SOUTH HILL PRIMARY SCHOOL
Long Term Plan: Computing

GOLDEN THREADS:				
Computing Systems and Networks	**Data and Information**	**Programming**	**Creating Media**	**Online Safety**

	Autumn 1	Autumn 2	Spring1	Spring 2	Summer 1	Summer 2
Online Safety	Privacy and Security (see online safety LTP)		Health and Wellbeing (see online safety LTP)		Online Bullying (see online safety LTP)	
EYFS Building blocks for the NCCE scheme.	Children use apps and software to create graphics Children incorporate technology into their role-play, e.g. a cash till. Children use simple software to explore numbers and sort objects. Using QR codes to listen to online stories. Children use recording devices and create digital images and animation. Children take photographs and use sound recorders. Children use instructional language and explore programmable devices such as floor robots. They record sound effects for storytelling, and use CDs and other sound technologies. Children make sounds and music using technology Children use sound devices to record and play back appropriate sounds to enhance imaginative play Children develop mouse skills and fine motor skills through using controls on technology devices. Children use sound devices to record themselves talking about numbers, shapes and objects.					
Year 1	**Technology Around Us** **(Computing systems and networks)** As this is a Year 1 unit, no prior knowledge is assumed. This unit progresses students' knowledge and understanding of technology and how they interact with it in school. Learners will build their knowledge of parts of a computer and develop the basic skills needed to effectively use a computer keyboard and mouse.	**Digital Painting** **(Creating media)** This unit introduces pupils to the following: How to switch their device on Usernames Passwords consolidation of keyboard and mouse skills which have been introduced in EYFS.	**Moving a Robot** **(Programming)** As this is a Year 1 unit, no prior knowledge is assumed. This unit progresses students' knowledge and understanding of giving and following instructions. It moves from giving instructions to each other to giving instructions to a robot by programming it.	**Animations in Scratch Jr.** **(Programming)** This unit progresses learners' knowledge and understanding of programming and follows on from 'Programming A – Moving a robot', where children will have learned to program a floor robot using instructions.	**Grouping Data** **(Data and information)** This unit will introduce pupils to data and information. It will introduce pupils to the concept of labelling and grouping objects based on their properties. Pupils will develop their understanding that objects can be given labels, which is fundamental to their future learning concerning databases and spreadsheets. In addition, pupils will begin to improve their ability to use dragging and dropping skills on a device.	**Digital Writing** **(Creating media)** This unit progresses students' knowledge and understanding of using computers to create and manipulate digital content, focussing on using a word processor. The learners will develop their ability to find and use the keys on a keyboard in order to create digital content. The learners are then introduced to manipulating the resulting text, making cosmetic changes, and justifying their reason for making these changes.

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Year 2	**Technology Around Us** **(Computing systems and networks)** This unit progresses students' knowledge and understanding of technology and how they interact with it beyond school. Learners will also build on their knowledge of using technology safely and responsibly, and begin to consider the implications of the choices that they make.	**Robot algorithms** **(Programming)** This unit progresses students' knowledge and understanding of algorithms and how they are implemented as programs on digital devices. Pupils will spend time looking at how the order of commands affects outcomes.	**Digital Photography** **(Creating media)** This unit begins the learners' understanding of how photos are captured and can be manipulated for different purposes. Following this unit, learners will develop their photo editing skills in Year 4.	**Quizzes in Scratch Jr.** **(Programming)** This unit progresses learners' knowledge and understanding of instructions in sequences and the use of logical reasoning to predict outcomes.	**Pictograms** **(Data and information)** This unit progresses students' knowledge and understanding of grouping data.	**Making Music** **(Creating media)** This unit progresses students' knowledge through listening to music and considering how music can affect how we think and feel. Learners will then purposefully create rhythm patterns and music.
Year 3	**Digital devices** **(Computing systems and networks)** This unit progresses students' knowledge and understanding of technology by focussing on digital and non-digital devices, and introducing the concept of computers connected together as a network. Following this unit, learners will explore the internet as a network of networks.	**Animation** **(Creating media)** This unit progresses students' knowledge and understanding of using digital devices to create media, exploring how they can create stop frame animations. Following this unit, learners will further develop their video editing skills in Year 5.	**Desktop Publishing** **(Creating media)** This unit progresses learners' knowledge and understanding of using digital devices to combine text and images building on work from the following units; Digital Writing Year 1, Digital painting Year 1, and Digital Photography Year 2.	**Branching Databases** **(Data and information)** This unit progresses students' knowledge and understanding of presenting information. It builds on their knowledge of data and information from key stage 1. They continue to develop their understanding of attributes and begin to construct and interrogate branching databases as a means of displaying and retrieving information.	**Sequencing in Scratch** **(Programming)** This unit assumes that learners will have some prior experience of programming; the KS1 NCCE units cover floor robots and Scratch Jr. However, experience of other languages or environments may also be useful.	**Events and actions in Scratch** **(Programming)** This unit assumes that learners will have some prior experience of programming. The key stage 1 National Centre for Computing Education units focus on floor robots and ScratchJr, however experience of other languages or environments may also be useful. The Year 3 — Programming A unit introduces the Scratch programming environment and the concept of sequences.

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Year 4	**The Internet** **(Computing systems and networks)** This unit progresses students' knowledge and understanding of networks in Year 3. In Year 5, they will continue to develop their knowledge and understanding of computing systems and online collaborative working.	**Photo Editing** **(Creating media)** Learners should have experience of making choices on a tablet/computer. They should be able to navigate within an application. This unit progresses students' skills through editing digital images and considering the impact that editing can have on an image. Learners will also consider how editing can be used appropriately for different scenarios, and create and evaluate 'fake' images, combining all of their new skills.	**Data Logging** **(Data and information)** This unit progresses pupils' knowledge and understanding of data and how it can be collected over time to answer questions. The unit also introduces the idea of automatic data collection.	**Repetition in shapes** **(Programming)** This unit progresses students' knowledge and understanding of programming. It progresses from the sequence of commands in a program to using count-controlled loops. Pupils will create algorithms and then implement those algorithms as code.	**Repetition in Scratch** **(Programming)** This unit assumes that learners will have some prior experience of programming. The KS1 NCCE units cover floor robots and Scratch Jr, and Scratch is introduced in the Year 3 programming units. However, experience of other languages or environments may also be useful.	**Audio Editing** **(Creating media)** This unit progresses students' knowledge and understanding of creating media, by focusing on the recording and editing of sound to produce a podcast. Following this unit, learners will explore combining audio with video in the 'Video editing' unit in Year 5.
Year 5	**Systems** **(Computing systems and networks)** This unit progresses learners' knowledge and understanding of computing systems and online collaborative working.	**Vector Drawing** **(Creating media)** This unit progresses students' knowledge and understanding of digital painting and has some links to desktop publishing in which learners used digital images. They are now creating the images that they could use in desktop publishing documents.	**Selection in physical computing** **(Programming)** This unit assumes that learners will have prior experience of programming using block-based construction (eg Scratch) and understand the concepts of sequence and repetition. The National Centre for Computing Education key stage 1 units focus on floor robots and ScratchJr, however, experience of other languages or environments may also be useful.	**Quizzes in Scratch** **(Programming)** This unit assumes that learners will have prior experience of programming using block-based construction (eg Scratch), understand the concepts of 'sequence' and 'repetition', and have some experience of using 'selection'. Ideally, learners will have completed 'Programming A – Selection in physical computing' before undertaking this unit, as this will provide them with the required knowledge of 'selection'.	**Flat-file Databases** **(Data and information)** This unit progresses pupils' knowledge and understanding of why and how information might be stored in a database, and looks at how tools within a database can help us to answer questions about our data. It moves on to demonstrate how a database can help us display data visually, and how real-life databases can be used to help us solve problems. Finally, the pupils create a presentation showing understanding and application of all the tools used within the unit.	**Video Editing** **(Creating media)** This unit progresses learners' knowledge and understanding of creating media by guiding them systematically through the process involved in creating a video. By the end of the unit, learners will have developed the skills required to plan, record, edit, and finalise a video.

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Year 6	**Searching and communicating** **(Computing systems and networks)** This unit progresses learners' knowledge and understanding of computing systems and online collaborative working.	**Spreadsheets** **(Data and information)** This unit progresses students' knowledge and understanding of data, and teaches them how to organise and modify data within spreadsheets. Specifically, learners will have experienced data in tables and charts in the Y4 data logging and Y5 branching database units.	**Variables in games** **(Programming)** This unit assumes that learners have some prior experience of programming in Scratch. Specifically, they should be familiar with the programming constructs of sequence, repetition, and selection. These constructs are covered in the Year 3, 4, and 5 National Centre for Computing Education programming units respectively. Each year group includes at least one unit that focuses on Scratch.	**Using Mirco:bits** **(Programming)** This unit builds upon pupils understanding of sequence, repetition and selection independently within programming.	**3D Modelling** **(Creating media)** This unit progresses students' knowledge and understanding of creating 3D graphics using a computer.	**Web Page Creation** **(Creating media)** This unit progresses students' knowledge and understanding of the following: digital writing, digital painting, desktop publishing, digital photography, photo editing, and vector drawing.