



South Gosforth First School Computing – Year 2 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 First School 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 1	Scratch Jnr (NCCE)	
Character Culture Creativity Challenge	Prior Learning Pupils are familiar with sequencing a set of instructions to create an outcome (algorithm) and have experience of block based coding from their unit in year 1 (code.org - Programming course A). They can drag and drop code using a mouse or trackpad. They are familiar with the concept of debugging and have begun to test their code when using beebots.	
	Key Learning Intentions To know that a sequence can be started using a variety of event blocks To know that a sequence has an outcome, and identify different programs that have the same outcome To understand the role of the numbers on ScratchJr blocks To write and run a simple program with a start block, and an end block which changes the background To create and program a quiz To identify errors in their program, and debug them	
	Overview of Computing Knowledge Pupils begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in Scratch Jr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects.	Key Vocabulary sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.
	Milestones of Learning	
	To explain that a sequence of commands has a start	During this lesson, pupils will begin to identify the start of sequences in real-world scenarios, and learn that sequences need to be started in ScratchJr. Pupils will create programs and run them in full-screen mode using the Green flag .
	To explain that a sequence of commands has an outcome	During this lesson, pupils will discover that a sequence of commands has an 'outcome'. They will predict the outcomes of real-life scenarios and a range of small programs in ScratchJr. Pupils will then match programs that produce the same outcome when run, and use a set of blocks to create programs that produce different outcomes when run.
	To create a program using a given design	During this lesson, pupils will be taught how to use the Start on tap and Go to page (Change background) blocks. They will use a predefined design to create an animation based on the seasons. Pupils will then be introduced to the task for the next lesson. They will predict what a given algorithm might mean.
	To change a given design	Pupils will look at an existing quiz design and think about how this can be realised within the ScratchJr app. They will choose backgrounds and characters for their own quiz



		projects. Pupils will modify a given design sheet and create their own quiz questions in ScratchJr.
	To create a program using my own design	Pupils will create their own quiz question designs including their own choices of question, artwork, and algorithms. They will increase the number of blocks used within their sequences to create more complex programs.
	To decide how my project can be improved	Pupils will compare their projects to their designs. They will think about how they could improve their designs by adding additional features. They will modify their designs and implement the changes on their devices. Pupils will find and correct errors in programs (debug) and discuss whether they debugged errors in their own projects.
	Online Safety PSHE lesson Self image and identity What can I do if I am worried or uncomfortable? Recognise hurtful behaviour, including online Know what to do and whom to tell if they see or experience hurtful behaviour, including online	

Autumn 2	E-book creation (Book creator)	
Character Culture Creativity Challenge	Prior Learning Pupils are familiar creating digital images, changing the size and position. They have experience of adding text to images, choosing the font size and type.	
	Key Learning Intentions To use technology purposefully to create and organise digital content To create and structure digital content across multiple pages To add and edit text within a digital document To insert and manipulate digital images To record and add audio to digital content	
	Overview of Computing Knowledge This unit builds on from pupils adding text to images in year 1. They use the app Book Creator on the ipads to create their eBooks. This unit introduces and develops a number of digital skills that pupils will use in many other programs. It also blends together different forms of media and communication (text, audio and images) into one 'blank canvas' book, meaning that pupils can make a book linked to other areas of curriculum (habitats).	Key Vocabulary Text, image, ebook, upload, select, insert, publishing, audio



	Milestones of Learning	
	Design an ebook cover	Pupils explore Book Creator and learn how to begin a new ebook. They design a digital book cover by adding a title, their name as the author, and choosing suitable colours or background images.
	Add themed pages to ebook, presenting information digitally	Children add multiple pages to their ebook based on a chosen theme (habitats, coastlines). They learn how to structure information across pages, deciding what each page will show.
	Add and edit text within a digital document	Pupils write sentences or short paragraphs on each page using the text tools. They practise typing, sounding out words, or improving spelling using teacher mode support. The focus is on communicating ideas clearly and using technology purposefully to create meaningful written content
	Insert and manipulate digital images	Children learn how to search for, upload, or take photos to add to their ebook pages. They choose images that match the text and theme, developing skills in selecting and placing multimedia. They resize and position images thoughtfully, improving the quality and clarity of their digital work.
	Record and add digital content	Using the voice-recording feature, pupils add audio narration or explanations to accompany their pages. They practise speaking clearly and linking spoken content to the images and text they have created. This completes their multimedia ebook and builds confidence in digital publishing.
	Online Safety Project Evolve: Copyright and Ownership To recognise that content on the internet may belong to other people To describe why other people's work belongs to them	



Spring 1	Digital Photography (NCCE)	
Character Culture Creativity Challenge	Prior Learning Pupils are familiar with the importance of using digital images in content. They are familiar with using images already uploaded to programs and changing the size and position of these images. Some pupils will be familiar with taking photos using devices such as phones or tablets at home.	
	Key Learning Intentions To use a digital device to take a photograph To make choices when taking a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that photos can be changed	
	Overview of Computing Knowledge In this unit from NCCE (digital photography), pupils learn that a range of digital devices can be used to capture photographs and develop practical skills in taking clear, well-framed images. They explore how orientation, composition, and lighting affect the quality and purpose of a photo, learning what makes an image effective. Pupils then enhance their photographs by applying simple editing tools to adjust brightness, colour, or effects, improving their final outcomes. Throughout the unit, they deepen their understanding of how digital images can be changed or manipulated and begin to recognise that photos they see online or in media may not always show reality.	Key Vocabulary device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting,
	Milestones of Learning	
	To use a digital device to take a photograph	Pupils develop their understanding of devices being used for photography. Pupils begin to capture their own images.
	To make choices when taking a photograph	In this lesson, pupils explore taking photographs in both portrait and landscape formats and explore the reasons why a photographer may favour one over the other.
	To describe what makes a good photograph	Pupils discover what constitutes good photography composition and put this into practice by composing and capturing photos of their own.
	To decide how photographs can be improved	Pupils are introduced to the concepts of light and focus as further important aspects of good photography composition. They investigate the effect that good lighting has on the quality of the photos they take, and explore what effect using the camera flash and adding an artificial light source have on their photos. They also learn how the camera autofocus tool can be used to make an object in an image stand out.
	To use tools to change an image	This lesson introduces the concept of simple image editing. Learners are introduced to the image editing software and use the 'Adjust' tools to change the colour effect of an image.



	Online Safety Safer Internet Day Assembly and PSHE lesson based on the given theme
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Spring 2	Programming - Course C (Code.org)	
Character	Prior Learning Pupils are familiar dragging and dropping code to create an event. They are familiar with blocks of code and they have started to make predictions about what they think their code will do. They have experience of identifying bugs in their code and trying to fix this.	
Culture	Key Learning Intentions To create and test simple programs by sequencing blocks correctly To find and correct errors in simple programs To develop more complex algorithms and programs, using sequencing and logical reasoning to solve problems To use simple programming to create digital art, understanding how instructions and patterns can be combined to produce different outcomes To use loop blocks in a simple program to repeat actions, explaining how loops can simplify coding and reduce errors.	
Creativity	Overview of Computing Knowledge This unit of work from code.org pupils build on the Scratch Jnr unit earlier in the year, by developing a deeper understanding of how algorithms and sequences control the behaviour of programs. They learn to write simple programs using block-based code, applying sequencing to move characters accurately through challenges and using logical reasoning to predict outcomes. Pupils deepen their debugging skills by identifying and correcting errors when programs do not behave as expected. As the unit progresses, they explore loops, discovering how repeated instructions make programs more efficient, and apply these within increasingly complex puzzles. They also learn about events, understanding how user actions such as clicks or key presses can trigger specific behaviours in a program.	
Challenge	Key Vocabulary Algorithm, bug, debugging, sequence, program, loop, repeat, event	
	Milestones of Learning	
	To create and test simple programs by sequencing blocks correctly	Pupils revisit dragging and dropping code to build their sequence of instructions for their sprite.
	To find and correct errors in simple programs	Pupils test programs and identify mistakes using logical reasoning to correct their errors.
	To develop more complex algorithms and programs, using sequencing and logical reasoning to solve problems	Pupils build longer, more complex sequences. They refine their algorithms, debug their code, and apply prediction skills as challenges increase in difficulty.
	To use simple programming to create digital art, understanding how instructions and patterns can be combined to produce different outcomes	Pupils develop accuracy in sequencing and explore how programming can be used creatively to make digital artwork.



	To use loop blocks in a simple program to repeat actions, explaining how loops can simplify coding and reduce errors.	Pupils revisit their understanding of loops by repeating actions, refining programs and applying debugging strategies where needed.
	Online Safety PSHE lessons Privacy and Security Managing Online Information What do we use the internet for? Know the ways in which people can access the internet e.g. phones, tablets, computers Recognise the purpose and value of the internet in everyday life Recognise that some content on the internet is factual and some is for entertainment e.g. news, games, videos Understand that information online might not always be true	

Summer 1	Pictograms (NCCE)	
Character Culture Creativity Challenge	Prior Learning Pupils are building on their maths and computing learning in this unit of work. Pupils are familiar with a range of data collection methods, they can create tally charts and simple bar charts. They have been introduced to pictograms in their maths learning in previous years.	
	Key Learning Intentions To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer	
	Overview of Computing Knowledge This unit from NCCE makes explicit links between the pupils maths learning and their computing curriculum. They will deepen their understanding of what the term 'data' means and how this can be collected in different forms. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data visually using software. Learners will use the data presented to answer questions.	Key Vocabulary common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing



Milestones of Learning		
	To recognise that we can count and compare objects using tally charts	Pupils will begin to understand the importance of organising data effectively for counting and comparing. They will create their own tally charts to organise data, and represent the tally count as a total. Finally, they will answer questions comparing totals in tally charts using vocabulary such as 'more than' and 'less than'.
	To recognise that objects can be represented as pictures	Pupils will become familiar with the term 'pictogram'. They will create pictograms manually and then progress to creating them using a computer. Pupils will begin to understand the advantages of using computers rather than manual methods to create pictograms, and use this to answer simple questions.
	To create a pictogram	Pupils will think about the importance of effective data collection and will consider the benefits of different data collection methods: why, for example, we would use a pictogram to display the data collected. They will collect data to create a tally chart and use this to make a pictogram on a computer. Pupils will explain what their finished pictogram shows by writing a range of statements to describe this.
	To select objects by attribute and make comparisons	Pupils will think about ways in which objects can be grouped by attribute. They will then tally objects using a common attribute and present the data in the form of a pictogram. Pupils will answer questions based on their pictograms using mathematical vocabulary such as 'more than'/'less than' and 'most'/'least'.
	To recognise that people can be described by attributes	Pupils will understand that people can be described by attributes. They will practise using attributes to describe images of people and the other pupils in the class. The pupils will collect data needed to organise people using attributes and create a pictogram to show this pictorially. Finally, pupils will draw conclusions from their pictograms and share their findings.
	To explain that we can present information using a computer	Pupils will understand that there are other ways to present data than using tally charts and pictograms. They will use a pre-made tally chart to create a block diagram on their device. Pupils will then share their data with a partner and discuss their findings. They will consider whether it is always OK to share data and when it is not OK. They will know that it is alright to say no if someone asks for their data, and how to report their concerns.
	Online Safety Project Evolve: Online Reputation To know how information put online about someone can last for a long time	



Summer 2	Making Music (NCCE)	
Character Culture Creativity Challenge	Prior Learning Pupils are familiar with digital devices being able to record and they are familiar with using audio to enhance other digital documents. Their learning in music has equipped them with skills to describe how music makes them feel and to identify some of the instruments that they hear. They are familiar with musical vocabulary such as rhythm, beat, tempo, instrument and pitch.	
	Key Learning Intentions To say how music can make us feel To identify that there are patterns in music To experiment with sound using a computer To use a computer to create a musical pattern To create music for a purpose	
	Overview of Computing Knowledge In this unit, pupils learn how digital tools can be used to create music. They explore how music can communicate feelings, how patterns are used to build rhythms, and how sequences of notes can be arranged to create a tune. Pupils experiment with untuned percussion and digital composition tools to compare non-digital and digital music-making.	Key Vocabulary music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit.
	Milestones of Learning	
	To say how music can make us feel	Pupils will listen to and compare two pieces of music from <i>The Planets</i> by Gustav Holst. They will then use a musical description word bank to describe how this music generates emotions, i.e. how it makes them feel.
	To identify that there are patterns in music	Pupils will explore rhythm . They will create patterns and use those patterns as rhythms. They will use untuned percussion instruments and computers to hear the different rhythm patterns that they create.
	To experiment with sound using a computer	Pupils will explore how music can be used in different ways to express emotions and to trigger their imaginations. They will experiment with the pitch of notes to create their own piece of music, which they will then associate with a physical object — in this case, an animal.
	To use a computer to create a musical pattern	Pupils will develop their understanding of music. They will use a computer to create and refine musical patterns.
	To create music for a purpose	Pupils will choose an animal and create a piece of music using the animal as inspiration. They will think about their animal moving and create a rhythm pattern from that. Once they have defined a rhythm, they will create a musical pattern (melody) to go with it



	Online Safety Project Evolve: Online Relationships To know to ask a trusted adult before clicking ‘yes’, ‘agree’ or ‘accept’ online
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