

ICT Units by Year Group -Questions

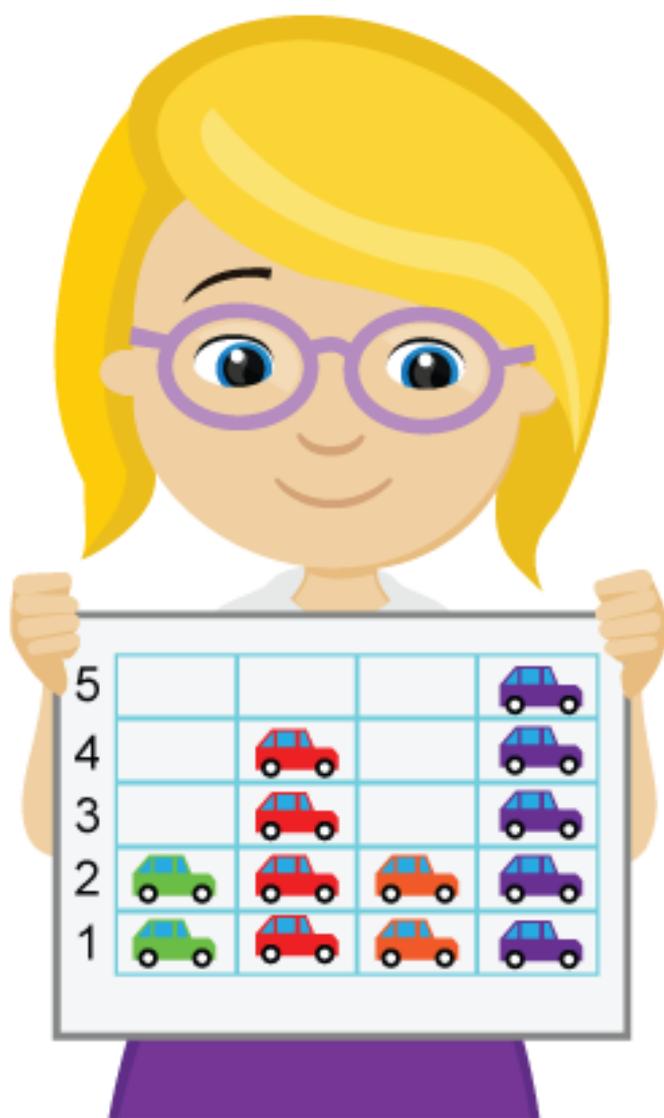
| | Autumn | | | | Spring | | | Summer | | |
|--------|--|---|---|---|---|---|--|---|---|--|
| Year 1 | What is Purple Mash? How do I stay safe online? | How can I sort objects using a computer? | What is a pictogram? | What is de-bugging? | What is an algorithm? | How do I make an animated book? | What is a computer code? | What is a computer code? | What is a spreadsheet? | What technology can I find outside school? |
| Year 2 | How do I create a programme to tell a story? | What is a digital footprint? | How do I create a table and block graph? | Can I use a database to answer a question? | What is an effective internet search? | How do I create electronic art? | What is an ecollage? | How do I use a computer to make music? | How can a story be presented in different ways? | |
| Year 3 | How do I write a computer programme? | Is cyber-bullying the same as bullying? Where can I get help? | What is cell location in a spreadsheet? | Can I type with both hands? | What is an email? How do I send an electronic letter? | What is a branching database? | What is a branching database? | What is a simulation | How do I present my own results in a graph? | |
| Year 4 | How do I manipulate graphics? | How do I protect myself from online identity theft? What is plagiarism? | What is the formula wizard in a spreadsheet? | How do I use a spreadsheet for budgeting? | How does font style and size have an impact on writing? | What is Logo and how do I learn its language? | What is stop motion animation? | Is all information on the internet true and reliable? | What are the different parts of a computer? | |
| Year 5 | How do I add a launch button to a game? | What is the impact of sharing digital content? How do I make a secure password? | How are spreadsheets used in the real world? | How are spreadsheets used in the real world? | How do I search information in a database? | What makes an effective game? | How do I create 2D and 3D models? | What is a concept map and what is it used for? | | |
| Year 6 | How do I write programmes that include variables? | What are the benefits and risks of mobile devices broadcasting location? | Can spreadsheets answer mathematical questions about probability? | Can spreadsheets answer mathematical questions about probability? | What is blogging? | How do I programme an adventure text? | How does the internet work? What is a network? | Are you smarter than a 10 year old? | | |



Computing

Scheme of Work

Year 1 Overview



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Introduction

This document contains an overview of the units included in the Purple Mash Computing Scheme of Work for Year 1.

For detailed lesson plans and resources, 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](#).

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Linking the lessons to curriculum objectives

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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 1 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 |
|---------------|---|---|---|---|--|---|---|---|---|---|----|----|------------------------------------|----|----|--|----|----|----|--------------------------------------|----|----|----|---|----|----|--|----|----|----|----|
| YEAR 1 | Unit 1.1 Online Safety & Exploring Purple Mash | | | | Unit 1.2 Grouping & Sorting | | Unit 1.3 Pictograms | | | Unit 1.4 Lego Builders | | | Unit 1.5 Maze Explorers | | | Unit 1.6 Animated Story Books | | | | Unit 1.7 Coding | | | | Unit 1.8 Spreadsheets | | | Unit 1.9 Technology outside school | | | | |
| | Number of Weeks – 4 Tools Used – Avatar creator Paint Projects Writing Templates 2Count (Pictograms) 2Explore (Music) | | | | Weeks – 2 Programs – 2Quiz | | Weeks – 3 Programs – 2Count 2Connect | | | Weeks – 3 Programs – 2Quiz Paint Projects Writing Templates | | | Weeks – 3 Programs – 2Go | | | Weeks – 5 Programs – 2Create A Story | | | | Weeks – 6 Programs – 2Code | | | | Weeks – 3 Programs – 2Calculate | | | Weeks – 2 Programs – Writing Templates | | | | |

Year 1 Unit Overview

Unit 1.1 – Online Safety & Exploring Purple Mash

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | To login safely. To start to introduce to the children the idea of 'ownership' of their creative work. | <ul style="list-style-type: none"> Children can login to Purple Mash using their own login. Children have created their own avatar and understand why it is useful. Children can add their name to a picture they created on the computer. Children are beginning to develop an understanding of ownership of work online. Children can save work into the My Work folder in Purple Mash and understand that this is a private saving space just for their work. |
| 2 | To know how to find saved work in the Online Work area and find teacher comments. To know how to search Purple Mash to find resources. | <ul style="list-style-type: none"> Children can find their saved work in the Online Work area of Purple Mash. Children can find messages that their teacher has left on Purple Mash. Children can search Purple Mash to find resources. |
| 3 | To become familiar with the types of resources available in the Topics section. To become more familiar with the icons used in the resources in the Topic section. To start to add pictures and text to work. | <ul style="list-style-type: none"> Children will be able to confidently use the different types of topic templates in the Topic section. Children will be confident with the functionality of the icons in the topic templates. Children will know how to use the different icons to add pictures and text to their work. |
| 4 | To explore the Tools section of Purple Mash and to learn about the common icons used in Purple Mash for Save, Print, Open, New. To explore the Games section on Purple Mash. To understand the importance of logging out when they have finished. | <ul style="list-style-type: none"> Children have explored the Tools section on Purple Mash and become familiar with some of the key icons, save, print, open and new. Children have explored the Games section and looked at Table Toons (2x tables). Children can logout of Purple Mash when they have finished using it and know why that is important. |

Unit 1.2 – Grouping & Sorting

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | To sort items using a range of criteria. | <ul style="list-style-type: none"> Children have sorted items using a range of criteria on the carpet as a class and in pairs. |
| 2 | To sort items on the computer using the 'Grouping' activities in Purple Mash. | <ul style="list-style-type: none"> Children have used Purple Mash activities to sort various items online using a variety of criteria. |

Unit 1.3 - Pictograms

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | To understand that data can be represented in picture format | <ul style="list-style-type: none"> Children can discuss and illustrate the transport used to travel to school. Children can contribute to the collection of class data. Children have used these illustrations to create a simple pictogram. |
| 2 | To contribute to a class pictogram | <ul style="list-style-type: none"> Children can contribute to a class pictogram. Children can discuss what the pictogram shows. |
| 3 | To use a pictogram to record the results of an experiment. | <ul style="list-style-type: none"> Children can collect data from rolling a die 20 times and recording the results. Children can represent the results as a pictogram. |

Unit 1.4 – Lego Builders

| Lesson | Aims | Success Criteria |
|--------|---|--|
| 1 | To emphasise the importance of following instructions. | <ul style="list-style-type: none"> Children know that to achieve the effect they want when building something, they need to follow accurate instructions. Children know that by following the instructions correctly, they will get the correct result. Children know that an algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective. |
| 2 | To follow and create simple instructions on the computer. | <ul style="list-style-type: none"> Children can follow instructions in a computer program. Children can explain the effect of carrying out a task with no instructions. Children know that computers need precise instructions to follow. Children know that an algorithm written for a computer to follow is called a program. |
| 3 | To consider how the order of instructions affects the result. | <ul style="list-style-type: none"> Children understand how the order in which the steps of a recipe are presented affects the outcome. Children can organise instructions for a simple recipe. Children know that correcting errors in an algorithm or program is called 'debugging'. |

Unit 1.5 – Maze Explorers

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | To understand the functionality of the basic direction keys in Challenges 1 and 2. To be able to use the direction keys to complete the challenges successfully. | <ul style="list-style-type: none"> Children know how to use the direction keys in 2Go to move forwards, backwards, left and right. Children know how to add a unit of measurement to the direction in 2Go Challenge 2. Children know how to undo their last move. Children know how to move their character back to the starting point. |
| 2 | To understand the functionality of the basic direction keys in Challenges 3 and 4. To understand how to create and debug a set of instructions (algorithm). | <ul style="list-style-type: none"> Children can use diagonal direction keys to move the characters in the right direction. Children know how to create a simple algorithm. Children know how to debug their algorithm. |
| 3 | To use the additional direction keys as part of their algorithm. To understand how to change and extend the algorithm list. To create a longer algorithm for an activity. | <ul style="list-style-type: none"> Children can use the additional direction keys to create a new algorithm. Children can challenge themselves by using the longer algorithm to complete challenges. |
| 4 | To provide an opportunity for the children to set challenges for each other. To provide an opportunity for the teacher to set these new challenges as 2Dos for all the class to try. | <ul style="list-style-type: none"> Children can change the background images in their chosen challenge and save their new challenge. Children have tried each other's challenges as 2Dos. |

Unit 1.6 – Animated Story Books

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | To be introduced to e-books and to 2Create a Story. | <ul style="list-style-type: none"> Children know the difference between a traditional book and an e-book. Children can use the different drawing tools to create a picture on the page. Children can add text to a page and change the colour, font and size of the text. Children can save their work. |
| 2 | To continue a previously saved story. To add animation to a story. | <ul style="list-style-type: none"> Children can open work that they saved in my last lesson. Children can add an animation to their picture. Children can play the pages they have created. Children can save their changes and overwrite the file. |
| 3 | To add sound to a story including voice recording and music the children have created. | <ul style="list-style-type: none"> Children can add a sound to the page. Children can add their own voice recording to the page. Children can create their own music and add it to their page. |
| 4 | To work on a more complex story including adding backgrounds and copying and pasting pages. | <ul style="list-style-type: none"> Children can add a background to the page. Children can copy and paste a page in the book. |
| 5 | To use additional features to enhance their stories. To share their e-books on a class display board. | <ul style="list-style-type: none"> Children can enhance the features of their story book by adding additional pages and animations. Children can share their storybook on a class story book display board. |

Unit 1.7 – Coding

| Lesson | Aims | Success Criteria |
|--------|--|--|
| 1 | <ul style="list-style-type: none"> To understand what coding means in computing. To create unambiguous instructions like those required by a computer. To build one- and two-step instructions using the printable code cards. | <ul style="list-style-type: none"> Children can explain what coding means. Children know that for the computer to make something happen, it needs to follow clear instructions. |
| 2 | <ul style="list-style-type: none"> To introduce 2Code. To use the 2Code program to create a simple program. | <ul style="list-style-type: none"> Children can explain what a block of code is. Children can read through combined blocks of code. |
| 3 | <ul style="list-style-type: none"> To use Design Mode to add and change backgrounds and characters. They will use the Properties table to change the look of the objects. To use the Properties table to change the look of the objects. | <ul style="list-style-type: none"> Children can make a background using Design Mode. Children can add characters using Design Mode. Children can use the drop-down menu to change backgrounds and characters. |
| 4 | <ul style="list-style-type: none"> To design a scene for a program. To use code blocks to make the characters move automatically when the green Play button is clicked. To add an additional character who moves when clicked. | <ul style="list-style-type: none"> Children can design a simple program and then create the program using 2Code. Children can write a program that controls how a character will move. Children can make a character move when clicked. |
| 5 | <ul style="list-style-type: none"> To explore the When Key and When Swiped commands (on tablets if available). To use the Stop button to make characters stop when the background is clicked. | <ul style="list-style-type: none"> Children can program a character to move given a variety of input events. |
| 6 | <ul style="list-style-type: none"> To explore a method to code interactivity between objects. To use Collision Detection to make objects perform actions. To use the sound property. | <ul style="list-style-type: none"> Children can use collision detection to make objects interact. Children can program a sound to play when objects collide. |

Unit 1.8 – Spreadsheets

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | Introduction to spreadsheets | <ul style="list-style-type: none"> • Children can navigate around a spreadsheet. • Children can explain what rows and columns are. • Children can save and open sheets. • Children can enter data into cells. |
| 2 | Adding images to a spreadsheet and using the image toolbox | <ul style="list-style-type: none"> • Children can open the Image toolbox and find and add clipart. • Children can use the 'move cell' tool so that images can be dragged around the spreadsheet. • Children can use the 'lock' tool to prevent changes to cells. |
| 3 | Using the 'speak' and 'count' tools in 2Calculate to count items | <ul style="list-style-type: none"> • Children can give images a value that the spreadsheet can use to count them. • Children can add the count tool to count items. • Children can add the speak tool so that the items are counted out loud. • Children can use a spreadsheet to help work out a fair way to share items . |

Unit 1.9 – Technology outside school

| Lesson | Aims | Success Criteria |
|--------|---|--|
| 1 | To walk around the local community and find examples of where technology is used. | <ul style="list-style-type: none"> • Children understand what is meant by 'technology'. • Children have considered types of technology used in school and out of school. |
| 2 | To record examples of technology outside school. | <ul style="list-style-type: none"> • Children have recorded 4 examples of where technology is used away from school. |

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 | 1.4 1.5 1.7 |
| Create and debug simple programs | Computer Science | 1.5 1.7 |
| Use logical reasoning to predict the behaviour of simple programs. | Computer Science | 1.5 1.7 |
| Use technology purposefully to create, organise, store, manipulate and retrieve digital content | Information Technology | 1.2 1.3 1.6 1.7 1.8 |
| Recognise common uses of information technology beyond school | Digital Literacy | 1.9 |
| 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 | 1.1 |

Welsh Digital Competence Framework

| Strand | Element | Objective (Learners are able to...): | Units Covered |
|-------------------------------|---|--|--|
| Citizenship | Identity, image and reputation | Understand that some websites ask for information that is private and personal. | 1.1 |
| | Health and well-being | Use digital devices within a controlled environment, time and context. | All units Most children will be able to follow the instructions given about opening particular tools and activities within Purple Mash and then saving and closing these activities when requested. |
| | Digital rights, licensing and ownership | Add their name and the date to work they have created. | 1.1, 1.6 |
| | Online behaviour and cyberbullying | Simply explain that digital technology can be used to communicate and connect with others locally and globally | 1.1, 1.6, 1.9 |
| | | Begin to identify similarities and differences between online and offline communication. | 1.1, 1.6, 1.9 |
| | | Use appropriate words and feelings. | 1.1 |
| Interacting and collaborating | Communication | Contribute to a whole-class or group online communication in one or more languages. | 1.3, 1.8 |
| | Collaboration | Collaborate with a partner on a piece of digital work. | Possible with all units Most children will be able to work collaboratively to produce an animated story. Discussion will focus on the backgrounds used in Unit 1.6 Lesson 4 Point 3. This collaboration may be ongoing throughout the year if the children work in pairs on the computer. |
| | Storing and sharing | Save work using a familiar word as a filename, e.g. child's name/keyword. | 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.8 |
| Producing | | Identify some success criteria in response to questions. | 1.2, 1.3, 1.8 |

| | | | |
|---------------------------------|----------------------------------|---|--|
| | Planning, sourcing and searching | Use text when searching for information/media (image, video, sound) and use an internet browser independently, | 1.1 |
| | Creating | Select appropriate software to complete given tasks in order to use text, image, sound, animation and video. | By completing a variety of units Children will be able to distinguish between basic graphing tools such as 2Count, music composition tools such as 2Explore and writing tools such as 2Publish. They understand the use of these tools for completing given tasks such as writing a simple story with basic animation and sound e.g. (Unit 1.6 Animated Stories). |
| | Evaluating and improving | Comment on work in relation to the success criteria, e.g. add comments using recording feature in software. | Use of 2Blog to share and comment upon work. Use of teacher commenting with online work (unit 1.1). Children can access comments on their online work via the notification icon (Unit 1.1. Lesson 2 Point 4). They are familiar with key icons and recognise the record button in the tools which have this feature (Unit 1.1. Lesson 4 Point 11). Children should have been exposed to blogs set up by the teacher which contain some pupils' work and have attempted, as a class, to add comments about the work within the blog with support. |
| Data and Computational Thinking | Problem solving and modelling | Follow a sequence of steps to solve a problem, e.g. predict and explain what actions are needed to make something happen. | 1.4, 1.5, 1.7 |
| | | Break down a problem into separate parts to make it easier to understand | 1.4, 1.5, 1.7 |
| | | Create and record written instructions that others understand and can follow. | 1.4, 1.5, 1.7 |
| | | Change instructions to achieve a different outcome. | 1.4, 1.5, 1.7 |
| | Data and information literacy | Collate and group given data using simple words, e.g. sort pictures/words | 1.3, 1.8 |
| | | Classify an object using more than one criterion, e.g. labelling group/set | 1.2 |
| | | Record data collected in a suitable format, e.g. use tally charts, pictograms and block graphs in a simple computing package. | 1.3, 1.8 |

Northern Ireland Levels of Progression and Desirable Features

| | Objective | Units Covered |
|----------|--|--|
| Explore | Access, select, interpret and research information from safe and reliable sources. | 1.1, 1.3, 1.6, 1.9 |
| | Investigate, make predictions and solve problems through interaction with digital tools. | 1.2, 1.3, 1.5, 1.7, 1.8 |
| 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. | Variety of units using different tools |
| Exchange | Communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally. | 1.1, 1.3, 1.6, 1.7, 1.8 Use of 2Blog and Display boards to share work |
| 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 | 1.6 |
| Film and Animation | 1.6 |
| Interactive Design | 1.5, 1.7 |
| Managing data | 1.2, 1.3, 1.8 |
| Music and Sound | 1.6 |
| Online Communication | 1.1 |
| Presenting | 1.6 |
| Working with Images | 1.1, 1.3, 1.6 |

Scottish Curriculum for Excellence (First Level)

| Technological developments in society | Units Covered |
|--|---------------------------------|
| By exploring and using technologies in the wider world, I can consider the ways in which they help. | 1.9 |
| I can work with others to generate, discuss and develop imaginative ideas to create a product of the future. | Many units use these skills. |
| By exploring current news items of technological interest, I have raised questions on the issues and can share my thoughts. | 1.1, 1.9 |
| Throughout all my learning, I take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. | 1.9 |
| 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. |
| 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. | 1.1 |
| I am developing problem-solving strategies, navigation and co-ordination skills, as I play and learn with electronic games, remote control or programmable toy | 1.4, 1.5, 1.7 |
| Craft, design, engineering and graphics contexts for developing technological skills and knowledge | Units Covered |
| I explore materials, tools and software to discover what they can do and how I can use them to help solve problems and construct 3D objects which may have moving parts. | 1.7, 1.9 |
| I am developing an interest, confidence and enjoyment in using drawing and colour techniques, manually or electronically, to represent ideas in different learning situations | 1.6 |
| Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. | All units |



Computing

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Year 2 Overview



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Year 2 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 2 | Unit 2.1 Coding | | | | | Unit 2.2 Online Safety | | | Unit 2.3 Spreadsheets | | | | Unit 2.4 Questioning | | | | Unit 2.5 Effective Searching | | | Unit 2.6 Creating Pictures | | | | Unit 2.7 Making Music | | | Unit 2.8 Presenting Ideas | | | | | |
| | Number of Weeks – 5 Main Programs – 2Code | | | | | Weeks – 2 Programs - Writing Templates Display boards 2Respond (2Email) | | | Weeks – 4 Programs – 2Calculate | | | | Weeks – 5 Programs – 2Question, 2Investigate 2Calculate | | | | Weeks – 3 Programs – Browser 2Quiz Writing Templates | | | Weeks – 5 Programs – 2Paint A Picture Writing Templates | | | | Weeks – 3 Programs – 2Sequence | | | Weeks – 4 Programs – 2Connect (Mind Map) 2Create a Story (ebook) 2Quiz Writing Templates | | | | | |

Year 2 Unit Overview

Unit 2.1 – Coding

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | <ul style="list-style-type: none"> To understand what an algorithm is. To create a computer program using simple algorithms. | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> To compare the Turtle and Character objects. To use the button object. To understand how use the Repeat command. To understand how to use the Timer command. | <ul style="list-style-type: none"> Children know that the Turtle and Character objects have different properties and move in different ways. They can begin to make choices about which object type to use. Children are beginning to understand that the Repeat and Timer commands both make objects repeat actions but function differently and the type of object can affect which is the best command to use. Children can include a button in their programs. |
| 3 | <ul style="list-style-type: none"> To know what debugging means. To understand the need to test and debug a program repeatedly. To debug simple programs. | <ul style="list-style-type: none"> Children can explain what debug (debugging) means. Children have a clear idea of how to use a design document to start debugging a program. Children can debug simple programs. Children can explain why it is important to save their work after each functioning iteration of the program they are making. |
| 4 | <ul style="list-style-type: none"> To create programs using different kinds of objects whose behaviours are limited to specific actions. To predict what the objects will do in other programs, based on their knowledge of what the object is capable of. To discuss how logic helped them understand that they could only predict specific actions, as that is what the objects were limited to. | <ul style="list-style-type: none"> Children can create a computer program using different objects. Children can predict what the objects in classmates' programs will do, based on my knowledge of the objects' limitations, e.g. a turtle can only move in specific ways. Children can explain how they know that certain objects can only move in certain ways |
| 5 | <ul style="list-style-type: none"> To use all the coding knowledge, they have learned throughout their programming lessons to create a more complex program that tells a story. | <ul style="list-style-type: none"> Children can plan and use algorithms in programs successfully to achieve a result. Children can plan and use algorithms in programs successfully to achieve the desired a result. Children can code a program using a variety of objects, actions, events and outputs successfully. |

Unit 2.2 – Online Safety

| Lesson | Aims | Success Criteria |
|--------|---|--|
| 1 | <p>To know how to refine searches using the Search tool.</p> <p>To know how to share work electronically using the display boards.</p> <p>To use digital technology to share work on Purple Mash to communicate and connect with others locally.</p> <p>To have some knowledge and understanding about sharing more globally on the Internet.</p> | <ul style="list-style-type: none"> 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 | <p>To introduce Email as a communication tool using 2Respond simulations.</p> <p>To understand how we talk to others when they aren't there in front of us.</p> <p>To open and send simple online communications in the form of email.</p> | <ul style="list-style-type: none"> Children understand how 2Repond can teach about 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 | <p>To understand that information put online leaves a digital footprint or trail.</p> <p>To begin to think critically about the information they leave online.</p> <p>To identify the steps that can be taken to keep personal data and hardware secure.</p> | <ul style="list-style-type: none"> Children can explain what a digital footprint is. Children can give examples of things that they wouldn't want to be in their digital footprint. |

Unit 2.3 - Spreadsheets

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | Reviewing prior use of spreadsheets | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Children can use copying a 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 | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> Children can create a table of data on a spreadsheet. Children can use the data to create a block graph manually. |

Unit 2.4 – Questioning

| Lesson | Aims | Success Criteria |
|--------|---|--|
| 1 | To show that the information provided on pictogram is of limited use beyond answering simple questions. | <ul style="list-style-type: none"> Children understand that the information on pictograms cannot be used to answer more complicated questions. |
| 2 | To use YES or No questions to separate information. | <ul style="list-style-type: none"> Children have used a range of yes/no questions to separate different items. |
| 3 | To construct a binary tree to separate different items. | <ul style="list-style-type: none"> Children understand what is meant by a binary tree. Children have designed a binary tree to sort pictures of children. |
| 4 | Use 2Question (a binary tree) to answer questions. | <ul style="list-style-type: none"> 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 the 2Simple Avatar pictures to names using a binary tree. |
| 5 | To use a database to answer more complex search questions. To use the search tool to find information. | <ul style="list-style-type: none"> Children understand what is meant by a database. Children have used a database to answer simple and more complex search questions. |

Unit 2.5 – Effective Searching

| Lesson | Aims | Success Criteria |
|--------|---|--|
| 1 | To understand the terminology associated with searching. | <ul style="list-style-type: none"> Children can recall the meaning of key internet terms. Children have completed a quiz about the Internet. |
| 2 | To gain a better understanding about searching on the Internet. | <ul style="list-style-type: none"> 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 for answers to a quiz on the internet. |
| 3 | To create a leaflet to help someone search for information on the Internet. | <ul style="list-style-type: none"> Children have created a leaflet to consolidate their knowledge of effective Internet searching. |

Unit 2.6 – Creating Pictures

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | To be introduced to 2Paint A Picture. To look at the impressionist style of art (Monet, Degas, Renoir). | <ul style="list-style-type: none"> Children can explain what is meant by impressionist art. Children can use 2Paint a Picture to create art based upon this style. |
| 2 | To recreate pointillist art and look at the work of pointillist artists such as Seurat. | <ul style="list-style-type: none"> Children can explain what pointillism is. Children can use 2Paint a Picture to create art based upon this style. |
| 3 | To look at the work of Piet Mondrian and recreate it using the Lines template. | <ul style="list-style-type: none"> Children can describe the main features of Piet Mondrian's work. Children can use 2Paint a Picture to create art based upon his style. |
| 4 | To look at the work of William Morris and recreate it using the Patterns template. | <ul style="list-style-type: none"> 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 their patterns. |
| 5 | To explore surrealism and eCollage | <ul style="list-style-type: none"> Children can describe surrealist art. Children can use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart. |

Unit 2.7 – Making Music

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | To be introduced to making music digitally using 2Sequence. To explore, edit and combine sounds using 2Sequence. | <ul style="list-style-type: none"> 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 | To add sounds to a tune they've already created to change it. To think about how music can be used to express feelings and create tunes which depict feelings. | <ul style="list-style-type: none"> Children have added sounds to a tune they've 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 | To upload a sound from a bank of sounds into the Sounds section. To record their own sound and upload it into the Sounds section. To create their own tune using the sounds which they have added to the Sounds section. | <ul style="list-style-type: none"> 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 2.8 – Presenting Ideas

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | To explore how a story can be presented in different ways. | <ul style="list-style-type: none"> 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 | To make a quiz about a story or class topic. | <ul style="list-style-type: none"> 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 | To make a fact file on a non-fiction topic. | <ul style="list-style-type: none"> 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 | To make a presentation to the class. | <ul style="list-style-type: none"> 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.

Welsh Digital Competence Framework

| Strand | Element | Objective (Learners are able to...): | Units Covered |
|-------------------------------|---|---|--|
| Citizenship | Identity, image and reputation | Understand that information put online leaves a digital footprint or trail | 2.2 2.5 |
| | | Identify the steps that can be taken to keep personal data and hardware secure. | 2.2 |
| | Health and well-being | Begin to identify the advantages and disadvantages of digital media and devices on their lives. | 2.2 |
| | Digital rights, licensing and ownership | Add their name and the date to work they have created and give reasons why this is important. type their first name and surname, add a date to pieces of work and orally provide reasons for doing so | 2.2 (and others where relevant) |
| | Online behaviour and cyberbullying | Use digital technology to communicate and connect with others locally and globally, e.g. text, image, photographs, video, newsletters, e-mail, web services. | 2.2 (and others where relevant) |
| | | Interact appropriately with others, e.g. follow the same rules when communicating face-to-face and online. | 2.8 |
| Interacting and collaborating | Communication | Send simple online communication in one or more languages from a single user account, e.g. e-mail (ensuring address is typed accurately) or video call. | 2.2 |
| | Collaboration | Use an online collaborative platform to create or edit a file, e.g. word processing, presenting tools, spreadsheets. | Unit- 2.8 and many Purple Mash activities. |
| | Storing and sharing | Save work using an appropriate file name, e.g. child's name and simple title | Most Units (2.1 Specifically) |

| | | | |
|---------------------------------|----------------------------------|---|---|
| | | Use an icon to open a saved file. | Unit- All units Most children will be able to identify a file icon to open within the 'my work' area of Purple Mash. Specifically, they will retrieve and open files in these lessons- Unit 2.6 Lesson 1 Point 9, Unit 2.4 Lesson 4 Point 2. |
| Producing | Planning, sourcing and searching | Plan how to complete a task in relation to identified success criteria | 2.1, 2.3 2.4, 2.5 2.6, 2.7 2.8 |
| | | Use keywords to search for specific information to solve a problem, e.g. Type keywords into a search engine and explain how their choice of website helps to solve the problem. | 2.5 |
| | Creating | Create and edit multimedia components in order to develop text, image, sound, animation and video for a range of tasks. | 2.6 2.7 2.8 |
| | Evaluating and improving | Identify what worked and what didn't, giving some of the reasons for their thoughts. | Most units Most children will be able to evaluate their own and others' digital work. They will be able to identify some areas of strength and improvement, giving reasons for some of their thoughts. Their evaluations will focus on suitability of digital content for intended purpose, functionality and their choice of software tool to achieve a given goal. |
| Data and Computational Thinking | Problem solving and modelling | Explain to others how a designed solution works, e.g. explain a design for a simple playground game and test, correcting any issues that arise. | 2.1 |
| | | Predict the outcome of simple sequences of instructions, e.g. predict what will happen if instructions are followed accurately | 2.1 |
| | | Create a simple solution that tests an idea, e.g. predict what would happen if it went wrong such as the sequence of waking up to go to school. | 2.1 2.3 |

| | | | |
|--|-------------------------------|--|------------|
| | Data and information literacy | Collect and organise data into groups, e.g. gather data by voting or sorting and represent in pictures, objects or drawings. | 2.4 |
| | | Extract information from simple tables and graphs, e.g. answer questions on table graph | 2.3 2.4 |
| | | Record data collected in a variety of suitable formats, e.g. lists, tables, block graphs and pictograms. | 2.3 2.4 |

Northern Ireland Levels of Progression and Desirable Features

| | Objective | Units Covered |
|----------|--|--|
| Explore | Access, select, interpret and research information from safe and reliable sources. | 2.2, 2.5, 2.8 |
| | Investigate, make predictions and solve problems through interaction with digital tools. | 2.1, 2.3, 2.4 |
| 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. | Variety of units using different tools |
| Exchange | Communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally. | 2.3, 2.4, 2.6, 2.7, 2.8 Use of 2Blog and Display boards to share work |
| 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 | 2.8 |
| Film and Animation | 2.6, 2.7 |
| Interactive Design | 2.1 |
| Managing data | 2.3, 2.4 |
| Music and Sound | 2.7, 2.6 |
| Online Communication | 2.2 |
| Presenting | 2.8 |
| Working with Images | 2.6 |

Scottish Curriculum for Excellence (First Level)

| Technological developments in society | Units Covered |
|--|--|
| By exploring and using technologies in the wider world, I can consider the ways in which they help. | Discussed throughout units where relevant. |
| I can work with others to generate, discuss and develop imaginative ideas to create a product of the future. | Many units use these skills. |
| By exploring current news items of technological interest, I have raised questions on the issues and can share my thoughts. | 2.2, 2.5, 2.8 |
| Throughout all my learning, I take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. | Can be emphasised through all units. |
| 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. |
| 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. | 2.2 |
| I am developing problem-solving strategies, navigation and co-ordination skills, as I play and learn with electronic games, remote control or programmable toy. | 2.1 |
| Craft, design, engineering and graphics contexts for developing technological skills and knowledge | Units Covered |
| Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. | 2.1, 2.8 |
| I am developing an interest, confidence and enjoyment in using drawing and colour techniques, manually or electronically, to represent ideas in different learning situations | 2.6 |
| I explore materials, tools and software to discover what they can do and how I can use them to help solve problems and construct 3D objects which may have moving parts. | 2.1, 2.3 |





Computing

Scheme of Work

Year 3 Overview



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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.

Data

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 | | | | | | Unit 3.2 Online Safety | | | Unit 3.3 Spreadsheets | | | Unit 3.4 Touch-Typing | | | Unit 3.5 Email (including email safety) | | | | | | Unit 3.6 Branching Databases | | | Unit 3.7 Simulations | | | Unit 3.8 Graphing | | | | |
| | Number of Weeks – 6 Main Programs – 2Code | | | | | | Weeks – 3 Programs – 2Connect (Mind Map) 2Blog (Blogging) Writing Templates Display boards | | | Weeks – 3 Programs – 2Calculate | | | Weeks – 4 Programs – 2Type | | | Weeks – 6 Programs – 2Email | | | | | | Weeks – 4 Programs – 2Question | | | Weeks – 3 Programs – 2Simulate, Writing Templates | | | Weeks – 3 Programs – 2Graph Writing Templates 2Blog (Blogging) | | | | |

Year 3 Unit Overview

Unit 3.1 – Coding

| Lesson | Aims | Success Criteria |
|--------|--|--|
| 1 | <ul style="list-style-type: none"> To review coding vocabulary that relates to Object, Action, Output, Control and Event. To use 2Chart to represent a sequential program design. <ul style="list-style-type: none"> To use the design to write the code for the program | <ul style="list-style-type: none"> Children can create a design that represents a sequential algorithm. Children can use a flowchart design to create the code. Children can explain what Object, Action, Output, Control and Event are in computer programming. |
| 2 | <ul style="list-style-type: none"> To design and write a program that simulates a physical system. | <ul style="list-style-type: none"> Children can explain how their program simulates a physical system, i.e. my vehicles 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 | <ul style="list-style-type: none"> To look at the grid that underlies the design and relate this to X and Y properties. To introduce selection in their programming by using the if command. <ul style="list-style-type: none"> To combine a timer in a program with selection. | <ul style="list-style-type: none"> Children can make use of the X and Y properties of objects in their coding. Children can create an if statement in their program. Children can use a timer and if statement to introduce selection in their program. |
| 4 | <ul style="list-style-type: none"> To understand what a variable is in programming. <ul style="list-style-type: none"> To use a variable to create a timer | <ul style="list-style-type: none"> Children can explain what a variable is in programming. Children can explain why variables need to be named. Children can create a variable in a program. Children can set/change the variable values appropriately to create a timer. |
| 5 | <ul style="list-style-type: none"> To create a program with an object that repeats actions indefinitely. To use a timer to make characters repeat actions. <ul style="list-style-type: none"> To explore the use of the repeat command and how this differs from the timer. | <ul style="list-style-type: none"> Children can show how their character repeats an action and explain how they caused it to do so. 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. Children can explain how they made objects repeat actions. |
| 6 | <ul style="list-style-type: none"> To know what debugging means. To understand the need to test and debug a program repeatedly. To debug simple programs. <ul style="list-style-type: none"> To understand the importance of saving periodically as part of the code development process. | <ul style="list-style-type: none"> Children can explain what debug (debugging) means. Children have a clear idea of how to use a design document to start debugging a program. Children can debug simple programs. 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 | <p>To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away.</p> <p>To understand how the Internet can be used to help us to communicate effectively.</p> <p>To understand how a blog can be used to help us communicate with a wider audience.</p> | <ul style="list-style-type: none"> Children understand what makes a good password for use on the Internet. Children are beginning to realise the outcomes of not keeping passwords safe. Children can contribute to a concept map of all the different ways they know that the Internet can help us to communicate. Children have contributed to a class blog with clear and appropriate messages. |
| 2 | <p>For children to consider if that they read on websites is true?</p> <p>To look at some 'spoof' websites.</p> <p>To create a 'spoof' webpage.</p> <p>To think about why these sites might exist and how to check that the information is accurate.</p> | <ul style="list-style-type: none"> Children understand that some information held on websites may not be accurate or true. Children are beginning to understand how to search the Internet and how to think critically about the results that are returned. Children have accessed and assessed a 'spoof' website. Children have created their own 'spoof' webpage mock-up. Children have shared their 'spoof' web page on a class display board. |
| 3 | <p>To learn about the meaning of age restrictions symbols on digital media and devices.</p> <p>To discuss why PEGI restrictions exist.</p> <p>To know where to turn for help if they see inappropriate content or have inappropriate contact from others.</p> | <ul style="list-style-type: none"> Children can identify some physical and emotional effects of playing/watching inappropriate content/games. 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. | <ul style="list-style-type: none"> Children can create a table of data on a spreadsheet. 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. | <ul style="list-style-type: none"> Children can use the 'more than', 'less than' and 'equals' tools to compare different numbers and help to work out solutions to sums. Children can use the 'spin' tool to count through times tables. |
| 3 | To introduce the Advanced Mode of 2Calculate and use coordinates. | <ul style="list-style-type: none"> 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. 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. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Children can use two hands to type the letters on the keyboard. |
| 3 | To practise the keys typed with the left hand. | <ul style="list-style-type: none"> Children can touch type using the left hand. |
| 4 | To practise the keys typed with the right hand. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Children can attach work to an email. Children know what CC means and how to use it. |
| 6 | To explore a simulated email scenario. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Children understand how YES/NO questions are structured and answered. Children have used YES/NO questioning to play a simple game with a friend. |
| 2 | To complete a branching database using 2Question. | <ul style="list-style-type: none"> Children have contributed to a class branching database about fruit. Children have completed a branching database about vegetables. |
| 3 and 4 | To create a branching database of the children’s choice. | <ul style="list-style-type: none"> Children can choose a suitable topic for a branching database. Children can select and save appropriate images. Children can create a branching database. 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. | <ul style="list-style-type: none"> Children know that a computer simulation can represent real and imaginary situations. Children can give some examples of simulations used for fun and for work. Children can give suggestions of advantages and problems of simulations. |
| 2 | To explore a simulation. | <ul style="list-style-type: none"> Children can explore a simulation. Children can use a simulation to try out different options and to test predictions. Children can begin to evaluate simulations by comparing them with real situations and considering their usefulness. |
| 3 | To analyse and evaluate a simulation. | <ul style="list-style-type: none"> Children can recognise patterns within simulations and make and test predictions. Children can identify the relationships and rules on which the simulations are based and test their predictions. 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. | <ul style="list-style-type: none"> Children can set up a graph with a given number of fields. Children can enter data for a graph. Children can produce and share graphs made on the computer. |
| 2 | To solve an investigation and present the results in graphic form. | <ul style="list-style-type: none"> Children have solved a maths investigation. 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 |

Welsh Digital Competence Framework

| Strand | Learners are able to: | Units Covered |
|---------------------------------|--|-------------------------|
| Citizenship | Understand simple rules for sharing images and data, e.g. understand that photographs cannot be taken of others or shared online without seeking permission first. | 3.2, 3.5 |
| | Use strategies for creating and keeping strong, secure passwords, e.g. three to four random words joined together or using capitalisation and numbers. | 3.2 |
| | Acknowledge age restrictions and suitability of digital media and devices, e.g. locate and begin to understand PEGI ratings and age restriction guidelines. | 3.2 |
| | identify physical and emotional effects of playing/watching inappropriate content/games. | 3.2 |
| | explain how giving credit is a sign of respect. | 3.2 |
| | explain when and how it is acceptable to use the work of others. | 3.2 |
| | Explain the similarities and differences between offline and online communications, | 3.2, 3.5 |
| | Compose clear and appropriate messages in online communities. | 3.5 |
| Interacting and collaborating | Identify different forms of bullying, including cyberbullying, and suggest strategies for dealing with it, e.g. screenshot, block, report. | 3.2, 3.5 |
| | Exchange simple online communication in one or more languages, e.g. e-mail or video call | 3.5 |
| | Explain the advantages of communicating electronically. | 3.5 |
| | Use an online collaborative platform to create or edit a file in one or more languages. | 3.1, 3.3, 3.5, 3.6, 3.8 |
| | Save files to a specific location using an appropriate file name. | 3.1, 3.3, 3.6, 3.8 |
| Producing | Understand the importance of saving work periodically to avoid losing work. | 3.1, 3.3, 3.6, 3.8 |
| | Use identified success criteria as a plan for completion of task. | All Units |
| | Develop strategies for finding information using different keywords and techniques. | 3.2 |
| | Create and edit multimedia components in one or more languages. | 3.1, 3.3, 3.5, 3.6, 3.8 |
| | Organise a range of text, image, sound, animation and video for selected purposes. | 3.1, 3.3, 3.5, 3.6, 3.8 |
| Data and Computational Thinking | Give an opinion about their own work and suggest improvements. | 3.1, 3.4, 3.7 |
| | Represent a solution symbolically. | 3.1 |
| | Detect and correct mistakes in sequences of instructions. | 3.1 |
| | Identify repetitions or loops in a sequence. | 3.1 |
| | Collect data, enter and begin to analyse in given formats. | 3.3, 3.6, 3.8 |

Northern Ireland Levels of Progression and Desirable Features

| | Objective | Units Covered |
|----------|--|------------------------------|
| Explore | Access, select, interpret and research information from safe and reliable sources. | 3.2 |
| | Investigate, make predictions and solve problems through interaction with digital tools. | 3.1, 3.3, 3.6, 3.7, 3.8 |
| 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. | 3.1, 3.2, 3.3, 3.5, 3.6, 3.8 |
| Exchange | Communicate safely and responsibly using a range of contemporary digital methods and tools, exchanging, sharing, collaborating and developing ideas digitally. | 3.1, 3.2, 3.5, 3.6, 3.8 |
| 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. | 3.1, 3.2, 3.5 |
| 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 | 3.4, 3.8 |
| Film and Animation | See unit 4.6 |
| Interactive Design | 3.1, 3.7 |
| Managing data | 3.3, 3.6, 3.8 |
| Music and Sound | See unit 2.7 |
| Online Communication | 3.2, 3.5 |
| Presenting | Use of publishing templates and 2Connect to complete activities as part of lessons |
| Working with Images | Used in various units, see specifically unit 2.6 |

Scottish Curriculum for Excellence (First Level)

| Technological developments in society | Units Covered |
|--|---------------------------------|
| By exploring and using technologies in the wider world, I can consider the ways in which they help. | 3.2, 3.5, 3.7 |
| I can work with others to generate, discuss and develop imaginative ideas to create a product of the future. | 3.1, 3.3, 3.6, 3.8 |
| By exploring current news items of technological interest, I have raised questions on the issues and can share my thoughts. | 3.2 |
| Throughout all my learning, I take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. | 3.5 |
| 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. |
| 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. | 3.2 |
| I am developing problem-solving strategies, navigation and co-ordination skills, as I play and learn with electronic games, remote control or programmable toy. | 3.1 |
| Craft, design, engineering and graphics contexts for developing technological skills and knowledge | Units Covered |
| Having evaluated my work, I can adapt and improve, where appropriate, through trial and error or by using feedback. | 3.1, 3.4 |
| I am developing an interest, confidence and enjoyment in using drawing and colour techniques, manually or electronically, to represent ideas in different learning situations | See unit 2.6 |
| I explore materials, tools and software to discover what they can do and how I can use them to help solve problems and construct 3D objects which may have moving parts. | 3.1, 3.7 |



Computing

Scheme of Work

Year 4 Overview



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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 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.

Data

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

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Year 4 Unit Overview

Unit 4.1 – Coding

| Lesson | Aims | Success Criteria |
|--------|--|--|
| 1 | <ul style="list-style-type: none"> To review coding vocabulary. To use a sketch or storyboard to represent a program design and algorithm. To use the design to create a program. | <ul style="list-style-type: none"> Children can use sketching to design a program and reflect upon their design. Children can create code that conforms to their design. |
| 2 | <ul style="list-style-type: none"> To introduce the If/else statement and use it in a program. To create a variable. To explore a flowchart design for a program with an if/else statement To create a program which responds to the If/else command, using the value of the variable. | <ul style="list-style-type: none"> Children can create an 'If/else' statement. Children understand what a variable is in programming. Children can set/change the variable values appropriately. Children can interpret a flowchart that depicts an if/else flowchart. |
| 3 | <ul style="list-style-type: none"> To create a program with a character that repeats actions. To use the Repeat Until command to make characters repeat actions. To program a character to respond to user keyboard input. | <ul style="list-style-type: none"> Children can show how a character repeats an action and explain how they caused it to do so. Children can make a character respond to user keyboard input. |
| 4 | <ul style="list-style-type: none"> To make timers and counting machines using variables to print a new number to the screen every second. | <ul style="list-style-type: none"> Children can explain what a variable is when used in programming. Children can create a timer that prints a new number to the screen every second. Children can explain how they made their program change the number every second. |
| 5 | <ul style="list-style-type: none"> To explore how 2Code can be used to investigate control by creating a simulation. | <ul style="list-style-type: none"> Children can create an algorithm modelling the sequence of a simple event. Children can manipulate graphics in the design view to achieve the desired look for the program. Children can use an algorithm when making a simulation of an event on the computer. |
| 6 | <ul style="list-style-type: none"> To know what decomposition and abstraction are in computer science. To take a real-life situation, decompose it and think about the level of abstraction. To design a decomposed feature of a real-life situation. | <ul style="list-style-type: none"> Children can make good attempts to break down their aims for a coding task into smaller achievable steps. 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. |

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"> • Children know that security symbols such as a padlock protect their identity online. • Children know the meaning of the term 'phishing' and are aware of the existence of scam websites. • Children can explain what a digital footprint is and how it relates to identity theft. • Children can give examples of things that they wouldn't want to be in their digital footprint. |
| 2 | To Identify the risks and benefits of installing software including apps. | <ul style="list-style-type: none"> • Children can identify possible risks of installing free and paid for software. • Children know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. • Children know what a computer virus is. |
| 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"> • 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 • Children know about citing sources that they have used. |
| 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"> • 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. • Children can give reasons for limiting screen time. |

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

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"> 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. Children have used text formatting to make a piece of writing fit for its audience and purpose. |
| 2 & 3 | To use a simulated scenario to produce a news report. | <ul style="list-style-type: none"> Children have role-played the job of a journalist in a newsroom. Children have interpreted a variety of incoming communications and used these to build up the details of a story. Children have used the incoming information to write their own newspaper report. |
| 4 & 5 | To use a simulated scenario to write for a community campaign. | <ul style="list-style-type: none"> Children have used 2Connect to mind-map ideas for a community campaign. Children have used these ideas to write a persuasive letter or poster as part of the campaign. Children have assessed their texts using criteria to judge their suitability for the intended audience. |

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

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"> Children have put together a simple animation using paper to create a flick book. Children have an understanding of animation 'frames'. Children have made a simple animation using 2Animate. |
| 2 | To learn about onion skinning in animation. To add backgrounds and sounds to animations. | <ul style="list-style-type: none"> Children know what the Onion Skin tool does in animation. Children can use the Onion Skin tool to create an animated image. Children can use backgrounds and sounds to make more complex and imaginative animations. |
| 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"> Children know what stop motion animation is and how it is created. Children have used ideas from existing stop motion films to recreate their own animation. Children have shared their animations and commented on each other's work using display boards and blogs in Purple Mash. |

Unit 4.7 – Effective Searching

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

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

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

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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 | Understand how to protect themselves from online identity theft. | 4.2 |
| | | Understand that information put online leaves a digital footprint or trail. | 4.2 |
| | | Identify risks and benefits of installing software. | 4.2 |
| | Health and well-being | Identify the positive and negative influences of technology on health and the environment | 4.2 |
| | | Explain the importance of balancing game and screen time with other parts of their lives. | 4.2 |
| | Digital rights, licensing and ownership | Understand that copying the work of others and presenting it as their own is called 'plagiarism.' | 4.2 |
| | | Recognise watermarks and copyright symbols | 4.4 |
| | Online behaviour and cyberbullying | Identify actions to report and prevent cyberbullying. | 4.2 |
| | | Identify appropriate behaviour when participating or contributing to collaborative online projects for learning. | Multiple Units Most children will demonstrate appropriate behaviours during collaborative and shared projects e.g. Use of 2Email, 2Blog and collaboration in 2Connect. |
| | Interacting and collaborating | Communication | Exchange online communication with other learners in one or more languages, making use of a growing range of available features. |

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| | | | |
|-----------|----------------------------------|---|---|
| | Collaboration | Manage an online file, adding and responding to comments. | All units by using Purple Mash 2Dos and commenting. In all areas of Purple Mash, work created, shared, edited and then submitted by children can be marked, rewarded and commented on by the teacher. Children then can respond to the teacher's comments. This encourages reflective discussion. |
| | Storing and sharing | Understand that there are different types of storage, e.g. local, network, online, removable. | 4.2 |
| | | Manage files and folders locally or online. | All units Throughout Purple Mash children can create their own subfolders within their 'My Work' folder and move work from one folder to another. Children can save their work in a range of formats including- locally, on a network, online and on removable devices. |
| Producing | Planning, sourcing and searching | Develop own success criteria to be used to plan a digital task. | All Units Throughout all the units, most children will be able to develop their own success criteria from a given objective to plan and then implement a digital task |
| | | Find relevant information using different keywords and search techniques. | 4.7 |
| | | Select an appropriate website from search results and begin to consider if the content is reliable. | 4.2 4.7 |
| | Creating | Create and modify multimedia components using a range of software. | 4.1 4.3 4.4 4.5 4.6 |
| | | Modify and present a range of text, image, sound, animation and video for selected purposes. | 4.1 4.3 4.4 4.5 4.6 |

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| | | | |
|---------------------------------|-------------------------------|--|---|
| | Evaluating and improving | Give an opinion about their own and others' work and suggest improvements independently and collaboratively. | All units Most children will be able to provide opinions about their own and others' work and suggest improvements independently and collaboratively. They will be able to do this across a range of software and package features e.g. 2Calcualte (Spreadsheets), 2Code (Coding), 2Animate (Animation), 2Publish (Publishing), 2Logo (Logo) and 2Blog (Blogging). |
| | | Give reasons for choices made. | All units Most children can use the range of software and package features to justify their reasons for the choices they make when evaluating and improving. |
| Data and Computational Thinking | Problem solving and modelling | Demonstrate how part of a solution might need repetition. | 4.1 |
| | | Represent a simple solution in a flowchart that contains a looping element. | 4.1 |
| | Data and information literacy | Begin to create data sets and extract information from them with tables, charts, spreadsheets and databases. | 4.3 |

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Northern Ireland Levels of Progression and Desirable Features

| | Objective | Units Covered |
|----------|--|------------------------------|
| Explore | Access, select, interpret and research information from safe and reliable sources. | 4.2, 4.7 |
| | Investigate, make predictions and solve problems through interaction with digital tools. | 4.1, 4.3, 4.4, 4.5, 4.6 |
| 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. | 4.1, 4.2, 4.3, 4.4, 4.5, 4.6 |
| 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 | 4.4 |
| Film and Animation | 4.6 |
| Interactive Design | 4.1, 4.5 |
| Managing data | 4.3 |
| Music and Sound | See unit 2.7 |
| Online Communication | Use of 2dos and blogging as part of lessons |
| Presenting | 4.4, 4.6 |
| Working with Images | 4.6 |

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. | 4.4, 4.6 |
| I can investigate how an everyday product has changed over time to gain an awareness of the link between scientific and technological developments | 4.8 provides opportunities to explore this area, 4.6 |
| 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 | 4.2 |

| | |
|--|--|
| Using appropriate software, I can work collaboratively to design an interesting and entertaining game which incorporates a form of control technology or interactive multimedia. | 4.1 |
| 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. | 4.3 Modelling real-life situations technologically |
| 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. | 4.6 see also 2.6 |
| Throughout my learning, I experiment with the use of colour to develop an awareness of the effects and impacts it can have. | 4.6, 4.4 |



Computing

Scheme of Work

Year 5 Overview



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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'.

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.

Data

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 5 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 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 – 2 Code | | | | | | Weeks – 3 Programs - 2 Publish Plus Writing Templates Display boards 2Connect (Mind Map) | | | Weeks – 6 Programs – 2 Calculate | | | | | | Weeks – 4 Programs – 2 Investigate (database) Avatar creator | | | | Weeks – 5 Programs – 2 DIY 3D Writing Templates 2Blog (Blogging) | | | | Weeks – 4 Programs – 2 Design and Make Writing Templates | | | | Weeks – 4 Programs – 2 Connect | | | | |

Year 5 Unit Overview

Unit 5.1 – Coding

| Lesson | Aims | Success Criteria |
|--------|---|--|
| 1 | <ul style="list-style-type: none"> To review coding vocabulary. To use a sketch or storyboard to represent a program design and algorithm. To use the design to create a program. | <ul style="list-style-type: none"> Children can use sketching to design a program and reflect upon their design. Children can create code that conforms to their design. |
| 2 | <ul style="list-style-type: none"> To design and write a program that simulates a physical system. | <ul style="list-style-type: none"> Children can explain how their program simulates a physical system. Children can select the relevant features of a situation to incorporate into their simulation by using decomposition and abstraction. Children can reflect upon the effectiveness of their simulation. |
| 3 | <ul style="list-style-type: none"> To review the use of number variables in 2Code. To explore 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 | <ul style="list-style-type: none"> To create a playable, competitive game. To combine the use of variables, If/else statements and Repeats to achieve the desired effect in code. To read code so that it can be adapted, personalised and improved. | <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 | <ul style="list-style-type: none"> To explore the launch command and use buttons within a program that launch other programs or open websites. To create a program to inform others. | <ul style="list-style-type: none"> Children can include buttons and objects that launch windows to websites and programs. Children can code a program that informs others. |

Unit 5.2 – Online Safety

| Lesson | Aims | Success Criteria |
|--------|--|--|
| 1 | <p>To gain a greater understanding of the impact that sharing digital content can have.</p> <p>To review sources of support when using technology.</p> <p>To review children’s responsibility to one another in their online behaviour.</p> | <ul style="list-style-type: none"> • Children know what Childnet SMART CREW is and have thought critically about the information that they share online both about themselves and others. • Children know who to tell if they are upset by something that happens online. • Children can use the SMART rules as a source of guidance when online. |
| 2 | <p>To know how to maintain secure passwords.</p> <p>To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this.</p> <p>To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.</p> | <ul style="list-style-type: none"> • Children think critically about what they share online, even when asked by a usually reliable person to share something. • Children have clear ideas about good passwords. • Children can see how they can use images and digital technology to create effects not possible without technology. • Children have experienced how image manipulation could be used to upset them or others even using simple, freely available tools and little specialist knowledge. |
| 3 | <p>To learn about how to reference sources in their work</p> <p>To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.</p> <p>Ensuring reliability through using different methods of communication</p> | <ul style="list-style-type: none"> • Children can cite all sources when researching and explain the importance of this. • Children select keywords and search techniques to find relevant information and increase reliability • Children show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each. |

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. |

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 | 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 | Various Search technologies are taught more specifically in unit 4.7. Children will utilize this knowledge in many Internet based sessions in all areas of the curriculum. |
| 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 | Element | Objective (Learners are able to...): | Units Covered |
|--|---|---|--|
| Citizenship | Identity, image and reputation | Talk about the impact that the digital content created can have. | 5.2 |
| | | Explain why it is important to discuss their use of technology with an adult. | 5.2 |
| | | Maintain secure passwords on a regular basis applying the characteristics of strong passwords and refrain from using the same password more than once | 5.2 |
| | Health and well-being | Understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. | 5.2 |
| | | | 5.5 |
| | Digital rights, licensing and ownership | Cite all sources when researching and explain the importance of this. | 5.2 |
| | Online behaviour and cyberbullying | Understand that photographs can be edited digitally and the rights and permissions associated with this. | 5.2 |
| Demonstrate appropriate online behaviour and apply a range of strategies to protect themselves and others from possible online dangers, bullying and inappropriate behaviour | | | 5.2 Also as part of blogging about their work in various units. |
| Interacting and collaborating | Communication | Exchange online communication with other learners in one or more languages, making use of a growing range of available features. | Most Units Most children will successfully exchange online communication with other learners for a variety of purposes, using a range of Purple Mash tools such as 2Email, 2Blog, collaborative functionality e.g. 2Dos, 2Connect and 2Investige. Their skill at using more advanced features such as searching for 2Dos. |

| | | | |
|-----------|----------------------------------|---|---|
| | | Show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each. | 5.2 |
| | Collaboration | Work with others to create an online collaborative project for a specific purpose, sharing and appropriately setting permissions for other | 5.7 |
| | Storing and sharing | Back up files to a second or third storage device | Through Blogging covered in several units. Using Purple Mash collaborative tools. Throughout Purple Mash, most children will understand that as well as files being stored in the cloud, they can also be downloaded and backed up locally, on a network or on a portable device. |
| | | Search for a specific file | Most Units Most children will be able to use the search feature in the 'My Work' area to find files that meet a specific search criteria e.g. name of file, date (if used to name the file), subject etc. |
| | | Upload files from a local drive to online storage. | Most Units Most children can use the image upload feature in various tools used for example: (Unit-5.4-2Investigate, 5.3-2calculate, 5.6- 2DIY3D and 5.7-2connect) to upload an image from a local drive to Purple Mash. |
| Producing | Planning, sourcing and searching | Create a written plan using a template provided. | 5.1 5.5 5.6 |
| | | Adjust keywords and search techniques to find relevant information; begin to reference sources used in their work; consider if the content is reliable. | 5.2, |
| | Creating | Combine a range of multimedia components to produce an appropriate outcome. | 5.1 5.5 |
| | | Create, collect and combine a range of text, image, sound, animation and video for selected purposes. | 5.1 5.5 |

| | | | |
|---------------------------------|-------------------------------|---|---|
| | Evaluating and improving | Explain reasons for layout and content of own work | 5.1 5.3 5.4 5.5 5.6 5.7 |
| | | Comment on reasons for layout | 5.1 5.3 5.4 5.5 5.6 5.7 |
| | | Invite feedback/responses from others | 5.1 5.3 5.4 5.5 5.6 5.7 |
| | | Create groups and share work between them to allow review of work. | Most Units Opportunities exist in all units for children to share work between them, both electronically or physically, and use this sharing as an opportunity to review others' work. |
| Data and Computational Thinking | Problem solving and modelling | Design simple sequences of instructions (algorithms) including the use of Boolean values (i.e. yes/no/true/false), e.g. within the algorithm, demonstrate the correct use of Boolean values giving an either/or response. | 5.1 |
| | Data and information literacy | Create, explore and analyse data sets, highlighting relationships within 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 |



Computing

Scheme of Work

Year 6 Overview



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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.

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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.



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 6 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 6 | Unit 6.1 Coding | | | | | | Unit 6.2 Online Safety | | | Unit 6.3 Spreadsheets | | | | | Unit 6.4 Blogging | | | | Unit 6.5 Text Adventures | | | | Unit 6.6 Networks | | | Unit 6.7 Quizzing | | | | | | |
| | Number of Weeks – 6 Main Programs – 2Code | | | | | | Weeks – 3 Programs - 2DIY 3D 2DIY 2Code 2Blog (Blogging) | | | Weeks – 5 Programs – 2Calculate | | | | | Weeks – 4 Programs – 2Blog | | | | Weeks – 5 Programs – 2Code, 2Connect, 2Create a Story, Writing Templates | | | | Weeks – 3 Programs – 2Connect (Mind Map) Writing Templates | | | Weeks – 6 Programs – 2DIY 2Quiz Text Toolkit 2Investigate (database) | | | | | | |

* There is an optional unit – **Unit 6.8 – Understanding Binary** that can be used in addition to the above units. It is a four-lesson unit. Tools used: 2Connect, (Mind Map), 2Question (Binary Databases), Writing Templates, 2Code

Year 6 Unit Overview

Unit 6.1 – Coding

| Lesson | Aims | Success Criteria |
|--------|--|--|
| 1 & 2 | <ul style="list-style-type: none"> To review good planning skills. To design programs using their choice of objects, attributing specific actions to each using their new programming knowledge. To use variables within a game to keep track of the properties of objects. | <ul style="list-style-type: none"> Children can plan a program before coding to anticipate the variables that will be required to achieve the desired effect. Children can follow through plans to create the program. Children can debug when things do not run as expected. |
| 3 | <ul style="list-style-type: none"> To use functions and understand why they are useful in 2Code. To debug a program and organise the code into tabs. To organise code into functions and Call functions to eliminate surplus code in the program. | <ul style="list-style-type: none"> Children can explain what functions are and how they can be created and labelled in 2Code. Children can explain how to move code from one tab to another in 2Code. Children can explain how they organised code in a program into functions to make it easier to read. |
| 4 | <ul style="list-style-type: none"> To explore the options for getting text input from the user in 2Code. How to include interactivity in programming. | <ul style="list-style-type: none"> 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. |
| 5 | <ul style="list-style-type: none"> To use flowcharts to test and debug a program. To create a simulation of a room in which devices can be controlled. | <ul style="list-style-type: none"> Children can follow flowcharts to create and debug code. Children can create flowcharts for algorithms using 2Chart. Children can be creative with the way they code to generate novel visual effects. |
| 6 | <ul style="list-style-type: none"> To explore how 2Code can be used to make a text-based adventure game. | <ul style="list-style-type: none"> Children can follow through the code of how a text adventure can be programmed in 2Code. Children can adapt an existing text adventure to make it unique to their requirements. |

Unit 6.2 – Online Safety

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | <p>Identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g. apps accessing location.</p> <p>Identify secure sites by looking for privacy seals of approval, e.g. https, padlock icon.</p> <p>Identify the benefits and risks of giving personal information and device access to different software.</p> | <ul style="list-style-type: none"> 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 | <p>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.</p> <p>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.</p> <p>To begin to understand how information online can persist and give away details of those who share or modify it.</p> | <ul style="list-style-type: none"> 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. |
| 3 | <p>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.</p> <p>To identify the positive and negative influences of technology on health and the environment.</p> | <ul style="list-style-type: none"> 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. |

Unit 6.3 - Spreadsheets

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | Exploring Probability | <ul style="list-style-type: none"> 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 | Use of spreadsheets in 'real life' Creating a computational model | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> 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 | <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 applied to real life. |

Unit 6.4 – Blogging

| Lesson | Aims | Success Criteria |
|--------|--|---|
| 1 | To identify the purpose of writing a blog. To identify the features of successful blog writing. | <ul style="list-style-type: none"> Children understand how a blog can be used as an informative text. Children understand the key features of a blog. |
| 2 | To plan the theme and content for a blog. | <ul style="list-style-type: none"> Children can work collaboratively to plan a blog. |
| 3 | To understand how to write a blog. To consider the effect upon the audience of changing the visual properties of the blog. To understand the importance of regularly updating the content of a blog. | <ul style="list-style-type: none"> Children can create a blog with a specific purpose. Children understand that the way in which information is presented has an impact upon the audience. Children understand that blogs need to be updated regularly to maintain the audience's interest and engagement. |
| 4 | To understand how to contribute to an existing blog. To understand how and why blog posts are approved by the teacher. | <ul style="list-style-type: none"> 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. |
| 5 | To understand the importance of commenting on blogs. To peer-assess blogs against the agreed success criteria. | <ul style="list-style-type: none"> Children can comment on and respond to other blogs. Children can assess the effectiveness and impact of a blog. |

Unit 6.5 – Text Adventures

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | To find out what a text adventure is. To plan a story adventure. | <ul style="list-style-type: none"> 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. |
| 2 | To make a story-based adventure. | <ul style="list-style-type: none"> 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 | To introduce map-based text adventures. | <ul style="list-style-type: none"> Children can map out an existing text adventure. Children can contrast a map-based game with a sequential story-based game. |
| 4 | To code a map-based text adventure. | <ul style="list-style-type: none"> Children can create their own text-based adventure based upon a map. Children can use coding concepts of functions, two-way selection (if/else statements) and repetition in conjunction with one another to code their game. Children make logical attempts to debug their code when it does not work correctly. |

Unit 6.6 – Networks

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | To discover what the children know about the internet. | <ul style="list-style-type: none"> Children know the difference between the World Wide Web and the internet. |
| 2 | To find out what a LAN and a WAN are. To find out how we access the internet in school. | <ul style="list-style-type: none"> Children know about their school network. |
| 3 | To research and find out about the age of the internet. To think about what the future might hold. | <ul style="list-style-type: none"> 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 | Aims | Success Criteria |
|--------|--|---|
| 1 | To make a picture quiz for young children. | <ul style="list-style-type: none"> • 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 | To learn how to use the question types within 2Quiz. | <ul style="list-style-type: none"> • 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. • 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. • As a class, children have collaborated on a quiz. |
| 4 | To explore the grammar quizzes. | <ul style="list-style-type: none"> • Children have tried out the different types of Text Toolkit grammar games. • Children have chosen an appropriate Text Toolkit tool to make their own grammar game. |
| 5 | To make a quiz that requires the player to search a database. | <ul style="list-style-type: none"> • 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. | <ul style="list-style-type: none"> • Children have used their knowledge of quiz types to create a quiz show quiz based on a curriculum area. |

Unit 6.8 OPTIONAL UNIT– Understanding Binary

| Lesson | Aims | Success Criteria |
|--------|---|---|
| 1 | <p>Examine how whole numbers are used as the basis for representing all types of data in digital systems through:</p> <p>Recognising 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).</p> <p>Understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics.</p> | <p>Children have an understanding of binary as a number system and its purpose and application in computing.</p> <ul style="list-style-type: none"> • 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 an 'on' switch. |
| 2 & 3 | <p>Recognising that the numbers 0, 1, 2 and 3 could be represented by the patterns of two binary digits of 00, 01, 10 and 11</p> <p>Representing whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary.</p> | <ul style="list-style-type: none"> • Children can count up from 0 in binary. Some may need visual aids to help them. • Children can relate bits to computer storage. |
| 4 | <p>Representing whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary.</p> <p>Exploring how division by two can be used as a technique to determine the binary representation of any whole number by collecting remainder terms</p> | <ul style="list-style-type: none"> • Children can convert numbers to binary using the division by two method. • Children can check their own answers using the converter tool. |
| 5 | <p>Representing the state of an object in a game as active or inactive using the respective binary values of 1 or 0</p> | <ul style="list-style-type: none"> • Children can make use of a variable set to 0 or 1 to control game states. |
| 6 | <p>Are you smarter than a 10- (or 11-) year-old? To make a quiz to test your teachers or parents.</p> | <ul style="list-style-type: none"> • Children have used their knowledge of quiz types to create a quiz show quiz based on a curriculum area. |

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 |
| 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 |
| 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 |
| 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 |

*And discussed in other units.

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. |



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|-----------|----------------------------------|--|---|
| | | 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 |
| | | 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 |
| | 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 |
| | | Demonstrate how an algorithm is useful for representing a solution to a problem through testing | 6.1 6.5 |
| | | 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 |
| | Data and information literacy | Construct, refine and interrogate data sets to test or support an investigation. | 6.3 6.5 |

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 |
| 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 |
| Managing data | 6.3 |
| 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 |
| 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 |
| 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 |
| 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 |