



Computing Overview

Year	Term	Key Concept	Intent	Nat. curriculum objective	Milestones	Essential Characteristics	Vocabulary	Prior Learning
Year 1	Autumn 1	Computing systems and networks Technology around us	Learners will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. Learners will also consider how to use technology responsibly.	Recognise common uses of information technology beyond school Use technology purposefully to create, organise, store, manipulate, and retrieve digital content 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.	To identify technology To identify a computer and its main parts To use a keyboard to type on a computer To create rules for using technology responsibly	The ability to use a computer to type The ability to use technology responsibly	technology, computer, trackpad, mouse, keyboard, keys, typing, responsibly	No prior learning
Year 1	Autumn 2	Creating media Digital painting	Learners will develop their understanding of a range of tools used for digital painting. They then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work. The unit concludes with learners considering their preferences when painting with and without the use of digital devices.	Use technology purposefully to create, organise, store, manipulate, and retrieve digital content	To describe what different freehand tools do To use the shape and line tools To explain why I chose the tools I used To use a computer on my own to paint a picture	The ability to create a digital painting The ability to manipulate images using a computer	freehand tools, line, shape, fill, undo, digital painting, colours, brush sizes, brush tools, image, artist – Wassily Kandinsky	Pupils will have explored the works of Wassily Kandinsky explored in EYFS



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Year 1	Spring 1	<p>Programming</p> <p>Moving a robot</p>	<p>Learners will be introduced to early programming concepts.</p> <p>Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each command for the floor robot does, and use that knowledge to start predicting the outcome of programs.</p> <p>The unit is paced to ensure time is spent on all aspects of programming, and builds knowledge in a structured manner.</p> <p>Learners are also introduced to the early stages of program design through the introduction of algorithms.</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>Recognise common uses of information technology beyond school</p>	<p>To explain what a given command can do</p> <p>To act out a given word</p> <p>To combine commands to make a sequence</p> <p>To plan a simple program</p> <p>To find a solution to a problem</p>	<p>The ability to create a simple program by using an algorithm</p> <p>The ability to debug a simple program</p>	<p>floor robots, beebots, command, direction, memory, run, forwards, backwards, left turn, right turn, trial, error, program, prediction, debug</p>	<p>No prior learning</p>
Year 1	Spring 2	<p>Data and information</p> <p>Grouping data</p>	<p>This unit introduces learners to data and information. Labelling, grouping, and searching are important aspects of data and information.</p> <p>This unit of work focuses on assigning data (images) with different labels in order to demonstrate how computers are able to group and present data.</p>	<p>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</p> <p>Use technology safely and respectfully</p>	<p>To label objects</p> <p>To identify that objects can be counted</p> <p>To describe/count objects in different ways</p> <p>To compare groups of objects</p> <p>To answer questions about groups of objects</p>	<p>The ability to use computers to gather data</p>	<p>objects, labels, groups, properties, colour, size, similar, classify, different</p>	<p>No prior learning</p>



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Year 1	Summer 1	<p>Creating media</p> <p>Digital writing</p>	<p>Learners will develop their understanding of the various aspects of using a computer to create and manipulate text.</p> <p>They will become more familiar with using a keyboard and mouse to enter and remove text. Learners will also consider how to change the look of their text, and will be able to justify their reasoning in making these changes.</p> <p>Finally, learners will consider the differences between using a computer to create text, and writing text on paper. They will be able to explain which method they prefer and explain their reasoning for choosing this.</p>	<p>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</p> <p>Use technology safely and respectfully, keeping personal information private</p>	<p>To use a computer to write</p> <p>To add and remove text on a computer</p> <p>To change the look of text on a computer</p> <p>To make careful choices when changing text</p> <p>To explain why I used the tools that I chose</p>	<p>The ability to write using a computer</p> <p>The ability to edit text on a computer</p>	<p>word processor, keys, text, keyboards, backspace, caps lock, cursor, fonts, justify, undo</p>	<p>Builds upon first unit of work in year 1</p>
Year 1	Summer 2	<p>Programming</p> <p>Programming animations</p>	<p>Learners will be introduced to on-screen programming through ScratchJr.</p> <p>Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs.</p> <p>Learners will also be introduced to the early stages of program design through the introduction of algorithms.</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>To choose a command for a given purpose</p> <p>To show that a series of commands can be joined together</p> <p>To identify the effect of changing a value</p> <p>To design the parts of a project</p> <p>To use an algorithm to create a program</p>	<p>The ability to use software to create my own simple program</p> <p>The ability to make changes to values and therefore how a program is run</p>	<p>Scratch Junior, commands, sprite, blocks, backgrounds, algorithms, values, effects</p>	<p>Builds upon algorithm knowledge developed in previous unit of work – Moving a robot</p>



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Year 2	Autumn 1	<p>Computing systems and networks</p> <p>IT around us</p>	<p>Learners will develop their understanding of what information technology (IT) is and will begin to identify examples.</p> <p>They will discuss where they have seen IT in school and beyond, in settings such as shops, hospitals, and libraries.</p> <p>Learners will then investigate how IT improves our world, and they will learn about the importance of using IT responsibly.</p>	<p>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</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>To recognise the uses and features of IT</p> <p>To identify uses of IT in school/beyond school</p> <p>To explain how IT helps us</p> <p>To explain how to use IT safely</p>	<p>The ability to identify the safe and proper use of IT both in and beyond school</p>	<p>Information Technology (IT), purpose, familiar places, work places, devices,</p>	<p>Builds upon and expands on the first unit taught in year 1</p>
Year 2	Autumn 2	<p>Creating media</p> <p>Digital photography</p>	<p>Learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos.</p> <p>Finally, they will use this knowledge to recognise that images they see may not be real.</p>	<p>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</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</p>	<p>To use a digital device to take a photograph</p> <p>To make choices when taking a photograph</p> <p>To decide how photographs can be improved</p> <p>To use tools to change an image</p> <p>To recognise that photos can be changed</p>	<p>The ability to use a digital device to take photographs</p> <p>The ability to edit and improve a digital photograph</p>	<p>capture, portrait, landscape, process, composed, composition, light, focus, flash, flash lighting, artificial lighting, autofocus, editing, Pixlr, software, adjust,</p>	<p>No prior learning</p>



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				content or contact on the internet or other online technologies				
Year 2	Spring 1	Programming Robot algorithms	<p>This unit develops learners' understanding of instructions in sequences and the use of logical reasoning to predict outcomes.</p> <p>Learners will use given commands in different orders to investigate how the order affects the outcome.</p> <p>They will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.</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>To describe a series of instructions as a sequence</p> <p>To explain what happens when we change the order of instructions</p> <p>To use logical reasoning to predict the outcome of a program</p> <p>To design an algorithm</p> <p>To create and debug a program</p>	<p>The ability to predict the outcome of a program</p> <p>The ability to create and debug my own program</p>	<p>clear, precise, sequences, order, test, logical reasoning, predictions, design, create, test, starting point/finishing point,</p>	<p>Builds upon algorithm skills and knowledge learnt in year 1</p>
Year 2	Spring 2	Data and information Pictograms	<p>Learners will begin to understand what the term data means and how data can be collected in the form of a tally chart.</p> <p>They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams.</p> <p>Learners will use the data presented to answer questions.</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</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>To recognise that we can count and compare objects using tally charts</p> <p>To recognise that objects can be represented as pictures/create a pictogram</p> <p>To select objects by attribute and make comparisons</p> <p>To explain that we can present information using a computer</p>	<p>The ability to collect and present data using a computer</p>	<p>organising, counting, comparing, tally chart, data, more than, less than, pictogram, attribute, most, least,</p>	<p>Builds upon data and information skills learnt in year 1</p>



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Year 2	Summer 1	<p>Creating media</p> <p>Digital music</p>	<p>In this unit, learners will be using a computer to create music. They will listen to a variety of pieces of music and consider how music can make them think and feel.</p> <p>Learners will compare creating music digitally and non-digitally. Learners will look at patterns and purposefully create music.</p>	<p>Use technology purposefully to create, organise, store, manipulate, and retrieve digital content</p>	<p>To say how music can make us feel</p> <p>To identify that there are patterns in music</p> <p>To experiment with sound using a computer</p> <p>To create music for a purpose</p> <p>To review and refine computer work</p>	<p>The ability to create music using a computer</p> <p>The ability to review, edit and refine music on a computer</p>	<p>Gustav Holst, compare, rhythm, percussion, pitch, create, retrieve, review, improve</p>	<p>No prior learning</p>
Year 2	Summer 2	<p>Programming</p> <p>Programming quizzes</p>	<p>Learners begin to understand that sequences of commands have an outcome, and make predictions based on their learning.</p> <p>They use and modify designs to create their own quiz questions in ScratchJr, and realise these designs in ScratchJr using blocks of code.</p> <p>Finally, learners evaluate their work and make improvements to their programming projects.</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>	<p>To explain that a sequence of commands has a start/outcome</p> <p>To create a program using a given design</p> <p>To change a given design</p> <p>To create a program using my own design</p> <p>To decide how my project can be improved</p>	<p>The ability to create a program of my own design and then evaluate it</p>	<p>sequences, design, animation, backgrounds, characters, quiz, questions, artwork, algorithms, compare, additional features, errors</p>	<p>Builds upon algorithm skills and knowledge learnt in year 1 and previous unit in year 2</p>