Curriculum Progression Map

Subject: Computing

Intent: The intent of iLearn2 is to help pupils become independent, creative, safe, respectful and problem-solving digital citizens with broad and transferable skills. iLearn2 makes computing fun for pupils, inspiring them to develop skills beyond the classroom and building an awareness of all the opportunities the subject provides.

The three aspects are:

- *Computer Science* – this covers programming (both block-based and text-based), including computational thinking using web-based software such as Scratch. Pupils across Key Stage 1 and 2 will write code to program physical and on-screen objects, interactive games and use text-based language, such as HTML and Python by the end of Key Stage 2.
- *Information Technology* – this covers the use of applications to create digital content, including document creation and editing, video making, digital art, graphic design, animation, 3D modelling and website building.
- *Digital Literacy* – covers skills to find, evaluate, utilise and share using technologies and the Internet. This includes important e-safety and internet research skills, as well as an understanding of computer networks in Key Stage 2.

Autumn	Year 3	Year 4	Year 5	Year 6
Knowledge	How computers work (Typing) Comic Creations 1. Add, resize and organise colour or picture backgrounds. 2. Add, resize, organise characters/objects to different panels. 3. Add narration using text and direct speech using speech bubbles. 4. Save comic with name and title. 5. Add audio recordings (optional).	Internet Research 1. Use search technologies to find specific pieces of information. 2. Understand features of an Internet Browser. 3. Reference the correct source of information. 4. Be discerning in evaluating digital content. 5. Check the internet for fake news by cross-referencing facts. Animation 1. Create a stop-motion video by duplicating slides that	Programming in Scratch 1. Program inputs for control, selection (conditions) and sensing for interaction and data variables for scoring and a game timer. 2. Program distance sensing and movement. 3. Program Inputs, outputs, loops, conditions, sensing and variables. 4. Program list variables that chooses randomly. Ebook creation 1. Add page colour and style.	Computers- past, present and future 1. Show awareness of how computers and digital technology helps us today. 2. Understand how technology has changed over time and represent it as an interactive timeline. 3. Understand the impact (positive/negative) technological changes have on society. 4. Predict how technology will change in the future. Web Design

		include backgrounds and shapes. 2. Create animation using transition and animation effects (morph, motion paths, pulse etc), including taking and editing a screenshot. 3. Animate individual elements of objects. 4. Create animated GIF files by animating pixels. <u>E Safety</u> 1. Understand what to do if something upsets you online. 2. Understand why and how people can be nasty online. Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people. 3. Understand why people pretend to be someone else online.	2. Add, position and format text on different pages. 3. Add and position images. 4. Add audio, including hiding it behind an object. 5. Add hyperlinks to text and images. 6. Search for shapes. 7. Lock and arrange shapes (extension task). <u>E Safety</u> 1. Keep personal information private. 2.Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online.	1. Create a static homepage. 2. Choose a suitable theme for your website. 3. Change the site identity to a suitable title, tagline and website icon. 4. Upload a suitable header and/or background image. 5. Adjust the website sidebar and add suitable widgets. 6. Add text and images to a page and edit them. 7. Add multiple pages and edit the navigation, including sub-menus. 8. Provide constructive feedback for your classmates' websites. <u>E Safety</u> 1. Keep personal information private. 2.Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint.
Skills	<u>Comic Creations</u> ● Digital Design Skills: Organizing and resizing backgrounds, characters, and objects in a digital layout. ● Creative Storytelling: Developing narratives through text, speech bubbles, and visual	<u>Internet Research</u> ● Effective Search Techniques: Using search engines to find accurate and specific information efficiently. ● Understanding Browser Features: Learning about tabs, address bars, bookmarks, and navigation tools in web browsers. ● Referencing Skills:	<u>Programming in Scratch</u> ● To write a programme with inputs, movement, selection, sensing and data variables. ● Program distance sensing and movement. ● Program inputs, outputs, loops, selection, sensing and variables. <u>Ebook creation</u> ● Front cover with	<u>Esafety</u> To understand the importance of keeping personal information private. To understand why it is important to keep track of our digital footprint. To be able to check if online content is trustworthy. <u>Computers- past, present and future</u> To understand how

	elements. ● Technical Skills: Using digital tools to save, name, and manage files effectively. ● Audio Integration: Adding and editing audio recordings to complement visual storytelling (optional). ● Planning and Organization: Structuring content across panels to create a coherent comic.	Identifying and crediting the correct sources of information to ensure proper attribution. ● Critical Thinking: Evaluating the reliability and accuracy of online content to determine its trustworthiness. ● Fact-Checking: Cross-referencing information across multiple sources to identify and avoid fake news or misinformation. <u>Stop-Motion:</u> ● Understanding how to duplicate slides for frame-by-frame animation. ● Combining backgrounds and shapes to build a cohesive story. ● Applying advanced effects like morph, motion paths, and pulse. ● Capturing and editing screenshots to integrate into animations. ● Manipulating and animating specific parts of objects (e.g., rotating or resizing components). ● Animating pixel-based elements. ● Exporting animations as GIF files for digital sharing.	background colour, text and an image ● Question page ● Answer pages ● Hyperlinks <u>Esafety</u> ● Use technology safely, respectfully and responsibly ● Recognise acceptable/ unacceptable behaviour	technology changes over time and predict how it will change further. To create a google slides presentation to show how technology has changed over time. <u>Web design</u> To understand what makes a good website To understand how to layout a website To understand why you should only use copyright-free images To add content to my own webpage To evaluate what my webpage looks like on different devices and suggest changes/edits. To explain what a navigation path is. To make multiple web pages and link them using hyperlinks. To explain the implication of linking to content owned by others. To create hyperlinks to link to other people's work. To evaluate the user experience of a website.

Spring	Year 3	Year 4	Year 5	Year 6
Knowledge	<u>Programming in Scratch</u> 1. Design, write and debug programs that accomplish specific goals. (Including outputs) 2. Use repetition in programs. 3. Work with various forms of inputs; keyboard, mouse and touch screen. 4. Write programs to simulate physical systems. <u>Branching databases</u> 1. Add and label objects within a branching database. 2. Ask questions to sort (classify) objects.	<u>Programming in Scratch</u> 1. Program inputs with loops, selection and sensing for interactions. 2. Work with variables and various forms of input and output. 3. Debug programs that accomplish goals. (correcting errors) 4. Use selection, data variables and operators. 5. Program a virtual robot using Scratch blocks. <u>Data Handling</u> 1. Change the appearance of cells in a spreadsheet (fill colour and border) then add and align text. 2. Find and add data to a spreadsheet, resize cells and use the software to create a suitable chart with a title. <u>E Safety</u> 4. Understand why we only talk to people we know in the real world, when online. 5. Understand why we should not always trust what we read online and how to check 6. Understand the importance of being kind in the real world and also online.	<u>Text-based programming</u> 1. Change the variables of text-based commands. 2. Write text-based commands accurately and use fill effects, stamps and functions. 3. Write text commands/functions to program keyboard inputs in a game. (Not compatible with iPad/tablet unless using physical keyboard) 4. Programming a Logo turtle to move and use pen *(Activity 4, lesson 1 and 2)* 5. Use co-ordinates in with a Logo turtle. 6. Print labels in Logo. 7. Program a loop (repetition) and shapes in Logo Turtle. 8. Program colours in Logo turtle. 9. Program variables in Logo turtle. <u>Computer networks and the internet</u> 1. Understand Computer Networks, Internet and Cloud Computing and how they help us. 2. What is email and how can we use it safely? 3. Understand how and why we collaborate online (including blogging). <u>E Safety</u> 4. Understand the term digital footprint.	<u>Programming in Scratch</u> 1. Program keyboard/touch screen inputs, selection (conditions), loops and random variables for unpredictability (operators). 2. Program inputs, selection, sensing, random variables, operators for direction and data variables for scoring. 3. Use inputs, selection, loops, sensing, costume changes and broadcasts. 4. Work with multiple sprites to send broadcast messages between them. <u>Databases</u> 1. Use comprehension skills to find clues that match the column headings of a spreadsheet. 2. Use spreadsheet tools (filters and conditional formatting) to find the specific data to match the clues. <u>E Safety</u> 5. How can we check if online content is trustworthy? 6. How, where and who can we report concerns we have to. 7. Use suitable usernames and passwords for online accounts.

			5. How can we check online content is trustworthy.	
Skills	<u>Programming</u> ● Breaking down tasks into steps to design and debug programs. ● Creating programs with clear goals and using outputs like sounds, movements, or animations. ● Using repetition (e.g., "forever" or "repeat" blocks) to create efficient programs. ● Responding to keyboard, mouse, and touch screen events to control their programs. ● Simulating physical systems (e.g., traffic lights or bouncing balls) using Scratch. ● Identifying and fixing errors in their code for smooth program functionality. ● Designing unique and interactive projects by combining various programming blocks. <u>Branching Databases</u> ● Learn to add and label objects accurately within a branching database. ● Develop the ability to	<u>Programming</u> ● Learn to use loops, selection (if/else statements), and sensing blocks to create interactive programs. ● Understand how to create, use, and manipulate variables to store and display data. ● Explore various forms of input (keyboard, mouse) and output (sound, visual effects). ● Develop problem-solving skills by identifying and fixing errors in programs to achieve specific goals. ● Apply selection (decision-making), operators (math and logical operations), and data variables in coding projects. ● Gain experience programming a virtual robot, learning to control its movements and actions using Scratch blocks. <u>Data Logging</u> Using a digital device to collect data Using data to find information	<u>Text-based programming</u> ● Write number variables ● Write text-based commands with accuracy, including fill effects, stamps and functions ● Write text commands/functions to program keyboard inputs in a game ● Program a turtle in Logo <u>Computer networks and the Internet</u> ● Understand computer networks, Internet and Cloud computing ● What is email and how can we use it safely? ● How and why can we collaborate online? <u>Esafety</u> ● Describe the term ‘sharing’ online and why we need to get permission to share photos and videos of other people ● Understand why people pretend to be someone else online Understand why we only talk to people we know in the read world, when online	<u>Variables in Games</u> Improving a game by using variables Designing and creating a project that builds on a given example and achieves a specific goal <u>Spreadsheets</u> Applying formula to data, including duplicating Collecting data for a spreadsheet Creating a spreadsheet Choosing suitable ways to present data

	ask relevant yes/no questions to sort and classify objects. ● Understand how to structure information in a way that helps identify objects efficiently. ● Practice creating pathways based on specific characteristics or attributes. ● Gain experience using technology to create and interact with databases.			
Summer	Year 3	Year 4	Year 5	Year 6
Knowledge	<u>Digital Art</u> 1. Use various lines and fill tools plus copy/paste and rotation to create pattern effects. 2. Use shapes, fill, copy/paste, zoom and flip to create reflective symmetry effects. 3. Use stamps, copy/paste, layers and multiple frames to create animated GIF computer game graphics. <u>Programming in Kodu</u> 1. Create a 3D place using various design tools 2. Write a program to control a character using inputs 3. Write a program with conditions to create an if statement (If the character	<u>3D Village Pupil Activity Pack skills:</u> 1. Understand 3D spatial awareness. 2. Add 3D shapes, resize, adjust height, duplicate and use the different perspective. 3. Re-create different types of buildings using 3D shapes. 4. Create roads/paths by adjusting the height of 3D shapes. 5. Add windows and door shapes. <u>Programming in Scratch</u> 1. Program inputs with loops, selection and sensing for interactions. 2. Work with variables and various forms of input and	<u>App design</u> 1. Adjust slide size to mimic a phone/tablet size. 2. Add text and images to a slide. 3. Add icons and text to use as navigation. 4. Duplicate slides to create multiple pages of the app. 5. Create hyperlinks to create navigation. <u>Micro Bits [TBC]</u> <u>Stop Motion Animation</u> <u>E Safety</u> 6. How and where and who can we report concerns we have to. 7. Understand the pitfalls of in-app purchases.	<u>Photo Editing</u> 1. Adjust the colours, brightness and contrast to improve a photo. 2. Create a before and after slide in presentation software. 3. Take and crop a screenshot. 4. Add drawing and text layers. 5. Import new images as layers and resize them to fit. 6. Add colour elements to a black and white image using layers and eraser tools. 7. Use Artificial Intelligence (AI) to remove objects from photographs. <u>Python Programming</u>

	touches an object it will disappear) 4. Add a multi-player aspect 5. Write a program with variables (scoring system) 6. Program operators (equals) to achieve a score and win a game.	output. 3. Debug programs that accomplish goals. (correcting errors) 4. Use selection, data variables and operators. 5. Program a virtual robot using Scratch blocks. <u>E Safety</u> 7. Understand how to protect digital content with a strong password. 8. Understand the importance of using avatars and how to make them.		1. Use the PRINT command for text. 2. Program a simple calculator in Python. 3. Program loops to repeat text. 4. Program interactive inputs. 5. Find errors in a program (debugging) 6. Program a trivia chatbot using 'send message' functions (challenge) <u>E Safety</u> 8. Understand the pitfalls of in-app purchases. 9. Understand how and why companies/people track our online behaviour and how we can prevent it. 10.Understand how clones, trojans and hackers can steal your online identity
Skills	<u>Digital Art</u> ● Drawing with various line and fill tools. ● Using copy/paste and rotation to design repeating patterns. ● Manipulating shapes with fill tools and zooming in for precision. ● Using flip and copy/paste to create symmetrical designs. ● Applying stamps and layers for complex designs. ● Using multiple	<u>3D Village:</u> ● Understanding how objects occupy space and relate to one another in three dimensions. ● Adding, resizing, and adjusting the height of 3D shapes. ● Duplicating shapes and working with multiple perspectives. ● Re-creating realistic buildings using a variety of 3D shapes. ● Designing roads and paths by modifying the height of 3D shapes.	<u>App design</u> ● Slide size and colour ● Text and images ● Icons and text ● Other slides ● Create navigation via hyperlinks <u>Physical devices</u> ● What is a Microbit? ● Microbit program editor, loops and LED outputs ● Programming a Microbit (Inputs) ● Programming a Microbit (other projects) <u>Esafety</u> ● Identify a range of ways to report concerns about content and contact	<u>Photo Editing</u> Changing the composition of an image Making good choices when selecting tools Comparing the similarities and differences in photos. Using photoshop to edit and change effects. Altering images using AI.

	frames to create animated GIFs for computer game graphics. <u>Programming</u> ● Using design tools to create imaginative and detailed 3D environments. ● Writing code to control characters and respond to user inputs. ● Understanding and using "if" statements to create interactions (e.g., objects disappearing when touched). ● Adding multiplayer features to encourage shared experiences and teamwork. ● Implementing scoring systems to track and manage game progress. ● Applying "equals" and other operators to create game-winning conditions and enhance gameplay mechanics.	● Adding features like windows and doors to enhance the realism of structures. <u>Programming</u> ● Repeating actions in programs to create efficient code. ● Making decisions in code with "if" and "else" blocks to control program flow. ● Detecting interactions, such as touch or keypress events, to trigger actions. ● Storing and manipulating data to manage different values during a program. ● Using different methods for input (e.g., mouse or keyboard) and output (e.g., displaying information). ● Identifying and correcting mistakes in code to achieve the desired result. ● Using mathematical and logical operators to manipulate data (e.g., addition, subtraction, comparisons). ● Control a virtual robot's movements and actions using Scratch blocks for real-world simulations.	● In-app purchases	
Impact: End Points				

	A Year 3 child at the end of the academic year will be able to: ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. ● Design, write and debug programs that accomplish specific goal, including simulating physical systems. ● Use sequence and repetition in programs; work with various forms of input. ● Collect, classify and present data. ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. ● Design, write and debug programs that	A Year 4 child at the end of the academic year will be able to: ● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. ● Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. ● Design, write and debug programs that accomplish specific goals. ● Use sequence, selection, and repetition in programs; work with various forms of input and output. ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. ● Collecting, analysing, evaluating and presenting data and information. ● Select, use and combine a variety of software (including internet services) on a range of	A Year 5 child at the end of the academic year will be able to: ● Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. ● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. ● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. ● Use sequence and repetition in programs; work with variables. Correct errors. ● Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they	A Year 6 child at the end of the academic year will be able to: ● Design and create digital content to accomplish goals. ● Use search technologies effectively and be discerning in evaluating digital content. ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.

	accomplish specific goal. ● Use sequence and selection in programs; work with various forms of input.	digital devices to design and create a range of programs, systems and content that accomplish given goals.	offer for communication and collaboration. ● Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.	