interactive, Evaluation, Screenshot, Playability</i></p>	<p><b>*Online Safety</b></p> <p><b>*Safer Internet Day</b></p> <p><b>*STEM links/enrichment</b></p>
<p>End of phase skills:</p>	<ul style="list-style-type: none"> <li>- <b>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</b></li> <li>- <b>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</b></li> <li>- <b>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</b></li> <li>- <b>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</b></li> <li>- <b>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</b></li> </ul>			

- **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.**