Computing Scheme

Unit Overview

Year 1

Information Technology | Computer Science | Digital Literacy

Introduction to Purple Mash — 3 Lessons

Introduction to Purple Mash Introducing Purple Mash and the essential skills for the year 1 scheme units.

- Logging in and out of Purple Mash
- Opening and using 2Dos
- Saving work in the Work area

Creative Computing — 4 Lessons

Developing mouse skills and ICT skills using the creative 2DIY tools in Purple Mash.

- Making digital art
- Making and sharing jigsaws
- Making a drag and drop game

Data Explorers — 6 Lessons

Grouping and sorting objects. Relating this to organising and interpreting data. Using pictorial data on Purple Mash.

- Sorting and grouping quizzes
- Understanding what data is
- Representing data electronically

Creating & Following Instructions — 3 Lessons

Understanding simple algorithms though unplugged activities before moving to sequencing activities on digital devices.

- Following instructions
- Creating Instructions
- Understanding simple algorithms

Animated Stories — 6 Lessons

Creating and combining digital art and text to produce digital books using the 2Create a Story tool.

- Creating digital art and text
- Adding animation to images
- Adding sound

Coding — 6 Lessons

Introducing block coding using 2Code.

- 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. Relating 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 the concept of digital music.

- Creating sounds using 2Explore
- Combining instruments using 2Beat
- Composing digital music

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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.

Route Explorers
4 Lessons

Coding using 2Go. Writing simple instructions to move a screen turtle along routes.

- Considering direction and distance
- Creating commands
- Building an algorithm

The Internet
4 Lessons

Understanding what the internet is.

- Defining the World Wide Web
- Recognising browsers and websites
- Connecting to the internet

Creating Pictures
5 Lessons

Using a digital art tool to create art in different traditional art styles.

- Using 2Paint a Picture templates
- Exploring the features of each template
- Compiling an online art portfolio
- Comparing digital art effects to non digital effects

Spreadsheets
6 Lessons

Introducing spreadsheets and the way they organise data using the 2Calculate tool.

- Understanding cells and columns
- Inserting images with values
- Using totalling tools
- Creating graphs

Questioning
4 Lessons

Investigating data, how it is collected and how it can be presented.

- Asking the right question to collect or present data
- Keeping a tally
- Using 2Count to present the data
- Using a branching database

Coding
6 Lessons

Developing coding skills using 2Code.

- Understanding algorithms
- Introducing sequencing
- Coding interaction between objects
- Using timers
- Debugging

Presenting Ideas
4 Lessons

Creating mind maps using 2Connect to organise and present ideas.

- Using and making mind maps
- Using a mind map as a presentation tool

Making Music
3 Lessons

Composing digital melodies using 2Sequence.

- Understanding a digital music tool
- Relating the functions to musical terms
- Composing music digitally

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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.

Email — 6 Lessons

Communicating electronically using 2Email. Considering safety aspects of email communication.

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

Route Planners — 5 Lessons

Using 2Go to create routes for screen turtles. Coding using angles of turn and repetition.

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

Branching Databases — 4 Lessons

Creating branching databases (binary tree databases) using 2Question.

- Asking binary questions
- Completing branching databases in 2Question
- Creating and testing branching databases

Spreadsheets — 6 Lessons

Working with data using spreadsheets in the 2Calculate tool.

- Creating graphs
- Understanding cell addresses
- Using the formula bar
- Combining 2Calculate functions to analyse data

Coding — 6 Lessons

Developing coding skills using 2Code.

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

Presenting Ideas — 5 Lessons

Using industry standard software to create presentations.

- Adding media
- Customising with animation and timings
- Designing an effective presentation

Touch Typing — 4 Lessons

Developing touch typing skills using 2Type.

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

micro:bit — 4 Lessons

Coding using a micro:bit as an external device. 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

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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.

Unpacking Hardware and Software — 4 Lessons

Understanding technology and computer systems in relation to their hardware and software.

- Defining types of technology
- Knowing how systems work together
- Identifying hardware
- Understanding software

Animation — 6 Lessons

Creating digital animations using the 2Animate tool.

- Knowing the types of animation
- Understanding onion skinning
- Exploring animation features
- Using storyboarding

Logo — 4 Lessons

Learning the text-based Logo coding language to create patterns and shapes Coding sequences, repetition, and procedures.

- Using Logo commands
- Writing commands in a sequence
- Refining code using repetition and procedures

Sound Stories — 4 Lessons

Adding narrative and sound effects to create audio books using 2Cast.

- Recording audio content
- Creating sound effects
- Post-production editing

Effective Searching — 4 Lessons

Exploring how to effectively search the internet. Exploring safety aspects of online information.

- Using a search engine
- Search rankings
- Reliable searching
- Search algorithms

Coding — 6 Lessons

Developing coding skills using 2Code.

- Introducing selection
- Exploring design properties
- Introducing loops
- Coding number variables

Making Music — 4 Lessons

Using the Busy Beats tool to explore and compose music digitally.

- Exploring pulse, rhythm and tempo
- Understanding pitch and texture
- Composing a melody

Introduction to AI — 4 Lessons

Understanding what artificial intelligence is, how it can help and the ethics around its use.

- Exploring how AI works
- Investigating the positive and negative impacts of AI
- Considering AI in the future

micro:bit — 4 Lessons

Coding using a micro:bit as an external device. Includes an emulator for schools without micro:bits.

- Exploring sensor inputs and the accelerometer
- Using variables, inputs and outputs
- Coding with selection and loops

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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

Making effective quizzes using 2Quiz. Exploring types of questioning and effective presentation of a quiz.

- 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 for collecting, presenting, searching and analysing data.

- Understanding records and fields
- Creating a collaborative database
- Searching databases
- Analysing data

Game Creator — 5 Lessons

Designing and making a 3D maze adventure game using 2DIY3D.

- Exploring the features of a good game
- Designing and making sprites and the game world
- Evaluating the playability of games

Spreadsheets — 6 Lessons

Working with data using spreadsheets in the 2Calculate tool.

- Using formulae
- Exploring measurement conversions
- Carrying out numerical investigations
- Creating computational models

Coding — 6 Lessons

Developing coding skills using 2Code.

- Coding efficiently by refining code
- Simulating a physical system
- Exploring decomposition and abstraction
- Using functions and variables

Word Processing — 6 Lessons

Using industry standard software to create documents.

- Creating documents
- Using images
- Entering and editing text
- Using tables and templates

Concept Maps — 4 Lessons

Using and creating concept maps using 2Connect.

- Creating concept maps
- Presenting from a concept map
- Making collaborative concept maps

Coding External Devices — 6 Lessons

Using the Purple Chip app on a tablet or phone device alongside Purple Mash.

- Using device movement
- Exploring text functions
- Coding interaction with the environment

micro:bit — 4 Lessons

Coding using a micro:bit as an external device. 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

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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 6 scheme units. Use with classes who haven't used Purple Mash before or who need a refresher in the basics.

Graphing
4 Lessons

Understanding the benefits of creating common graph types digitally. Using appropriate features to present data in the best possible way.

- Creating a range of graph types
- Incorporating multiple datasets
- Using graphs to solve a problem
- Exporting and importing files

Blogging
4 Lessons

Understanding how blogs and their features can effectively engage an audience.

- Planning the theme, content and structure
- Writing, editing and publishing a blog post
- Understanding blog moderation
- Reviewing and commenting on blog posts

Data Detectives
4 Lessons

Using the Data Detectives tool to work with large datasets to analyse complex data and answer questions.

- Filtering and sorting data
- Grouping data
- Linking tables

Networks
4 Lessons

Learning what networks do and how they connect devices. Considering safety aspects of networks and collaboration.

- Identifying examples of networks
- Recognising types of networks
- Understanding internet services
- Discussing positive and negative use of networks

Coding
6 Lessons

Developing coding skills using 2Code.

- Using functions
- Understanding flowcharts and control simulations
- Coding for user input

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 datatypes
- Coding repetition in Python

Spreadsheets
5 Lessons

Using industry standard software to work with spreadsheets.

- Performing calculations
- Entering and using formulae
- Presenting data
- Solving real life problems

3D Modelling
5 Lessons

Exploring computer aided design in 3D using the 2Design and Make tool.

- Working with viewpoints of 3D objects
- Adding and editing points on a model
- Designing for a purpose

Binary
5 Lessons

Understanding binary as a number system and its purpose and application in computing.

- Examining how binary represents data in digital systems.
- Counting in binary
- Converting from decimal to binary
- Exploring binary in relation to game states

micro:bit
5 Lessons

Coding using a micro:bit as an external device.

- Using the micro:bit as a data logger
- Measuring, recording and analysing environmental data
- Collecting data and exporting to graphical software

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