



# Otterbourne CE Primary School - Computing Curriculum Map, Progression and Golden Threads

## Concepts to know and remember

Programming Skills		IT and Digital Literacy Skills			Online Safety	
	Autumn Term	Spring Term			Summer Term	
<b>Year R</b>	Complete a simple program on electronic devices	Create content such as a video recording, stories, and/or draw a picture on screen.			Develop digital literacy skills by being able to access, understand and interact with a range of technologies. Use the internet with adult supervision to find and retrieve information of interest to them	
<b>Assessment</b>	Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes					
<b>Year 1</b>	<b>Bee-Bot</b> Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	<b>Online Safety</b> Media Balance & Well-being 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.	<b>Mouse Control</b> use technology purposefully to create, organise, store, manipulate and retrieve digital content	<b>Keyboard Skills on wordpad</b> Use technology purposefully to create, organise, store, manipulate and retrieve digital content	<b>Scratch Junior</b> Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	<b>Digital Painting</b> Use technology purposefully to create, organise, store, manipulate and retrieve digital content
<b>Assessment Knowledge Skills</b>	To choose the order of commands in a sequence	To say what to do if I see disturbing content online at school or home.	To move the mouse to move the cursor on the screen to a specific location.	To use the space bar to make space and delete to delete letters/words.	To use commands to move a sprite in Scratch Jr  To use more than one block by joining them together in Scratch Jr	To select and use tools to create digital imagery - controlling the pen and using the fill tool

<p>Year 2</p>	<p><b>Word Processing part 1</b></p> <p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>	<p><b>Being Safe &amp; Respectful online</b></p> <p><i>How technology makes you feel</i></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><b>Digital Devices</b></p> <p>Recognise common uses of information technology beyond school</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><b>Bee Bots explore Mr McGregor's Garden</b></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><b>Programming with ScratchJr</b></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><b>Word Processing part 2 – Keep our school tidy instructions (Short application unit/ recap of Autumn 1)</b></p> <p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>
<p>Assessment Knowledge Skills</p>	<p>To use the space bar only once between words. To identify the toolbar and know how to use it to alter text.</p>	<p>To explain how to keep safe on the internet.</p>	<p>To name 4 different types of digital devices.</p>	<p>To predict a simple program – what is the beebot going to do?</p>	<p>To debug code that does not do what I want it to do</p>	<p>To save my work naming it after what the document is about</p> <p>To open a saved document within a program (windows)</p>
<p>Year 3/4 Cycle A</p>	<p><b>Y3 – introduction to Scratch (making a sounds drumkit)</b></p> <p>Begin to use Scratch independently. Dragging and dropping blocks of code to for individual programs for different sprites.</p> <p><b>Y4 – count control loops (Toy Giveaway)</b></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</p>	<p><b>Creative Media Desktop Publishing – Create a Drinks Sale Poster.</b></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, including collecting, analysing, evaluating and presenting data and information</p>	<p><b>Be Internet Legends – Staying safe online.</b></p> <p>Children will be taught how to stay safe online including keeping personal information safe with secure passwords, being aware of 'phishing' and scamming, and the importance of being kind online.</p>	<p><b>Y3 – introducing Scratch (Sequencing Sounds)</b></p> <p><b>Y4 – indefinite loops (Fish Tank game)</b></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</p>	<p><b>Creating Media: Photo Editing for Tourist Brochures</b></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, including collecting, analysing, evaluating and presenting data and information</p>	

	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				algorithms work and to detect and correct errors in algorithms and programs	
<b>Assessment Knowledge Skills</b>	Y3 To create a game with a sprite that can be moved using the keyboard Y4 To add a sprite which uses a 'count controlled loop'	To create a presentation demonstrating my understanding with a range of media – Canva or Publisher		To create a strong secure password to keep personal information safe from scammers or hackers.	Y3 To use logical reasoning to begin to detect errors in their own or others' programs, giving reasons Y4 To use logical reasoning to detect and fix errors in their own or others' programs, giving reasons. Test the program to ensure they are fixed	To enhance digital images and photographs using crop, brightness, contrast & resize.
<b>Year 3/4 Cycle B</b>	<b>Computing Systems &amp; Networks - The Internet</b> 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 Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	<b>Powerpoint – Stone Age to Iron Age</b>  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, including collecting, analysing, evaluating and presenting data and information	<b>Managing Online Information Project Evolve</b>  Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 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 Digimap – mapping of trade routes and distances.	<b>Y3 – introduction to Scratch (making a simple game)</b> <b>Y4 – count control loops (Toy Giveaway)</b> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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	<b>Y3 – introducing Scratch (sequencing sounds)</b> <b>Y4 – indefinite loops (Fish Tank game)</b> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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	<b>Stop Frame Animation</b>  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, including collecting, analysing, evaluating and presenting data and information
<b>Assessment Knowledge Skills</b>	To understand the basic concept of a network  To describe what a 'router' is and does accurately	To create an interactive presentation including at least 2 pictures and at least 2 animations/transitions using PowerPoint.	To differentiate between information that may be opinions/beliefs or facts online	Y3 To create a game with a sprite that can be moved using the keyboard Y4 To add a sprite which uses a 'count controlled loop'	Y3 To use logical reasoning to begin to detect errors in their own or others' programs, giving reasons  Y4 To use logical reasoning to detect and fix errors in their own or others'	To create an animation at least 6 seconds long where the 'characters' move smoothly.

					programs, giving reasons. Test the program to ensure they are fixed	
<b>Year 5/6 Cycle A</b>	<b>Year 5 Making Choices (conditional selection)</b> <b>Year 6 - Variable Fun (introducing variables)</b> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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	<b>Systems &amp; Searching</b> 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 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	<b>Introduction to Spreadsheets</b> 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, including collecting, analysing, evaluating and presenting data and information	<b>Online Bullying</b> Project Evolve <b>Google Survey Tool</b> linked to Online Bullying Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 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, including collecting, analysing, evaluating and presenting data and information	<b>Year 5 Butterfly Game (game making - conditional selection in a loop)</b> <b>Year 6 Basic procedures</b> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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	<b>Be Internet Legends - Online Safety</b> To recognise the potential impact of sharing information online, how to spot fake information on the internet, and what to do if you see something online that makes you feel unsafe.
<b>Assessment Knowledge Skills</b>	<b>Y5</b> –To add a question to the Scratch quiz with a different response for a correct or incorrect answer. <b>Y6</b> To add pieces of code containing variables to an existing program on Scratch	To recognise and describe some limitations of common search engines	To use spreadsheet formulae to calculate and present numerical data	To create and publish own online questionnaire and see results To describe how to get help for someone that is being bullied online and assess when they need to do or say something or tell someone	<b>Y5</b> To use logical reasoning to detect and fix errors in rules-based or sequenced algorithms, giving reasons (e.g. spot and correct errors in the rules of their game). <b>Y6</b> – To decompose code into sections for effective debugging	To determine which information is fake and which is real to avoid 'phishing' scams.
<b>Year 5/6 Cycle B</b>	<b>Online Safety - Project Evolve Self-image &amp; Identity</b> <b>Creating Media - Web Page Creation</b> linked to self-image & identity work Understand computer networks including the internet; how they can provide multiple services, such as the world		<b>Year 5 Making Choices (conditional selection)</b>	<b>Canva</b> Creating fonts and images for Protest banners. -see Moodle plus (Phil to upload)	<b>Year 5 Butterfly Game (game making - conditional selection in a loop)</b>	<b>Online Relationships Safety – Project Evolve</b> Use technology safely, respectfully and responsibly;

	<p>wide web; and the opportunities they offer for communication and collaboration Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>	<p><b>Year 6 - Variable Fun (introducing variables)</b> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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</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, including collecting, analysing, evaluating and presenting data and information</p>	<p><b>Year 6 Basic procedures</b> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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</p>	<p>recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>
<p><b>Assessment Knowledge Skills</b></p>	<p>To create a web page using Google Sites which includes an image carousel, text and a hyperlink.  To describe issues online that might make them or others feel sad, worried, uncomfortable or frightened and give examples of how they might get help, both on and offline</p>	<p><b>Y5</b> –To add a question to the Scratch quiz with a different response for a correct or incorrect answer.  <b>Y6</b> To add pieces of code containing variables to an existing program on Scratch</p>	<p>To create an appropriate title using the magic image AI tool on Canva.</p>	<p><b>Y5</b> To use logical reasoning to detect and fix errors in rules-based or sequenced algorithms, giving reasons (e.g. spot and correct errors in the rules of their game).  <b>Y6</b> – To decompose code into sections for effective debugging</p>	<p>To demonstrate how they would support others (including those who are having difficulties) online.</p>

## Progression and Golden Threads

Golden Threads	Computing Science Programming & Networks Strand 1	IT and Digital Literacy Competent users of Technology Strand 2	Digital Literacy Online Safety Strand 3
Early Years	Bee-bot play	Multimedia knowledge –	
Year 1	Sequence, debugging	Word processing, keyboard skills, device pointer, multimedia, saving	Media Balance & Well-being
Year 2	Sequence, debugging, prediction, algorithmic evaluation, technology around us, digital devices	Word Processing, keyboard knowledge, saving, common uses of technology.	How technology makes you feel Being Safe and Respectful online
Year 3/4 Cycle A	Sequence, fast and slow code, Scratch programming environment	Word Processing, keyboard skills. Creating Media – Publisher/ photo editing/ Powerpoint/ Stop-Frame Animation: working with graphics, organisation, presentation media, computer aided design, organisation & shortcuts.	Healthy well-being & life-style
Year 3/4 Cycle B	Count controlled loops, indefinite loops		Managing Online Information Navigating the internet safely
Year 5/6 Cycle A	Conditional selection, conditional selection within a loop	Word Processing, keyboard skills. Desktop publishing, survey building, shortcuts, document retrieval	Online Bullying / Online Reputation Safe Internet use
Year 5/6 Cycle B	Variables, procedures, Networks	Creating Media - Web-page creation/ Banners (Canva) Creating Surveys (Google survey) Spreadsheets (graphing	Self-Image & Identity

and formulas), shortcuts

Online Relationships