# purple mash

## Computing

### Scheme of Work

## Year 3 Overview

# Contents

# Introduction

This document contains an overview of the units included in the Purple Mash Computing Scheme of Work for Year 3.

For detailed lesson plans and other information, see the documents for the individual units themselves.

Most lessons assume that children are logged onto Purple Mash with their own individual usernames and passwords, so their work will be saved in their own folders automatically and can be easily reviewed and assessed by the class teacher.  If children have not used and logged onto Purple Mash before then they will need to spend some time before starting these lessons, learning how to do this. Children can be supported by having their printed logon cards (produced using Create and Manage Users) to hand.

Lesson plans also make use of the facility within Purple Mash to set activities for pupils which they can then complete and hand-in online (2Dos). This enables you to assess their work easily as well as distribute resources to all pupils.  If children have not opened 2Dos before then they will need more detailed instructions about how to do this.  A teacher's guide to 2Dos can be found in the teacher's section: 2Dos Guide.

If you are currently using a single login per class or group and would like to set up individual logins yourself, then please see our guide to doing so at Create and Mange Users. Alternatively, please contact support at support@2simple.com or 0208 203 1781.

To force links within this document to open in a new tab, right-click on the link then select 'Open link in new tab'.

## Linking the lessons to curriculum objectives

At the end of this document you will find a breakdown showing how the units relate to the curricula of England, Wales, Northern Ireland and Scotland. Within each unit document is a section called Assessment Guidance with exemplars of how a child at emerging, expected and exceeding level of achievement could demonstrate this in their work through the unit. These statements could also be used for reporting.

This information can be used in association with the Purple Mash Data Dashboard to make and record judgements about children's outcomes and demonstrate progress over time.

For more information about the Data Dashboard see the Data Dashboard manual or view the videos within the Data Dashboard tool.

## Differentiation

Where appropriate, guidance has been given on how to simplify tasks within lessons or challenge those who are ready for more stretching tasks.

# Year 3 Whole Year Overview

| Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| YEAR 3 | **Unit 3.1 Coding**<br><br>**Number of Weeks** – 6<br>**Main Programs** – 2Code | | | | | | **Unit 3.2 Online Safety**<br><br>**Weeks** – 3<br>**Programs** – 2Connect (Mind Map)<br>2Blog (Blogging)<br>Writing Templates<br> Display boards | | | **Unit 3.3 Spreadsheets**<br><br>**Weeks** – 3<br>**Programs** – 2Calculate | | | **Unit 3.4 Touch-Typing**<br><br>**Weeks** – 4<br>**Programs** – 2Type | | | | **Unit 3.5 Email** (including email safety)<br><br>**Weeks** – 6<br>**Programs** – 2Email | | | | | | **Unit 3.6 Branching Databases**<br><br>**Weeks** – 4<br>**Programs** – 2Question | | | | **Unit 3.7 Simulations**<br><br>**Weeks** – 3<br>**Programs** – 2Simulate, Writing Templates | | | **Unit 3.8 Graphing**<br><br>**Weeks** – 3<br>**Programs** – 2Graph Writing Templates 2Blog (Blogging) | | |

# Year 3 Unit Overview

## Unit 3.1 – Coding

| Lesson | Aims | Success Criteria |
|---|---|---|
| 1 | • To review coding vocabulary that relates to Object, Action, Output, Control and Event.<br>• To use 2Chart to represent a sequential program design.<br> • To use the design to write the code for the program | • Children can create a design that represents a sequential algorithm.<br>• Children can use a flowchart design to create the code.<br>• Children can explain what Object, Action, Output, Control and Event are in computer programming. |
| 2 | • To design and write a program that simulates a physical system. | • Children can explain how their program simulates a physical system, i.e. my vehicles move at different speeds and angles.<br>• Children can describe what they did to make their vehicle change angle.<br>• Children can show that their vehicles move at different speeds |
| 3 | • To look at the grid that underlies the design and relate this to X and Y properties.<br>• To introduce selection in their programming by using the if command.<br> • To combine a timer in a program with selection. | • Children can make use of the X and Y properties of objects in their coding.<br>• Children can create an if statement in their program.<br>• Children can use a timer and if statement to introduce selection in their program. |
| 4 | • To understand what a variable is in programming.<br> • To use a variable to create a timer | • Children can explain what a variable is in programming.<br>• Children can explain why variables need to be named.<br>• Children can create a variable in a program.<br>• Children can set/change the variable values appropriately to create a timer. |
| 5 | • To create a program with an object that repeats actions indefinitely.<br>• To use a timer to make characters repeat actions.<br> • To explore the use of the repeat command and how this differs from the timer. | • Children can show how their character repeats an action and explain how they caused it to do so.<br>• Children are beginning to understand how the use of the timer differs from the repeat command and can experiment with the different methods of repeating blocks of code.<br>• Children can explain how they made objects repeat actions. |
| 6 | • To know what debugging means.<br>• To understand the need to test and debug a program repeatedly.<br>• To debug simple programs.<br> • To understand the importance of saving periodically as part of the code development process. | • Children can explain what debug (debugging) means.<br>• Children have a clear idea of how to use a design document to start debugging a program.<br>• Children can debug simple programs.<br>• Children can explain why it is important to save their work after each functioning iteration of the program they are making. |

## Unit 3.2 – Online Safety

| Lesson | Aims | Success Criteria |
|--------|------|------------------|
| 1 | To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.<br>To understand how the Internet can be used to help us to communicate effectively.<br>To understand how a blog can be used to help us communicate with a wider audience. | • Children understand what makes a good password for use on the Internet. Children are beginning to realise the outcomes of not keeping passwords safe.<br>• Children can contribute to a concept map of all the different ways they know that the Internet can help us to communicate.<br>• Children have contributed to a class blog with clear and appropriate messages. |
| 2 | For children to consider if that they read on websites is true?<br>To look at some 'spoof' websites.<br>To create a 'spoof' webpage.<br>To think about why these sites might exist and how to check that the information is accurate. | • Children understand that some information held on websites may not be accurate or true.<br>• Children are beginning to understand how to search the Internet and how to think critically about the results that are returned.<br>• Children have accessed and assessed a 'spoof' website.<br>• Children have created their own 'spoof' webpage mock-up.<br>• Children have shared their 'spoof' web page on a class display board. |
| 3 | To learn about the meaning of age restrictions symbols on digital media and devices.<br>To discuss why PEGI restrictions exist.<br>To know where to turn for help if they see inappropriate content or have inappropriate contact from others. | • Children can identify some physical and emotional effects of playing/watching inappropriate content/games.<br>• Children relate cyberbullying to bullying in the real-world and have strategies for dealing with online bullying including screenshot and reporting. |

## Unit 3.3 – Spreadsheets

| Lesson | Aims | Success Criteria |
|--------|------|------------------|
| 1 | To create pie charts and bar graphs. | • Children can create a table of data on a spreadsheet.<br>• Children can use a spreadsheet program to automatically create charts and graphs from data. |
| 2 | To use the 'more than', 'less than' and 'equals' tools. | • Children can use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to sums.<br>• Children can use the 'spin' tool to count through times tables. |
| 3 | To introduce the Advanced Mode of 2Calculate and use coordinates. | • Children can describe a cell location in a spreadsheet using the notation of a letter for the column followed by a number for the row.<br>• Children can find specified locations in a spreadsheet. |

## Unit 3.4 – Touch-typing

| Lesson | Aims | Success Criteria |
|--------|------|------------------|
| 1 | To introduce typing terminology. Understand the correct way to sit at the keyboard. To learn how to use the home, top and bottom row keys. | • To understand the names of the fingers. • To understand what is meant by – home, bottom, and top rows. • Developed ability to touch type the home, bottom, and top rows. |
| 2 | To practise and improve typing for home, bottom and top rows. | • Children can use two hands to type the letters on the keyboard. |
| 3 | To practise the keys typed with the left hand. | • Children can touch type using the left hand. |
| 4 | To practise the keys typed with the right hand. | • Children can touch type using the right hand. |

## Unit 3.5 – Email

| Lesson | Aims | Success Criteria |
|--------|------|------------------|
| 1 | To think about the different methods of communication. | • Children can list a range of different ways to communicate. • Children can use 2Connect to highlight the strengths and weaknesses of each method. |
| 2 | To open and respond to an email. To write an email to someone, using an address book. | • Children can open an email and respond to it. • Children have sent emails to other children in the class. |
| 3 | To learn how to use email safely. | • Children have written rules about how to stay safe using email. • Children have contributed to classmates' rules. |
| 4 | To learn how to use email safely. | • Children have created a quiz about email safety which explores scenarios that they could come across in the future. |
| 5 | To add an attachment to an email. | • Children can attach work to an email. • Children know what CC means and how to use it. |
| 6 | To explore a simulated email scenario. | • Children can read and respond to a series of email communications. • Children can attach files appropriately and use email communication to explore ideas. |

## Unit 3.6 – Branching Databases

| Lesson | Aims | Success Criteria |
|---|---|---|
| 1 | To sort objects using just YES/NO questions. | • Children understand how YES/NO questions are structured and answered.<br>• Children have used YES/NO questioning to play a simple game with a friend. |
| 2 | To complete a branching database using 2Question. | • Children have contributed to a class branching database about fruit.<br>• Children have completed a branching database about vegetables. |
| 3 and 4 | To create a branching database of the children's choice. | • Children can choose a suitable topic for a branching database.<br>• Children can select and save appropriate images.<br>• Children can create a branching database.<br>• Children know how to use and debug their own branching database. |

## Unit 3.7 – Simulations

| Lesson | Aims | Success Criteria |
|---|---|---|
| 1 | To look at what simulations are. | • Children know that a computer simulation can represent real and imaginary situations.<br>• Children can give some examples of simulations used for fun and for work.<br>• Children can give suggestions of advantages and problems of simulations. |
| 2 | To explore a simulation. | • Children can explore a simulation.<br>• Children can use a simulation to try out different options and to test predictions.<br>• Children can begin to evaluate simulations by comparing them with real situations and considering their usefulness. |
| 3 | To analyse and evaluate a simulation. | • Children can recognise patterns within simulations and make and test predictions.<br>• Children can identify the relationships and rules on which the simulations are based and test their predictions.<br>• Children can evaluate a simulation to determine its usefulness for purpose. |

## Unit 3.8 – Graphing

| Lesson | Aims | Success Criteria |
|---|---|---|
| 1 | To enter data into a graph and answer questions. | • Children can set up a graph with a given number of fields.<br>• Children can enter data for a graph.<br>• Children can produce and share graphs made on the computer. |
| 2 | To solve an investigation and present the results in graphic form. | • Children have solved a maths investigation.<br>• Children can present the results in a range of graphical formats. |

# English National Curriculum Objectives (Key Stage 2)

| National Curriculum Objective | Strand | Units |
|---|---|---|
| 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 | 3.1 |
| Use sequence, selection and repetition in programs; work with variables and various forms of input and output. | Computer Science | 3.1 |
| Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs | Computer Science | 3.1 |
| 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 | 3.5 |
| Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. | Information Technology | |
| 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 | 3.4 3.5 3.6 3.7 3.8 |
| Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | Digital Literacy | 3.2 3.5 |