



# Computing

## Scheme of Work

### Year 4 Overview



# Contents

Introduction .....	3
Linking the lessons to curriculum objectives .....	3
Differentiation.....	3
Year 4 Whole Year Overview .....	4
Year 4 Unit Overview .....	5
Unit 4.1 – Coding.....	5
Unit 4.2 – Online Safety .....	6
Unit 4.3 - Spreadsheets.....	7
Unit 4.4 – Writing for Different Audiences .....	7
Unit 4.5 – Logo .....	8
Unit 4.6 – Animation .....	8
Unit 4.7 – Effective Searching .....	9
Unit 4.8 – Hardware Investigators .....	9
English National Curriculum Objectives (Key Stage 2).....	10
Welsh Digital Competence Framework .....	11
Northern Ireland Levels of Progression and Desirable Features .....	14
Scottish Curriculum for Excellence (Second Level) .....	15

# Introduction

This document contains an overview of the units included in the Purple Mash Computing Scheme of Work for Year 4.

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](mailto: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.



Data

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 4 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 4	<b>Unit 4.1 Coding</b>						<b>Unit 4.2 Online Safety</b>				<b>Unit 4.3 Spreadsheets</b>					<b>Unit 4.4 Writing for Different Audiences</b>					<b>Unit 4.5 Logo</b>				<b>Unit 4.6 Animation</b>			<b>Unit 4.7 Effective Searching</b>			<b>Unit 4.8 Hardware Investigators</b>	
	<b>Number of Weeks – 6</b> <b>Main Programs –</b> 2Code						<b>Weeks – 4</b> <b>Programs –</b> 2Connect (Mind Map) 2Publish Plus Display boards				<b>Weeks – 5</b> <b>Programs –</b> 2Calculate					<b>Weeks – 5</b> <b>Programs –</b> Writing Templates 2Simulate 2Connect (Mind Map) 2Publish Plus					<b>Weeks – 4</b> <b>Programs –</b> 2Logo				<b>Weeks – 3</b> <b>Programs –</b> – 2Animate			<b>Weeks – 3</b> <b>Programs –</b> Browser 2Quiz 2Connect (Mind Map)			<b>Weeks – 2</b> <b>Programs –</b> 2Quiz 2Connect (Mind Map) Writing Templates	

# Year 4 Unit Overview

## Unit 4.1 – Coding

Lesson	Aims	Success Criteria
1	<ul style="list-style-type: none"> <li>To review coding vocabulary.</li> <li>To use a sketch or storyboard to represent a program design and algorithm.</li> <li>To use the design to create a program.</li> </ul>	<ul style="list-style-type: none"> <li>Children can use sketching to design a program and reflect upon their design.</li> <li>Children can create code that conforms to their design.</li> </ul>
2	<ul style="list-style-type: none"> <li>To introduce the If/else statement and use it in a program.</li> <li>To create a variable.</li> <li>To explore a flowchart design for a program with an if/else statement</li> <li>To create a program which responds to the If/else command, using the value of the variable.</li> </ul>	<ul style="list-style-type: none"> <li>Children can create an 'If/else' statement.</li> <li>Children understand what a variable is in programming.</li> <li>Children can set/change the variable values appropriately.</li> <li>Children can interpret a flowchart that depicts an if/else flowchart.</li> </ul>
3	<ul style="list-style-type: none"> <li>To create a program with a character that repeats actions.</li> <li>To use the Repeat Until command to make characters repeat actions.</li> <li>To program a character to respond to user keyboard input.</li> </ul>	<ul style="list-style-type: none"> <li>Children can show how a character repeats an action and explain how they caused it to do so.</li> <li>Children can make a character respond to user keyboard input.</li> </ul>
4	<ul style="list-style-type: none"> <li>To make timers and counting machines using variables to print a new number to the screen every second.</li> </ul>	<ul style="list-style-type: none"> <li>Children can explain what a variable is when used in programming.</li> <li>Children can create a timer that prints a new number to the screen every second.</li> <li>Children can explain how they made their program change the number every second.</li> </ul>
5	<ul style="list-style-type: none"> <li>To explore how 2Code can be used to investigate control by creating a simulation.</li> </ul>	<ul style="list-style-type: none"> <li>Children can create an algorithm modelling the sequence of a simple event.</li> <li>Children can manipulate graphics in the design view to achieve the desired look for the program.</li> <li>Children can use an algorithm when making a simulation of an event on the computer.</li> </ul>
6	<ul style="list-style-type: none"> <li>To know what decomposition and abstraction are in computer science.</li> <li>To take a real-life situation, decompose it and think about the level of abstraction.</li> <li>To design a decomposed feature of a real-life situation.</li> </ul>	<ul style="list-style-type: none"> <li>Children can make good attempts to break down their aims for a coding task into smaller achievable steps.</li> <li>Children recognise the need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task.</li> </ul>

## Unit 4.2 – Online Safety

Lesson	Aims	Success Criteria
1	To understand how children can protect themselves from online identity theft. Understand that information put online leaves a digital footprint or trail and that this can aid identity theft.	<ul style="list-style-type: none"> <li>Children know that security symbols such as a padlock protect their identity online.</li> <li>Children know the meaning of the term 'phishing' and are aware of the existence of scam websites.</li> <li>Children can explain what a digital footprint is and how it relates to identity theft.</li> <li>Children can give examples of things that they wouldn't want to be in their digital footprint.</li> </ul>
2	To Identify the risks and benefits of installing software including apps.	<ul style="list-style-type: none"> <li>Children can identify possible risks of installing free and paid for software.</li> <li>Children know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer.</li> <li>Children know what a computer virus is.</li> </ul>
3	To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.	<ul style="list-style-type: none"> <li>Children are able to determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it</li> <li>Children know about citing sources that they have used.</li> </ul>
4	To identify the positive and negative influences of technology on health and the environment. To understand the importance of balancing game and screen time with other parts of their lives.	<ul style="list-style-type: none"> <li>Children are able to take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities.</li> <li>Children can give reasons for limiting screen time.</li> </ul>

## Unit 4.3 - Spreadsheets

Lesson	Aims	Success Criteria
1	Using the formula wizard in the advanced mode to add formulae and explore formatting cells	<ul style="list-style-type: none"> <li>Children can use the number formatting tools within 2Calculate to appropriately format numbers.</li> <li>Children can add a formula to a cell to automatically make a calculation in that cell.</li> </ul>
2	Timer and spin button	<ul style="list-style-type: none"> <li>Children can use the timer, random number and spin button tools.</li> <li>Children can combine tools to make fun ways to explore number.</li> </ul>
3	Line graphs	<ul style="list-style-type: none"> <li>Children can use a series of data in a spreadsheet to create a line graph.</li> <li>Children can use a line graph to find out when the temperature in the playground will reach 20°C.</li> </ul>
4	Using a spreadsheet for budgeting	<ul style="list-style-type: none"> <li>Children can make practical use of a spreadsheet to help them plan actions.</li> <li>Children can use the currency formatting in 2Calculate.</li> </ul>
5	Exploring Place Value with a spreadsheet	<ul style="list-style-type: none"> <li>Children can allocate values to images and use these to explore place value.</li> <li>Children can use a spreadsheet made in 2Calculate to check their understanding of a mathematical concept.</li> </ul>

## Unit 4.4 – Writing for Different Audiences

Lesson	Aims	Success Criteria
1	To explore how font size and style can affect the impact of a text.	<ul style="list-style-type: none"> <li>Children have looked at and discussed a variety of written material where the font size and type are tailored to the purpose of the text.</li> <li>Children have used text formatting to make a piece of writing fit for its audience and purpose.</li> </ul>
2 & 3	To use a simulated scenario to produce a news report.	<ul style="list-style-type: none"> <li>Children have role-played the job of a journalist in a newsroom.</li> <li>Children have interpreted a variety of incoming communications and used these to build up the details of a story.</li> <li>Children have used the incoming information to write their own newspaper report.</li> </ul>
4 & 5	To use a simulated scenario to write for a community campaign.	<ul style="list-style-type: none"> <li>Children have used 2Connect to mind-map ideas for a community campaign.</li> <li>Children have used these ideas to write a persuasive letter or poster as part of the campaign.</li> <li>Children have assessed their texts using criteria to judge their suitability for the intended audience.</li> </ul>

## Unit 4.5 – Logo

Lesson	Aims	Success Criteria
1	To learn the language of Logo. To input simple instructions on Logo.	<ul style="list-style-type: none"> <li>Children know what the different instructions are in Logo and how to type them.</li> <li>Children can follow simple Logo instructions to create shapes on paper.</li> <li>Children can follow simple instructions to create shapes in Logo.</li> </ul>
2	For the children to use Logo to create letters.	<ul style="list-style-type: none"> <li>Children can create Logo instructions to draw letters of increasing complexity.</li> <li>Children can write Logo instructions for a word of four letters.</li> </ul>
3	To use the Repeat function in Logo to create shapes.	<ul style="list-style-type: none"> <li>Children can predict what shapes will be made from Logo instructions.</li> <li>Children can create shapes using the Repeat function.</li> <li>Children can find the most efficient way to draw shapes.</li> </ul>
4	To use the Build feature in Logo.	<ul style="list-style-type: none"> <li>Children can use the Build feature.</li> <li>Children can create 'flowers' using Logo.</li> </ul>

## Unit 4.6 – Animation

Lesson	Aims	Success Criteria
1	To discuss what makes a good animated film or cartoon and what their favourites are. To learn how animations are created by hand. To find out how 2Animate can be created in a similar way using the computer.	<ul style="list-style-type: none"> <li>Children have put together a simple animation using paper to create a flick book.</li> <li>Children have an understanding of animation 'frames'.</li> <li>Children have made a simple animation using 2Animate.</li> </ul>
2	To learn about onion skinning in animation. To add backgrounds and sounds to animations.	<ul style="list-style-type: none"> <li>Children know what the Onion Skin tool does in animation.</li> <li>Children can use the Onion Skin tool to create an animated image.</li> <li>Children can use backgrounds and sounds to make more complex and imaginative animations.</li> </ul>
3	To be introduced to stop motion animation. To share animation on the class display board and by blogging.	<ul style="list-style-type: none"> <li>Children know what stop motion animation is and how it is created.</li> <li>Children have used ideas from existing stop motion films to recreate their own animation.</li> <li>Children have shared their animations and commented on each other's work using display boards and blogs in Purple Mash.</li> </ul>



### Unit 4.7 – Effective Searching

Lesson	Aims	Success Criteria
1	To locate information on the search results page.	<ul style="list-style-type: none"> <li>Children can structure search queries to locate specific information.</li> </ul>
2	To use search effectively to find out information.	<ul style="list-style-type: none"> <li>Children have used search to answer a series of questions.</li> <li>Children have written search questions for a friend to solve.</li> </ul>
3	To assess whether an information source is true and reliable.	<ul style="list-style-type: none"> <li>Children can analyse the contents of a web page for clues about the credibility of the information.</li> </ul>

### Unit 4.8 – Hardware Investigators

Lesson	Aims	Success Criteria
1	To understand the different parts that make up a computer.	<ul style="list-style-type: none"> <li>Children can name the different parts of a desktop computer.</li> <li>Children know what the function of the different parts of a computer is.</li> </ul>
2	To recall the different parts that make up a computer.	<ul style="list-style-type: none"> <li>Children have created a leaflet to show the function of computer parts.</li> </ul>

## 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	4.1 4.5
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	4.1 4.5
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Computer Science	4.1 4.5
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	4.2 4.7 4.8
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Information Technology	4.7
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	4.1 4.3 4.4 4.6
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital Literacy	4.2*

\*And discussed in other units

Need more support? [Contact us](#)

Tel: 0208 203 1781 | Email: [support@2simple.com](mailto:support@2simple.com) | Twitter: [@2simplesoftware](https://twitter.com/2simplesoftware)