



Computing Curriculum Map

By the end of Nursery, we expect children to be able to:

- ✓ Remember rules without needing an adult to remind them
- ✓ Match their developing physical skills to tasks and activities in the setting
- ✓ Explore how things work

By the end of Reception, we expect children to be able to:

- ✓ Show resilience and perseverance in the face of a challenge
- ✓ Know and talk about the different factors that support their overall health and wellbeing: sensible amounts of 'screen time'
- ✓ Develop their small motor skills so that they can use a range of tools competently, safely, and confidently
- ✓ Explore, use and refine a variety of artistic effects to express their ideas and feelings.
- ✓ Be confident to try new activities and show independence, resilience, and perseverance in the face of challenge
- ✓ Explain the reasons for rules, know right from wrong and try to behave accordingly
- ✓ Safely use and explore a variety of materials, tools, and techniques, experimenting with colour, design, texture, form and function

By the end of Key Stage Two, we expect children to be able to:

- ✓ Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- ✓ Analyse problems in computational terms, and have repeated practical experience of writing computer programs to solve such problems
- ✓ Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- ✓ Are responsible, competent, confident and creative users of information and communication technology

Year 1	Autumn E - Safety	Spring Mouse and Keyboard Skills	Spring Text and images	Autumn Digital Sound	Summer Digital Art	Summer Programming
National Curriculum Programme of Study	<p>Use technology safely and respectfully, keeping personal information private.</p> <p>Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p>	<p>Recognise common uses of information technology beyond school.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>	<p>Use logical reasoning to predict the behaviour of simple programs.</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p>
RDPS Knowledge and Skills	<p>Understand what personal information is and why we keep personal information private.</p> <p>Understand why websites want personal information.</p> <p>Identify when and where to go for help when concerned.</p> <p>Understand the dangers of sharing photos online.</p> <p>Understand that people online are not always who they say they are. Understand how to trust information online.</p> <p>Learn to use the Internet responsibly.</p> <p>Understand why we should be respectful.</p>	<p>Move the mouse or trackpad and left click to select an object.</p> <p>Drag and drop with mouse or trackpad to move objects around the screen.</p> <p>Use double click or double tap.</p> <p>Find letters or numbers on keyboard.</p> <p>Begin touch typing with home row keys.</p>	<p>Add, move and resize images.</p> <p>Add text and adjust size and placement.</p> <p>Add, resize, and place images on a page then add and position text to label and describe images.</p> <p>Use word banks to write sentences about images.</p>	<p>Understand that different instruments make their own sound and that instruments can be divided into groups</p> <p>Create a rhythm using a pattern of beats.</p> <p>Create digital sounds using patterns and shapes.</p> <p>Create a simple melody using patterns and adjust tempo.</p>	<p>Change the colour and pattern of elements.</p> <p>Position and rotate objects on a design.</p> <p>Position objects in relation to each other.</p> <p>Resize, rotate, flip, and arrange objects behind/in front of each other.</p>	<p>Place instructions into the correct order (sequence) to make something work.</p> <p>Use direction arrows to move an on-screen object (character/sprite) to achieve an objective.</p> <p>Predict a route and sequence direction commands (algorithm) to achieve an objective.</p> <p>Correct the errors if necessary (debug).</p> <p>Sequence code blocks, including movements and execute (start program) blocks to write a program to achieve an objective.</p>
Supporting Resources	<p>https://projectevolve.co.uk/toolkit/resources/years/year-one/</p> <p>https://www.ilearn2.co.uk/e-safety---key-stage-1.html/</p>	<p>https://www.ilearn2.co.uk/eyfs/year-1-mouse-and-keyboard-skills.html/</p>	<p>https://www.ilearn2.co.uk/year-1-text--images.html/</p>	<p>https://www.ilearn2.co.uk/year1/musiccreation.html/</p>	<p>https://www.ilearn2.co.uk/year13ddesign.html/</p>	<p>https://www.ilearn2.co.uk/year-1-programming.html/</p>

Year 2	Autumn E - Safety	Autumn Digital Art	Spring Developing Programming	Spring Internet Research	Summer Programming	Summer Text and Images
National Curriculum Programme of Study	<p>Use technology safely and respectfully, keeping personal information private.</p> <p>Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>	<p>Use logical reasoning to predict the behaviour of simple programs.</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p>	<p>Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p>	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs.</p> <p>Use logical reasoning to predict the behaviour of simple programs.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>
RDPS Knowledge and Skills	<p>Understand what personal information is and why we keep personal information private.</p> <p>Understand why websites want personal information.</p> <p>Identify when and where to go for help when concerned.</p> <p>Understand the dangers of sharing photos online.</p> <p>Understand that people online are not always who they say they are. Understand how to trust information online.</p> <p>Learn to use the Internet responsibly.</p> <p>Understand why we should be respectful.</p>	<p>Add a background and objects to a frame, including text.</p> <p>Copy/clone a frame and move objects to create an animation.</p> <p>Flip an object.</p> <p>Create screen-recording animation.</p> <p>Create stop-motion animation with photos.</p>	<p>Place instructions into the correct order (sequence) to make something work.</p> <p>Use direction arrows to move an on-screen object (character/sprite) to achieve an objective.</p> <p>Predict a route and sequence direction commands (algorithm) to achieve an objective.</p> <p>Correct the errors if necessary (debug).</p> <p>Sequence code blocks, including movements and execute (start program) blocks to write a program to achieve an objective.</p>	<p>Understand how a webpage displays information in different ways, text, images, videos and interactive elements.</p> <p>Use a webpage to answer questions by using keywords.</p>	<p>Program movements.</p> <p>Program outputs for audio or text.</p> <p>Find errors in a program (debug).</p> <p>Program inputs (touch or clicking)</p> <p>Program selection/conditions (if statements).</p>	<p>Add a book cover with title, author, colour, and image.</p> <p>Add multiple pages based on a theme.</p> <p>Add text on different pages.</p> <p>Add images on different pages to match the theme/text.</p> <p>Add voice recordings to match the text and theme.</p>
Supporting Resources	<p>https://projectevolve.co.uk/toolkit/resources/years/year-two/</p> <p>https://www.ilearn2.co.uk/e-safety---key-stage-1.html/</p>	<p>https://www.ilearn2.co.uk/year-2-animation.html/</p>	<p>https://www.ilearn2.co.uk/year-2-programming.html/</p>	<p>https://www.ilearn2.co.uk/year-2-research.html/</p>	<p>https://www.ilearn2.co.uk/year-2-scratch-jr.html/</p>	<p>https://www.ilearn2.co.uk/ebobookcreationks1.html/</p>

Year 3	Autmn E-Safety	Autumn Text and Images	Spring Digital Art	Spring Infographics	Summer Text Editing	Summer Programming
National Curriculum Programme of Study	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p>	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.	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.	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.	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.	<p>Design, write and debug programs that accomplish specific goal.</p> <p>Use sequence and selection in programs; work with various forms of input.</p>
RDPS Knowledge and Skills	<p>Understand what to do if something upsets you online.</p> <p>Understand why and how people can be nasty online.</p> <p>Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people.</p> <p>Understand why people pretend to be someone else online.</p> <p>Understand why we only talk to people we know in the real world, when online.</p>	<p>Know the advantages of creating comics digitally.</p> <p>Know how to add, resize, and organise colour or picture backgrounds.</p> <p>Know how to add, resize, organise characters/objects to different panels.</p> <p>Know how to add narration using text and direct speech using speech bubbles.</p> <p>Add, resize, and organise colour or picture backgrounds.</p> <p>Add, resize, organise characters/objects to different panels.</p> <p>Add narration using text and direct speech using speech bubbles.</p> <p>Save comic with name and title.</p>	<p>Understand and place 3D space on a grid to match another design.</p> <p>Re-create or design familiar 3D models using cubes, such as tables and chairs.</p> <p>Use chisel tool to improve and adapt models.</p> <p>Colour individual blocks or whole models.</p> <p>Apply 3D skills to your own design.</p> <p>Design cities/towns for a purpose and to a budget.</p>	<p>Understand what an infographic is and why we use them.</p> <p>Search for and add suitable graphic elements.</p> <p>Add and format suitable titles and text.</p> <p>Label an image using arrows.</p>	<p>Add and edit backgrounds.</p> <p>Add and edit characters, including changing posture, expression, and clothing.</p> <p>Add narration and speech bubbles, including formatting text.</p> <p>Duplicate objects to match scenes.</p> <p>Search for objects to use.</p>	<p>Create a 3D place using various design tools.</p> <p>Write a program to control a character using inputs.</p> <p>Write a program with conditions to create an if statement.</p> <p>Add a multi-player aspect.</p> <p>Write a program with variables (scoring system).</p> <p>Program operators (equals) to achieve a score and win game.</p>
Supporting Resources	<p>https://projectevolve.co.uk/sign-in/?redirect=%2Ftoolkit%2Fresources%2Fyears%2Fyear-three%2F</p> <p>https://www.ilearn2.co.uk/e-safety---key-stage-2.html/</p>	https://www.ilearn2.co.uk/comiccreationteacher.html/	https://www.ilearn2.co.uk/year33d-designteacher.html/	https://www.ilearn2.co.uk/year3infographics.html/	https://www.ilearn2.co.uk/year3storyboards/	https://www.ilearn2.co.uk/year-3-kodu.html/

Year 4	Autumn E-Safety	Autumn Internet Research	Spring Programming	Spring Inside a computer	Summer Digital Art	Summer Animation
National Curriculum Programme of Study	<p>Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p>	<p>Design, write and debug programs that accomplish specific goals.</p> <p>Use sequence, selection, and repetition in programs, work with various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>	<p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</p>
RDPS Knowledge and Skills	<p>Understand what to do if something upsets you online.</p> <p>Understand why people pretend to be someone else online.</p> <p>Understand why we only talk to people we know in the real world, when online.</p> <p>Understand why we should not always trust what we read online and how to check.</p> <p>Understand how to protect digital content with a strong password.</p> <p>Understand the importance of being kind in the real world and also online.</p>	<p>Understand how search results are selected and ranked and show awareness of different strategies for finding specific information.</p> <p>Understand the features of an Internet Browser.</p> <p>Use search technologies (different websites) to find specific pieces of information.</p> <p>Reference the correct source of information.</p> <p>Be discerning in evaluating digital content.</p> <p>Check the internet for fake news by cross-referencing facts.</p>	<p>Program inputs with loops, selection and sensing for interactions.</p> <p>Work with variables and various forms of input and output.</p> <p>Debug programs that accomplish goals. (correcting errors)</p> <p>Use selection, data variables and operators.</p> <p>Program a virtual robot using Scratch blocks.</p>	<p>Understand what important parts of inside a computer or mobile device do to help with the performance (CPU, Fan, Hard Drive, RAM, Graphics Card).</p> <p>Understand that memory is measured in bytes and gigabytes.</p> <p>Use search engines on websites to find suitable information.</p>	<p>Create an icon using different shapes and fill tools.</p> <p>Combine shapes and lines, then arrange them in front/behind each other.</p> <p>Combine shapes, colour and text to re-create an icon.</p> <p>Change the colour, size and style of text to match an icon, then arrange images and use masking and opacity tools.</p>	<p>Understand that stop-motion is a series of pictures that are slightly different, and they appear to move when played one after other.</p> <p>Know how to create a stop motion video by duplicating slides that include backgrounds and shapes.</p> <p>Know how to use transition and animation effects in presentation software.</p> <p>Know how to animation individual parts of objects to create realistic animation.</p> <p>How to create animated pixel animation and save it as GIF file (short animation on a loop).</p>
Supporting Resources	<p>https://projectevolve.co.uk/toolkit/resources/years/4/</p> <p>https://www.ilearn2.co.uk/e-safety---key-stage-2.html/</p>	<p>https://www.ilearn2.co.uk/year-4-research.html/</p>	<p>https://www.ilearn2.co.uk/y4scratch.html/</p>	<p>https://www.ilearn2.co.uk/year-4-inside-a-computer/</p>	<p>https://www.ilearn2.co.uk/year-4-graphic-design/</p>	<p>https://www.ilearn2.co.uk/year-4-animation.html/</p>

Year 5	Autumn E-Safety	Autumn Programming	Spring Computer Networks	Spring Digital Sound	Summer Programming	Summer Text-based programming
National Curriculum Programme of Study	<p>Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p>	<p>Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts.</p> <p>Use sequence, selection, and repetition in programs, work with variables and various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>	<p>Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.</p>	<p>Select, use, and combine a variety of software (including internet services) on a range of digital devices to design content that accomplish given goals.</p>	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p> <p>Use sequence, selection, and repetition in programs, work with variables and various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>	<p>Use sequence and repetition in programs; work with variables. Correct errors.</p>
	<p>Understand what to do if something upsets you online.</p> <p>Understand why and how people can be nasty online.</p> <p>Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people.</p> <p>Understand why people pretend to be someone else online.</p> <p>Understand why we only talk to people we know in the real world, when online.</p> <p>Understand why we should not always trust what we read online and how to check.</p> <p>Understand how to protect digital content with a strong password.</p> <p>Understand the importance of using avatars and how to make them.</p>	<p>Know that sprites can be controlled in different ways using keyboard or touch screen inputs.</p> <p>Know that sprites can be programmed to sense other sprites or colours then make decisions.</p> <p>Know how to program variables, including random variables that can be used to make a game unpredictable.</p> <p>Program inputs for control, selection (conditions) and sensing for interaction and data variables for scoring and a game timer.</p> <p>Program distance sensing and movement.</p> <p>Program Inputs, outputs, loops, selection, sensing, and variables.</p> <p>Program list variables that chooses randomly.</p>	<p>Understand the different equipment needed for a computer network and how they help.</p> <p>Understand the advantages of a computer network (share information, troubleshoot computers, do not need to use the same computer to access files).</p> <p>Understand why a computer network needs to be secure.</p> <p>Understand the term 'cloud computing' and the advantages of it.</p>	<p>Layer tracks using sounds and effects.</p> <p>Use various online samplers and sequencers to create drums patterns and scales.</p> <p>Create effective instrument tracks.</p> <p>Edit tracks and effectively adjust volume and add effects.</p>	<p>Understanding Bluetooth Technology as an Input Device.</p> <p>Write programs for the Sphero using movement and repetition (loops).</p> <p>Write a program to trace a maze/route with Sphero and De-bug.</p> <p>Write a program with outputs.</p> <p>Write a program with random variables</p>	<p>Know that JavaScript and Logo are text-based programming languages that use letters, numbers, and symbols to program interactive elements (JavaScript) or an on-screen turtle to move or draw.</p> <p>Know that text-based programming commands need to be typed accurately.</p> <p>Change the variables of text-based commands.</p> <p>Write text-based commands accurately and use fill effects, stamps, and functions.</p> <p>Write text commands/functions to program keyboard inputs in a game.</p> <p>Programming a Logo turtle to move and use pen.</p> <p>Use co-ordinates in with a Logo.</p> <p>Print labels in Logo</p> <p>Program a loop (repetition) and shapes.</p> <p>Program colours and variables.</p>
Supporting Resources	https://projectevolve.co.uk/toolkit/resources/years/5/ https://www.ilearn2.co.uk/e-safety/--key-stage-2.html/	https://www.ilearn2.co.uk/y5scratch.html/	https://www.ilearn2.co.uk/year-5-computer-networks.html/	https://www.ilearn2.co.uk/year-5-music-creation.html/	https://www.ilearn2.co.uk/year-5-sphero-programming.html/	https://www.ilearn2.co.uk/textprogrammingstudent.html/

Year 6	Autumn E- Safety	Autumn Spreadsheets	Spring BBC Micro: bit	Spring Programming	Summer Digital Art	Summer Digital Advancements
National Curriculum Programme of Study	<p>Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</p>	<p>Collecting, analysing, evaluating, and presenting data and information.</p>	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p> <p>Use sequence, selection, and repetition in programs, work with variables and various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	<p>Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts.</p> <p>Use sequence, selection, and repetition in programs, work with variables and various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</p>	<p>Design and create digital content to accomplish goals.</p> <p>Use search technologies effectively and be discerning in evaluating digital content.</p>
RDPS Knowledge and Skills	<p>Know what to do if something upsets you online.</p> <p>Understand why and how people can be nasty online.</p> <p>Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people.</p> <p>Understand why people pretend to be someone else online.</p> <p>Understand why we only talk to people we know in the real world, when online.</p> <p>Understand why we should not always trust what we read online and how to check.</p> <p>Understand how to protect digital content with a strong password.</p> <p>Understand the importance of being kind in the real world and online.</p> <p>Understand the importance of using avatars and how to make them.</p>	<p>Use comprehension skills to find clues that match the column headings of a spreadsheet.</p> <p>Use spreadsheet tools (filters and conditional formatting) to find the specific data to match the clues.</p> <p>Use spreadsheet tools (filters and conditional formatting) to find the specific data to match the clues and select the best tool for the type of data that is being found.</p> <p>Write clues that allow others to search the spreadsheet.</p>	<p>Know how to create test and transfer code to micro: bits.</p> <p>Understand that computers need instructions in a sequence, also known as algorithms, and that these are written as programs in code, a language the computer can understand.</p> <p>Learn how sequences and loops can be used to make animations and control programs.</p> <p>Gain practical experience and understanding of inputs, outputs, and variables in real-world contexts.</p> <p>Learn how logic ('if...then' instructions) and sensors combine to make a simple control system.</p> <p>Combine skills and knowledge gained through the previous lessons to create computer simulations of real-world games of chance.</p> <p>Evaluate control programmes.</p>	<p>Program inputs, selection, loops, and random variables (operators) for unpredictability.</p> <p>Program inputs, selection (conditions), sensing, random variables, operators for direction and data variables for scoring.</p> <p>Use inputs, selection (conditions), loops, sensing, costume changes, and broadcasts.</p> <p>Work with multiple sprites to send broadcast messages between them.</p> <p>Know that sprites can be controlled in different ways using keyboard or touch screen inputs.</p> <p>Know that sprites can be programmed to sense other sprites or colours then make decisions.</p> <p>Know how to program variables, including random variables that can be used to make a game unpredictable.</p> <p>Know how to program operators to add sums.</p> <p>Know how to program broadcasts, to send messages between sprites.</p>	<p>Adjust the colours, brightness, and contrast to improve a photo.</p> <p>Create a before and after slide in presentation software.</p> <p>Take and crop a screenshot.</p> <p>Add drawing and text layers.</p> <p>Import new images as layers and resize them to fit.</p> <p>Add colour elements to a black and white photo using layers and eraser tools.</p> <p>Use Artificial Intelligence to remove objects from photographs and expand them.</p>	<p>Show an awareness of how computers and digital technology helps us today.</p> <p>Understand how technology has changed over time and represent it as an interactive timeline.</p> <p>Understand the impact (positive/negative) technological changes have on society.</p> <p>Predict how technology will change in the future.</p> <p>Show awareness of how computers and digital technology helps us today.</p> <p>Understand how technology has changed over time and represent it as an interactive timeline.</p> <p>Understand the impact (positive/negative) technological changes have on society.</p> <p>Predict how technology will change in the future.</p>
Supporting Resources	https://projectevolve.co.uk/toolkit/resources/years/6/ https://www.ilearn2.co.uk/e-safety--key-stage-2.html/	https://www.ilearn2.co.uk/year-6-data-detectives/	https://microbit.org/teach/lessons/first-lessons-with-makecode-and-the-microbit/	https://www.ilearn2.co.uk/year6-html/	https://www.ilearn2.co.uk/image-editingteacher.html/	https://www.ilearn2.co.uk/year-6-computers-past-present-future.html/