



South Gosforth First School Computing – Year 1 Long Term Plan



Purpose of Study

At South Gosforth First School, our computing curriculum enables pupils to develop the computational thinking, creativity and confidence they need to understand and engage with an increasingly digital world. Rooted in the National Curriculum, our approach reflects the school's commitment to providing rich, ambitious and meaningful learning experiences from Early Years through to Year 4.

Computing at South Gosforth has strong connections with mathematics, science, and design and technology. At its core is computer science: pupils learn the fundamental principles of information, algorithms and logic, how digital systems operate, and how to apply this knowledge by designing, writing and debugging their own programs. Through carefully sequenced units informed by NCCE, code.org and iLearn2, pupils develop a secure and age-appropriate understanding of how technology works.

Building on this foundation, pupils use information technology purposefully to create digital content, solve problems, and communicate their ideas. They learn to select appropriate tools, use devices safely and effectively, and understand how technology supports their learning across the curriculum.

A central aim of computing at South Gosforth is to ensure that pupils become digitally literate—able to use technology confidently, responsibly and creatively. Pupils learn how to express themselves, collaborate with others, and begin to understand their place within an online world. Our curriculum prepares them not only for the next stage of their education, but also to participate safely and thoughtfully in a digital society.

Aims

In line with the National Curriculum for Computing it is our aim to ensure that all pupils:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Can 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



Autumn	Technology All Around Us	
Character Culture Creativity Challenge	Prior Learning The children are used to technology in their continuous provision in early years. They are familiar with cause and effect toys and have a developing understanding of toys that need some simple level of programming. The children are familiar with using ipads for a specific purpose.	
	Key Learning Intentions To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly	
	Overview of Computing Knowledge 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 and who to ask for help if they see any content or comments online that make them feel uncomfortable. This unit will run alongside the need for a transition period from the Early Years setting. Children will still have experience of technology in play based continuous provision.	Key Vocabulary Technology, computer, laptop, mouse, keyboard, screen, save, click, double click, type, drag
	Milestones of Learning	
	To identify technology	Learners will become familiar with the term 'technology'. They will classify what is and what is not technology in their school and/or classroom. Learners will demonstrate their understanding of how technology helps us in different ways. They will be able to explain how to keep themselves safe online and where to go for support when they see content that makes them feel uncomfortable.
	To identify a computer and its main parts	Learners will get to know the main parts of a desktop or laptop computer. They will practise turning on and logging in to a computer. The learners will apply their knowledge of the different parts of a computer, to complete a mouse-based task
	To use a mouse in different ways	Learners will be building on the mouse skills they were introduced to in Lesson 2. Learners will review images of a computer to explain what each part does. They will develop an understanding that different computers use different mice, but they perform the same function. They will use the mouse to open a program and create a simple picture.
	To use a keyboard to type on a computer	Learners will begin to use the computer keyboard for a purpose. They should understand that writing on a keyboard is called typing and will begin to demonstrate their ability to write their name. Learners will then save their work using the save icon and understand that this icon is used in lots of different programs.



	To use the keyboard to edit text	Learners will begin by opening a file they have previously created. They will demonstrate their ability to use a keyboard to edit text, by writing a sentence and then deleting letters. They will also use the keyboard arrow keys to move the text cursor in their textbox.
	Online Safety NCCE Health, well being and lifestyle Copyright and ownership <i>To create rules for using technology responsibly</i> Pupils will be introduced to the concept of using computers safely, within the context of a school setting. They will explore why we have rules in school and how those rules help us, and then apply this understanding to rules needed for using computer technology safely (NCCE lesson).	

Spring 1	Digital Painting (NCCE)	
Character Culture Creativity Challenge	Prior Learning Pupils have started to become more familiar with the components of computers, using the mouse and keyboard in previous units and have begun developing their skills in this area. They are familiar with ipads and the logging on process for this. They have been introduced to the paintz app in the previous unit. They are beginning to be familiar with the fill and undo tools in programmes.	
	Key Learning Intentions To know that computers can be used to create a range of art To choose appropriate paint tools to recreate a picture To use freehand tools, changing the colour and brush size To use shape and line tools for precision, changing the size, shape and colour To use the undo button to correct mistakes To use the fill tool to colour an enclosed area	
	Overview of Computing Knowledge In this unit of work from NCCE (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.	Key Vocabulary paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting,
	Milestones of Learning	
	To know what different freehand tools do.	Pupils are introduced to the freehand tools that are available for painting. They make marks and draw lines on screen, describing which tools they used.



	To use shapes and lines to create images	Pupils make marks with the square and lines tools, they create their own digital painting in the style of an artist.
	To use knowledge of drawing tools to make careful choices	Pupils develop painting styles and make choices about shapes and colours to create a painting in the style of an artist.
	To explain the choice of tools used	Pupils increase their understanding of the different tools available to them and develop their understanding of which tool would be best for specific styles of painting.
	To use a computer independently to paint a picture	Pupils can select and change appropriate brush size and colours to create dots of colour on the page.
	Online Safety Safer Internet Day Assembly and PSHE lessons based around the given theme	

Spring 2	Text and Images (ilearn2)	
Character Culture Creativity Challenge	Prior Learning Pupils are familiar with creating digital art. They are familiar with books using text and images to convey messages. They are developing their awareness of letters on the keyboard and are becoming more confident using the keyboard to login with their name.	
	Key Learning Intentions To change the background colour of a page. To add, resize and position images on a page. To type and position text on a page. To label pictures with text. To use word-banks for writing sentences about pictures.	
	Overview of Computing Knowledge This unit of work from ilearn2 introduces the pupils to the uses of digital text and images, such as web-pages, posters and comics. Pupils further develop their keyboard skills and are introduced to creating capital letters using a keyboard on a laptop or ipad. It teaches pupils early desktop publishing skills, combining text and images onto a page.	Key Vocabulary Click, drag, icon, bigger, smaller, select, delete, undo
	Milestones of Learning	
	To change back ground colour on a page and add, resize and position images	Pupils are introduced to the Where's Wally book as a class. They are going to make their own page. Pupils complete task 1 and 2 of activity 1 to change background colour and images.



	To write a simple sentence, adding text to a digital image.	Pupils build on from previous weeks learning and create their picture but this time, complete task 2 in activity 1, adding a speech bubble with a question for their reader. Pupils can swap devices to try and find their friend's character.
	To type and position text on a digital image	Pupils use background colour tools from previous week and then add animals and pictures of their choice to the page. Then add text boxes to label the picture and position them on the page.
	To label pictures with text	As a class decide on one place to select, model using word bank to create a simple sentence. Pupils create their own sentence.
	To label pictures with text	Pupils develop independence in adding text to images by selecting a new place and writing a simple sentence to go with it
	Online Safety PSHE lessons Managing Online Information Online Bullying Know how and why people use the internet Understand the benefits of using the internet and digital devices Know how people find things out using the internet Know how to communicate safely with others online	

Summer 1	Programming a Robot (NCCE)
Character	Prior Learning Pupils are familiar with cause and effect devices from continuous provision in early years, developing early algorithm learning. They have written instructions in their English units and are familiar with instructional language.
Culture	Key Learning Intentions
Creativity	To explain what a given command will do To act out a given word To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences
Challenge	To plan a simple program To find more than one solution to a problem



	Overview of Computing Knowledge This unit from NCCE introduces learners to early programming concepts. Pupils will explore using individual commands. They will explore floor robot commands and what they do and then use that knowledge to start predicting the outcome of programs. Pupils are also introduced to the early stages of program design through the introduction of algorithms.		Key Vocabulary Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.
	Milestones of Learning		
	To explain what a given command will do	Pupils will be introduced to floor robots. They will talk about what the buttons on a floor robot might do and then try the buttons out. They will consider the direction command buttons, as well as the 'clear memory' and 'run program' buttons.	
	To act out a given word	Pupils will think about the language used to give directions and how precise it needs to be. They will also work with a partner to give and follow instructions.	
	To combine forwards and backwards commands to make a sequence	Pupils will focus on programming the floor robot to move forwards and backwards. They will see that the robot moves forwards and backwards a fixed distance. This highlights the idea that robots follow a clear, fixed command in a precise and repeatable way.	
	To combine four direction commands to make sequences	Pupils will use 'left turn' and 'right turn' commands along with 'forwards' and 'backwards' commands. Pupils will predict where given programs will move the robot to. Pupils will make their predictions by looking at the commands and matching the program steps to movements.	
	To plan a simple program	Pupils will decide what their program will do. They will then create their program and test it on the robot. They will be introduced to debugging.	
	To find more than one solution to a problem	Pupils will be encouraged to plan routes around a mat before they start to write programs for those routes.	
	Online Safety PSHE lessons Health, wellbeing and lifestyle How can I look after my body? Identify different types of play including balancing screen based play		



Summer 2	Programming - Course A (code.org)	
Character Culture Creativity Challenge	Prior Learning Pupils are familiar with cause and effect devices from continuous provision in early years, developing early algorithm learning. They have written instructions in their English units and are familiar with instructional language.	
	Key Learning Intentions To use mouse or trackpad to create simple programs To understand that an algorithm is a set of instructions To create simple programs To build simple programs using block based coding To recognise when loops make an algorithm more effective To use simple loop blocks in a simple pattern	
	Overview of Computing Knowledge This unit from code.org develops foundational computing knowledge through block-based programming. Pupils then build core computer skills such as dragging and dropping and using simple digital tools. They explore early programming concepts by creating and following algorithms, understanding that instructions must be sequenced correctly to achieve a desired outcome. Children learn to write simple programs using block-based code, applying logical reasoning to predict behaviour and debug mistakes. As they progress, they are introduced to loops, discovering how repeated instructions can make programs more efficient. Later lessons introduce events, helping pupils understand how programs can respond to user actions.	Key Vocabulary Algorithm, drag, drop, double-click, bug, debug, loop, repeat, event
	Milestones of Learning	
	To use mouse or trackpad to create simple programs	Pupils complete a series of digital skill-building levels that teach them how to drag, drop and manipulate on-screen elements. They practise controlling the mouse or trackpad while completing simple puzzles designed to develop basic computer operation skills
	To understand that an algorithm is a set of instructions	Pupils are introduced to block programming, then complete progressive skill-building puzzles. They drag and connect coding blocks to move Scrat through simple mazes, learning how ordering instructions correctly affects program outcomes
	To create simple programs	Pupils are introduced to pair programming through a video, then complete coding levels that require sequencing, debugging and refining their programs. They practise identifying mistakes, using the step button, and improving their instructions through trial and error
	To build simple programs using block-based coding	Pupils work through increasingly challenging skill-building tasks guiding characters using block code. They develop sequencing and problem-solving skills and apply debugging strategies while navigating BB-8 through different challenges
	To recognise when loops make an algorithm more effective	Pupils watch a short video and complete coding levels that introduce loop blocks. They use repeat commands to move Scrat efficiently through puzzles, exploring how loops reduce the number of blocks needed



	To recognise when loops make an algorithm more effective To use simple loop blocks in a simple pattern	Pupils watch videos introducing loop use, then complete multiple skill-building levels applying repeat blocks in more complex situations. They practise using loops to collect items, navigate paths, and refine their programs through debugging.
	Online Safety PSHE lesson Self image and identity Online Reputation Identify the basic rules for keeping safe online Know whom to tell if they see something online that makes them feel unhappy, worried, or scared	