Computing Scheme of Work Overview Year 6

Contents

Introduction

This document contains an overview of the units included in the Purple Mash Computing Scheme of Work for Year 6.

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.
For England and Wales, guidance is also given about assessing children against each objective using the scheme of Work lessons. This will follow for other countries in due course.

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 and SEND

Where appropriate, guidance has been given on how to simplify tasks within lessons or challenge those who are ready for more stretching tasks.
We identify SEND as a broad term which can include physical, sensory, cognitive, behaviour and learning access needs, of which some children with SEND needs may be functioning at above expected national levels.
Within the Scheme of Work, it is expected that most lessons are differentiated by outcome and by the support and\or scaffolding children are given to meet their individual needs.
For each unit of work, there are three example assessment statements relating to pupil outcomes: Emerging; Expected and Exceeding. The emerging level outcomes would include children in the lowest 20% of attainment in this area.
For more able children there are extension tasks provided in many of the lessons.
We haven't provided SEND specific guidance except on the occasion where ability in other subjects might make accessing the computing content more difficult for some. For example, when mathematical understanding overlaps with work done on spreadsheets. We aim to ensure that most resources are accessible for most children e.g. by using voice recording in addition to text in quiz resources and by consideration of colour palette and illustrations.

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:

- 6.9 Spreadsheets
- 6.3 Spreadsheets with 2Calculate

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.

- 6.7 Quizzing

For lessons taught more discretely as computing such as Email (3.5) and Blogging (6.4), topic themes could still be used to double-up on objectives covered.

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.

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 is a crash course unit for Coding using 2Code.
Use this unit instead of the standard Coding units if the children have not completed the prior years' coding units. The crash courses are designed to enable children to catch up with the main features of the units from previous years ready for next steps.
The year 6 Spreadsheet unit that uses 2Calculate (Unit 6.3) also assumes children have completed the Spreadsheets units in previous years. If your year 6 children have not completed these units, look at unit 6.9 as an alternative. This unit offer a choice of Microsoft Excel or Google Sheets that assume no prior knowledge and can be used instead of 2Calculate. If you do wish to use 2Calculate, we advise using the Year 5 crash course unit.

Year 6 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 6.1 Coding **Number of lessons** – 6 **Main Programs** – 2Code	**Unit 6.2 Online safety** **Number of lessons** – 2 **Programs** - Various	**Unit 6.3 Spreadsheets** **Number of lessons** – 5 **Programs** – 2Calculate
Unit 6.4 Blogging **Number of lessons** – 4 **Programs** – 2Blog	**Unit 6.5 Text Adventures** **Number of lessons** – 5 **Programs** – 2Code, 2Connect	**Unit 6.6 Networks** **Number of lessons** – 3
Unit 6.7 Quizzing **Number of lessons** – 6 **Programs** – 2Quiz, 2DIY, Text Toolkit, 2Investigate	**Unit 6.8 Understanding Binary** **Number of Lessons** – 4 **Main Program** – 2Code	**Unit 6.9 Spreadsheets (with Microsoft Excel or Google Sheets)** **Number of Lessons** – 8 **Main program** – MS Excel or Google Sheets

Year 6 Unit Overview

Unit 6.1 – Coding

Lesson	Title	Aims (Objectives)	Success Criteria
1 &2	Designing and Making a more Complex Program	• To design a playable game with a **timer** and a **score**. • To plan and use **selection** and **variables**. • To understand how the **launch command** works.	• Children can plan a program which includes a timer and a score. • Children can follow their plans to create a program. • Children can debug when things do not run as expected.
3	Using Functions	• To use **functions** and understand why they are useful. • To understand how **functions** are created and **called**.	• Children can create a program that makes use of functions. • Children can create a program that uses multiple functions with the code arranged in tabs. • Children can explain how their code executes when their program is run.
4	Flowcharts and Control Simulations	• To use **flowcharts** to test and **debug** a program. • To create a **simulation** of a room in which devices can be controlled.	• Children can follow flowcharts to create and debug code. • Children can create flowcharts for procedures. • Children can be creative with the way they code to generate novel visual effects.
5	User Input	• To understand the different options of generating **user input** in 2Code. • To understand how **user input** can be used in a program.	• Children can code programs that take text input from the user and use this in the program. • Children can attribute variables to user input. • Children are aware of the need to code for all possibilities when using user input.
6	Using Text-based Adventures	• To understand how 2Code can be used to make a text-based adventure game.	• Children can follow through the code of how a text adventure can be programmed in 2Code. • Children can design their own text-based adventure game based on one they have played. • Children can adapt an existing text adventure so it reflects their own ideas.

Unit 6.2 – Online Safety

Lesson	Title	Aims (Objectives)	Success Criteria
1	Message in a Game	• To identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location. • To identify secure sites by looking for privacy seals of approval, e.g., https, padlock icon. • To identify the benefits and risks of giving personal information and device access to different software.	• Children have used the example game and further research to refresh their memories about risks online including sharing location, secure websites, spoof websites, phishing, and other email scams. • Children have used the example game and further research to refresh their memories about the steps they can take to protect themselves including protecting their digital footprint, where to go for help, smart rules and security software.
2	Online Behaviour	• To review the meaning of a digital footprint and understand how and why people use their information and online presence to create a virtual image of themselves as a user. • To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour. • To begin to understand how information online can persist and give away details of those who share or modify it.	• Children understand how what they share impacts upon themselves and upon others in the long-term. • Children know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour when they experience it or witness it as a bystander. • **Extension:** Children' actions demonstrate that they also feel a responsibility to others when communicating and sharing content online.
3	Screen Time	• To understand the importance of balancing game and screen time with other parts of their lives, e.g., explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health. • To identify the positive and negative influences of technology on health and the environment.	• Children can 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. • Children can give reasons for limiting screen time. • Children can talk about the positives and negative aspects of technology and balance these opposing views. • **Extension:** Children have an internalised in-depth understanding of the risks and benefits of an online presence.

Unit 6.3 – Spreadsheets

Lesson	Title	Aims (Objectives)	Success Criteria
1	Exploring Probability	• To use a spreadsheet to investigate the probability of the results of throwing many dice.	• Children can create a spreadsheet to answer a mathematical question relating to probability. • Children can take copy and paste shortcuts. • Children can problem solve using the count tool.
2	Creating a Computational Model	• To use a spreadsheet to calculate the discount and final prices in a sale. Create a formula to help work out the prices of items in the sale.	• Children can create a machine to help work out the price of different items in a sale. • Children can use the formula wizard to create formulae. • Children can use a spreadsheet to solve a problem.
3	Use a Spreadsheet to Plan Pocket Money Spending	• To use a spreadsheet to plan how to spend pocket money and the effect of saving money.	• Children can use a spreadsheet to model a real-life situation and come up with solutions. • Children can make practical use of a spreadsheet to help plan actions.
4 & 5	Planning a School Event	• To use a spreadsheet to plan a school charity day to maximise the money donated to charity.	• Children can use a spreadsheet to model a real-life situation and come up with solutions that can be applied to real life.

Unit 6.4 – Blogging

Lesson	Title	Aims (Objectives)	Success Criteria
1	What is a Blog?	• To identify the purpose of writing a blog. • To identify the features of successful blog writing.	• Children understand how a blog can be used as an informative text. • Children understand the key features of a blog.
2	Planning a Blog	• To plan the theme and content for a blog.	• Children can work collaboratively to plan a blog.
3	Writing a Blog	• To understand how to write a blog and a blog post. • To consider the effect upon the audience of changing the visual properties of the blog. • To understand how to contribute to an existing blog.	• Children can create a blog or blog post with a specific purpose. • Children understand that the way in which information is presented has an impact upon the audience.

4	Sharing Posts and Commenting	• To understand the importance of commenting on blogs. • To peer-assess blogs against the agreed success criteria. • To understand how and why blog posts and comments are approved by the teacher.	• Children can post comments and blog posts to an existing class blog. • Children understand the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying. • Children can assess the effectiveness and impact of a blog. • Children understand that content included in their blog carefully considers the end user.

Unit 6.5 – Text Adventures

Lesson	Title	Aims (Objectives)	Success Criteria
1	What Is a Text Adventure? Planning a Story Adventure	• To find out what a text-based adventure game is and to explore an example made in 2Create a Story. • To use 2Connect to plan a 'Choose your own Adventure' type story.	• Children can describe what a text adventure is. • Children can map out a story-based text adventure. • Children can use 2Connect to record their ideas. • **Extension:** Children can turn a simple story with 2 or 3 levels of decision making into a logical design
2	Making a Story-based Adventure Game	• To use 2Connect plans for a story adventure to make the adventure using 2Create a Story.	• Children can use the full functionality of 2Create a Story Adventure mode to create, test and debug using their plan. • Children can split their adventure-game design into appropriate sections to facilitate creating it.
3	Coding Comprehension of Text Adventure Game	• To read and understand given code for a text adventure game.	• Children can explain the features and purpose of code within a given text adventure. • Children are able to step through each line of code and follow the flow of execution.
4	Debugging and Improving a Text Adventure.	• To debug a text adventure. • To independently design and implement improvements to a text adventure game.	• Children can make logical attempts to debug more complex code involving a combination of functions, variables and a loop. • Children can suggest and implement ideas to further develop the program.

Unit 6.6 – Networks

Lesson	Title	Aims (Objectives)	Success Criteria
1	The World Wide Web and the Internet	• To discover what the children know about the Internet.	• Children know the difference between the World Wide Web and the internet. • **Extension:** Children can provide examples of the difference between the World Wide Web and the Internet.
2	Our School Network and Accessing the Internet	• To find out what a LAN and WAN are. • To find out how we access the internet in school.	• Children know about their school network. • **Extension:** Children can explain the differences between more than two network types such as: LAN, WAN, WLAN and SAN.
3	Research	• To research and find out about the age of the internet. • To think about what the future might hold.	• Children have researched and found out about Tim Berners-Lee. • Children have considered some of the major changes in technology which have taken place during their lifetime and the lifetime of their teacher/another adult.

Unit 6.7 – Quizzing

Lesson	Title	Aims (Objectives)	Success Criteria
1	Introducing 2DIY	• To create a picture-based quiz for young children.	• Children have used the 2DIY activities to create a picture-based quiz. • Children have considered the audience's ability level and interests when setting the quiz. • Children have shared their quiz and responded to feedback.
2 & 3	Using 2Quiz	• To learn how to use the question types within 2Quiz.	• Children understand the different question types within 2Quiz. • Children have ideas about what sort of questions are best suited to the different question types. • Children have used 2Quiz to make and share a science quiz (or another subject). • Children have considered the audience's ability level and interests when setting the quiz. • Children have shared their quiz with peers. • Children have given and responded to feedback.

4	Exploring Grammar Quizzes	• To explore the grammar quizzes.	• Children have tried out the different types of grammar games. • Children have chosen an appropriate tool to make their own grammar game(s).
5	A Database Quiz	• To make a quiz that requires the player to search a database.	• Children have used a 2Investigate quiz to answer quiz questions. • Children have designed their own quiz based on one of the 2Investigate example databases.
6	Are you Smarter than a 10- (or 11-) Year-Old?	• To make a quiz to test your teachers or parents.	• Children have used their knowledge of quiz types to create a quiz show quiz based on a curriculum area.

Unit 6.8– Understanding Binary

Lesson	Title Examine how whole numbers are used as the basis for representing all types of data in digital systems through:	Aims (Objectives)	Success Criteria Children understand binary as a number system and its purpose and application in computing.
1	What is Binary?	• To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems). • To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics.	• Children can explain how all data in a computer is saved in the computer memory in a binary format. • Children can explain that binary uses only the integers 0 and 1. • Children can relate 0 to an 'off' switch and 1 to and 'on' switch.
2	Counting in Binary	• To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To recognise that the numbers 0, 1, 2 and 3 could be represented by the patterns of two binary digits of 00, 01, 10 and 11 • To represent whole numbers in binary, for example counting in	• Children can count up from 0 in binary using visual aids if needed. • Children can relate bits to computer storage.

		binary from zero to 15, or writing a friend's age in binary.	
3	Converting from Decimal to Binary	• To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary. • To explore how division by two can be used as a technique to determine the binary representation of any whole number by collecting remainder terms.	• Children can convert numbers to binary using the division by two method. • Children can check their own answers using the converter tool.
4	Game States	• To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To represent the state of an object in a game as active or inactive using the respective binary values of 1 or 0.	• Children can make use of a variable set to 0 or 1 to control game states.

Unit 6.9– Spreadsheets (with Microsoft Excel)

Lesson	Title	Aims (Objectives)	Success Criteria
1	What is a Spreadsheet?	• To know what a spreadsheet looks like. • To navigate and enter data into cells.	• Children know some uses of a spreadsheet tool. • Children can navigate around a spreadsheet using cell references. • Children can enter data into cells. • Children understand new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook.
2	Basic Calculations	• To introduce some basic data formulae in Excel. • To demonstrate how the use of Excel can save time and effort when performing calculations.	• Children can use a spreadsheet to carry out basic calculations including addition, subtraction, multiplication and division formulae. • Children can use the series fill function. • Children recognise how using formulae allows the data to change and the calculations to update automatically.
3	Modelling	• To use a spreadsheet to model a situation.	• Children can use a spreadsheet to model a situation. • Children can use a spreadsheet to solve a problem. • Children can use the SUM function
4	Organising Data	• To demonstrate how Excel can make complex data clear by manipulating the way it is presented.	• Children can use a variety of methods including flash fill, convert text to tables and splitting cells for organising and presenting their data in a spreadsheet. • Children know what is meant by a delimiter. • Children understand how to sort data.
5	Advanced Formulae and Big Data	• To use formulae for percentages, averages, max and min in spreadsheets.	• Children know how to incorporate formulae for percentages, averages, max and min into their spreadsheets. • Children gain familiarity with range notation. • Children know some shortcuts that help to make data meaningful. • Children begin to develop a critical eye when it comes to the conclusions that can be made from data.
6	Charts and Graphics	• To create a variety of graphs in Excel.	• Children know that there are ways to represent their data graphically and that spreadsheets can make the process of representing data easier.

			• Children gain an understanding of how a graphical representation can make data easier to interpret. • Children make a variety of charts using Sheets. • Children illustrate their data using sparklines and data bars.
7	Using a Spreadsheet to Plan a Cake Sale	• To use a spreadsheet to model a real-life situation.	• Children can understand how a spreadsheet can be used to plan an event. • Children understand the advantages of using formulae when data is subject to change. • Children have modelled a real-life situation using a spreadsheet.
8	Using a Spreadsheet to Solve Problems	• To apply spreadsheet skills to solving problems.	• To apply all new spreadsheet skills to solving problems and presenting data. • To explore printing spreadsheets.

Unit 6.9– Spreadsheets (with Google sheets)

Lesson	Title	Aims (Objectives)	Success Criteria
1	What is a Spreadsheet?	• To know what a spreadsheet looks like. • To navigate and enter data into cells.	• Children know some uses of a spreadsheet tool. • Children can navigate around a spreadsheet using cell references. • Children can enter data into cells. • Children understand new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, workbook.
2	Basic Calculations	• To introduce some basic data formulae in Sheets. • To demonstrate how the use of Sheets can save time and effort when performing calculations.	• Children can use a spreadsheet to carry out basic calculations including addition, subtraction, multiplication and division formulae. • Children can use the series fill function. • Children recognise how using formulae allows the data to change and the calculations to update automatically.
3	Modelling	• To use a spreadsheet to model a situation.	• Children can use a spreadsheet to model a situation. • Children can use a spreadsheet to solve a problem. • Children can use the SUM function
4	Organising Data	• To demonstrate how spreadsheets can make complex data clearer by manipulating the way it is presented.	• Children can use a variety of methods including flash fill, convert text to tables and splitting cells for organising and presenting their data in a spreadsheet.

			• Children know what is meant by a delimiter. • Children understand how to sort data.
5	Advanced Formulae and Big Data	• To use formulae for percentages, averages, max and min into spreadsheets.	• Children know how to incorporate formulae for percentages, averages, max and min into their spreadsheets. • Children gain familiarity with range notation. • Children know some shortcuts that help to make data meaningful. • Children begin to develop a critical eye when it comes to the conclusions that can be made from data.
6	Charts and Graphics	• To create a variety of charts and graphs to understand data.	• Children know that there are ways to represent their data graphically and that spreadsheets can make the process of representing data easier. • Children gain an understanding of how a graphical representation can make data easier to interpret. • Children make a variety of charts using Sheets. • Children illustrate their data using sparklines and data bars.
7	Using a Spreadsheet to Plan a Cake Sale	• To use a spreadsheet to model a real-life situation.	• Children can understand how a spreadsheet can be used to plan an event. • Children understand the advantages of using formulae when data is subject to change. • Children have modelled a real-life situation using a spreadsheet.
8	Using a Spreadsheet to Solve Problems	• To apply spreadsheet skills to solving problems.	• To apply all new spreadsheet skills to solving problems and presenting data. • To explore printing spreadsheets.

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	6.1 6.5, 6.8
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	6.1
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	6.5
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Computer Science	6.1 6.5, 6.8
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	6.2
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	6.4
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	6.6
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Information Technology	6.2
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	6.1, 6.3 6.4, 6.5 6.7, 6.8, 6.9
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact*.	Digital Literacy	6.2 6.4

Welsh Digital Competence Framework

``Strand	Element	Objective (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.	Identity, image and reputation	Explain what metadata of a photograph can include, e.g. date, time and location	6.2
		Identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g. apps accessing location.	6.2
		Identify secure sites by looking for privacy seals of approval, e.g. https, padlock icon.	6.2
		Identify the benefits and risks of giving personal information and device access to different software.	6.2
		Understand how and why people use their information and online presence to create a virtual image of themselves as a user.	6.2
	Health and well-being	Understand the importance of balancing game and screen time with other parts of their lives.	6.2
	Digital rights, licensing and ownership	Cite all sources when researching and explain the importance of this.	6.2 6.4
		Understand that photographs can be edited digitally and discuss rights and permissions associated with this.	6.2
	Online behaviour and cyberbullying	Demonstrate appropriate online behaviour and apply a range of strategies to protect themselves and others from possible online dangers, bullying and inappropriate behaviour.	6.2 6.4

Interacting and collaborating	Communication	Exchange online communication, making use of a growing range of available features.	6.4
		Show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each	6.2
	Collaboration	Work with others to create an online collaborative project for a specific purpose, sharing and appropriately setting permissions for other group members.	6.4
	Storing and sharing	Create and share hyperlinks to local, network and online files.	All Units Throughout Purple Mash most children can create a link by saving their work and then clicking on the share (world) button when their work is open. Children can then copy and save the link to a desired location.
		Password-protect a file	N/A Purple Mash is password protected. This can be contrasted to the need to password protect other files using different software.
Producing	Planning, sourcing and searching	Plan work independently before beginning the digital task	All Units Children will demonstrate strong independent planning skills before commencing any digital task. Their planning will be concise, apt to intended task, demonstrate deep awareness of audience/end users and state justification for planned ideas.
		Extend strategies for finding information; store previous searches and results for future use.	N/A This is not applicable to Purple Mash.

	Creating	Use a range of software to produce and refine multimedia components.	6.1, 6.3 6.4, 6.5 6.7, 6.9
		Select and combine a range of text, image, sound, animation and video to produce an outcome for a selected purpose. Use software tools to enhance the outcomes for specific audiences.	6.1, 6.3 6.4, 6.5 6.7, 6.9
	Evaluating and improving	Explain reasons for layout and content of own work.	All units Most children can explain, with evidenced based reasons, as to why they have chosen a specific layout and content for their digital creations e.g. 2Code programs (Unit 6.1), 2Calculate spreadsheets for solving a problem (Unit 6.3) and 2DIY for quiz creation (Unit 6.7). They evaluate their work using given criteria, reflecting on previous learning concepts and by making appropriate generalisations.
		Ensure output is appropriate for specific purpose.	All units Most children can use given criteria, prior learning and both collaborative and independent approaches to ensure their digital output is appropriate for specific purpose.
		Comment on reasons for layout and content.	All units Most children comment on the reasons for layout and content across a range of digital content using both electronic (2Blog, Preview and Correct, 2Email) and non-electronic.

		Invite feedback/responses from others.	All units Most children use the range of software within Purple Mash and its features to invite feedback/responses from others, e.g. 2Blog, comment functionality for online-work, collaborative mode etc.
		Create groups and share work between them to allow review of work.	All units Most children can use 2Blog, 2Email, shared folders and comment functionality to share work and review it.
Data and Computational Thinking	Problem solving and modelling	Demonstrate how programs or processes run by following a sequence of instructions exactly and in order	6.1 6.5, 6.8
		Demonstrate how an algorithm is useful for representing a solution to a problem through testing	6.1 6.5, 6.8, 6.9
		Understand that changing instructions can affect or even terminate a process, e.g. moving instructions around in a program could produce unexpected outcomes or cause the program to fail altogether.	6.1 6.5, 6.8
	Data and information literacy	Construct, refine and interrogate data sets to test or support an investigation.	6.3 6.5, 6.9

Northern Ireland Levels of Progression and Desirable Features

	Objective	Units Covered
Explore	Access, select, interpret and research information from safe and reliable sources.	6.2
	Investigate, make predictions and solve problems through interaction with digital tools.	6.1, 6.3, 6.5, 6.8, 6.9
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	6.4, 6.7
Film and Animation	
Interactive Design	6.1, 6.5, 6.7, 6.8
Managing data	6.3, 6.9
Music and Sound	
Online Communication	6.4 and use of 2dos and blogging as part of lessons
Presenting	6.7
Working with Images	6.7

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.	6.5, 6.7, 6.9
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	6.2

Using appropriate software, I can work collaboratively to design an interesting and entertaining game which incorporates a form of control technology or interactive multimedia.	6.1, 6.5, 6.7, 6.8
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	
Through discovery and imagination, I can develop and use problem-solving strategies to construct models.	6.3 Modelling real-life situations technologically 6.8, 6.9
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.	
Throughout my learning, I experiment with the use of colour to develop an awareness of the effects and impacts it can have.	6.7