



Computing

Scheme of Work

Year 5 Overview



Introduction

This document contains an overview of the units included in the Purple Mash Computing Scheme of Work for Year 5.

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'.

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 5 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
YEAR 5	Unit 5.1 Coding						Unit 5.2 Online Safety		Unit 5.3 Spreadsheets						Unit 5.4 Databases				Unit 5.5 Game Creator				Unit 5.6 3D Modelling			Unit 5.7 Concept Maps					
	Number of Weeks – 6 Main Programs – 2Code						Weeks – 2 Programs - Various		Weeks – 6 Programs – 2Calculate						Weeks – 4 Programs – 2Question, 2Investigate				Weeks – 5 Programs – 2DIY 3D				Weeks – 4 Programs – 2Design and Make			Weeks – 4 Programs – 2Connect					

Year 5 Unit Overview

Unit 5.1 – Coding

Lesson	Aims	Success Criteria
1	Designing and writing a program that accomplishes a specific goal.	<ul style="list-style-type: none"> Children can explain what Object, Action, Output, Control and Event are in computer programming. Children can explain which commands they included in their program and what they achieve.
2	Simulating a physical system.	<ul style="list-style-type: none"> Children can explain how their program simulates a physical system, i.e. objects move at different speeds and angles. Children can describe what they did to make their vehicle change angle. Children can show that their vehicles move at different speeds.
3	Introducing text variables.	<ul style="list-style-type: none"> Children can explain what a variable is in programming. Children can set/change the variable values appropriately. Children know some ways that text variables can be used in coding.
4 & 5	Creating and improving a game.	<ul style="list-style-type: none"> Children can create a game which has a timer and score pad. Children can use variables to control the objects in the game. Children can create loops using the timer and If/else statements.
6	Internet safety.	<ul style="list-style-type: none"> Children can explain what internet safety is. Children can include two buttons that launch windows to two separate websites that provide further information in my program. Children can use my coding knowledge to create a program that explains internet safety.

Unit 5.2 – Online Safety

Lesson	Aims	Success Criteria
1	To discuss and understand the importance of keeping personal information safe. To understand issues concerning the reliability of sources and people online.	<ul style="list-style-type: none"> Children know what Childnet SMART CREW is and have used their resources to gain an understanding about keeping safe online. Children know who to tell if they are upset by something that happens online.
2	To create a comic strip to share my knowledge about online safety.	<ul style="list-style-type: none"> Children have made a comic strip to share knowledge about online safety.

Unit 5.3 - Spreadsheets

Lesson	Aims	Success Criteria
1	Conversions of measurements.	<ul style="list-style-type: none"> Children can create a formula in a spreadsheet to convert m to cm. Children can apply this to creating a spreadsheet that converts miles to km and vice versa.
2	Novel use of the count tool.	<ul style="list-style-type: none"> Children can use a spreadsheet to work out which letters appear most often. Children can use the 'how many' tool.
3	Formulae including the advanced mode.	<ul style="list-style-type: none"> Children can use a spreadsheet to work out the area and perimeter of rectangles. Children can use these calculations to solve a real-life problem.
4	Using text variables to perform calculations.	<ul style="list-style-type: none"> Children can create simple formulae that use different variables. Children can create a formula that will work out how many days there are in x number of weeks or years.
5	Using a spreadsheet to plan an event.	<ul style="list-style-type: none"> Children can use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied.

Unit 5.4 – Databases

Lesson	Aims	Success Criteria
1	To learn how to search for information on a database.	<ul style="list-style-type: none"> Children understand the different ways to search a database. Children can search a database in order to answer questions correctly.
2	To contribute to a class database.	<ul style="list-style-type: none"> Children have designed an avatar for a class database. Children have successfully entered information into a class database.
3 & 4	To create a database around a chosen topic.	<ul style="list-style-type: none"> Children can create their own database on a chosen topic. Children can add records to their database. Children know what a database field is and can correctly add field information. Children understand how to word questions so that they can be effectively answered using a search of their database.

Unit 5.5 – Game Creator

Lesson	Aims	Success Criteria
1	To set the scene.	<ul style="list-style-type: none"> Children can review and analyse a computer game. Children can describe some of the elements that make a successful game. Children can begin the process of designing their own game.
2	To create the game environment.	<ul style="list-style-type: none"> Children can design the setting for their game so that it fits with the selected theme. Children can upload images or use the drawing tools to create the walls, floor and roof.
3	To create the game quest.	<ul style="list-style-type: none"> Children can design characters for their game. Children can decide upon, and change, the animations and sounds that the characters make.
4	To finish and share the game	<ul style="list-style-type: none"> Children can make their game more unique by selecting the appropriate options to maximise the playability. Children can write informative instructions for their game so that other people can play it.
5	To evaluate their and peers' games.	<ul style="list-style-type: none"> Children can evaluate my their own and peers' games to help improve their design for the future.

Unit 5.6 – 3D Modelling

Lesson	Aims	Success Criteria
1	To be introduced to 2Design and Make.	<ul style="list-style-type: none"> Children know what the 2Design and Make tool is for. Children have explored the different viewpoints in 2Design and Make whilst designing a building.
2	To explore the effect of moving points when designing.	<ul style="list-style-type: none"> Children have adapted one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form.
3	To understand designing for a purpose.	<ul style="list-style-type: none"> Children have explored how to edit the polygon 3D models to design a 3D model for a purpose.
4	To understand printing and making.	<ul style="list-style-type: none"> Children have refined one of their designs to prepare it for printing. Children have printed their design as a 2D net and then created a 3D model. Children have explored the possibilities of 3D printing.

Unit 5.7 – Concept Maps

Lesson	Aims	Success Criteria
1	To understand the need for visual representation when generating and discussing complex ideas.	<ul style="list-style-type: none"> • Children can make connections between thoughts and ideas. • Children can see the importance of recording concept maps visually.
2	To understand and use the correct vocabulary when creating a concept map. To create a concept map.	<ul style="list-style-type: none"> • Children understand what is meant by 'concept maps', 'stage', 'nodes' and 'connections'. • Children can create a basic concept map.
3	To understand how a concept map can be used to retell stories and information.	<ul style="list-style-type: none"> • Children have used 2Connect Story Mode to create an informative text.
4	To create a collaborative concept map and present this to an audience.	<ul style="list-style-type: none"> • Children have used 2Connect collaboratively to create a concept map. • Children have used Presentation Mode to present their concept maps to an audience.

Key Stage 2 English National Curriculum Objectives

National Curriculum Objective	Strand	Units Covered
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	5.1, 5.5
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	5.1
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Computer Science	5.1
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	5.2
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Information Technology	See unit 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	5.1, 5.3, 5.4, 5.5, 5.6, 5.7
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital Literacy	5.2 and discussed in other units

Welsh Digital Competence Framework

Strand	Learners are able to:	Units Covered
Citizenship Note: The Scheme of Work contains a unit on Online Safety in each year group. Taken as a whole, these units provide pupils with the citizenship knowledge.	Understand how to protect themselves from online identity theft.	5.2
	Be aware that information put online leaves a digital footprint or trail.	5.2
	Identify risks and benefits of installing software.	5.2
	Identify the positive and negative influences of technology on health and the environment	5.2
	Understand that copying the work of others and presenting it as their own is called 'plagiarism.	5.2
	Explain when and how it is acceptable to use the work of others.	5.2
	Identify actions to report and prevent cyberbullying.	5.2
	Identify appropriate behaviour when participating or contributing to collaborative online projects for learning.	5.2 Also as part of blogging about their work in various units.
Interacting and collaborating	Exchange online communication with other learners in one or more languages, making use of a growing range of available features.	Through Blogging covered in several units. Email is specifically covered in unit 3.5
	Manage an online file, adding and responding to comments in one or more languages.	All units by using Purple Mash 2Dos and commenting.
	Be aware of different types of storage.	
	Manage files and folders locally or online.	All units
Producing	Develop own success criteria to be used as a plan.	All Units
	Find relevant information using different keywords and search techniques.	
	Select an appropriate website from search results and use a range of sources to check its validity.	
	Create and modify multimedia components in one or more languages using a range of software.	5.1, 5.3, 5.4, 5.5, 5.6, 5.7
	Modify and present a range of text, image, sound, animation and video for selected purposes.	5.1, 5.3, 5.4, 5.5, 5.6, 5.7

	Give an opinion about their own and others' work and suggest improvements independently and collaboratively. Give reasons for choices made.	All units
Data and Computational Thinking	Demonstrate how part of a solution might need repetition.	5.1
	Represent a simple solution in a flowchart that contains a looping element.	5.1
	Begin to create data sets and extract information from them.	5.3, 5.4

Northern Ireland Levels of Progression and Desirable Features

	Objective	Units Covered
Explore	Access, select, interpret and research information from safe and reliable sources.	5.2
	Investigate, make predictions and solve problems through interaction with digital tools.	5.1, 5.3, 5.4, 5.7
Express	Create, develop, present and publish ideas and information responsibly using a range of digital media and manipulate a range of assets to produce multimedia.	All units
Exchange	Communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally.	All units
Evaluate	Talk about, review and make improvements to work, reflecting on the process and outcome, and consider the sources and resources used, including safety, reliability and acceptability.	All units
Exhibit	Manage and present their stored work and showcase their learning across the curriculum, using ICT safely and responsibly.	All Units

Desirable Features	Units Covered
Desktop Publishing	5.5, 5.6, 5.7
Film and Animation	5.5
Interactive Design	5.1, 5.5
Managing data	5.4
Music and Sound	See unit 2.7
Online Communication	Use of 2dos and blogging as part of lessons
Presenting	5.5, 5.6, 5.7
Working with Images	5.5, 5.6

Scottish Curriculum for Excellence (Second Level)

Technological developments in society	Units Covered
When exploring technologies in the world around me, I can use what I learn to help to design or improve my ideas or products.	5.5, 5.6
I can investigate how an everyday product has changed over time to gain an awareness of the link between scientific and technological developments	
Having analysed how lifestyle can impact on the environment and Earth's resources, I can make suggestions about how to live in a more sustainable way.	
I can investigate the use and development of renewable and sustainable energy to gain an awareness of their growing importance in Scotland or beyond.	
ICT to enhance learning	Units Covered
As I extend and enhance my knowledge of features of various types of software, including those which help find, organise, manage and access information, I can apply what I learn in different situations.	By covering a variety of units.
I can access, retrieve and use information from electronic sources to support, enrich or extend learning in different contexts.	By covering a variety of units.
Throughout all my learning, I can use search facilities of electronic sources to access and retrieve information, recognising the importance this has in my place of learning, at home and in the workplace.	By covering a variety of units.
I explore and experiment with the features and functions of computer technology and I can use what I learn to support and enhance my learning in different contexts.	By covering a variety of units.
I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways.	By covering a variety of units.
Computing science contexts for developing technological skills and knowledge	Units Covered
I am developing my knowledge and use of safe and acceptable conduct as I use different technologies to interact and share experiences, ideas and information with others	5.2

Using appropriate software, I can work collaboratively to design an interesting and entertaining game which incorporates a form of control technology or interactive multimedia.	5.1, 5.5
Craft, design, engineering and graphics contexts for developing technological skills and knowledge	Units Covered
By applying my knowledge and skills of science and mathematics, I can engineer 3D objects which demonstrate strengthening, energy transfer and movement	5.6
Through discovery and imagination, I can develop and use problem-solving strategies to construct models.	5.3 Modelling real-life situations technologically, 5.6
Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback.	All units
I can use drawing techniques, manually or electronically, to represent objects or ideas, enhancing them using effects such as light, shadow and textures.	45.5, 5.6
Throughout my learning, I experiment with the use of colour to develop an awareness of the effects and impacts it can have.	5.6