Purple Mash Scheme of Work - Year 4

Unit 4.1 – Coding

Lesson	Title	Aims (Objectives)	Success Criteria
1	Design, Code, Test and Debug	• To review coding vocabulary and knowledge. • To create a simple computer program.	• Children can explore different object types in 2Code. • Children can use a background and objects to create a scene. • Children can plan an algorithm for their scene and use 2Code to program it.
2	IF Statements	• To begin to understand selection in computer programming. • To understand how an IF statement works.	• Children can create a program that includes an IF statement. • Children can interpret a flowchart that depicts an IF statement.
3	Co-ordinates	• To understand how to use co-ordinates in computer programming. • To understand how an IF statement works.	• Children can make use of the X and Y properties of objects in their coding. • Children can create a program that includes an IF statement.
4	Repeat Until and IF/ELSE Statements	• To understand the Repeat until command. • To begin to understand selection in computer programming. • To understand how an IF/ELSE statement works.	• Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes an IF/ ELSE statement. • Children can interpret a flowchart that depicts an IF/ ELSE statement.
5	Number Variables	• To understand what a variable is in programming. • To use a number variable.	• Children can explain what a variable is in programming. • Children can create and use variables when programming.
6	Making a Playable Game	• To review vocabulary and concepts learnt in Year 4 Coding. • To create a playable game.	• Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes and IF/ ELSE statement. • Children can interpret a flowchart that depicts an IF/ ELSE statement.

Unit 4.2 – Online Safety

Lesson	Title	Aims (Objectives)	Success Criteria
1	Going Phishing	• To understand how children can protect themselves from online identity theft. • To understand that information put online leaves a digital footprint or trail and that this can aid identity theft.	• Children know that security symbols such as a padlock protect their identity online. • Children know the meaning of the term 'phishing' and are aware of the existence of scam websites. • Children can explain what a digital footprint is and how it relates to identity theft. • Children can give examples of things that they would not want to be in their digital footprint.
2	Beware Malware	• To identify the risks and benefits of installing software including apps.	• Children can identify possible risks of installing free and paid for software. • Children know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. • Children know what a computer virus is.
3	Plagiarism	• To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. • To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.	• Children can determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it • Children know about citing sources that they have used.
4	Healthy Screen-Time	• To identify the positive and negative influences of technology on health and the environment. • To understand the importance of balancing game and screen time with other parts of their lives.	• Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. • Children can give reasons for limiting screen time.

Unit 4.3 – Spreadsheets

Lesson	Title	Aims (Objectives)	Success Criteria
1	Formula Wizard and Formatting Cells	• To explore how the numbers entered into cells can be set to either currency or decimal. • To explore the use of the display of decimal places. • To find out how to add formulae to a cell.	• Children can use the number formatting tools within 2Calculate to appropriately format numbers. • Children can add a formula to a cell to automatically make a calculation in that cell.
2	Using the Timer and Spin Buttons	• To explore how tools can be combined to use 2Calculate to make number games. • To explore the use of the timer, random number and spin button tools.	• Children can use the timer, random number and spin button tools. • Children can combine tools to make fun ways to explore number.
3	Line Graphs	• To use the line graphing tool in 2Calculate with appropriate data. • To interpret a line graph to estimate values between data readings.	• Children can use a series of data in a spreadsheet to create a line graph. • Children can use a line graph to find out when the temperature in the playground will reach 20°C.
4	Using a Spreadsheet for Budgeting	• To use the currency formatting tool in 2Calculate. • To use 2Calculate to create a model of a real-life situation.	• Children can make practical use of a spreadsheet to help them plan actions. • Children can use the currency formatting in 2Calculate.
5	Exploring Place Value with a Spreadsheet	• To use the functions of allocating value to images in 2Calculate to make a resource to teach place value.	• Children can allocate values to images and use these to explore place value. • Children can use a spreadsheet made in 2Calculate to check their understanding of a mathematical concept.

Unit 4.5 – Logo

Lesson	Title	Aims (Objectives)	Success Criteria
1	Introduction to 2Logo	• To learn the structure of the language of 2Logo. • To input simple instructions in 2Logo	• Children know what the common instructions are in 2Logo and how to type them. • Children can follow simple 2Logo instructions to create shapes on paper. • Children can follow simple instructions to create shapes in 2Logo.
2	Creating Letters using 2Logo	• To use 2Logo to create letter shapes.	• Children can create 2Logo instructions to draw patterns of increasing complexity. • Children understand the pu and pd commands. • Children can write 2Logo instructions for a word of four letters.
3	Using the 'Repeat' Command in 2Logo	• To use the Repeat command in 2Logo to create shapes.	• Children can follow 2Logo code to predict the outcome. • Children can create shapes using the Repeat command. • Children can find the most efficient way to draw shapes.
4	Using Procedures	• To use and build procedures in 2Logo.	• Children can use the Procedure feature. • Children can create 'flowers' or 'crystals' using 2Logo.

Unit 4.6 – Animation

Lesson	Title	Aims (Objectives)	Success Criteria
1	Animating an Object	• To decide what makes a good, animated film or cartoon and discuss favourite animations. • To learn how animations are created by hand. • To find out how 2Animate animations can be created in a similar way using technology.	• Children have put together a simple animation using paper to create a flick book. • Children understand animation frames. • Children have made a simple animation using 2Animate.
2	2Animate Tools	• To learn about onion skinning in animation. • To add backgrounds and sounds to animations.	• Children know what the Onion Skin tool does in animation. • Children can use the Onion Skin tool to create an animated image. • Children can use backgrounds and sounds to make more complex and imaginative animations.
3	Stop Motion Animation	• Introducing 'stop motion' animation. • To share animation the class blog.	• Children know what 'stop motion' animation is and how it is created. • Children have used ideas from existing 'stop motion' films to recreate their own animation. • Children have shared their animations and commented on each other's work using display boards and blogs in Purple Mash.

Unit 4.8 – Hardware Investigators

Lesson	Title	Aims (Objectives)	Success Criteria
1	Hardware	• To understand the different parts that make up a desktop computer.	• Children can name the different parts of a desktop computer. • Children know what the function of the different parts of a computer is.
2	Parts of a computer	• To recall the different parts that make up a computer	• Children have created a leaflet to show the function of computer parts.