Computing Scheme

Unit Overview

Year 1

Information Technology | Computer Science | Digital Literacy

Introduction to Purple Mash (3 lessons) This unit introduces Purple Mash, and the essential knowledge and skills required for the Year 1 units. Children will learn about 2Dos, saving work and navigating to key areas. • Logging in and out of Purple Mash • Opening and using 2Dos • Saving work in the Work area	**Creative Computing** (4 lessons) Children develop their mouse, keyboard and basic computing skills using creative tools. Children will use the 2DIY tools to paint, create jigsaws and make simple drag and drop games. • Making digital art • Making and sharing jigsaws • Making a drag and drop game	**Data Explorers** (6 lessons) Children use software tools to group and sort recognisable objects. By the end of the unit, children can collect simple data and present it in a pictogram. • Sorting and grouping items • Understanding what data is • Representing data accurately	**Creating & Following Instructions** (3 lessons) The basis for understanding simple algorithms and algorithmic thinking. This is a foundational unit, introducing the basis of logical thinking in preparation for coding. • Following instructions • Creating Instructions • Understanding simple algorithms
Animated Stories (6 lessons) Children create digital books using the 2Create a Story tool. They learn how to work with images, text and sound. Children also learn how to animate simple objects. • Creating digital art and text • Adding animation to images • Adding sound	**Coding** (6 lessons) Children learn coding using the block coding tool, 2Code. Children will explore simple instructions and relate this to code blocks. By the end of this unit, children will be able to make a simple program. • Using blocks to code • Understanding objects, actions and events • Planning and designing a program	**Technology Around Us** (4 lessons) Defining and understanding what technology is. Children will relate this to school, home, outside and to its use in the wider world. • Understanding what technology is • Recognising technology in the local environment and wider world	**Making Beats** (4 lessons) Introducing digital music making. Children will use the tools 2Explore and 2Beat to make their own digital music. • Creating sounds using 2Explore • Combining instruments using 2Beat • Composing digital music
Robotics with Mai-Z MouseBot (4 lessons) A Year 1 or Year 2 unit that introduces children to robotics. • Controlling the Mai-Z MouseBot through code • Coding movement, lights and sounds			
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Year 2

Information Technology | Computer Science | Digital Literacy

Introduction to Purple Mash (2 lessons) An optional introduction to Purple Mash and the essential skills for beginning the year 2 scheme units. Use with classes who haven't used Purple Mash before or who need a refresher in the basics.	**Creating Pictures** (5 lessons) Digital art creation using 2Paint A Picture. Children learn about famous art styles and how a digital art tool can be used to reproduce art in that style. • Painting in different styles • Learning about famous art styles • Creating a portfolio of digital art	**Making Music** (3 lessons) Explore digital music creation through the use of the music tool, 2Sequence. • Understanding a digital music tool • Relating functions to musical terms • Composing music digitally	**Spreadsheets** (6 lessons) Creating and using spreadsheets with 2Calculate, focusing on how to enter, organise, and manage data in rows and columns. • Understanding rows and columns • Inserting images with values • Using totalling tools • Creating graphs
Route Explorers (4 lessons) Children code using the tool, 2Go. Children learn to build simple algorithms to move a screen turtle along routes. • Considering direction and distance • Creating commands • Building an algorithm	**Questioning** (4 lessons) Children will explore how to ask questions to collect useful information. They will learn to organise data using tally charts, pictograms, and simple branching databases to help sort and identify objects. • Asking questions to collect data • Using 2Count to present data • Using a branching database	**Coding** (6 lessons) Builds on the coding skills and knowledge from Year 1. Children will explore, modify and create programs that include the use of timers and button objects. • Understanding algorithms • Introducing sequencing • Coding interaction between objects • Using timers and debugging	**Presenting Ideas** (4 lessons) Children will learn how to present ideas using the concept mapping tool, 2Connect. They will organise information using the features of a concept map and think about how to present their thoughts clearly to an audience. • Using and making mind maps • Using a mind map as a presentation tool
The Internet (4 lessons) The fundamentals of the internet, including its purpose, how we access it, and how to use it safely and effectively. • Defining the World Wide Web and the internet • Recognising different hardware • Understanding websites, webpages and browsers	**Robotics with Mai-Z MouseBot** (4 lessons) A Year 1 or Year 2 unit that introduces children to robotics. • Controlling the Mai-Z MouseBot through code • Coding movement, lights and sounds		
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Year 3

Information Technology | Computer Science | Digital Literacy

Introduction to Purple Mash — 2 lessons

An optional introduction to Purple Mash and the essential skills for beginning the year 3 scheme units. Use with classes who haven't used Purple Mash before or who need a refresher in the basics.

Touch Typing — 4 lessons

Introduce children to touch typing. Children learn correct posture, finger positioning and typing techniques to develop speed and accuracy, while understanding how these skills support safe and effective computer use.

- Recognising keyboard locations
- Understanding correct finger positioning
- Improving accuracy and speed

Email — 6 lessons

Children explore electronic communication using 2Email. Children learn how to respond to, compose and add attachments to emails as well as consider the safety aspects of email communication.

- Composing and replying to emails
- Opening and sending attachments
- Using email safely

Route Planners — 5 lessons

Children will plan algorithms and write code that includes angles of turn to create routes for screen turtles, testing them using 2Go.

- Writing commands using rotation
- Creating algorithms and writing code
- Planning routes
- Repetition in 2Go

Spreadsheets — 6 lessons

Using 2Calculate in Advanced Mode, helping children move beyond basic data entry to explore how spreadsheets can calculate and solve problems.

- Advanced mode of 2Calculate
- Understanding cell addresses
- Using the formula wizard

Coding — 6 lessons

Children will explore timers, the repeat command and the importance of nesting code. They will build up to using design documentation to code a program.

- Using flowcharts in 2Chart
- Using timers
- Introducing repetition
- Testing and debugging

Presentations — 5 lessons

Use of industry standard software to create presentations. Children will explore features of the presentation software then create and present their own slideshow presentations.

- Adding media
- Customizing with animations and timings
- Designing an effective presentation

Branching Databases — 4 lessons

Explore and create branching databases in 2Question. They learn how binary questioning is used to sort data records and about the importance of testing and debugging databases that they create.

- Asking binary questions
- Completing branching databases
- Creating and testing branching databases

micro:bit — 4 lessons

Introducing the micro:bit for coding external devices. Children will explore how to make basic outputs occur from the micro:bit when inputs are detected. The software includes an emulator for use in schools without micro:bits.

- Using the LED display
- Sequencing and timing
- Understanding inputs and outputs
- Adding sounds and gestures

Robotics with Mai-Z MouseBot — 4 lessons

A Year 3 or Year 4 unit that introduces children to robotics.

- Controlling the Mai-Z MouseBot through code
- Coding movement, lights and sounds

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Year 4

Information Technology | Computer Science | Digital Literacy

Introduction to Purple Mash — 2 lessons An optional introduction to Purple Mash and the essential skills for beginning the year 4 scheme units. Use with classes who haven't used Purple Mash before or who need a refresher in the basics.	**Animation** — 6 lessons Digital animation and the common techniques used by animators. Children will use traditional animation methods and compare these methods with using animation software (2Animate). • Knowing the types of animation • Understanding onion skinning • Exploring animation features • Using storyboarding	**Unpacking Hardware and Software** — 4 lessons Further understanding of technology and computer systems in relation to their hardware and software. • Defining types of technology • Knowing how systems work together • Identifying hardware • Understanding software	**Sound Stories** — 4 lessons This unit introduces children to 2Cast, an audio recording tool in Purple Mash. Children will explore the features of effective audio books and work as a team to script, record and edit their own. • Recording audio content • Creating sound effects • Post-production editing
Logo — 4 lessons This unit introduces children to Logo programming, focusing on developing their understanding of basic commands and programming concepts. Children will learn to create shapes and letters using instructions. • Using Logo commands • Writing commands in a sequence • Refining code using repetition and procedures	**Effective Searching** — 4 lessons This unit teaches children to use search technologies effectively by selecting clear keywords, refining searches for accuracy, and evaluating online content to judge whether it is reliable and trustworthy. • Using a search engine • Search rankings • Reliable searching • Search algorithms	**Coding** — 6 lessons This unit builds on learning from previous coding units. Children will learn to use selection, co-ordinates, looping and variables. They will use these coding skills to create their own game. • Introducing selection • Exploring design properties • Introducing loops • Coding number variables	**Composing Beats** — 4 lessons This unit teaches children to explore the different elements of music, experiment with beats, and compose engaging music using the Purple Mash tool, Busy Beats. • Exploring pulse, rhythm and tempo • Understanding pitch and texture • Composing a melody
Introduction to AI — 4 lessons This unit introduces pupils to Artificial Intelligence, exploring what it is, what it can do, and how it is used in today's digital world. • Exploring how AI works • Investigating the positive and negative impacts of AI • Considering AI in the future	**micro:bit** — 4 lessons This unit introduces children to coding a micro:bit to make simulations of real-world tools such as dice and step counters. Includes an emulator for schools without micro:bits. • Exploring sensor inputs and the accelerometer • Using variables, inputs and outputs • Coding with selection and loops	**Robotics with Mai-Z MouseBot** — 4 lessons A Year 3 or Year 4 unit that introduces children to robotics. • Controlling the Mai-Z MouseBot through code • Coding movement, lights and sounds	
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Year 5

Information Technology | Computer Science | Digital Literacy

Introduction to Purple Mash — 2 lessons An optional introduction to Purple Mash and the essential skills for beginning the year 5 scheme units. Use with classes who haven't used Purple Mash before or who need a refresher in the basics.	**Quizzing** — 5 lessons The process of designing and creating interactive quizzes using Purple Mash's 2Quiz tool. • Evaluating the features of a good quiz • Choosing appropriate question types • Making use of feedback and titles • Testing and editing quizzes	**Databases** — 4 lessons Using table-based databases. Children will create their own databases as well as query existing databases to find information that they are being asked for. • Understanding records and fields • Creating a collaborative database • Searching databases • Analysing data	**Game Creator** — 5 lessons Children will design and make their own 3D maze adventure games using the 2DIY3D tool, assessing the effectiveness of their own and others' creations. • Exploring the features of a good game • Designing and making sprites and the game world • Evaluating the playability of games
Spreadsheets — 6 lessons Through measurement conversions, graphing, weather analysis, budgeting, and planning a holiday, children learn how spreadsheets support real-world decision-making. • Using formulae • Exploring measurement conversions • Predicting results and identifying patterns	**Coding** — 6 lessons Children will learn about the importance of simplifying code, as well as how tags, functions and different variable types can be used within a program. • Coding efficiently by refining code • Simulating a physical system • Exploring decomposition and abstraction • Using functions and variables	**Word Processing** — 6 lessons This unit introduces children to word processing by using industry standard software. Children will explore how to edit, format and create their own documents. • Creating documents • Using images • Entering and editing text • Using tables and templates	**Concept Maps** — 4 lessons In this unit, children explore how concept maps can be used to organise, develop and present ideas using 2Connect. They will learn to create their own structured concept maps based on non-fiction topics and present their work clearly to an audience. • Creating concept maps • Presenting from a concept map • Making collaborative concept maps
Coding External Devices — 4 lessons Coding programs which enable the Purple Chip external device to be used as a game controller as well as exploring ways that the interaction of a host device and an external device can be used in real world scenarios. • Using device movement • Exploring text functions • Coding interaction with the environment	**micro:bit** — 4 lessons Explores the use of the temperature sensor and pins on the micro:bit as well as sensors and inputs covered previously. Includes an emulator for schools without micro:bits. • Exploring sensor inputs and the accelerometer • Using selection, variables, inputs and outputs • Coding for the micro:bit pins	**Robotics with Mai-Z MouseBot** — 4 lessons A Year 5 or Year 6 unit that introduces children to robotics. • Controlling the Mai-Z MouseBot through code • Coding movement, lights and sounds • Radio control	
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Year 6

Information Technology | Computer Science | Digital Literacy

Introduction to Purple Mash (2 lessons) An optional introduction to Purple Mash and the essential skills for beginning the year 5 scheme units. Use with classes who haven't used Purple Mash before or who need a refresher in the basics.	**Blogging** (4 lessons) Children explore blogs and their features, including how they can be used to engage an audience effectively. • Planning the theme, content and structure • Writing, editing and publishing a blog post • Understanding blog moderation • Reviewing and commenting on blog posts	**Networks** (4 lessons) This unit allows children to learn more about what networks are, what they do and how they connect devices. Children also consider the safety aspects of networks. • Identifying examples of networks • Recognising types of networks • Understanding internet services • Discussing positive and negative use of networks	**Graphing** (4 lessons) This unit explores the benefits of creating common graph types, digitally. Children will create a range of familiar graph types using the 2Graph and 2Calculate tools. • Creating a range of graph types • Incorporating multiple datasets • Using graphs to solve a problem • Exporting and importing files
Data Detectives (4 lessons) Exploration of 'big data' using Data Detectives; an interactive set of databases challenges. Children will interpret information being requested and query databases to find the information. • Filtering and sorting data • Grouping data • Linking tables	**Coding** (6 lessons) Coding cloning and hotspots within programs. Children will use more complex flowcharts to help them test and debug existing simulations and programs.Using functions • Understanding flowcharts and control simulations • Coding for user input	**3D Modelling** (4 lessons) 3D Modelling design using the CAD software, 2Design and Make. It guides children to create, refine and evaluate models with creativity and purpose. • Working with viewpoints of 3D objects • Adding and editing points on a model • Designing for a purpose	**Spreadsheets** (6 lessons) Industry standard spreadsheets software. Children will explore how to create spreadsheets and use their functionality to support real-world decision-making and problem-solving. • Performing calculations • Entering and using formulae • Presenting data • Solving real life problems
Introduction to Python (4 lessons) Introducing text-based Python coding using the Python in Pieces platform. Python in Pieces translates between block-code and Python. • Comparing block and text code views • Coding for text output • Working with different data types • Coding repetition in Python	**Binary** (4 lessons) The concept of binary, helping them understand that all digital systems store and process information using patterns of 1s and 0s. • Examining how binary represents data in digital systems. • Converting from decimal to binary • Exploring binary in relation to game states	**micro:bit** (4 lessons) Use of micro:bits to collect data on environmental conditions. Children will create programs that use the micro:bit's pin input to create outputs. • Using the micro:bit as a data logger • Measuring, recording and analysing environmental data • Collecting data and exporting to graphical software	**Robotics with Mai-Z MouseBot** (4 lessons) A Year 5 or Year 6 unit that introduces children to robotics. • Controlling the Mai-Z MouseBot through code • Coding movement, lights and sounds • Radio control
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