Computing Scheme of Work Overview Year 2

Contents

Introduction

This document contains an overview of the units included in the Purple Mash Computing Scheme of Work for Year 2.
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.

Adapting and Refining the Scheme for your School

In an ideal world, pupils would be able to complete all units; this provides a wide range of different technological experiences using a variety of tools. The overlaps between units serve to deepen understanding of computational concepts and provide opportunities for pupils to apply and extend understanding and make links in their knowledge and capabilities.
However, as a school, you might decide that you need to refine the scheme for your own purposes and needs, meaning that not all units can be covered. This section Title to help you to do this whilst still being confident in curriculum coverage.
Firstly, use the colour coding to pick and choose units that cover the three strands of computing content to ensure a spread of complimentary opportunities and skills and to ensure curriculum coverage. Ideally, balance these strands over the whole school so that pupils cover and revisit all areas.
Secondly, look for opportunities to incorporate the computational skills into other subjects. Resources could be adapted or created to match your topics. Here are some suggestions:
Units that link to the maths curriculum:

- 2.4 Questioning
- 2.3 Spreadsheet units

Units that could easily be topic linked; resources will need to be adapted to have a topic theme: Any of the data handling units suggested in the maths section.

- 2.6 Creating Pictures
- 2.8 Presenting Ideas

Online safety units can be part of RSE\PSHE lessons; there is a strong link between the learning objectives related to online safety with many of the online safety lessons aligning with RSE\PSHE objectives.
Music topics could be incorporated into music lessons with a modelling of musical skills on both instruments and using the computer:

- 2.7 Making Music

We have a stand-alone spreadsheet unit for Y6, this does not rely upon having completed the other spreadsheet units so might be another way to familiarise pupils with spreadsheets without including a spreadsheet unit in each year groups. In this case, we would advise including the use of spreadsheets and other data programs within maths where there is a curricular link.

Crash Courses

There are crash course units for Spreadsheets using 2Calculate and Coding using 2Code.
Use these units instead of the standard Spreadsheets and Coding units if the children have not completed the prior year's spreadsheets or coding units. The crash courses are designed to

enable children to catch up with the main features of the units from previous years and progress onto the standard units in the next year.
For example, if you are a school that starts in year 3 with children joining from different settings who have not used the Purple Mash Computing Scheme, you would start with the crash courses in year 3 for Coding and Spreadsheets and then children will be ready for the standard units for coding and spreadsheets in year 4.
Use these units if your school has just started using the scheme so children have not completed the prior year units.

Year 2 Whole Year Overview

Predominant Area of Computing*		
Computer Science	Information Technology	Digital Literacy

*Most units will include aspects of all strands.

These units can be taught in any order to meet the needs of your wider curriculum.

Unit 2.1 **Coding** **Number of lessons** - 5 **Programs** - 2Code	**Unit 2.2** **Online Safety** **Number of lessons** - 3 **Programs** - Various	**Unit 2.3** **Spreadsheets** **Number of lessons** - 4 **Programs** - 2Calculate
Unit 2.4 **Questioning** **Number of lessons** - 5 **Programs** - 2Question, 2Investigate	**Unit 2.5** **Effective Searching** **Number of lessons** - 3 **Programs** - Browser	**Unit 2.6** **Creating Pictures** **Number of lessons** - 5 **Programs** - 2PaintAPicture
Unit 2.7 **Making Music** **Number of lessons** - 3 **Programs** - 2Sequence	**Unit 2.8** **Presenting Ideas** **Number of lessons** - 4 **Programs** - Various	

Year 2 Unit Overview

Autumn 1

Unit 2.1 – Coding

Lesson	Title	Success Criteria
1	Algorithms	• Children can explain that an algorithm is a set of instructions. • Children can describe the algorithms they created. • Children can explain that for the computer to make something happen, it needs to follow clear instructions.
2	Collision Detection	• Children can plan an algorithm that includes collision detection. • Children can create a program using collision detection. • Children read blocks of code and predict what will happen when it is run.
3	Using a Timer	• Children can create a program that uses a timer-after command. • Children can explain what the timer-after command does in their program. • Children can predict what will happen in a program that includes a timer-after command.
4	Different Object Types	• Children can create a computer program that includes different objects types. • Children can modify the properties of an object. • Children can use different events in their program to make objects move.
5	Buttons	• Children can create a computer program that includes a button object. • Children can explain what a button does in their program. • Children can modify the properties of a button to fit their program design.

Autumn 2

Unit 2.2 – Online Safety

Lesson	Title	Success Criteria
1	Searching and Sharing	• Children can use the search facility to refine searches on Purple Mash by year group and subject. • Children can share the work they have created to a display board. • Children understand that the teacher approves work before it is displayed. • Children are beginning to understand how things can be shared electronically for others to see both on Purple Mash and the Internet.
2	Email Using 2Respond	• Children know that Email is a form of digital communication. • Children understand how 2Repond can teach them how to use email. • Children can open and send an email to a 2Respond character. • Children have discussed their own experiences and understanding of what email is used for. • Children have discussed what makes us feel happy and what makes us feel sad.
3	Digital Footprint	• Children can explain what a digital footprint is. • Children can give examples of things that they would not want to be in their digital footprint.

Unit 2.3 - Spreadsheets

Lesson	Title	Success Criteria
1	Reviewing prior use of spreadsheets	• Children can explain what rows and columns are in a spreadsheet. • Children can open, save and edit a spreadsheet. • Children can add images from the image toolbox and allocate them a value. • Children can add the count tool to count items.
2	Copying and Pasting Totalling tools	• Children can use copying, cutting and pasting to help make spreadsheets. • Children can use tools in a spreadsheet to automatically total rows and columns. • Children can use a spreadsheet to solve a mathematical puzzle.
3	Using a spreadsheet to add amounts	• Children can use images in a spreadsheet. • Children can work out how much they need to pay using coins by using a spreadsheet to help calculate.
4	Creating a table and block graph	• Children can create a table of data on a spreadsheet. • Children can use the data to create a block graph manually.

Spring 1

Unit 2.4 – Questioning

Lesson	Title	Success Criteria
1	Using and Creating Pictograms	• Children understand that the information on pictograms cannot be used to answer more complicated questions.
2	Asking Yes / No Questions	• Children have used a range of yes/no questions to separate different items.
3	Binary Trees	• Children understand what is meant by a binary tree. • Children have designed a binary tree to sort pictures of children.
4	Using 2Question - a Computer-Based Binary Tree Program	• Children understand that questions are limited to 'yes' and 'no' in a binary tree. • Children understand that the user cannot use 2Question to find out answers to more complicated questions. • Children have matched 2Simple item pictures to names using a binary tree.

5	Using 2Investigate: a Non-Binary Database.	• Children understand what is meant by a database. • Children have used a database to answer simple and more complex search questions.

Spring 2

Unit 2.6 – Creating Pictures

Lesson	Title	Success Criteria
1	Introduction and Impressionism	• Children can describe the main features of impressionist art. • Children can use 2Paint a Picture to create art based upon this style.
2	Pointillist Art	• Children can explain what pointillism is. • Children can use 2Paint a Picture to create art based upon this style.
3	Piet Mondrian	• Children can describe the main features of Piet Mondrian's work. • Children can use 2Paint a Picture to art based upon his style.
4	William Morris and Pattern	• Children can describe the main features of art that uses repeating patterns. • Children can use 2Paint a Picture to create art by repeating patterns in a variety of ways. • Children can combine more than one effect in 2Paint a Picture to enhance patterns.
5	Surrealism and eCollage	• Children can describe surrealist art.

		• Children can use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart.

Summer 1

Unit 2.7 – Making Music

Lesson	Title	Success Criteria
1	Introducing 2Sequence	• Children understand what 2Sequence is and how it works. • Children have used the different sounds within 2Sequence to create a tune. • Children have explored how to speed up and slow down tunes. • Children understand what happens to the tune when sounds are moved.
2	Making Music	• Children have added sounds to a tune they have already created to change it. • Children have considered how music can be used to express feelings. • Children can change the volume of the background sounds. • Children have created two tunes which depict two feelings.
3	Soundtracks	• Children have uploaded and used their own sound chosen from a bank of sounds. • Children have created, uploaded and used their own recorded sound. • Children have created their own tune using some of the chosen sounds.

Unit 2.5 – Effective Searching

Lesson	Title	Success Criteria
1	Understanding the Internet and Searching	• Children can recall the meaning of key Internet and searching terms. • Children have completed a quiz about the Internet.

2	Searching the Internet	• Children can identify the basic parts of a web search engine search page. • Children have learnt to read a web search results page. • Children can search the Internet for answers to a quiz.
3	Sharing Knowledge of the Internet and Effective Searching	• Children have created a leaflet to consolidate knowledge of effective Internet searching.

Summer 2

Unit 2.8 – Presenting Ideas

Lesson	Title	Success Criteria
1	Presenting a Story Three Ways	• Children have examined a traditional tale presented as a mind map, as a quiz, as an e-book and as a fact file. • Children know that digital content can be represented in many forms.
2	Presenting Ideas as a Quiz	• Children have made a quiz about a story using 2Quiz. • Children can talk about their work and make improvements to solutions based on feedback received.

3	Making a Non-Fiction Fact File	• Children have extracted information from a 2Connect file to make a publisher fact file on a non-fiction topic. • Children have added appropriate clipart. • Children have added an appropriate photo. • Children know that data can be structured in tables to make it useful.
4	Making a Presentation	• Children can use a variety of software to manipulate and present digital content and information. • Children can collect, organise and present data and information in digital content. • Children can create digital content to achieve a given goal by combining software packages.

English National Curriculum Objectives (Key Stage 1)

National Curriculum Objective	Strand	Units
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	2.1
Create and debug simple programs	Computer Science	2.1
Use logical reasoning to predict the behaviour of simple programs.	Computer Science	2.1
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Information Technology	2.3 2.4 2.5 2.6 2.7 2.8
Recognise common uses of information technology beyond school	Digital Literacy	2.5*
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	2.2*

*And in other units when appropriate.