

EYFS Computing Overview.

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, there are many, frequent opportunities for young children to use technology to solve problems and produce creative outcomes during their time in EYFS. Computational thinking is developed through play as part of continuous provision and links are made in all curriculum areas.

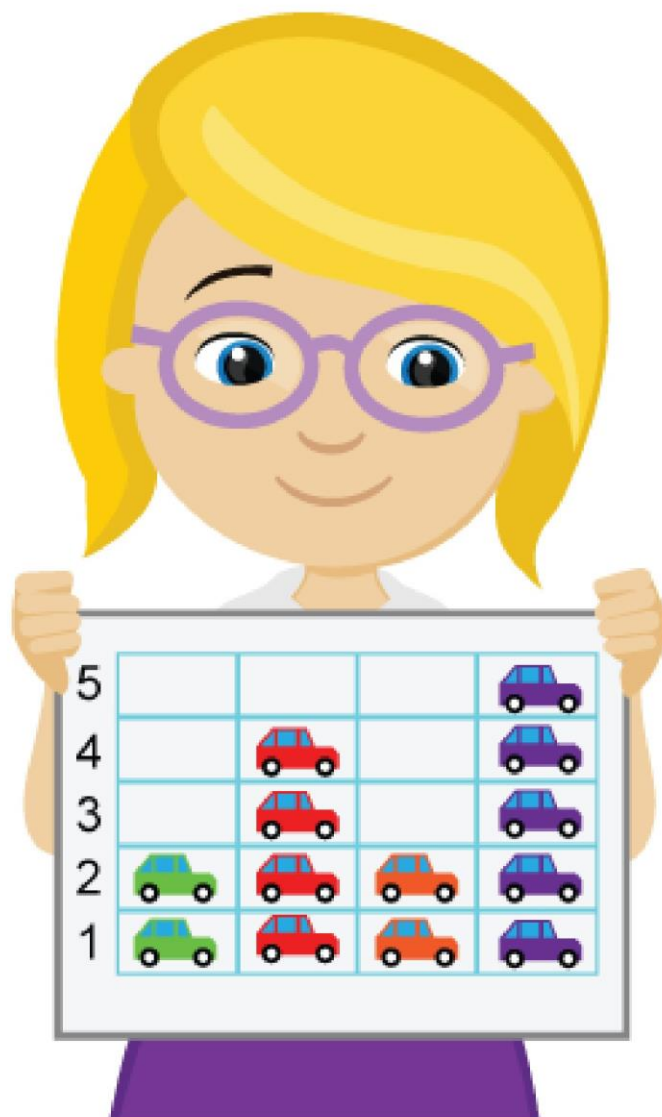
EYFS teachers also use the whole school Purple Mash scheme linked to the early learning goals as outlined in the March 2021 statutory framework for the early years and foundation stage. Activities link to developing skills in communication and language, expressive arts, literacy, mathematics, physical development, PSED and understanding the world.



Computing

Scheme of Work

Year 1 Overview



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](#).

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



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
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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	<p>To understand the functionality of the basic direction keys in Challenges 1 and 2.</p> <p>To be able to use the direction keys to complete the challenges successfully.</p>	<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.

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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.

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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.

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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.
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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.

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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





Computing

Scheme of Work

Year 2 Overview



Introduction

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

For detailed lesson plans and other information, see the documents for the individual units themselves.

Most lessons assume that children are logged onto Purple Mash with their own individual usernames and passwords, so their work will be saved in their own folders automatically and can be easily reviewed and assessed by the class teacher. If children have not used and logged onto Purple Mash before then they will need to spend some time before starting these lessons, learning how to do this. Children can be supported by having their printed logon cards (produced using [Create and Manage Users](#)) to hand.

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Data

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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.

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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				

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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.

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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. 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?

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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.
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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.

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		<ul style="list-style-type: none"> 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.

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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.
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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 nonfiction topic.	<ul style="list-style-type: none"> • Children have extracted information from a 2Connect file to make a publisher fact file on a nonfiction 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*
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*And in other units when appropriate.

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Computing

Scheme of Work

Year 3 Overview



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.

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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. 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. 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. 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. 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. 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.

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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. 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.
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Unit 3.2 Online Safety

Lesson	Aims	Success Criteria
1	To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away. To understand how the Internet can be used to help us to communicate effectively. To understand how a blog can be used to help us communicate with a wider audience.	<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	For children to consider if that they read on websites is true? To look at some 'spoof' websites. To create a 'spoof' webpage. To think about why these sites might exist and how to check that the information is accurate.	<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	To learn about the meaning of age restrictions symbols on digital media and devices. To discuss why PEGI restrictions exist. To know where to turn for help if they see inappropriate content or have inappropriate contact from others.	<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 realworld and have strategies for dealing with online bullying including screenshot and reporting.

Unit 3.3 – Spreadsheets

Lesson	Aims	Success Criteria
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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 discuss the need for correct posture when typing. To introduce typing terminology.	<ul style="list-style-type: none"> Children understand the names of the fingers. Children understand what is meant by 'top row', 'home row', 'bottom row' and 'space bar'.
2	To practise and improve typing skills.	<ul style="list-style-type: none"> Children can use two hands to type the letters on the keyboard.
3	To start to type words.	<ul style="list-style-type: none"> Children can type full words using the correct fingering.
4	To improve the speed and efficiency of typing skills.	<ul style="list-style-type: none"> Children can type a series of words with speed and accuracy.

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.

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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.

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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.
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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.

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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





Computing

Scheme of Work

Year 4 Overview



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.

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Data

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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 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	33
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 – 6 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		

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. 	<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.

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Unit 4

	<ul style="list-style-type: none"> To design a decomposed feature of a real-life situation. 	
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.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. To select an appropriate website from search results and begin to consider if the content is reliable.	<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. Children consider the reliability of the source of information when looking online.
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.

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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.

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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.

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Unit 4

		<ul style="list-style-type: none">• 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.
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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*



Computing

Scheme of Work

Year 5 Overview



Introduction

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

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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.

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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. 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.

.2 – Online Safety

Lesson	Aims	Success Criteria
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Unit 5

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.

.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.

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Unit 5

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.

.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.

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Unit 5

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.

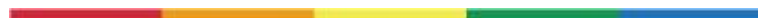
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Unit 5.7 – Concept Maps

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.



<p>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.</p>	<p>Information Technology</p>	<p>5.1 5.3 5.4 5.5 5.6 5.7</p>
<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>	<p>Digital Literacy</p>	<p>5.2 and discussed in other units</p>

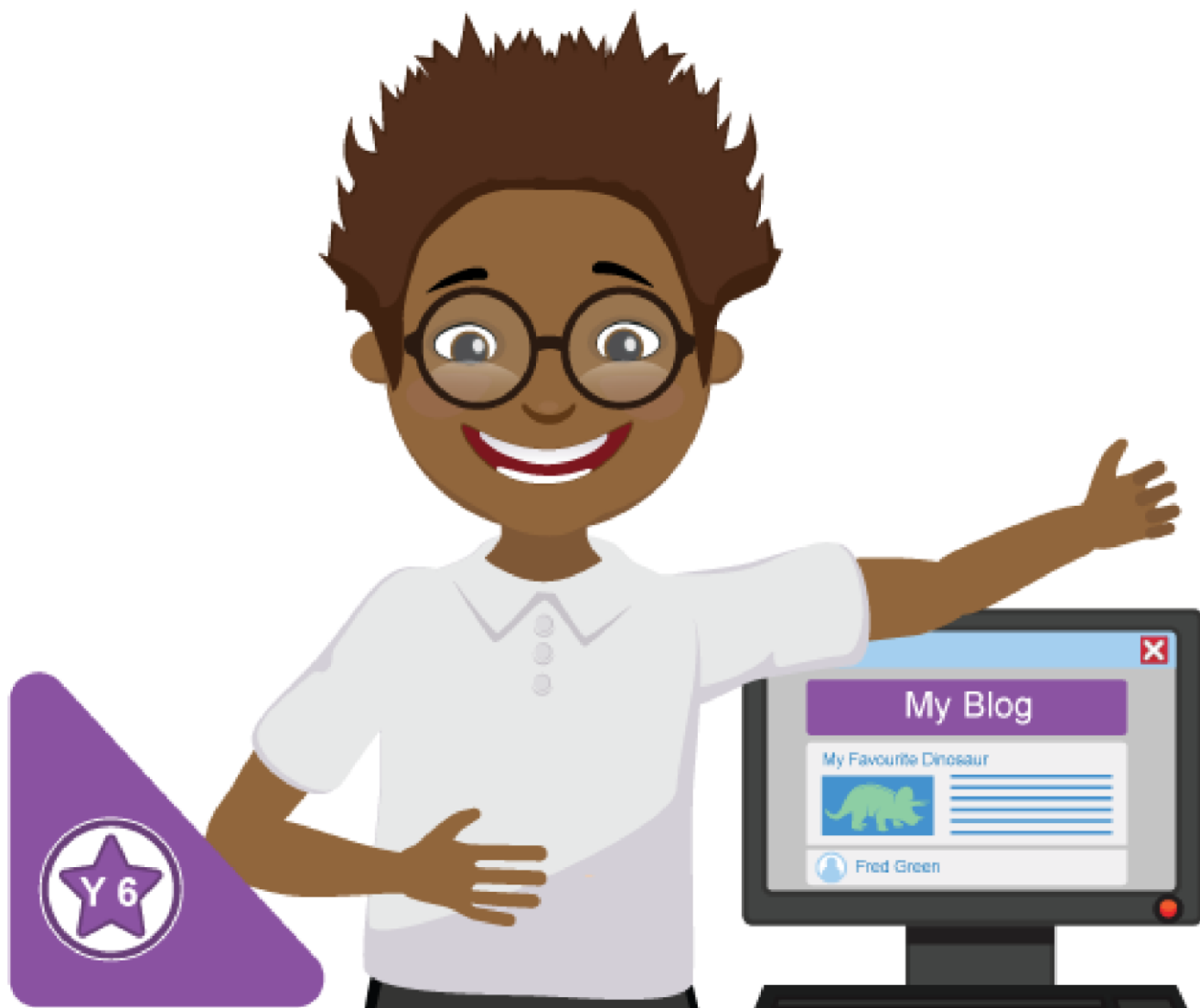
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Computing

Scheme of Work

Year 6 Overview



Introduction

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

For detailed lesson plans and other information, see the documents for the individual units themselves.

Most lessons assume that children are logged onto Purple Mash with their own individual usernames and passwords, so their work will be saved in their own folders automatically and can be easily reviewed and assessed by the class teacher. If children have not used and logged onto Purple Mash before then they will need to spend some time before starting these lessons, learning how to do this. Children can be supported by having their printed logon cards (produced using [Create and Manage Users](#)) to hand.

Lesson plans also make use of the facility within Purple Mash to set activities for pupils which they can then complete and hand-in online (2Dos). This enables you to assess their work easily as well as distribute resources to all pupils. If children have not opened 2Dos before then they will need more detailed instructions about how to do this. A teacher's guide to 2Dos can be found in the teacher's section: [2Dos Guide](#).

If you are currently using a single login per class or group and would like to set up individual logins yourself, then please see our guide to doing so at [Create and Mange Users](#). Alternatively, please contact support at support@2simple.com or 0208 203 1781.

To force links within this document to open in a new tab, right-click on the link then select 'Open link in new tab'.

Linking the lessons to curriculum objectives

At the end of this document you will find a breakdown showing how the units relate to the curricula of England, Wales, Northern Ireland and Scotland.

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



This information can be used in association with the Purple Mash Data Dashboard to make and record judgements about children's outcomes and demonstrate progress over time.

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 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.

.2 – Online Safety

Lesson	Aims	Success Criteria
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Unit 6

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. To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour. To begin to understand how information online can persist and give away details of those who share or modify it.</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. 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.

.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.

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Unit 6

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.

.5 – Text Adventures

Lesson	Aims	Success Criteria
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Unit 6

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.

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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 picturebased 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
	Examine how whole numbers are used as the basis for representing all types of data in digital systems through:	Children have an understanding of binary as a number system and its purpose and application in computing.

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<p>1</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>	<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.
<p>2 & 3</p>	<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.
<p>4</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> <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.
<p>5</p>	<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.
<p>6</p>	<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.

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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
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*And discussed in other units.

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