Computing Overview 2022-2023

All plans are available in the teacher's area of Purple Mash under the Computing Scheme of Work. Please print off/read plans for each unit carefully.

Foundation Stage

Access Mini-Mash on Purple Mash as needed to fit planning and current learning – teach children how to access own Purple Mash account

Beebots used to plan a journey

Use of ipads to access drawing / writing programmes and take own photos / videos.

Classroom computer to access various packages that support current learning.

Use IWB in class to play games, draw, write – children learn how to change pens, turn pages.

Computing Overview 2022-2023

Year 1

All plans are available in the teacher's area of Purple Mash under the Computing Scheme of Work. Please print off/read plans for each unit carefully.

National Curriculum Objectives	Strand	Unit
Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Computer Science	2,4,5,7
Create and debug simple programs	Computer Science	5,7
Use logical reasoning to predict the behaviour of simple programs.	Computer Science	5,7
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Information Technology	3,6,7,8
Recognise common uses of information technology beyond school	Digital Literacy	9
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.	Digital Literacy	1

Term	Focus / Activities / Resources	Knowledge, Skills, Understanding	Key Vocab
1	**Online Safety and Exploring Purple Mash**	➢ Login using username and password. ➢ Become familiar with resources on Purple Mash. ➢ Add pictures and text to work. ➢ Logout of account after use. ➢ Begin to develop an understanding of ownership of work online.	Login Username Log out My Work Password Avatar Notification Tools Save Topics
2	**Grouping and Sorting / Pictograms**	➢ Sort items using a range of criteria. ➢ Contribute to a class pictogram. ➢ Use programs to represent and record results.	Sort Criteria Pictogram Data

			Collate
3	**Lego Builders / Maze Explorers**	➢ Follow and create simple instructions. ➢ Consider how the order of instructions affect results. ➢ Understand the function of basic direction keys. ➢ Understand how to create and debug an algorithm. ➢ Understand how to change and extend an algorithm. ➢ Set challenges for each other ➢ Complete challenges set by the class.	Instruction Algorithm Computer Program Debug Direction Challenge Arrow Undo Rewind Forward Backwards Right Turn Left turn Debug Instruction Algorithm
4	**Animated Story Books**	➢ Create a story as an e-book. ➢ Add to previously saved work. ➢ Add animation to work. ➢ Add sound to work. ➢ Use additional features to enhance their stories such as: backgrounds and copying and pasting pages. ➢ Share e-books on a class display board.	Animation E-book Font File Sound effect Display Board
5	**Coding**	➢ Understand what coding means in Computing. ➢ Build one and two step instructions using coding cards. ➢ Use the program 2Code to create a simple program. ➢ Design a scene for a program. ➢ Use code blocks to add characters and make them move. ➢ Explore a method to code interactively between objects. ➢ Use collision detection to make objects perform actions.	Action Background Button Character Code Block Code Design Coder Coding Collision Detection Command Object Design Mode

		➢ Use the sound property.	Input Scale Program Properties When clicked Stop command When key Sound
6	Spreadsheets Technology outside school	➢ Navigate around a spreadsheet. ➢ Add images to a spreadsheet using the image toolbox. ➢ Use the 'speak' and 'count' tools in 2calculate. ➢ Walk around the local community and find examples of technology. ➢ Record examples of technology outside of school	Arrow keys Columns Count tool Lock tool Speak tool Backspace key Cells Delete key Make cell tool Spreadsheet Cursor Clipart Image Toolbox Rows Technology

Computing Overview 2022-2023

All plans are available in the teacher's area of Purple Mash under the Computing Scheme of Work. Please print off/read plans for each unit carefully.

Year 2

National Curriculum Objectives	Strand	Unit
Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Computer Science	1
Create and debug simple programs	Computer Science	1
Use logical reasoning to predict the behaviour of simple programs.	Computer Science	1
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Information Technology	3,4,5,6,7,8
Recognise common uses of information technology beyond school	Digital Literacy	5
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.	Digital Literacy	2

Term	Focus / Activities / Resources	Knowledge, Skills, Understanding	Key Vocab
1	**Coding**	➢ Explain that an algorithm is a set of instructions. ➢ Beginning to understand the Repeat and Timer commands. ➢ Include a button in their programs. ➢ Explain what debug (debugging) means. ➢ Plan and use algorithms in programs successfully to achieve a result.	Action Algorithm Bug Character Code block Code Design Command Debug Design Mode Input Object Properties Repeat Scale Timer

			When clicked When key
2	**Online safety and spreadsheets**	➢ Begin to understand how things can be shared electronically. ➢ Open and send an email to a 2Respond character. ➢ Explain what a digital footprint is. ➢ Explain what rows and columns are in a spreadsheet. ➢ Use copying a pasting to help make spreadsheets. ➢ Use tools in a spreadsheet to automatically total rows and columns. ➢ Create a table of data on a spreadsheet.	Search Display Board Internet Sharing E-mail Attachment Digital Footprint Backspace Key Copy and Paste Columns Cells Count tool Delete key Equals tool Image Toolbox Lock tool Move cell tool Rows Speak Tool Spreadsheet
3	**Questioning**	➢ Understand what is meant by a binary tree. ➢ Understand what is meant by a database. ➢ Use a database to answer simple and more complex search questions	Pictorgram Question Data Collate Binary Tree Avatar Database
4	**Effective Searching**	➢ Recall the meaning of key internet terms. ➢ Identify the basic parts of a web search engine search page.	Internet Search Search Engine
5	**Creating Pictures**	➢ Use '2paint a picture' to study a range of artistic styles and recreate them.	Impressionism Pointillism Surrealism Palette Share

			Template
6	**Making music and Presenting ideas**	➢ Use the different sounds within 2Sequence to create a tune. ➢ Create two tunes digitally which depict two feelings. ➢ Create, upload and use their own recorded sounds. ➢ Know that digital content can be represented in many forms. ➢ Extract information from a 2Connect file to make a publisher fact file on a nonfiction topic. ➢ Use a variety of software to manipulate and present digital content and information.	Bpm Instrument Soundtrack Composition Music Tempo Digitally Sound effects Volume Concept map Node Narrative Quiz Animated Audience Presentation Non-fiction

Computing Overview 2022-2023

Year 3

All plans are available in the teacher's area of Purple Mash under the Computing Scheme of Work. Please print off/read plans for each unit carefully.

National Curriculum Objectives	Strand	Unit
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Computer Science	1
Use sequence, selection and repetition in programs; work with variables and various forms of input and output	Computer Science	1
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Computer Science	1
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.	Computer Science	3,4,5,6,7,8
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	Information technology	5
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.	Information technology	2
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital literacy	

Term	Focus / Activities / Resources	Knowledge, Skills, Understanding	Key Vocab
1	**Algorithms and Programs**	➢ Review coding vocabulary that relates to Object, Action, Output, Control and Event. ➢ Use 2Chart to represent a sequential program design. ➢ Use the design to write the code for the program	Action Algorithm Bug Code Block Debug If

		➢ Design and write a program that simulates a physical system. ➢ Understand what a variable is in programming. ➢ Create a program with an object that repeats actions indefinitely ➢ Know what debugging means.	Object Computer simulation Algorithm Code design Input Properties Selection Bug Command Event Output Repeat Timer Variable
2	**Using the Internet and Spreadsheets**	➢ Know what makes a safe password. ➢ Understand how the Internet can be used to help us to communicate effectively. ➢ Understand how a blog can be used to help us communicate with a wider audience. ➢ Consider if what is read on websites is true? To look at some 'spoof' websites. To create a 'spoof' webpage. ➢ Learn about the meaning of age restrictions symbols on digital media and devices. ➢ Create pie charts and bar graphs. ➢ Use the 'more than', 'less than' and 'equals' tools.	Password Internet Blog Concept map Username Website PEGI rating <>= Copy and paste Delete Key Move cell tool Columns Equals tool Rows Cells Spin tool Spreadsheet
3	**Touch typing**	➢ Understand the correct way to sit at the keyboard. ➢ To learn how to use the home, top and bottom row keys. ➢ Practise the keys typed with the left hand. ➢ Practise the keys typed with the left hand. ➢ Practise the keys typed with the right hand.	Posture Bottom row keys Top Row Keys Space bar Home row keys

4	**Communicating**	➢ Open and respond to an email. ➢ Write an email to someone, using an address book. ➢ Learn how to use email safely. ➢ Add an attachment to an email.	Communication Send Formatting E-mail CC Report to the teacher Compose Attachment Password Address book Save to draft
5	**Databases and simulations**	➢ Complete a branching database. ➢ Create a branching database ➢ Look at what simulations are. ➢ Explore a simulation. ➢ Analyse and evaluate a simulation.	Branching database Data Database Question Simulation
6	**Graphing**	➢ Enter data into a graph and answer questions. ➢ Solve an investigation and present the results in graphic form	Graph Field Data Bar chart Block graph Line graph.

Computing Overview 2022-2023

Year 4

All plans are available in the teacher's area of Purple Mash under the Computing Scheme of Work. Please print off/read plans for each unit carefully.

National Curriculum Objectives	Strand	Unit
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Computer Science	1,5
Use sequence, selection and repetition in programs; work with variables and various forms of input and output	Computer Science	1,5
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Computer Science	1,5
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.	Computer Science	2,7,8
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	Information technology	7
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.	Information technology	1,3,4,6,9
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital literacy	2

Term	Focus / Activities / Resources	Knowledge, Skills, Understanding	Key Vocab
1	**Coding**	➢ Use repeat instructions on characters. ➢ Experiment with variables to control models. ➢ Create if/else statements. ➢ Make turns specifying the degrees. ➢ Understand and use variables. ➢ Give an on-screen robot specific directional instructions.	Action Code Design Debug/Debugging Flowchart Bug If/Else Repeat Simulation Alert

		➢ Make accurate predictions about the outcome of a program they have written	Control Design Mode Get input Input Selection Timer Algorithm Command Event If Object Computer simulation Variable
2	**Online Safety and Spreadsheets**	➢ Understand the need for rules to keep them safe when exchanging learning and ideas online ➢ Identify possible risks of installing free and paid for software ➢ Determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it ➢ Take more informed ownership of the way that they choose to use their free time digitally. ➢ Use the number formatting tools ➢ Add a formula to a cell to automatically make a calculation in that cell. ➢ Use a series of data in a spreadsheet to create a line graph.	Computer virus Cookies Copyright Digital footprint Email Identify theft Malware Phishing Plagiarism Spam Average Advance mode Copy and paste Columns Cells Charts Equals tool Formula Formula wizard Move cell tool Random tool Rows Spin tool Spreadsheet Timer

3	**Spreadsheets (finishing) and Writing for audiences.**	➢ Use text formatting to make a piece of writing fit for its audience and purpose. ➢ Use a range of word processing tools.	Font Bold Italic Underline
4	**Logo**	➢ Know what the different instructions are in Logo and how to type them ➢ Follow simple instructions to create shapes in Logo ➢ Create shapes using the Repeat function.	LOGO BK FD RT LT Repeat SETPC SETPS PU PD
5	**Animation**	➢ Understand the use of frames. ➢ Use backgrounds and sounds to make more complex and imaginative animations ➢ Use ideas from existing stop motion films to recreate their own animation	Animation Background Frame Flipbook Onion skinning Stop motion Play Sounds Video clip
6	**Effective searches and Investigating Hardware**	➢ Structure search queries to locate specific information. ➢ Analyse the contents of a web page for clues about the credibility of the information ➢ Name the different parts of a desktop computer ➢ Know what the function of the different parts of a computer is	Easter egg Internet Internet browser Search Website Search engine Spoof website

Computing Overview 2022-2023

Year 5

All plans are available in the teacher's area of Purple Mash under the Computing Scheme of Work. Please print off/read plans for each unit carefully.

National Curriculum Objectives	Strand	Unit
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Computer Science	1, 5
Use sequence, selection and repetition in programs; work with variables and various forms of input and output	Computer Science	1
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Computer Science	1
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.	Computer Science	2
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	Information technology	Various. Search technologies are taught more in unit 7.
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.	Information technology	1,3,4,5,6,7,8
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital literacy	2

Term	Focus / Activities / Resources	Knowledge, Skills, Understanding	Key Vocab
1	**Coding**	➢ Create code that conforms to their design. ➢ Explain how their program simulates a physical system. ➢ Set/change the variable values appropriately. ➢ Create a game which has a timer and score pad. ➢ Create loops using the timer and If/else statements.	Action Bug Control Event If/Else Alert Code Design Debug/Debugging

			Get input Input Algorithm Command Design mode If Object Output Repeat Selection Simulation
2	**Online Safety / Spreadsheets**	➢ Know who to tell if they are upset by something that happens online. ➢ Use the SMART rules as a source of guidance when online. ➢ Think critically about what they share online. ➢ Have clear ideas about good passwords. ➢ Can cite all sources when researching and explain the importance of this. ➢ Create formulae to solve conversions. ➢ Create simple formulae that use different variables. ➢ Use a spreadsheet to model a real-life situation.	Online safety Smart rules Password Reputable Encryption Identity theft Shared image Plagiarism Citations Reference Bibliography Average Advanced Copy and paste Columns Cells Charts Equals Formula Move cell tool Random tool Rows Spin tool Spreadsheet Timer
3	**Databases**	➢ Search a database in order to answer questions correctly.	Avatar Charts

		➢ Enter information into a class database. ➢ Understand how to word questions so that they can be effectively answered using a search of their database.	Database Sort, group and arrange Statistics and reports Table Collaborative Data Find Binary Tree Record
4	**Game Creator**	➢ Review and analyse a computer game. ➢ Create settings and characters for games. ➢ Use animations and sounds to develop characters. ➢ Create a game and instructions for it.	Animation Evaluation Interactive Perspective Computer game Image Screenshot Customise Instructions Texture Playability
5	**3D Modelling**	➢ Understand how to use 2Design and make ➢ Explore moving points on a design ➢ Design for a purpose ➢ Print 2D designs to create 3D designs	CAD 2D Points Modelling Viewpoint Net Template 3D Polygon 3D Printing
6	**Effective Searching**	➢ Create concept maps to express ideas. ➢ Use concept mapping to create a piece of writing.	Audience Concept Map Node Collaboratively Connection Thought Concept Idea Visual

Computing Overview 2022-2023

Year 6

All plans are available in the teacher's area of Purple Mash under the Computing Scheme of Work. Please print off/read plans for each unit carefully.

National Curriculum Objectives	Strand	Unit
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Computer Science	1, 5, 9
Use sequence, selection and repetition in programs; work with variables and various forms of input and output	Computer Science	1,5
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Computer Science	1,5,9
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.	Computer Science	2,4,6
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	Information technology	2
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.	Information technology	1,3,4,5,7,8
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital literacy	2, 4

Term	Focus / Activities / Resources	Knowledge, Skills, Understanding	Key Vocab
1	**Coding**	➢ Debug when things do not run as expected. ➢ Explain what functions are and how they can be created and labelled. ➢ Code programs that take text input from the user. ➢ Follow flowcharts to create and debug code. ➢ Explain how they organised code in a program into functions.	Action Alert Algorithm Code design Command Control Debug/Debugging Event Flowchart bug

			Get input Function If If/Else Input Output Repeat Simulation Tabs Selection
2	**Online Safety and Spreadsheets**	➢ Understand how what they share impacts upon themselves and upon others in the long-term. ➢ Know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour. ➢ Give reasons for limiting screen time. ➢ Create a spreadsheet to answer a mathematical question relating to probability. ➢ Use the formula wizard to create formulae. ➢ Use a spreadsheet to solve a problem. ➢ Use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life.	Digital footprint Phishing Password Screen time Spoof website PEGI rating Average Advance mode Copy and paste Columns Cells Charts Dice Equals tool Formula Formula wizard Move cell tool Rows Random tool Spreadsheet Timer Spin tool
3	**Databases**	➢ Understand how a blog can be used for information. ➢ Work collaboratively ➢ Create blogs for specific purposes. ➢ Understand that blogs need to be regularly updates. ➢ Post comments on blogs.	Audience Blog Blog page Blog post Collaborative Icon

		➢ Demonstrate awareness of inappropriate posts and cyberbullying.	
4	**Text Adventures**	➢ Map out a story-based text adventure. ➢ Use the full functionality of 2Create a Story Adventure mode to create, test and debug using their plan. ➢ Use coding concepts of functions, two-way selection (if/else statements) and repetition in conjunction with one another to code their game.	Text based adventure Concept map Debug Sprite Function
5	**Networks**	➢ Know the difference between the World Wide Web and the internet. ➢ Know about their school network. ➢ Consider some of the major changes in technology which have taken place during their lifetime and the lifetime of their teacher/another adult.	Internet World Wide Web Wide area network Network Router Network Cables Wireless
6	**Quizzing**	➢ Have ideas about what sort of questions are best suited to the different question types. ➢ Used 2Quiz to make and share a science quiz. ➢ Used a 2Investigate quiz to answer quiz questions. ➢ Design their own quiz based on one of the 2Investigate example databases.	Audience Collaboration Concept map Database Quiz