Computing Skills, Knowledge and Vocabulary Progression

Year 4

	Autumn 1
Vocabulary 4:1 Coding (6 weeks)	**Action** **Alert** **Algorithm** **Flowchart Bug** **Code Design** **Command** **Control** **Debug/Debugging** **Design Mode** **Event** **Get Input** **If (command)** **If/Else** **Input -** **Output** **Object** **Repeat** **Selection** **Simulation** **Timer** **Variable**

Knowledge 4:1 Coding (6 weeks)	Children know how to create an 'If/else' statement. Children understand what a variable is in programming. Children know how to set/change the variable values appropriately. Children are able to interpret a flowchart that depicts an if/else flowchart. To know how to use the Repeat Until command to make characters repeat actions. To know how to create a program with a character that repeats actions. Children are able to make a character respond to user keyboard input. Children can explain how they made their program change the number every second. To know what decomposition and abstraction are in computer science. To be able to take a real-life situation, decompose it and think about the level of abstraction. Children can make good attempts to break down their aims for a coding task into smaller achievable steps. Children recognise the need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task.
Skills 4:1 Coding (6 weeks)	To use a sketch or storyboard to represent a program design and algorithm. To use the design to create a program. Children can create code that conforms to their design. To make timers and counting machines using variables to print a new number to the screen every second. Children can create an algorithm modelling the sequence of a simple event. Children can manipulate graphics in the design view to achieve the desired look for the program. Children can use an algorithm when making a simulation of an event on the computer. To design a decomposed feature of a real-life situation
	Autumn 2
Vocabulary 4:2 Online Safety (4 weeks)	**Computer virus** **Cookies** **Copyright** **Digital footprint** **Email** **Identity theft** **Malware** **Phishing** **Plagiarism** **Spam**

Knowledge 4:2 Online Safety (4 weeks)	To understand how children can protect themselves from online identity theft. Understand that information put online leaves a digital footprint or trail and that this can aid identity theft. Children know that security symbols such as a padlock protect their identity online. Children know the meaning of the term 'phishing' and are aware of the existence of scam websites. Children can explain what a digital footprint is and how it relates to identity theft. Children can give examples of things that they wouldn't want to be in their digital footprint. To know 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. 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 are able to determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it Children know about citing sources that they have used. To understand the importance of balancing game and screen time with other parts of their lives. Children are able to take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. Children can give reasons for limiting screen time.
Skills 4:2 Online Safety (4 weeks)	To identify the positive and negative influences of technology on health and the environment.
	Spring 1

Vocabulary 4:3 Spreadsheets (5 weeks)	**Average** **Advance mode** **Copy and Paste** **Columns** **Cells** **Charts** **Equals tool** **Formula** **Formula Wizard** **Move cell tool** **Random tool** **Rows** **Spin Tool** **Spreadsheet** **Timer**
Knowledge 4:3 Spreadsheets (5 weeks)	Children know how to 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. Children can use the timer, random number and spin button tools. Children know how to combine tools to make fun ways to explore number Children know how to use a series of data in a spreadsheet to create a line graph.
Skills 4:3 Spreadsheets (5 weeks)	Children can use a line graph to find out when the temperature in the playground will reach 20°C. Children can use the currency formatting in 2Calculate. 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.

	Spring 2
Vocabulary 4:4 Writing for different audiences (5 weeks)	**Font** **Bold** **Italic** **Underline**
Knowledge 4:4 Writing for different audiences (5 weeks)	To understand how font size and style can affect the impact of a text. To use and understand a simulated scenario to produce a news report. Children are able understand and interpret a variety of incoming communications and use them to build up the details of a story. To use and understand a simulated scenario to write for a community campaign. Children are able to assess their texts using criteria to judge their suitability for the intended audience
Skills 4:4 Writing for different audiences (5 weeks)	Children can use text formatting to make a piece of writing fit for its audience and purpose. Children are able to role-play the job of a journalist in a newsroom. Children can use 2Connect to mind-map ideas for a community campaign. Children can use these ideas to write a persuasive letter or poster as part of the campaign.
	Summer 1
Vocabulary 4:5 Logo (4 weeks)	**LOGO** **BK** **FD** **RT**

	LT **REPEAT** **SETPC** **SETPS** **PU** **PD** **See knowledge organiser for definitions!**
Knowledge 4:5 Logo (4 weeks)	Children know what the common instructions are in Logo and how to type them. Children can follow simple Logo instructions to create shapes on paper. Children can follow simple instructions to create shapes in Logo. Children can create Logo instructions to draw patterns of increasing complexity. Children understand the pu and pd commands. Children can write Logo instructions for a word of four letters. Children can follow Logo code to predict the outcome. Children can use the Procedure feature. Children can create 'flowers' or 'crystals' using Logo.
Skills 4:5 Logo (4 weeks)	Children can create shapes using the Repeat function. Children can find the most efficient way to draw shapes
Vocabulary **4:6 Animation** **(3 weeks)**	**Animation** **Flipbook** **Frame** **Onion skinning** **Background** **Play** **Sound** **Stop motion** **Video clip**

Knowledge **4:6 Animation (3 weeks)**	Children know how to put together a simple animation using paper to create a flick book. Children have an understanding of animation frames Children know what the Onion Skin tool does in animation Children know what 'stop motion' animation is and how it is created
Skills **4:6 Animation (3 weeks)**	Children have made a simple animation using 2Animate 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. 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.
	Summer 2
Vocabulary **4:7 Effective Searching (3 weeks)**	**Easter egg** **Internet** **Internet browser** **Search** **Search engine** **Spoof website** **Website**
Knowledge **4:7 Effective Searching (3 weeks)**	Children can structure search queries to locate specific information Children are able to write search questions for a friend to solve. Children know how to analyse the contents of a web page for clues about the credibility of the information.
Skills **4:7 Effective Searching (3 weeks)**	Children have used search to answer a series of questions.

Vocabulary **4:8 Hardware Investigators (2 weeks)**	**Motherboard** **CPU** **RAM** **Graphics card** **Network card** **Monitor** **Speakers** **Keyboard and mouse**
Knowledge **4:8 Hardware Investigators (2 weeks)**	Children can name the different parts of a desktop computer. Children know what the function of the different parts of a computer is.
Skills **4:8 Hardware Investigators (2 weeks)**	Children have created a leaflet to show the function of computer parts.