purple mash

Using Purple Mash to Teach the NCCE Units of Work

2simple

Contents

Introduction

This document contains information from the Teach Computing curriculum developed by the National Centre for Computing Education (NCCE) for key stages 1 and 2.
Each unit is presented alongside links that can be used to deliver it using the Purple Mash tools and resources.

Year 1

NCCE Unit: Computing Systems and Networks – Technology Around Us

Description:
Develop your learners' understanding of technology and how it can help them. They will become more familiar with the different components of a computer by developing their keyboard and mouse skills, and also start to consider how to use technology responsibly.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Technology in our classroom	To identify technology • I can explain technology as something that helps us. • I can locate examples of technology in the classroom. • I can explain how these technology examples help us.	Technology	Maps to Unit 1.9 Technology Outside School, lesson 1	Technology quiz

2 - Using Technology	To identify a computer and its main parts • I can name the main parts of a computer • I can switch on and log into a computer • I can use a mouse to click and drag	Computer, mouse/trackpad, keyboard, screen, click, drag		Quiz: Parts of a computer Developing mouse skills using puzzles; choose a selection from PM, relate to class topics, include paint projects and games?
3 - Mouse skills	To use a mouse in different ways • I can use a mouse to open a program • I can click and drag to make objects on a screen • I can use a mouse to create a picture	Computer mouse/trackpad, draw, click, double-click, click and drag	Relates to Unit 1.1 Exploring Purple Mash	Use of 2Paint to create pictures
4 - Using a keyboard	To use a keyboard to type • I can tell you that writing on a computer is called typing • I can type my name on a computer • I can use the shift key to type a capital letter • I can save my work to a file	Input device, computer, keyboard, mouse	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1	Keys Quiz 2Type can be used for specific keyboard practise.
5 - Keyboard skills	To use the keyboard to edit text • I can open my work from a file • I can use the arrow keys to move the cursor	Shift, space bar, capital letter, full stop	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1	Keys Quiz Using the keyboard to type text. Use of Mashcams to put child in context and type some simple sentences such

	• I can delete letters			as My name is xxx. To practice typing, capital letters and spaces and full stops
6 - Using a computer responsibly	To create rules for using technology responsibly • I can identify rules to keep us safe and healthy when we are using technology in and beyond the home • I can give examples of some of these rules • I can discuss how we benefit from these rules	Safely, responsibly, computer, technology	Unit 1.1 covers online safety aspects.	Device Safety Rules Making a 2Connect, class contributes rules in a few categories: • How we use computers safely • How we make sure that we are happy when using computers • How we make sure that we learn when using computers • How we can be kind when using computers

NCCE Unit: Creating Media – Digital Painting

Description:
Explore the world of digital art and its exciting range of creative tools with your learners. Empower them to create their own paintings, while getting inspiration from a range of other artists. Conclude by asking them to consider their preferences when painting with, and without, the use of digital devices.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - How can we paint using computers?	To describe what different freehand tools do • • I can make marks on a screen and explain which tools I used • • I can draw lines on a screen and explain which tools I used • • I can use the paint tools to draw a picture	paint program, tool, paintbrush, erase, fill, undo	Relates to unit 1.6 Animated Story Books	Use 2Paint to follow the lesson steps. Pupils share the portraits to a display board to use in the Plenary
2 - Using shapes and lines	To use the shape tool and the line tool • I can make marks with the square and line tools • I can use the shape and line tools effectively	Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool	Unit 2.6 Creating Pictures is a year 2 unit in Purple Mash. It includes lessons on the work of the Impressionist artists, Pointilism and Mondrian and includes fact files. These lessons could be adapted for younger learners.	2PaintAPicture – Use of the Lines template. The help video for this template specifically uses Mondrian as an example. Use a PM Displayboard to share the work.

	• I can use the shape and line tools to recreate the work of an artist			
3 - Making careful choices	To make careful choices when painting a digital picture • I can choose appropriate shapes • I can make appropriate colour choices • I can create a picture in the style of an artist	Henri Matisse, shape tool, fill tool	Unit 2.6 Creating Pictures is a year 2 unit in Purple Mash. It includes lessons on the work of the Impressionist artists, Pointillism and Mondrian and includes fact files. These lessons could be adapted for younger learners.	Use 2Paint to follow the lesson steps.
4 - Why did I choose that?	• To explain why I chose the tools I used • I know that different paint tools do different jobs • I can choose appropriate paint tools and colours to recreate the work of an artist • I can say which tools were helpful and why	Wassily Kandinsky, tools, feelings, colour, brush style		2Paint Quiz Use 2Paint to follow the lesson steps.
5 - Painting all by myself	• To use a computer on my own to paint a picture • I can make dots of colour on the page	Georges Seurat, Pointillism, brush size	Unit 2.6 Creating Pictures is a year 2 unit in Purple Mash. It includes lessons on the work of the Impressionist artists, Pointilism and	2PaintAPicture - Use of the Pointilism template. The help video for this template specifically uses

	• I can change the colour and brush sizes • I can use dots of colour to create a picture in the style of an artist on my own		Mondrian and includes fact files. These lessons could be adapted for younger learners.	Impressionism as an example. Use a PM Displayboard to share the work. Use the NCCE lesson plan with the 2PaintAPicture tool.
6 - Comparing computer art and paintings	• To compare painting a picture on a computer and on paper • I can explain that pictures can be made in lots of different ways • I can spot the differences between painting on a computer and on paper • I can say whether I prefer painting using a computer or using paper	Pictures, painting, computers, like, prefer, dislike		Use of 2Count to make a pictogram for the lesson Plenary

NCCE Unit: Creating Media – Digital Writing

Description:
Promote your learners' understanding of the various aspects of using a computer to create and change text. Learners will familiarise themselves with typing on a keyboard and begin using tools to change the look of their writing, and then they will consider the differences between using a computer and writing on paper to create text.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Exploring the keyboard	• To use a computer to write • I can open a word processor • I can recognise keys on a keyboard • I can identify and find keys on a keyboard	Word processor, keyboard, keys, letters, Microsoft Word, Google Docs	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1. Relates to unit 1.6 Animated Story Books.	Use of 2Publish templates for introducing word processing. Use of 2Type. 2Type Teacher Guide
2 - Adding and removing text	• To add and remove text on a computer • I can enter text into a computer • I can use letter, number, and space keys • I can use backspace to remove text	Word processor, keyboard, keys, letters, numbers, space, backspace, text cursor, Microsoft Word, Google Docs	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1. Relates to unit 1.6 Animated Story Books.	Use of 2Publish templates for introducing word processing. Use of 2Type. Use of the Wanted template
3 - Exploring the toolbar	• To identify that the look of text can be changed on a computer • I can type capital letters • I can explain what the keys that I have learnt about already do	Word processor, keyboard, keys, capital letters, toolbar, bold, italic,	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1.	Use of 2Publish templates for introducing word processing.

	• I can identify the toolbar and use bold, italic, and underline	underline, Microsoft Word, Google Docs	Relates to unit 1.6 Animated Story Books.	
4 - Making changes to writing	• To make careful choices when changing text • I can select a word by double-clicking • I can select all of the text by clicking and dragging • I can change the font	Word processor, keyboard, mouse, cursor, select, font, toolbar, bold, italic, underline, Microsoft Word, Google Docs	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1. Relates to unit 1.6 Animated Story Books.	Use of 2Publish templates for introducing word processing.
5 - Explaining my choices	• To explain why I used the tools that I chose • I can say what tool I used to change the text • I can decide if my changes have improved my writing • I can use 'undo' to remove changes	Word processor, keyboard, keys, cursor, undo, font, toolbar, bold, italic, underline, Microsoft Word, Google Docs	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1. Relates to unit 1.6 Animated Story Books.	Use of 2Publish templates for introducing word processing.
6 - Pencil or keyboard?	• To compare writing on a computer with writing on paper • I can write a message on a computer and on paper • I can compare using a computer with using a pencil and paper • I can say which method I like best	Word processor, keyboard, keys, undo, backspace, toolbar, bold, italic, underline, Microsoft Word, Google Docs	Pupils are introduced to this as they progress through the scheme of work units. Including in unit 1.1. Relates to unit 1.6 Animated Story Books.	Use of 2Publish templates for introducing word processing.

NCCE Unit: Data and Information – Grouping Data

Description:
This unit introduces pupils to data and information. They will begin by using labels to put objects into groups, and labelling these groups. Pupils will demonstrate that they can count a small number of objects, before and after the objects are grouped. They will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Label and match	• To label objects • I can describe objects using labels • I can match objects to groups • I can identify the label for a group of objects	Object, label, group, search, image	Unit 1.2 Grouping and Sorting	2Quiz and 2DIY Drag and Placing and 2Quiz sorting and grouping questions types can be used to create quizzes and games to practice these skills. Teacher Guides
2 – Group and count	• To identify that objects can be counted • I can count objects • I can group objects • I can count a group of objects	Group, object, label, image	Unit 1.2 Grouping and Sorting	2Quiz and 2DIY Drag and Placing and 2Quiz sorting and grouping questions types can be used to create quizzes and games to practice these skills.
3 – Describe an object	• To describe objects in different ways • I can describe an object • I can describe a property of an object	Group, object, property, label, colour, size, shape	Unit 1.2 Grouping and Sorting	2Quiz sorting and grouping questions types can be used to create quizzes to practice these skills. Use of databases within 2Question to discuss

	• I can find objects with similar properties			properties of objects and split them into groups.
4 – Making different groups	• To count objects with the same properties • I can group similar objects • I can group objects in more than one way • I can count how many objects share a property	Group, object, property, value, label, colour, data set	Unit 1.2 Grouping and Sorting	2Quiz sorting and grouping questions types can be used to create quizzes to practice these skills. Use of databases within 2Question to discuss properties of objects and split them into groups.
5 – Comparing groups	• To compare groups of objects • I can choose how to group objects • I can describe groups of objects • I can record how many objects are in a group	Group, object, property, value, label, colour, size, shape, more, less, most, fewest	Unit 1.2 Grouping and Sorting	2Quiz use of the words more, less, most, fewest in quizzes such as multiple choice. e.g. Probability Quiz
6 – Answering questions	• To answer questions about groups of objects • I can decide how to group objects to answer a question • I can compare groups of objects • I can record and share what I have found.	Group, object, property, value, label, colour, data set, more, less, most, least, fewest, the same	Unit 1.2 Grouping and Sorting	2Quiz use of the grouping and sorting question types.

NCCE Unit: Programming A – Moving a robot

Description:
This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Buttons	To explain what a given command will do • I can predict the outcome of a command on a device • I can match a command to an outcome • I can run a command on a device	Forwards, backwards, turn, clear, go, commands	Unit 1.5 – Maze Explorers	2Go tool 2Go User Guide
2 – Same but different	To act out a given word • I can follow an instruction • I can recall words that can be acted out • I can give directions	Instructions, directions	Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders	2Go tool 2Go User Guide
3 – Forwards and Backwards	To combine forwards and backwards commands to make a sequence	Forwards, backwards, commands	Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders	2Go tool 2Go User Guide

	• I can compare forwards and backwards movements • I can start a sequence from the same place • I can predict the outcome of a sequence involving forwards and backwards commands			
4 – Four Directions	To combine four direction commands to make sequences • I can compare left and right turns • I can experiment with turn and move commands to move a robot • I can predict the outcome of a sequence involving up to four commands	Left, right, turn, commands	Unit 1.5 – Maze Explorers	2Go tool 2Go User Guide
5 – Getting there	To plan a simple program • I can explain what my program should do • I can choose the order of commands in a sequence • I can debug my program	Plan, algorithm, program	Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders	2Go tool 2Go User Guide

6 – Routes	To find more than one solution to a problem • I can identify several possible solutions • I can plan two programs • I can use two different programs to get to the same place	Route, plan, program	Unit 1.5 – Maze Explorers	2Go tool 2Go User Guide

NCCE Unit: Programming B – Introduction to Animation

Description:
This unit introduces learners to on screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify and create programs. Learners are also introduced to the early stages of program design through the introduction of algorithms.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Comparing tools	To choose a command for a given purpose • I can find which commands move a sprite • I can use commands to move a sprite • I can compare different programming tools	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area	Pupils use 2Code Chimp level to learn about coding using blocks. Specific learning objectives vary from the NCCE as the tools differ. Unit 1.7: Coding	2Code 2Code Teacher Guide
2 – Joining blocks	To show that a series of commands can be joined together • I can use more than one block by joining them together • I can use a start block in a program • I can run my program	Block, joining, command, start block, run, program, programming area, background, delete, reset, algorithm, predict	Unit 1.7: Coding	2Code 2Code Teacher Guide

3 – Make a change	To identify the effect of changing a value • I can find blocks which have numbers • I can change the value • I can say what happens when I change a value	Effect, change, value, block	Unit 1.7: Coding	2Code 2Code Teacher Guide
4 – Adding sprites	To explain that each sprite has its own instructions • I can show that a project can include more than one sprite • I can delete a sprite • I can add blocks to each of my sprites	Instructions, sprite, delete, program, algorithm	Unit 1.7: Coding	2Code 2Code Teacher Guide
5 – Project design	To design the parts of a project • I can choose appropriate artwork for my project • I can decide how each sprite will move • I can create an algorithm for each sprite	Sprite, background, appropriate, algorithm	Unit 1.7: Coding	2Code 2Code Teacher Guide

6 – Following my design	To use my algorithm to create a program • I can use sprites which match my design • I can add programming blocks based on my algorithm • I can test the programs I have created	Sprite, design, programming blocks, algorithm, programs	Unit 1.7: Coding	2Code 2Code Teacher Guide

Year 2

NCCE Unit: Computing Systems and Networks – Information Technology Around Us

Description:
How is information technology (IT) being used for good in our lives? With an initial focus on IT in the home, learners explore how IT benefits society in places such as shops, libraries, and hospitals. Whilst discussing the responsible use of technology, and how to make smart choices when using it.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - What is information technology?	To recognise the uses and features of information technology • I can identify examples of computers • I can describe some uses of computers • I can identify that a computer is a part of information technology	Information technology (IT), computer	Maps to Unit 1.9 Technology Outside School	Use 2Connect collaboratively as part of the Introduction and to organise ideas. Use individually for Activity 1
2 - Where have we seen information technology in the home?	To identify information technology in the home	Information technology	Maps to Unit 1.9 Technology Outside School	Writing Template – Technology Outside School

	• I can explain the purpose of information technology in the home • I can open a file • I can move and resize images			Photo prompt Slideshow (from Unit 1.9) – Technology Outside School
3 - Where have we seen information technology in the world?	To identify information technology beyond school • I can find examples of information technology • I can talk about uses of information technology • I can compare types of information technology	Information technology (IT), computer	Maps to Unit 1.9 Technology Outside School	Introduction – use 2Connect to collect ideas collaboratively. Activity 2 → Writing Template – Technology Outside School
4 - How does IT improve our world?	To explain how information technology benefits us • I can demonstrate how information technology is used in a shop • I can recognise that information technology can be connected • I can explain how information technology helps people	Information technology (IT), computer, barcode, scanner/scan	Maps to Unit 1.9 Technology Outside School	

5 - Demonstrate safe use of information technology	To show how to use information technology safely • I can list different uses of information technology • I can recognise how to use information technology responsibly • I can say how those rules/guides can help me	Information technology	Unit 2.2 Online Safety – the Purple Mash unit focuses more on online safety than the physical use of technology.	Use 2Connect in the Introduction to collaborate on IT activities. Activity 3 has themes in common with lesson 3 of unit 2.2
6 - Using information technology responsibly	To recognise that choices are made when using information technology • I can identify the choices that I make when using information technology • I can explain simple guidance for using information technology in different environments and settings • I can enjoy a variety of activities	Information technology	Unit 2.2 Online Safety	Use Purple Mash tools as part of the carousel e.g. 2Paint or 2PaintAPicture (creative), mash cams (connect or give),

NCCE Unit: Creating media – Digital photography

Description:
Through the lessons in this unit, learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - What devices are used to take photographs?	• To know what devices can be used to take photographs • I can sort devices into old and new • I can talk about how to take a photograph • I can capture digital photos and talk about my experience	Device, camera, photograph, capture, image, digital		
2 - Landscape or portrait?	• To use a digital device to take a photograph • I can explain the process of taking a good photograph • I can take photos in both landscape and portrait format • I can explain why a photo looks better in	Landscape, portrait, horizontal, vertical, field of view, narrow, wide, format		Pupils could upload their photos to Purple Mash, either onto a Publishing template using 2Publish (the storyboard has four picture boxes), or to 2CreateAStory as backgrounds to make a photo book of their work. Pupils can type simple sentences regarding portrait or landscape choices. Add word banks to

	portrait or landscape format			2Publish templates if necessary and set as a 2do so reduce pupil's typing load. Share using a displayboard.
3 - What makes a good photograph?	• To describe what makes a good photograph • I can identify what is wrong with a photograph • I can discuss how to take a good photograph • I can improve a photograph by retaking it	Framing, focal point, subject matter, field of view, format, compose		Pupils could upload their photos to Purple Mash, either onto a Publishing template using 2Publish (the storyboard has four picture boxes), or to 2CreateAStory as backgrounds to make a photo book of their work. Pupils can type simple sentences regarding choices and reviewing. Add word banks to 2Publish templates if necessary and set as a 2do so reduce pupil's typing load. Share using a displayboard.
4 - How can we capture clear photos?	• To decide how photographs can be improved • I can explore the effect that light has on a photo • I can experiment with different light sources • I can focus on an object	Natural lighting, artificial lighting, flash, focus, background, foreground		Pupils could upload their photos to Purple Mash, either onto a Publishing template using 2Publish (the storyboard has four picture boxes), or to 2CreateAStory as backgrounds to make a photo book of their work. Pupils can type simple sentences regarding choices and improvements. Add word banks to 2Publish templates if necessary and set as a 2do so

				reduce pupil's typing load. Share using a displayboard.
5 - How can photographs be changed?	• To use tools to change an image • I can recognise that images can be changed • I can use a tool to achieve a desired effect • I can explain my choices	Editing, tools, colour, filter, images, Pixlr		Photo editing can be done as part of uploading backgrounds in 2CreateAStory (My Story level)  Photo editing can also be done in 2PaintAPicture – eCollage template. 
6 - Is it real?	• To recognise that images can be changed • I can apply a range of photography skills to capture a photo • I can recognise which images have been changed • I can identify which images are real and	Format, framing, lighting, focus, filter, changed, real		Photo editing can be done as part of uploading backgrounds in 2CreateAStory (My Story level) 

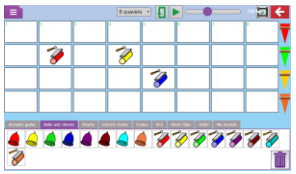
	which have been changed			Photo editing can also be done in 2PaintAPicture – eCollage template. Pupils can create their own fake images by combining photos and clipart.  

NCCE Unit: Creating media – Making Music

Description:
Learners will explore how music can make them think and feel. They will make patterns and use those patterns to make music with both percussion instruments and digital tools. They will also create different rhythms and tunes, using the movement of animals for inspiration. Finally, learners will share their creations and compare creating music digitally and non-digitally.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - How music makes us feel	• To say how music can make us feel • I can identify simple differences in pieces of music • I can listen with concentration to a range of music • I can describe how music makes me feel, e.g. happy or sad	Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions	Unit 2.7 Making Music	Use of 2Connect to collaborate on ideas. Use of 2Sequence to compose tunes that convey emotions (see Unit 2.7, lesson 2)
2 - Rhythms and patterns	• To identify that there are patterns in music • I can create a rhythm pattern • I can play an instrument following a rhythm pattern • I can explain that music is created and played by humans	Pattern, rhythm, pulse	Unit 2.7 Making Music	There are several Purple Mash music tools that could be used. 2Explore allows pupils to play a selection of sounds; these can be used to create pulse and rhythm (click the 'New file' button to see the choices:

				 2Beat teaches rhythm and pulse by building up various beats – use the help videos for guidance  . The rhythm is built by the instruments and the pulse if displayed as the blue highlight when the composition is played. 2Sequence can be used to create pulses and rhythms using different combinations of instruments. The rhythm is built by the instruments and the pulse if displayed as the blue highlight when the composition is played.  Share rhythm patterns to a displayboard to listen to as a class.

3 - How music can be used	• To describe how music can be used in different ways • I can connect images with sounds • I can use a computer to experiment with pitch and duration • I can relate an idea to a piece of music	Neptune, pitch, tempo, rhythm, notes		Use of 2Sequence to explore pitch and duration of sounds.
4 - Notes and tempo	• To show how music is made from a series of notes • I can identify that music is a sequence of notes • I can use a computer to create a musical pattern using three notes • I can refine my musical pattern on a computer			Use of 2Sequence, select a musical group such as the xylophone notes. Tempo can be changed using the bpm (beats per minute) slider  Work can be shared to a displayboard.
5 - Creating digital music	• To create music for a purpose • I can describe an animal using sounds • I can explain my choices • I can save my work	Create, emotion, pitch, pulse/beat, tempo, instrument, rhythm, notes		Use of 2Sequence, select a musical group such as drums to compose the rhythm. Work can be shared to a displayboard.

6 - Reviewing and editing music	• To review and refine our computer work • I can reopen my work • I can explain how I made my work better • I can listen to music and describe how it makes me feel			Pupils edit their own work or use lesson 2 of unit 2.7 to edit the provided music.

NCCE Unit: Data and Information - Pictograms

Description:
This unit introduces the learners to the term 'data'. Learners will begin to understand what data means and how this can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Counting and comparing	To recognise that we can count and compare objects using tally charts • I can record data in a tally chart • I can represent a tally count as a total • I can compare totals in a tally chart	More than, less than, most, least, organise, data, object, tally chart, votes, total	Unit 1.3 - Pictograms	2Count 2Count Teacher Guide
2 – Enter the data	To recognise that objects can be represented as pictures • I can enter data onto a computer • I can use a computer to view data in a different format • I can use pictograms to answer simple questions about objects	Pictogram, enter, data, tally chart, compare, more than, less than, objects, count	Unit 1.3 - Pictograms	2Count 2Count Teacher Guide
3 – Creating pictograms	To create a pictogram	Tally chart, data, pictogram, explain,	Unit 1.3 - Pictograms	2Count 2Count Teacher Guide

	• I can organise data in a tally chart • I can use a tally chart to create a pictogram • I can explain what the pictogram shows	more, less, most, least, more common, least common		
4 – What is an attribute?	To select objects by attribute and make comparisons • I can tally objects using a common attribute • I can create a pictogram to arrange objects by an attribute • I can answer more than/less than, most/least questions about an attribute	Attribute, group, same, different, object, more than/less than, most/least	Unit 1.3 - Pictograms Unit 1.2 Grouping and Sorting	2Count 2Count Teacher Guide 2Quiz and 2DIY Drag and Placing and 2Quiz sorting and grouping questions types can be used to create quizzes and games to practice these skills.
5 – Comparing people	To recognise that people can be described by attributes • I can choose a suitable attribute to compare people • I can collect the data I need • I can create a pictogram and draw conclusions from it	Attribute, compare, tally chart, pictogram, more than, less than, most popular, least popular, conclusion	Unit 1.3 - Pictograms	2Count 2Count Teacher Guide
6 – Presenting information?	To explain that we can present information using a computer	Tally chart, pictogram, block diagram, most, least,	Unit 1.3 - Pictograms Unit 3.8 - Graphing	2Count 2Count Teacher Guide

	• I can use a computer program to present information is different ways • I can share what I have found out using a computer • I can give simple examples of why information should not be shared	common, sharing, data		2Graph 2Graph Teacher Guide

NCCE Unit: Programming A – Robot algorithms

Description:
This unit develops pupils' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Pupils will use given commands in different orders to investigate how the order affects the outcome. Pupils will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Giving Instructions	To explain what a given command will do • I can predict the outcome of a command on a device • I can match a command to an outcome • I can run a command on a device	Instruction, sequence, clear, unambiguous, algorithm, program	Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders In year 2, many of the concepts in this NCCE unit are taught through coding unit 2.1 using 2Code alongside design of algorithms and prediction.	2Go tool 2Go User Guide
2 – Same but different	To explain what happens when we change the order of instructions • I can create different algorithms for a range of sequences (using the same commands) • I can use an algorithm to program a sequence on a floor robot • I can show the difference in outcomes between two	Sequence, order, algorithm, commands	Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders In year 2, many of the concepts in this NCCE unit are taught through coding unit 2.1 using 2Code alongside design of algorithms and prediction.	2Go tool 2Go User Guide

	sequences that consist of the same commands			
3 – Making predictions	To use logical reasoning to predict the outcome of a program (series of commands) • I can follow a sequence • I can predict the outcome of a sequence • I can compare my prediction to the program outcome	Sequence, prediction, program	Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders In year 2, many of the concepts in this NCCE unit are taught through coding unit 2.1 using 2Code alongside design of algorithms and prediction.	2Go tool 2Go User Guide
4 – Mats and routes	To explain that programming projects can have code and artwork • I can explain the choices I made for my mat design • I can identify different routes around my mat • I can test my mat to make sure that it is usable	Artwork, design, route, mat	Pupils can design their own backgrounds in 2Go Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders In year 2, many of the concepts in this NCCE unit are taught through coding unit 2.1 using 2Code alongside design of algorithms and prediction.	2Go User Guide
5 – Algorithm design	To design an algorithm • I can explain what my algorithm should achieve	Algorithm	Unit 1.5 – Maze Explorers Unit 1.4 Lego Builders In year 2, many of the concepts in this NCCE unit	2Go tool 2Go User Guide

	• I can create an algorithm to meet my goal • I can use my algorithm to create a program		are taught through coding unit 2.1 using 2Code alongside design of algorithms and prediction.	
6 – Debugging	To create and debug a program that I have written • I can plan algorithms for different parts of a task • I can test and debug each part of the program • I can put together the different parts of my program	Debugging, algorithm, program	Unit 2.1 – Coding: Lesson 3	2Code Activities Chimp Level 2Code Debug Challenges Chimp Level 2Code Teacher Guide

NCCE Unit: Programming B – An introduction to quizzes

Description:
This unit initially recaps on learning from the Year 1 Scratch Junior unit 'Programming B - Introduction to animation' Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Scratch Jr recap	To explain that a sequence of commands has a start • I can identify the start of a sequence • I can identify that a program needs to be started • I can show how to run my program	Sequence, command, program, run, program, start	Pupils use 2Code Chimp level to learn about coding using blocks. Specific learning objectives vary from the NCCE as the tools differ. Unit 2.1: Coding	2Code 2Code Teacher Guide
2 – Outcomes	To explain that a sequence of commands has an outcome • I can predict the outcome of a sequence of commands • I can match two sequences with the same outcome • I can change the outcome of a sequence of commands	Sequence, command, outcome, predict, program, blocks	Unit 2.1: Coding	2Code 2Code Teacher Guide

3 – Using a design	To create a program using a given design • I can tell the actions of a sprite in an algorithm • I can decide which blocks to use to meet the design • I can build the sequences of blocks I need	Sprite, algorithm, blocks, design, sequence, predict	Unit 2.1: Coding	2Code 2Code Teacher Guide
4 – Changing a design	To change a given design • I can choose backgrounds for the design • I can choose characters for the design • I can create a program based on the new design	Actions, sprite, project, blocks, design, sequence, modify, change	Unit 2.1: Coding	2Code 2Code Teacher Guide
5 – Designing and creating a program	To create a program using my own design • I can choose the images for my own design • I can create an algorithm • I can build sequences of blocks to match my design	Design, algorithm, build, sequence, blocks, match	Unit 2.1: Coding	2Code 2Code Teacher Guide

6 – Evaluating	To decide how my project can be improved • I can compare my project to my design • I can improve my project by adding features • I can debug	Sprite, design, programming blocks, algorithm, programs	Unit 2.1: Coding	2Code 2Code Teacher Guide

Year 3

NCCE Unit: Computing Systems and Networks – Connecting Computers

Description:
Challenge your learners to develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. Start by comparing digital and non-digital devices, before introducing them to computer networks that include network infrastructure devices like routers and switches.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - How does a digital device work?	To explain how digital devices function • I can explain that digital devices accept inputs • I can explain that digital devices produce outputs • I can follow a process	Digital device, input, output, process		
2 - What parts make up a digital device?	To identify input and output devices • I can classify input and output devices • I can describe a simple process	Digital device, input, output, process		

	• I can design a digital device			
3 - How do digital devices help us?	To recognise how digital devices can change the way we work • I can explain how I use digital devices for different activities • I can recognise similarities between using digital devices and non-digital tools • I can suggest differences between using digital devices and non-digital tools	Program		Use of Purple Mash art or writing tools for the computer-based task; 2Paint, 2PasinAPicture, 2CreateAStory, 2Publish.
4 - How am I connected?	To explain how a computer network can be used to share information • I can recognise different connections • I can explain how messages are passed through multiple connections • I can discuss why we need a network switch	Connection, network, network switch		Activity 1: use 2Connect
5 - How are computers connected?	To explore how digital devices can be connected	**Network switch**: a device that enables multiple devices on a		Purple Mash quizzes. These include further content regarding hardware as well

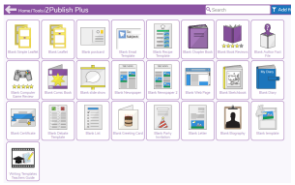
	• I can recognise that a computer network is made up of a number of devices • I can demonstrate how information can be passed between devices • I can explain the role of a switch, server, and wireless access point in a network	network to be connected with each other **Server:** a computer that manages the network and stores files **Wireless access point (WAP):** a device, connected to a wired network, that sends and receives wireless signals for/from devices with WiFi connectivity		as networks, inputs and outputs: Hardware Quiz Networks Quiz Networks Labelling Transferring files
6 - What does our school network look like?	To recognise the physical components of a network • I can identify how devices in a network are connected with one another • I can identify networked devices around me • I can identify the benefits of computer networks	**Network switch**: a device that enables multiple devices on a network to be connected with each other **Server:** a computer that manages the network and stores files **Wireless access point (WAP):** a device, connected to a wired network, that		Purple Mash quizzes. These include further content regarding hardware as well as networks, inputs and outputs: Hardware Quiz Networks Quiz Networks Labelling Transferring files

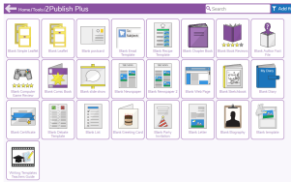
		sends and receives wireless signals for/from devices with WiFi connectivity		

NCCE Unit: Creating media – Desktop publishing

Description:
During this unit, learners will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' and begin to understand how these can support them in making their own template for a magazine front cover. They will start to add text and images to create their own pieces of work using desktop publishing software. Learners will look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Words and pictures	To recognise how text and images communicate information • I can explain the difference between text and images • I can explain that text and images can communicate messages clearly • I can identify the advantages and disadvantages of using text and images	Text, images, advantages, disadvantages, communicate	Unit 2.8 Presenting Ideas Unit 4.4 Writing for Different Audiences	
2 - Can you edit it?	To recognise that text and layout can be edited	Font, font style, communicate, template	Unit 2.8 Presenting Ideas	Use 2Publish or 2Publish Plus templates. A party invitation template can be

	• I can change font style, size, and colour for a given purpose • I can edit text • I can explain that text can be changed to communicate more clearly			found in 2PublishPlus here
3 - Great template!	To choose appropriate page settings • I can define the term 'page orientation' • I can identify placeholders and say why they are important • I can create a template for a particular purpose	Landscape, portrait, orientation, placeholder, template	Unit 4.4 Writing for Different Audiences	Use of the pictorial representations of templates in 2Publish and 2Publish Plus alongside topic related writing templates.  The Blank Template can be used to do some simple image and text layout
4 - Can you add content?	To add content to a desktop publishing document • I can choose the best locations for my content • I can paste text and images to create a magazine cover	Desktop publishing, copy, paste	Unit 2.8 Presenting Ideas	Use 2Publish or 2Publish Plus templates.

	• I can make changes to content after I've added it			
5 - Lay it out	To consider how different layouts can suit different purposes • I can identify different layouts • I can match a layout to a purpose • I can choose a suitable layout for a given purpose	Layout, purpose	Unit 4.4 Writing for Different Audiences	Use of the pictorial representations of templates in 2Publish and 2Publish Plus alongside topic related writing templates, postcards and leaflets. 
6 - Why desktop publishing?	To consider the benefits of desktop publishing • I can identify the uses of desktop publishing in the real world • I can say why desktop publishing might be helpful • I can compare work made on desktop publishing to work created by hand		Unit 2.8 Presenting Ideas Unit 4.4 Writing for Different Audiences	

NCCE Unit: Creating Media – Animation

Description:
During this unit, learners will use a range of techniques to create a stop frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Can a picture move?	To explain that animation is a sequence of drawings or photographs • I can draw a sequence of pictures • I can create an effective flip book–style animation • I can explain how an animation/flip book works	Animation, flip book	Unit 4.6 Animation	
2- Frame by frame	To relate animated movement with a sequence of images • I can predict what an animation will look like • I can explain why little changes are needed for each frame • I can create an effective stop frame animation	Stop frame animation, frame, sequence, image, photograph	Unit 4.6 Animation	Activity 2: Use 2Animate. Pupils can use the camera in the same way as suggested in the lesson plan or by drawing on the slides and using onion skinning.

3 - What's the story?	To plan an animation • I can break down a story into settings, characters, and events • I can describe an animation that is achievable on screen • I can create a storyboard	Setting, character, events, stop frame animation, onion skinning	Unit 4.6 Animation	2Animate. Pupils can use the camera in the same way as suggested in the lesson plan or by drawing on the slides and using onion skinning and readymade backgrounds. Printable Storyboards
4 - Picture perfect	To identify the need to work consistently and carefully • I can use onion skinning to help me make small changes between frames • I can review a sequence of frames to check my work • I can evaluate the quality of my animation	Stop frame animation, onion skinning, consistency	Unit 4.6 Animation	2Animate
5 - Evaluate and make it great!	To review and improve an animation • I can explain ways to make my animation better • I can evaluate another learner's animation • I can improve my animation based on feedback	Evaluation, animation, onion skinning, delete, frame		Pupils could share their animations to a 2Blog (allowing peer review via blog comments) or to a displayboard with verbal peer review in class.

6 - Lights, camera, action	To evaluate the impact of adding other media to an animation • I can add other media to my animation • I can explain why I added other media to my animation • I can evaluate my final film	Animation, media, import, transition		Pupils can add text and sounds to their 2Animate animations. Photos could be used as background images in a frame allowing them to be uploaded. Slides can be added and moved around to accommodate edits. 

NCCE Unit: Data and Information – Branching Databases

Description:
During this unit, learners will develop their understanding of what a branching database is and how to create one. They will gain an understanding of what attributes are and how to use them to sort groups of objects by using yes/no questions. The learners will create physical and on-screen branching databases. Finally, they will evaluate the effectiveness of branching databases and will decide what types of data should be presented as a branching database.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Yes or no questions	To create questions with yes/no answers • I can investigate questions with yes/no answers • I can make up a yes/no question about a collection of objects • I can create two groups of objects separated by one attribute	Attribute, value, questions, table, objects	Unit 3.6 – Branching Databases	2Question Tool 2Question Teacher Guide 2Quiz and 2DIY Drag and Placing and 2Quiz sorting and grouping questions types can be used to create quizzes and games to practice these skills.
2 – Making groups	To identify the object attributes needed to collect relevant data • I can select an attribute to separate objects into groups • I can create a group of objects within an existing group	Branching database, database, attribute, value, questions, objects, equal, even, separate	Unit 3.6 – Branching Databases	2Question Tool 2Question Teacher Guide 2Quiz and 2DIY Drag and Placing and 2Quiz sorting and grouping questions types can be used to create quizzes and games to practice these skills.

	• I can arrange objects into a tree structure			
3 – Creating a branching database	To create a branching database • I can select objects to arrange in a branching database • I can group objects using my own yes/no questions • I can prove my branching database works	Branching database, database, attribute, value, questions, objects	Unit 3.6 – Branching Databases	2Question Tool 2Question Teacher Guide .
4 – Structuring a branching database	To explain why it is helpful for a database to be well structured • I can create yes/no questions using given attributes • I can explain that questions need to be ordered carefully to split objects into similarly sized groups • I can compare two branching database structures	Branching database, attribute, questions, structure, compare, order, organise	Unit 3.6 – Branching Databases	2Question Tool 2Question Teacher Guide
5 – Using a branching database	To identify objects using a branching database • I can select a theme and choose a variety of objects	Branching database, attribute, value, question, j2data, selecting	Unit 3.6 – Branching Databases	2Question Tool 2Question Teacher Guide

	• I can create questions and apply them to a tree structure • I can use my branching database to answer questions			
6 – Presenting information	To compare the information shown in a pictogram with a branching database • I can explain what a pictogram tells me • I can explain what a branching database tells me • I can compare two ways of presenting information	Branching database, attribute, value, questions, j2data, pictogram, compare, information, decision tree	Unit 3.6 – Branching Databases	2Question Tool 2Question Teacher Guide

NCCE Unit: Programming A – Sequence in music

Description:
This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Introduction to Scratch	To explore a new programming environment • I can identify the objects in a Scratch project (sprites, backdrops) • I can explain that objects in Scratch have attributes (linked to) • I can recognise that commands in Scratch are represented as blocks	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 3.1: Coding	2Code 2Code Teacher Guide
2 – Programming sprites	To identify that commands have an outcome • I can identify that each sprite is controlled by the commands I choose	Sprites, programming blocks, motion, turn, point in direction, go to, glide	Unit 3.1: Coding	2Code 2Code Teacher Guide

	• I can choose a word which describes an on-screen action for my design • I can create a program following a design			
3 – Sequences	To explain that a program has a start • I can start a program in different ways • I can create a sequence of connected commands • I can explain that the objects in my project will respond exactly to the code	Sequence, event, task, design, code, run the code	Unit 3.1: Coding	2Code 2Code Teacher Guide
4 – Ordering commands	To recognise that a sequence of commands can have an order • I can explain what a sequence is • I can combine sound commands • I can order notes into a sequence	Sequence, order, note, chord	Unit 3.1: Coding	2Code 2Code Teacher Guide
5 – Looking good	To change the appearance of my project • I can build a sequence of commands	Sprite, stage, costume, backdrop	Unit 3.1: Coding	2Code 2Code Teacher Guide

	• I can decide the actions for each sprite in a program • I can make design choices for my artwork			
6 – Making an instrument	To create a project from a task description • I can identify and name the objects I will need for a project • I can relate a task description to a design • I can implement my algorithm as code	Design, algorithm, bug, debug	Unit 3.1: Coding	2Code 2Code Teacher Guide

NCCE Unit: Programming B – Events and actions

Description:
This unit explores the links between events and actions, whilst consolidating prior learning relating to sequencing. Learners will begin by moving a sprite in four directions (up, down, left and right). They will then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of pen blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with learners designing and coding their own maze tracing program.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Moving a sprite	To explain how a sprite moves in an existing project • I can explain the relationship between an event and an action • I can choose which keys to use for actions and explain my choices • I can identify a way to improve a program	Motion, event, sprite, algorithm, logic	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 3.1: Coding Unit 5.5 – Game Creator uses the tool 2DIY 3D in which pupils design and create a maze-based game with moving sprites.	2Code 2Code Teacher Guide 2DIY 3D 2DIY 3D Teacher Guide
2 – Maze movement	To create a program to move a sprite in four directions • I can choose a character for my project	Move, resize, algorithm	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives	2Code 2Code Teacher Guide

	• I can choose a suitable size for a character in a maze • I can program movement		vary from the NCCE as the tools differ. Unit 3.1: Coding Unit 5.5 – Game Creator uses the tool 2DIY 3D in which pupils design and create a maze-based game with moving sprites.	2DIY 3D 2DIY 3D Teacher Guide
3 – Drawing lines	To adapt a program to a new context • I can use a programming extension • I can consider the real world when making design choices • I can choose blocks to set up my program	Extension block, pen up, set up	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 3.1: Coding Unit 5.5 – Game Creator uses the tool 2DIY 3D in which pupils design and create a maze-based game with moving sprites.	2Code 2Code Teacher Guide 2DIY 3D 2DIY 3D Teacher Guide
4 – Adding features	To develop my program by adding features • I can identify additional features (from a given set of blocks) • I can choose suitable keys to turn on additional features	Pen, design, event, action, algorithm	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 3.1: Coding	2Code 2Code Teacher Guide

	• I can build more sequences of commands to make my design work		Unit 5.5 – Game Creator uses the tool 2DIY 3D in which pupils design and create a maze-based game with moving sprites.	2DIY 3D 2DIY 3D Teacher Guide
5 – Debugging movement	To identify and fix bugs in a program • I can test a program against a given design • I can match a piece of code to an outcome • I can modify a program using a design	Debugging, errors, setup	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 3.1: Coding Unit 5.5 – Game Creator uses the tool 2DIY 3D in which pupils design and create a maze-based game with moving sprites.	2Code 2Code Teacher Guide 2DIY 3D 2DIY 3D Teacher Guide
6 – Making a project	To design and create a maze-based challenge • I can make design choices and justify them • I can implement my design • I can evaluate my project	Design, code, setup, test, debug, actions, events	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 3.1: Coding Unit 5.5 – Game Creator uses the tool 2DIY 3D in	2Code 2Code Teacher Guide 2DIY 3D 2DIY 3D Teacher Guide

			which pupils design and create a maze-based game with moving sprites.	

Year 4

NCCE Unit: Computing systems and networks – The internet

Description:
During this unit learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet and be given opportunities to explore the World Wide Web for themselves to learn about who owns content and what they can access, add, and create. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Connecting networks	To describe how networks physically connect to other networks • I can describe the internet as a network of networks • I can demonstrate how information is shared across the internet • I can discuss why a network needs protecting	Internet, network, router, network security	Unit 4.8 Hardware Investigators Unit 4.2 Online Safety	Use 2Connect to collect ideas as part of the introduction. These resources include further content regarding hardware as well as networks, inputs and outputs: Hardware Quiz Networks Quiz Networks Labelling Writing Templates Transferring files Online Safety email simulations: Downloading Software, You've won!, SPAM

2- What is the internet made of?	To recognise how networked devices make up the internet • I can describe the different networked devices and how they connect • I can explain how the internet allows us to view the World Wide Web • I can recognise that the World Wide Web is the part of the internet that contains websites and web pages	**Network switch:** A device that enables multiple devices on a network to be connected with each other **Server**: A computer that manages the network and stores files **Wireless access point (WAP):** A device, connected to a wired network, that sends and receives wireless signals for/from devices with WiFi connectivity **Router**: A device that passes information between two computer networks	Unit 4.8 Hardware Investigators Unit 4.2 Online Safety	Quizzes Hardware Quiz Networks Quiz Networks Labelling Interface Layout Quiz Writing Templates Transferring files About the Internet
3 - Sharing information	To outline how websites can be shared via the World Wide Web • I can explain the types of media that can be shared on the World Wide Web (WWW)	Website, web page, web address, router, routing, route tracing, browser	Unit 2.5 Effective searching Unit 4.8 Hardware Investigators Unit 4.2 Online Safety	Slideshow What is the Internet? Effective Internet Searches (Part of unit 2.5) Writing Templates Transferring files About the Internet

	• I can describe where websites are stored when uploaded to the WWW • I can describe how to access websites on the WWW			Quizzes Interface Layout Quiz **Activity 2**: Use 2Connect for this task
4 - What is a website?	To describe how content can be added and accessed on the World Wide Web • I can create media which can be found on websites • I can recognise that I can add content to the WWW • I can explain that new content can be created online	World Wide Web, internet, content, website, web page, links, files	Unit 2.5 Effective searching	Quizzes Interface Layout Quiz **Activity 3:** Any Purple Mash Activity will illustrate creating content using a web-based tool.
5 - Who owns the web?	To recognise how the content of the WWW is created by people • I can explain that websites and their content are created by people • I can suggest who owns the content on websites • I can explain that there are rules to protect content	Website, use, content, download, sharing, ownership, permission	Unit 4.2 Online Safety, lesson 3	**Introduction**: use of Purple Mash as an example. Look at the Copyright statement for the scheme of work to see what companies do to protect and share their content. Plagiarism Quiz (part of unit 4.2, lesson 3)

6 - Can I believe what I read?	To evaluate the consequences of unreliable content • I can explain that not everything on the World Wide Web is true • I can explain why some information I find online may not be honest, accurate, or legal • I can explain why I need to think carefully before I share or reshare content	Information, sharing, accurate, honest, content, adverts	Unit 3.2 Online Safety, Lesson 2	

NCCE Unit: Creating media – Audio editing

Description:
In this unit, learners will initially examine devices capable of recording digital audio, which will include identifying the input device (microphone) and output devices (speaker or headphones) if available. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, learners will evaluate their work and give feedback to their peers.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Digital recording	• To identify that sound can be digitally recorded • I can identify digital devices that can play audio, record sound, or do both • I can identify important inputs and outputs of digital devices that can play audio, record sound, or do both • I can explain why I need to consider who owns audio and whether I have the right to reuse it	Audio, record, playback, microphone, speaker, headphones, input, output		Use of mashcams to record sound. Sound can be recorded as part of many Purple Mash tools, here are some examples: **Voice overs for** 2CreateAStory files 2Quiz 2Code 2Animate 2DIY Sound Drag Plagiarism Quiz (part of unit 4.2, lesson 3)
2 - Recording sound	• To use a digital device to record sound • I can use a device to record audio and play back sound	Audio, sound, record, playback, start, pause, stop, podcast		Sound can be recorded as part of many Purple mash tools, here are some examples:

	• I can suggest how to improve my recording • I can discuss what other people include when recording sound for a podcast			Mashcams Voice overs for 2CreateAStory files 2Sequence (My Sounds) 2Quiz 2Code 2Animate 2DIY Sound Drag Any of these files could be shared using a 2Blog to allow feedback and comments.
3 - Creating a podcast	• To explain that a digital recording is stored as a file • I can plan and write the content of a podcast • I can discuss why it is useful to be able to save digital recordings • I can save a digital recording as a file	Audio, sound, record, playback, start, pause, stop, podcast, save, file		
4 - Editing digital recordings	• To explain that audio can be changed through editing • I can open a digital recording from a file • I can discuss ways in which audio recordings can be altered	Audio, sound, record, playback, edit, selection, open, save, file		

	• I can edit sections of an audio recording			
5 - Combining audio	• To show that different types of audio can be combined and played together • I can discuss sounds that other people combine • I can choose suitable sounds to include in a podcast • I can use editing tools to arrange sections of audio	Audio, sound, edit, selection, open, save, mixing, time shift		
6 - Evaluating podcasts	• To evaluate editing choices made • I can explain that digital recordings need to be exported to share them • I can discuss the features of a digital recording I like • I can suggest improvements to a digital recording	Export, MP3, audio, editing, evaluate, feedback		2Sequence files can be exported as mp3 files. Sound can be recorded as part of many Purple mash tools, here are some examples: Mashcams Voice overs for 2CreateAStory files 2Sequence (My Sounds) 2Quiz 2Code 2Animate 2DIY Sound Drag Any of these files could be shared using a 2Blog to

				allow feedback and comments.

NCCE Unit: Creating Media – Photo editing

Description:
In this unit, learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Changing digital images	• To explain that digital images can be changed • I can identify changes that we can make to an image • I can explore how images can be changed in real life • I can explain the effect that editing can have on an image	Image, edit, arrange, select, digital, crop, undo, save		Introduction and starter activity; use 2Connect.
2 - Changing the composition of images	• To change the composition of an image • I can explain what has changed in an edited image • I can change the composition of an image by selecting parts of it • I can consider why someone might want to change the composition of an image	Image, search, save, copyright, composition, edit, save, pixels, crop, rotate, flip		
3 - Changing images for different uses	• To describe how images can be changed for different uses	Image, adjustments, effects, colours,		

	• I can talk about changes made to images • I can choose effects to make my image fit a scenario • I can explain why my choices fit a scenario	hue/saturation, sepia, save, version, illustrator, vignette		
4 - Retouching images	• To make good choices when selecting different tools • I can identify how an image has been retouched • I can give examples of positive and negative effects that retouching can have on an image • I can choose appropriate tools to retouch an image	Image, edit, retouch, clone, recolour, magic wand, select, adjust, sharpen, brighten		
5 - Fake images	• To recognise that not all images are real • I can sort images into 'fake' or 'real' and explain my choices • I can combine parts of images to create new images • I can talk about fake images around me	Image, fake, real, composite, cut, copy, paste, alter, background, foreground		2PaintAPicture – eCollage template

6 - Making and evaluating a publication	• To evaluate how changes can improve an image • I can consider the effect of adding other elements to my work • I can compare the original image with my completed publication • I can evaluate the impact of my publication on others through feedback	Image, publication, elements, original, font style, shapes, border, layer,		

NCCE Unit: Data and information – Data logging

Description:
In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Answering questions	To explain that data gathered over time can be used to answer questions • I can choose a data set to answer a given question • I can suggest questions that can be answered using a given data set • I can identify data that can be gathered over time	Data, table (layout)	Unit 3.8 - Graphing Unit 4.3 – Spreadsheets and other year group spreadsheet units	Use of Purple Mash tools 2Graph and 2Calculate for data collection
2 – Data collection	To use a digital device to collect data automatically • I can explain that sensors are input devices	Input device, sensor, data logger		This lesson uses data loggers which are not part of the Purple Mash tools. Purple Mash tools can be used for collecting the data if you are

	• I can use data from a sensor to answer a given question • I can identify that data from sensors can be recorded			using an alternative collection method. 2Graph and 2Calculate for data collection
3 - Logging	To explain that a data logger collects 'data points' from sensors over time • I can identify a suitable place to collect data • I can identify the intervals used to collect data • I can talk about the data that I have captured	Data logger, logging, data point, interval		This lesson uses data loggers which are not part of the Purple Mash tools. Purple Mash tools can be used for collecting the data if you are using an alternative collection method. 2Graph and 2Calculate for data collection
4 – Analysing data	To use data collected over a long duration to find information • I can import a data set • I can use a computer to view data in different ways • I can use a computer program to sort data	Analyse, data set, import, export		This lesson uses data loggers which are not part of the Purple Mash tools. Purple Mash tools can be used for collecting the data if you are using an alternative collection method. Use 2Calculate for data collection

5 – Data for answers	To identify the data needed to answer questions • I can propose a question that can be answered using logged data • I can plan how to collect data using a data logger • I can use a data logger to collect data	Data, data logger, logged, collection		This lesson uses data loggers which are not part of the Purple Mash tools. Purple Mash tools can be used for collecting the data if you are using an alternative collection method. Use 2Calculate for data collection
6 – Answering my question	To use collected data to answer questions • I can interpret data that has been collected using a data logger • I can draw conclusions from the data that I have collected • I can explain the benefits of using a data logger	Analyse, review, conclusion		Use of a customised 2Publish Plus template set as a 2do to record pupil analysis of the data.

NCCE Unit: Programming A – Repetition in shapes

Description:
This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming. Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Programming a screen turtle	• To identify that accuracy in programming is important • I can program a computer by typing commands • I can explain the effect of changing a value of a command • I can create a code snippet for a given purpose	• Program • Turtle — an arrow or turtle image on screen that draws a line as it is programmed • Commands • Code snippet — this could be the same as a program; it can have several sets of commands in one program	Unit 4.5 - Logo Pupils use 2Logo to develop their coding knowledge and skills in relation to the Logo language. Specific learning objectives vary from the NCCE. Alternatively use the Purple Mash version (2Logo) with the specific NCCE lesson plans.	Logo The Time crimes of Logonator – Adventure Logo Teacher Guide
2 – Programming letters	To create a program in a text-based language • I can use a template to create a design for my program	• Algorithm — the part of the design of the program that is precise instructions to be	Unit 4.5 - Logo Pupils use 2Logo to develop their coding knowledge and skills in relation to the Logo	Logo The Time crimes of Logonator – Adventure Logo Teacher Guide

	• I can write an algorithm to produce a given outcome • I can test my algorithm in a text-based language	implemented as code • Design • Debug — the process of finding and correcting errors in your code • Logo commands as detailed in the 'Glossary' handout	language. Specific learning objectives vary from the NCCE. Alternatively use the Purple Mash version (2Logo) with the specific NCCE lesson plans.	
3 – Patterns and repeats	To explain what 'repeat' means • I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves • I can identify patterns in a sequence, eg 'step three times' means the same as 'step, step, step' • I can use a count-controlled loop to produce a given outcome	Pattern, repeat, repetition, count-controlled loop, algorithm, value	Unit 4.5 - Logo Pupils use 2Logo to develop their coding knowledge and skills in relation to the Logo language. Specific learning objectives vary from the NCCE. Alternatively use the Purple Mash version (2Logo) with the specific NCCE lesson plans.	Logo The Time crimes of Logonator – Adventure Logo Teacher Guide
4 – Using loops to create shapes	To modify a count-controlled loop to produce a given outcome	Repeat, repetition, count-controlled loop, trace, value	Unit 4.5 - Logo Pupils use 2Logo to develop their coding	Logo The Time crimes of Logonator – Adventure

	• I can identify the effect of changing the number of times a task is repeated • I can predict the outcome of a program containing a count-controlled loop • I can choose which values to change in a loop		knowledge and skills in relation to the Logo language. Specific learning objectives vary from the NCCE. Alternatively use the Purple Mash version (2Logo) with the specific NCCE lesson plans.	Logo Teacher Guide
5 – Breaking things down	To decompose a program into parts • I can identify 'chunks' of actions in the real world • I can use a procedure in a program • I can explain that a computer can repeatedly call a procedure	• Repeat • Count-controlled loop • Decompose — break something down into smaller parts • Procedure — a named code snippet that can be run multiple times	Unit 4.5 - Logo Pupils use 2Logo to develop their coding knowledge and skills in relation to the Logo language. Specific learning objectives vary from the NCCE. Alternatively use the Purple Mash version (2Logo) with the specific NCCE lesson plans.	Logo The Time crimes of Logonator – Adventure Logo Teacher Guide
6 – Creating a program	To create a program that uses count-controlled loops to produce a given outcome • I can design a program that includes count-controlled loops	• Count-controlled loop • Procedure — a named code snippet that can	Unit 4.5 - Logo Pupils use 2Logo to develop their coding knowledge and skills in relation to the Logo language. Specific	Logo The Time crimes of Logonator – Adventure Logo Teacher Guide

	• I can make use of my design to write a program • I can develop my program by debugging it	be run multiple times • Debug — the process of finding and correcting errors in your code • Program — the entire solution to the task, and an implementation of the algorithm as code	learning objectives vary from the NCCE. Alternatively use the Purple Mash version (2Logo) with the specific NCCE lesson plans.	

NCCE Unit: Programming B – Repetition in games

Description:
This unit explores the concept of repetition in programming using the Scratch environment. It begins with a Scratch activity similar to that carried out in Logo in Programming unit A, where learners can discover similarities between two environments. Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Using loops to create shapes	To develop the use of count controlled loops in a different programming environment • I can list an everyday task as a set of instructions including repetition • I can predict the outcome of a snippet of code • I can modify a snippet of code to create a given outcome	Scratch, programming, sprite, blocks, code, loop, repeat, value	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 4.1: Coding	2Code 2Code Teacher Guide
2 – Different loops	To explain that in programming there are infinite loops and count-controlled loops • I can modify loops to produce a given outcome	Block, repeat, forever, infinite loop, count-controlled loop, costume	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 4.1: Coding	2Code 2Code Teacher Guide

	• I can choose when to use a count-controlled and an infinite loop • I can recognise that some programming languages enable more than one process to be run at once			
3 – Animate your name	To develop a design which includes two or more loops which run at the same time • I can choose which action will be repeated for each object • I can explain what the outcome of the repeated action should be • I can evaluate the effectiveness of the repeated sequences used in my program	Repetition, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 4.1: Coding	2Code 2Code Teacher Guide
4 – Modifying a game	To modify an infinite loop in a given program • I can identify which parts of a loop can be changed • I can explain the effect of my changes • I can re-use existing code snippets on new sprite	block, repeat, forever, infinite loop, modify, design	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 4.1: Coding	2Code 2Code Teacher Guide

5 – Designing a game	To design a project that includes repetition • I can evaluate the use of repetition in a project • I can select key parts of a given project to use in my own design • I can develop my own design explaining what my project will do	infinite loop, count-controlled loop, repetition, design, sprite, algorithm	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 4.1: Coding	2Code 2Code Teacher Guide
6 – Creating our games	To create a project that includes repetition • I can refine the algorithm in my design • I can build a program that follows my design • I can evaluate the steps I followed when building my project	repetition, design, algorithm, duplicate, debug, refine, evaluate	Pupils use 2Code Gibbon level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 4.1: Coding	2Code 2Code Teacher Guide

Year 5

NCCE Unit: Computing systems and networks – Sharing information

Description:
In this unit, learners will develop their understanding of computer systems and how information is transferred between systems and devices. Learners will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will also take part in a collaborative online project with other class members and develop their skills in working together online.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Systems	To explain that computers can be connected together to form systems • I can explain that systems are built using a number of parts • I can describe that a computer system features inputs, processes, and outputs • I can explain that computer systems communicate with other devices	System, connection, digital, input, process, output	Unit 4.8 Hardware Investigators Unit 5.2 Online Safety	**Introduction**: Use 2Connect or 2Write to record ideas collaboratively. Quizzes: Hardware Quiz Networks Quiz Networks Labelling Interface Layout Quiz Writing Templates: Transferring files About the Internet Slideshow What is the Internet? Effective Internet Searches (Part of unit 2.5) Online Safety email simulations: Downloading

				Software, You've won!, SPAM
2 - Computer systems and us	To recognise the role of computer systems in our lives • I can identify tasks that are managed by computer systems • I can identify the human elements of a computer system • I can explain the benefits of a given computer system	System, connection, digital, input, process, output		
3 - Transferring information	To recognise how information is transferred over the internet • I can recognise that data is transferred using agreed methods • I can explain that networked digital devices have unique addresses • I can explain that data is transferred over networks in packets	Protocol, address, packet		Activity 1 – use of 2Connect to collect ideas. Slideshow What is the Internet? Writing Templates Transferring files About the Internet
4 - Working together	To explain how sharing information online lets people	Chat, explore, slide deck		Many Purple Mash tools can be used to share files:

	in different places work together • I can recognise that connected digital devices can allow us to access shared files stored online • I can send information over the internet in different ways • I can explain that the internet allows different media to be shared			• Use of class shared areas. • 2Do notifications and setting of 2dos. • 2Email • 2Blog • Displayboards • Collaborative tools: 2Connect and 2Write **Activity 2** Pupils could make a shared blog rather than a slide deck and use 2Connect or 2Write to plan collaboratively what their blog post will be about.
5 - Better working together	To contribute to a shared project online • I can suggest strategies to ensure successful group work • I can make thoughtful suggestions on my group's work • I can compare working online with working offline	Chat, explore		
6 - Shared working	To evaluate different ways of working together online	Reuse, remix, collaboration		Activity 2 – Pupils can use a 2Code project

	• I can identify different ways of working together online • I can recognise that working together on the internet can be public or private • I can explain how the internet enables effective collaboration			

NCCE Unit: Creating media – Vector drawing

Description:
In this unit learners will find out that vector images are made up of shapes. They will learn how to use the different drawing tools and how images are created in layers. They will explore the ways in which images can be grouped and duplicated to support them in creating more complex pieces of work. This unit is planned using the Google Drawings app other alternative pieces of software are available.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – The drawing tools	To identify that drawing tools can be used to produce different outcomes: • I can recognise that vector drawings are made using shapes • I can identify the main drawing tools • I can discuss how a vector drawing is different from paper-based drawings	Vector, drawing tools, shapes, object, icons, toolbar		Purple Mash does not have a vector drawing tool but the paint tools can be used as a comparison. 2Paint a Picture 2Paint
2 – Create a vector drawing	To create a vector drawing by combining shapes • I can identify the shapes used to make a vector drawing	Vector drawing, object, move, resize, colour, rotate, duplicate/copy		Purple Mash does not have a vector drawing tool but the paint tools can be used as a comparison. 2Paint a Picture 2Paint

	• I can explain that each element added to a vector drawing is an object • I can move, resize, and rotate objects I have duplicated			
3 – Being effective	To use tools to achieve a desired effect • I can use the zoom tool to help me add detail to my drawings • I can explain how alignment grids and resize handles can be used to improve consistency • I can modify objects to create different effects	Organise, zoom, select, rotate, object, alignment grid, resize, handles, consistency, modify		Purple Mash does not have a vector drawing tool but the paint tools can be used as a comparison. 2Paint a Picture 2Paint
4 – Layers and objects	To recognise that vector drawings consist of layers • I can identify that each added object creates a new layer in the drawing • I can identify which objects are in the front layer or in the back layer of a drawing	Layers, object, front, back, order		Purple Mash does not have a vector drawing tool but the paint tools can be used as a comparison. 2Paint a Picture 2Paint

	• I can change the order of layers in a vector drawing			
5 – Manipulating objects	To group objects to make them easier to work with • I can copy part of a drawing by duplicating several objects • I can group to create a single object • I can reuse a group of objects to further develop my vector drawing	Copy, paste, group, ungroup, duplicate, object, vector drawing, reuse		Purple Mash does not have a vector drawing tool but the paint tools can be used as a comparison. 2Paint a Picture 2Paint
6 – Get designing	To evaluate my vector drawing • I can evaluate alternatives to vector drawings • I can suggest improvements to a vector drawing • I can apply what I have learned about vector drawings	Improvement, evaluate, alternatives, vector drawing		Purple Mash does not have a vector drawing tool but the paint tools can be used as a comparison. 2Paint a Picture 2Paint

NCCE Unit: Creating media – Video editing

Description:
This unit gives learners the opportunity to learn how to create short videos in groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-by-step support to take their idea from conception to completion. At the teacher's discretion, the use of green screen can be incorporated into this unit. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - What is video?	To recognise video as moving pictures that can include audio • I can explain that a video can include both visual and audio media • I can explain the benefits of adding audio (speech or music) to a video • I can plan a video project using a storyboard	Video, audio, recording, storyboard, script, soundtrack, dialogue	Unit 4.6 Animation	**Introduction & Activity 1**: Use 2Connect collaboratively instead of sticky notes. Add to this in later stages of the lesson.
2 - Identifying devices	To identify digital devices that can record video • I can identify and name digital devices that can record video and sound	Video, audio, recording, capture, zoom, storage, digital, tape		

	• I can choose the most suitable digital device for recording my project • I can locate and identify the working features of a digital device that can record video.			
3 - Using a device	To capture video using a digital device • I can select a suitable device and software to capture my video • I can demonstrate suitable methods of using a digital device to capture my video • I can demonstrate the safe use and handling of devices	Video, audio, AV (audiovisual), recording, save, videographer Video techniques: Zoom, pan, tilt, angle		
4 - Features of an effective video	To recognise the features of an effective video • I can list some of the features of an effective video • I can record a video that demonstrates some of the features of an effective video	Video, lighting, setting, YouTuber, content, light, audio/sound, camera angle, colour		Activity 1: Use 2Connect.

	• I can explain why lighting and angle are important in creating an effective video			
5 - Importing and editing video	To identify that video can be improved through reshooting and editing • I can store, retrieve, and export my recording to a computer • I can explain how to improve a video by reshooting and editing • I can select the correct tools to make edits to my video	Export, computer, Microsoft Movie Maker, split, trim/clip, edit, titles, end credits, timeline, transitions, audio, soundtrack, content, retake/reshoot (choose agreed language)		
6 - Video evaluation	To consider the impact of the choices made when making and sharing a video • I can make edits to my video and improve the final outcome • I can recognise that my choices when making a video will impact on the quality of the final outcome • I can evaluate my video and share my opinions	Video, special effects, title screen, end credits, export, constructive feedback		

NCCE Unit: Flat-file Databases

Description:
This unit looks at how a flat-file database can be used to organise data in records. Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Creating a paper-based database	To use a form to record information • I can create multiple questions about the same field, e.g. true or false, more than or less than • I can explain how information can be recorded • I can order, sort, and group my data cards	Database, data, information, record, field, sort, order, group	Unit 5.4 - Databases	2Investigate including the example databases could be used to deliver the NCCE lessons. A selection of 2Quiz, self-marking quizzes are provided that link to the example databases. 2Investigate Teacher Guide
2 – Computer databases	To compare paper and computer based databases • I can navigate a flat-file database to compare different views of information	Database, data, field, record, sort, order	Unit 5.4 - Databases	2Investigate including the example databases could be used to deliver the NCCE lessons. A selection of 2Quiz, self-marking quizzes are provided that link to the example databases.

	• I can explain what a field and a record is in a database • I can choose which field to sort data by to answer a given question			2Investigate Teacher Guide
3 – Using a database	To outline how grouping and then sorting data allows us to answer questions • I can explain how information can be grouped • I can group information to answer questions • I can combine grouping and sorting to answer more specific questions	Database, record, field, group, search, sort, order	Unit 5.4 - Databases	2Investigate including the example databases could be used to deliver the NCCE lessons. A selection of 2Quiz, self-marking quizzes are provided that link to the example databases. 2Investigate Teacher Guide
4 – Using search tools	To explain that tools can be used to select specific data • I can choose which field and value are required to answer a given question • I can outline how 'AND' and 'OR' can be used to refine data selection	Database, record, field, value, search, criteria	Unit 5.4 - Databases	2Investigate including the example databases could be used to deliver the NCCE lessons. A selection of 2Quiz, self-marking quizzes are provided that link to the example databases. 2Investigate Teacher Guide

	• I can choose multiple criteria to answer a given question			
5 – Comparing data visually	To explain that computer programs can be used to compare data visually • I can select an appropriate chart to visually compare data • I can refine a chart by selecting a particular filter • I can explain the benefits of using a computer to create graphs	Database, record, field, graph, chart, axis, compare, filter	Unit 5.4 - Databases	2Investigate including the example databases could be used to deliver the NCCE lessons. A selection of 2Quiz, self-marking quizzes are provided that link to the example databases. 2Investigate Teacher Guide
6 – Databases in real life	To apply my knowledge of a database to ask and answer real-world questions • I can ask questions that will need more than one field to answer • I can refine a search in a real-world context • I can present my findings to a group	Database, field, record, graph, chart, presentation	Unit 5.4 - Databases	2Investigate including the example databases could be used to deliver the NCCE lessons. A selection of 2Quiz, self-marking quizzes are provided that link to the example databases. 2Investigate Teacher Guide

NCCE Unit: Programming A – Selection in physical computing

Description:
In this unit, learners will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program components (including output devices- LEDs and motors) through the application of their existing programming knowledge. Learners are introduced to conditions as a means of controlling the flow of actions and make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the if, then structure).

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Connecting crumbles	To control a simple circuit connected to a computer • I can build a simple circuit to connect a microcontroller to a computer • I can program a microcontroller to light an LED • I can explain why I used an infinite loop	Microcontroller, Crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop	The Purple Mash scheme of work includes simulated devices rather than physical devices, lessons simulating physical systems can be found in the coding units such as Unit 4.1 – Coding, lesson 5 Pupils also learn about selection in coding as part of the coding units using 2Code. The Year 5 unit is Unit 5.1 - Coding	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide
2 – Combining output devices	To write a program that includes count-controlled loops • I can connect more than one output device to a microcontroller	Microcontroller, Crumble controller, output devices, motor, LED, Sparkle, crocodile clips,	The Purple Mash scheme of work includes simulated devices rather than physical devices, lessons simulating physical systems can be	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code

	• I can design sequences for given output devices • I can decide which output devices I control with a count-controlled loop	connect, battery box, program, repetition, count-controlled loop	found in the coding units such as Unit 4.1 – Coding, lesson 5 Pupils also learn about selection in coding as part of the coding units using 2Code. The Year 5 unit is Unit 5.1 - Coding	2Code Teacher Guide
3 – Controlling with conditions	To explain that a loop can stop when a condition is met, eg number of times • I can explain that a condition is something that can be either true or false (eg whether a value is more than 10, or whether a button has been pressed) • I can experiment with a 'do until' loop • I can program a microcontroller to respond to an input	Microcontroller, Crumble controller, components, switch, motor, LED, Sparkle, crocodile clips, connect, battery box, program, condition, true, false, input	The Purple Mash scheme of work includes simulated devices rather than physical devices, lessons simulating physical systems can be found in the coding units such as Unit 4.1 – Coding, lesson 5 Pupils also learn about selection in coding as part of the coding units using 2Code. The Year 5 unit is Unit 5.1 - Coding	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide
4 – Starting with selection	To conclude that a loop can be used to repeatedly check whether a condition has been met • I can explain that a condition being met can start an action • I can identify a condition and an action in my project	Microcontroller, output devices, selection, condition, action	The Purple Mash scheme of work includes simulated devices rather than physical devices, lessons simulating physical systems can be found in the coding units such as Unit 4.1 – Coding, lesson 5 Pupils also learn about selection in coding as	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide

	• I can use selection (an 'if... then...' statement) to direct the flow of a program		part of the coding units using 2Code. The Year 5 unit is Unit 5.1 - Coding	
5 – Drawing designs	To design a physical project that includes selection • I can identify a condition to start an action (real world) • I can describe what my project will do (the task) • I can create a detailed drawing of my project	Task, design, selection, repetition, condition, action, microcontroller, Crumble controller, output devices, motor, LED, Sparkle, switch, crocodile clips, battery box	The Purple Mash scheme of work includes simulated devices rather than physical devices, lessons simulating physical systems can be found in the coding units such as Unit 4.1 – Coding, lesson 5 Pupils also learn about selection in coding as part of the coding units using 2Code. The Year 5 unit is Unit 5.1 - Coding	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide
6 – Writing and testing algorithms	To create a controllable system that includes selection • I can write an algorithm to control lights and a motor • I can use selection to produce an intended outcome • I can test and debug my project	Task, design, selection, repetition, condition, action, microcontroller, Crumble controller, output devices, motor, LED, Sparkle, switch, algorithm, program, debug, evaluate	The Purple Mash scheme of work includes simulated devices rather than physical devices, lessons simulating physical systems can be found in the coding units such as Unit 4.1 – Coding, lesson 5 Pupils also learn about selection in coding as part of the coding units using 2Code. The Year 5 unit is Unit 5.1 - Coding	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide

NCCE Unit: Programming B – Selection in quizzes

Description:
In this unit, pupils develop their knowledge of selection by revisiting how conditions can be used in programs and then learning how the If... Then... Else structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They use their knowledge of writing programs and using selection to control outcomes to design a quiz in response to a given task and implement it as a program.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Exploring conditionals	To explain how selection is used in computer programs • I can recall how conditions are used in selection • I can identify conditions in a program • I can modify a condition in a program	Selection, condition, true, false, count controlled loop	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 5.1 - Coding	2Code 2Code Teacher Guide
2 – Selecting outcomes	To relate that a conditional statement connects a condition to an outcome • I can use selection in an infinite loop to check a condition • I can identify the condition and outcomes in an if..then... else statement	Selection, condition, true, false, outcomes, conditional statement - the linking together of a condition and outcomes- algorithm, program, debug.		

	• I can create a program with different outcomes using selection			
3 – Asking questions	To explain how selection directs the flow of a program • I can explain that program flow can branch according to a condition • I can design the flow of a program which contains If… Then… Else… • I can show that a condition can direct program flow in one of two ways	Selection, condition, true, false, outcomes, question, answer, algorithm, program, debug.		
4 – Designing a quiz	To design a program which uses selection • I can outline a given task • I can use a design format to outline my project • I can identify the outcome of user input in an algorithm	Task, design, algorithm, input, program, selection, condition, outcomes.		
5 – Testing a quiz	To create a program which uses selection	Implement, design, algorithm, program, selection, condition, outcome, test, run.		

	• I can implement my algorithm to create the first section of my program • I can test my program • I can share my program with others			
6 – Evaluating a quiz	To evaluate my program • I can identify ways the program could be improved • I can identify what setup code I need in my project • I can extend my program further	Implement, design, algorithm, program, debug, test, setup, selection, condition, outcome, share, evaluate, constructive		

Year 6

NCCE Unit: Computing systems and networks – Communication

Description:
In this unit, the class will learn about the World Wide Web as a communication tool. First, they will learn how we find information on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. They will then investigate different methods of communication, before focusing on internet-based communication. Finally, they will evaluate which methods of internet communication to use for particular purposes.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 - Searching the web	• To identify how to use a search engine • I can complete a web search to find specific information • I can refine my search • I can compare results from different search engines	Search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine	Unit 4.7 Effective Searching Unit 6.6 Networks Unit 6.2 Online Safety	Slideshows: Finding Answers (Part of unit 4.7) What is the Internet How Search Engines work Writing Frames Internet Research Searching for Images (Online Safety) About the Internet How we Search Searching the Internet Quizzes: Internet Recap Quiz (part of unit 4.7) Interface layout Quiz

				Browser Placing activity **Activity 1:** Pupils could use 2Chart to create a flowchart of instructions and then share using 2Blog or 2Email.
2 - Selecting search results	• To describe how search engines select results • I can explain why we need tools to find things online • I can recognise the role of web crawlers in creating an index • I can relate a search term to the search engine's index	Index, crawler, bot, search engine	Unit 4.7 Effective Searching Unit 6.6 Networks Unit 6.2 Online Safety	As above plus writing template: Sir Tim Berners-Lee This contains information as well as the template. The way that searches work are described as part of How Search Engines work
3 - How search results are ranked	• To explain how search results are ranked • I can explain that search results are ordered • I can explain that a search engine follows rules to rank relevant pages • I can suggest some of the criteria that a search engine checks to decide on the order of results	Ranking, search engine, search engine optimisation, links, web crawlers	Unit 4.7 Effective Searching Unit 6.6 Networks Unit 6.2 Online Safety	As above and Writing template Blank webpage **Activity 1**: Pupils could design a webpage using 2Code Gorilla and use the Launch command to include links to other pages; pupils can link to each other's pages using the sharing link in the Launch command.

				
4 -How are searches influenced?	• To recognise why the order of results is important, and to whom • I can describe some of the ways that search results can be influenced • I can recognise some of the limitations of search engines • I can explain how search engines make money	Searching, search engine, web crawler, content creator, selection, ranking	Unit 4.7 Effective Searching Unit 6.6 Networks Unit 6.2 Online Safety	
5 - How we communicate	• To recognise how we communicate using technology • I can explain the different ways in which people communicate • I can identify that there are a variety of ways of communicating over the internet	Communication, internet	Unit 4.7 Effective Searching Unit 6.6 Networks Unit 6.2 Online Safety	**Introduction**: Use 2Connect to record ideas. Add to this though the lesson to create a mind map. If the mind map is collaborative, then group can add to it in activity 3. **Activity 2**: Use 2Write collaboratively to contribute and refine a class list.

	• I can choose methods of communication to suit particular purposes			
6 - Communicating responsibly	• To evaluate different methods of online communication • I can compare different methods of communicating on the internet • I can decide when I should and should not share • I can explain that communication on the internet may not be private	Communication, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	Unit 4.7 Effective Searching Unit 6.6 Networks Unit 6.2 Online Safety	By following the Online Safety units in Purple mash, pupils will gain an understanding of these objectives. Use of 2Email Online Safety simulations: Inappropriate file sharing, Cyber Bullying, Confidential Information, Impulsive Communications.

NCCE Unit: Creating Media – 3D Modelling

Description:
During this unit, learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, including combining 3D objects to make a house and examining the differences between working digitally with 2D and 3D graphics. Learners will progress to making accurate 3D models of physical objects, such as a pencil holder, which include using 3D objects as placeholders. Finally, learners will examine the need to group 3D objects, then go on to plan, develop, and evaluate their own 3D model of a photo frame.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – What is 3D modelling?	To use a computer to create and manipulate three-dimensional (3D) digital objects: • I can discuss the similarities and differences between 2D and 3D shapes • I can explain why we might represent 3D objects on a computer • I can select, move, and delete a digital 3D shape	2D, 3D, 3D object, 3D space, view	Unit 5.6 – 3D Modelling Unit 5.5 – Game Creator	2Design and Make 2Design and Make Teacher Guide Maths Shape resources such as quizzes about 2D and 3D shapes. 2DIY 3D for 3D maze game creation 2DIY 3D Teacher Guide
2 – Making changes	To use digital tools to modify a 3D object	2D, 3D, 3D object, 3D space, resize, colour, lift	Unit 5.6 – 3D Modelling Shapes in 2Design and Make are manipulated	2Design and Make 2Design and Make Teacher Guide

	• I can identify how graphical objects can be modified • I can resize a 3D object • I can change the colour of a 3D object		differently to Tinkercad; the NCCE learning objectives can be applied to the use of 2Design and Make	
3 – Rotation and position	To construct a digital 3D model of a physical object • I can rotate a 3D object • I can position 3D objects in relation to each other • I can select and duplicate multiple 3D objects	Rotate, position, select, duplicate	Unit 5.6 – 3D Modelling	2Design and Make 2Design and Make Teacher Guide
4 – Making holes	To identify that physical objects can be broken down into a collection of 3D shapes • I can identify the 3D shapes needed to create a model of a real-world object • I can create digital 3D objects of an appropriate size • I can group a digital 3D shape and a placeholder to create a hole in an object	Dimensions, placeholder, hole, group, ungroup	Unit 5.6 – 3D Modelling	2Design and Make 2Design and Make Teacher Guide

5 – Planning my own 3D model	To design a digital model by combining 3D objects • I can plan my 3D model • I can choose which 3D objects I need to construct my model • I can modify multiple 3D objects	Resize, group, ungroup, design	Unit 5.6 – 3D Modelling	2Design and Make 2Design and Make Teacher Guide
6 – Making my own 3D model	To develop and improve a digital 3D model • I can decide how my model can be improved • I can modify my model to improve it • I can evaluate my model against a given criterion	Modify, evaluate, improve	Unit 5.6 – 3D Modelling	2Design and Make 2Design and Make Teacher Guide

NCCE Unit: Creating Media – Web page creation

Description:
This unit introduces learners to the creation of websites for a chosen purpose. Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – What makes a good website?	To review an existing website and consider its structure • I can explore a website • I can discuss the different types of media used on websites • I know that websites are written in HTML	Website, web page, browser, media, Hypertext Markup Language (HTML)	Unit 4.7 – Effective Searching Unit 6.2 – Online Safety	Webpages, icons and buttons quiz Interface placing game
2 – How would you lay out your web page?	To plan the features of a web page • I can recognise the common features of a web page • I can suggest media to include on my page	Web page, website, logo, layout, header, media, purpose		Blank Webpage Template

	• I can draw a web page layout that suits my purpose			
3 – Copyright or CopyWRONG?	To consider the ownership and use of images (copyright) • I can say why I should use copyright-free images • I can find copyright-free images • I can describe what is meant by the term 'fair use'	Copyright, fair use	Unit 4.2 – Online Safety – Lesson 3 Unit 5.2 – Online Safety – Lesson 3	Plagiarism Quiz
4 – How does it look?	To recognise the need to preview pages • I can add content to my own web page • I can preview what my web page looks like • I can evaluate what my web page looks like on different devices and suggest/make edits	Web page, home page, preview, evaluate, device, Google Sites	Unit 5.1 – Coding – Lesson 6 Pupils use 2Code to design a webpage with links to other pages and sites using the launch command.	Use of the Launch command within 2Code Gorilla level 2Code Teacher Guide Use of 2Create a Story Adventure mode which allows text and button linking to other pages or external links. 2Create a Story Guide
5 – Follow the breadcrumbs	To outline the need for a navigation path	Website, web page, breadcrumb trail, navigation, hyperlink, subpage	Unit 5.1 – Coding – Lesson 6 Pupils use 2Code to design a webpage with links to	Use of the Launch command within 2Code Gorilla level 2Code Teacher Guide

	• I can explain what a navigation path is • I can describe why navigation paths are useful • I can make multiple web pages and link them using hyperlinks		other pages and sites using the launch command. Unit 6.5 – Text Adventures, Lessons 1 & 2; change the theme from story to website with links	Use of 2Create a Story Adventure mode which allows text and button linking to other pages or external links. 2Create a Story Guide Use of 2Chart to map breadcrumbs and links 2Chart Teacher Guide
6 – Think before you link!	To recognise the implications of linking to content owned by other people • I can explain the implication of linking to content owned by others • I can create hyperlinks to link to other people's work • I can evaluate the user experience of a website	Hyperlink, evaluate, website, web page, implication, external link, embed	Unit 5.2 – Online Safety – Lesson 3	Use of the Launch command within 2Code Gorilla level 2Code Teacher Guide Use of 2Create a Story Adventure mode which allows text and button linking to other pages or external links. 2Create a Story Guide

NCCE Unit: Data and information - Spreadsheets

Description:
This unit introduces the learners to spreadsheets. Learners are supported in organising data into columns and rows to create their own data set. They are taught the importance of formatting data to support calculations. Learners are introduced to formulas and begin to understand how these can be used to produce calculated data. They are taught how to apply formulas which include a range of cells and apply formulas to multiple cells by duplicating them. Learners use spreadsheets to plan an event and answer questions. Finally learners create graphs and charts and evaluate their results in comparison to questions asked.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – What is a spreadsheet?	To identify questions which can be answered using data • I can explain the relevance of data headings • I can answer questions from an existing data set • I can ask simple relevant questions which can be answered using data	Spreadsheet, data, data heading, data set, cells, columns and rows.	Unit 6.3 – Spreadsheets (and other spreadsheet units) Unit 6.9 – Spreadsheets with MS Excel	2Calculate 2Calculate Teacher Guide
2 – Modifying spreadsheets	To explain that objects can be described using data • I can explain what an item of data is • I can apply an appropriate number format to a cell	Data, data item, data set, object, spreadsheet application, format, common attribute	Unit 6.3 – Spreadsheets (and other spreadsheet units) Unit 6.9 – Spreadsheets with MS Excel	2Calculate 2Calculate Teacher Guide

	• I can build a data set in a spreadsheet application			
3 – What's the formula?	To explain that formulas can be used to produce calculated data • I can explain the relevance of a cell's data type • I can construct a formula in a spreadsheet • I can identify that changing inputs changes outputs	Formula, calculation, data, spreadsheet, input, output. cells, cell reference	Unit 6.3 – Spreadsheets (and other spreadsheet units) Unit 6.9 – Spreadsheets with MS Excel	2Calculate 2Calculate Teacher Guide
4 – Calculate and duplicate	To apply formulas to data, including duplicating • I can recognise that data can be calculated using different operations • I can create a formula which includes a range of cells • I can apply a formula to multiple cells by duplicating it	Data, calculate, operation, formula, cell, range, duplicate, sigma	Unit 6.3 – Spreadsheets (and other spreadsheet units) Unit 6.9 – Spreadsheets with MS Excel	2Calculate 2Calculate Teacher Guide
5 – Event Planning	To create a spreadsheet to plan an event	Propose, question, data set, data, organised, formula	Unit 6.3 – Spreadsheets (and other spreadsheet units)	2Calculate 2Calculate Teacher Guide

	• I can use a spreadsheet to answer questions • I can explain why data should be organised • I can apply formula to calculate the data I need to answer questions		Unit 6.9 – Spreadsheets with MS Excel	
6 – Presenting data	To choose suitable ways to present data • I can produce a graph • I can use a graph to show the answer to questions • I can suggest when to use a table or graph	Graph, chart, evaluate, results, comparison, questions, software, tools, data	Unit 6.3 – Spreadsheets (and other spreadsheet units) Unit 6.9 – Spreadsheets with MS Excel	2Calculate 2Calculate Teacher Guide

NCCE Unit: Programming A – Variables in games

Description:
This unit explores the concept of variables in programming through games in Scratch. First, pupils will learn what variables are, and relate them to real-world examples of values that can be set and changed. Pupils will then use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, pupils will experiment with variables in an existing project, then modify them, then they will create their own project. In Lesson 4, pupils will focus on design. Finally, in Lesson 6, pupils will apply their knowledge of variables and design to improve their game in Scratch.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – Introducing variables	To define a 'variable' as something that is changeable • I can identify examples of information that is variable • I can explain that the way that a variable changes can be defined • I can identify that variables can hold numbers or letters	Variable, change, name, value	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 6.1 - Coding Unit 6.5 – Text Adventures	2Code 2Code Teacher Guide
2 – Variables in programming	To explain why a variable is used in a program • I can identify a program variable as a placeholder in memory for a single value	Variable, name, value, set, change	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 6.1 - Coding	2Code 2Code Teacher Guide

	• I can explain that a variable has a name and a value • I can recognise that the value of a variable can be changed		Unit 6.5 – Text Adventures	
3 – Improving a game	To choose how to improve a game by using variables • I can decide where in a program to change a variable • I can make use of an event in a program to set a variable • I can recognise that the value of a variable can be used by a program	Variable, set, change, design, event	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 6.1 - Coding Unit 6.5 – Text Adventures	2Code 2Code Teacher Guide
4 – Designing a game	To design a project that builds on a given example • I can choose the artwork for my project • I can explain my design choices • I can create algorithms for my project	Design, algorithm, code	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 6.1 - Coding Unit 6.5 – Text Adventures	2Code 2Code Teacher Guide

5 – Designing to code	To use my design to create a project • I can create the artwork for my project • I can choose a name that identifies the role of a variable • I can test the code that I have written	Task, algorithm, design, artwork, program, project, code, test, debug	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 6.1 - Coding Unit 6.5 – Text Adventures	2Code 2Code Teacher Guide
6 – Improving and sharing	To evaluate my project • I can identify ways that my game could be improved • I can extend my game further using more variables • I can share my game with others	Improve, evaluate, share	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. Specific learning objectives vary from the NCCE as the tools differ. Unit 6.1 - Coding Unit 6.5 – Text Adventures	2Code 2Code Teacher Guide

NCCE Unit: Programming B – Sensing

Description:
This unit is the final KS2 programming unit and brings together elements of all the four programming constructs: sequence from year 3, repetition from year 4, selection from year 5 and variables, introduced in year 6, programming A. It offers learners the opportunity to use all of these constructs in a different, but still familiar environment whilst also utilising a physical device - the micro:bit. The unit begins with a simple program which learners build in and test in the programming environment before transferring it to their micro:bit. Learners then take on three new projects in lessons 2, 3 and 4, with each lesson adding more depth.

Lesson	NCCE Learning Objectives	NCCE Key Vocabulary	Relevant Purple Mash Unit	Other Purple Mash Tools and activities
1 – The micro:bit	To create a program to run on a controllable device • I can apply my knowledge of programming to a new environment • I can test my program on an emulator • I can transfer my program to a controllable device	Micro:bit, MakeCode, input, process, output, flashing, USB	At present, Purple Mash tools do not connect with external devices. The coding concepts in these learning objectives are taught through the use of the coding tools such as 2Code.	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide
2 – Go with the flow	To explain that selection can control the flow of a program • I can identify examples of conditions in the real world	Selection, condition, if… then… else, variable, random	At present, Purple Mash tools do not connect with external devices. The coding concepts in these learning objectives are taught through the use of	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide

	• I can use a variable in an if... then... else... statement to select the flow of a program • I can determine the flow of a program using selection		the coding tools such as 2Code.	
3 – Sensing inputs	To update a variable with a user input • I can use a condition to change a variable • I can experiment with different physical inputs • I can explain that if you read a variable, the value remains	Input, selection, condition, variable, sensing, accelerometer	At present, Purple Mash tools do not connect with external devices. The coding concepts in these learning objectives are taught through the use of the coding tools such as 2Code.	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide
4 – Finding your way	To use an conditional statement to compare a variable to a value • I can explain the importance of the order of conditions in else if statements • I can use an operand (e.g. <>=) in an if... then... statement • I can modify a program to achieve a different outcome	Compass, direction, variable, navigation	At present, Purple Mash tools do not connect with external devices. The coding concepts in these learning objectives are taught through the use of the coding tools such as 2Code.	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide

5 – Designing a step counter	To design a project that uses inputs and outputs on a controllable device • I can decide what variables to include in a project • I can design the algorithm for my project • I can design the program flow for my project	Micro:bit, design, task, algorithm, variable, step counter	At present, Purple Mash tools do not connect with external devices. The coding concepts in these learning objectives are taught through the use of the coding tools such as 2Code.	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide
6 – Making a step counter	To develop a program to use inputs and outputs on a controllable device • I can create a program based on my design • I can test my program against my design • I can use a range of approaches to find and fix bugs	Plan, create, code, test, debug	At present, Purple Mash tools do not connect with external devices. The coding concepts in these learning objectives are taught through the use of the coding tools such as 2Code.	Pupils use 2Code Gorilla level to develop their coding knowledge and skills. 2Code 2Code Teacher Guide