

Termly Overview Computing – Progression of Skills

	Autumn		Spring		Summer	
	Digital literacy	Information technology	Computer science	Information technology	Information technology	Computer science
Year 1	<p>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. This unit directly precedes the Y2 Computer systems and networks unit, IT around us.</p>	<p>For this unit learners would benefit from being introduced to the keyboard and mouse (taught in previous unit). Learners should be familiar with:</p> <ul style="list-style-type: none"> • How to switch their device on • Usernames • Passwords 	<p>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.</p>	<p>This unit will introduce learners to data and information. It will introduce learners to the concept of labelling and grouping objects based on their properties. Learners will develop their understanding that objects can be given labels, which is fundamental to their future learning concerning databases and spreadsheets. In addition, learners will begin to improve their ability to use dragging and dropping skills on a device. Following this unit, in year 2, learners will present data graphically in pictograms.</p>	<p>This unit progresses the learners' 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. Following this unit, learners will further develop their digital writing skills in the Year 3 – 'Desktop publishing' unit and the Year 6 – 'Web page development' unit.</p>	<p>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.</p>

Year 2	<p>This unit progresses learners' understanding of technology and how they interact with it. They will develop this understanding to become familiar with the term information technology and will be able to identify common features of IT. This unit also builds on the learners' understanding of using technology safely and responsibly.</p>	<p>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.</p>	<p>In advance of the lessons in this Year 2 unit, learners should have had some experience of creating short programs using floor robots and predicting the outcome of a simple program. This unit progresses learners' knowledge and understanding of algorithms and how they are implemented as programs on digital devices. Learners will spend time looking at how the order of commands affects outcomes. Learners will use this knowledge and logical reasoning to trace programs and predict outcomes.</p>	<p>This unit progresses students' knowledge and understanding of grouping data. It builds on the Year 1 Data and Information unit where learners labelled objects and grouped them based on different properties. In Year 3 learners develop their understanding of attributes (properties) using branching databases to structure data according to different object attributes.</p>	<p>Learners should have experience of making choices on a tablet/computer, and they should be able to navigate within an application. Learners should also have some experience of patterns.</p> <p>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.</p>	<p>This unit progresses learners' knowledge and understanding of instructions in sequences and the use of logical reasoning to predict outcomes.</p>
Year 3	<p>This unit progresses learners' knowledge and understanding of technology by focusing on digital and non-digital devices, from the following units; Technology around me Year 1 and IT around us</p>	<p>This unit progresses learner's knowledge and understanding of using digital devices to create media, exploring how they can create stop-frame animations. It builds on learners previous understanding</p>	<p>This unit assumes that learners will have some prior experience of programming; via the KS1 NCCE units. They will have experienced programming via floor robots; Moving A Robot</p>	<p>This unit progresses learners' knowledge and understanding of the categories of data handling, with a particular focus on implementation. It builds on their</p>	<p>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</p>	<p>This unit assumes that learners will have some prior experience of programming; via the KS1 NCCE units. They will have experienced programming via floor robots; Moving A Robot Year 1 and Robot</p>

	<p>Year 2, and introducing the concept of computers connected together as a network. Following this unit, learners will explore the internet as a network of networks.</p>	<p>of images from the Digital Photography Year 2 unit. Following this unit, learners will further develop their video editing skills in Year 5.</p>	<p>Year 1 and Robot algorithms Year 2, alongside the use of ScratchJr through Programming animations Year 1 and Programming quizzes Year 2. ScratchJr uses a similar programming environment to Scratch, which is highlighted in lesson 1 of this unit.</p>	<p>knowledge of data and information from Key Stage 1; Grouping data in Year 1 and Pictograms in Year 2. They will continue to develop their understanding of attributes and begin to construct and interrogate branching databases as a means of displaying and retrieving information.</p>	<p>Year 1, Digital painting Year 1, and Digital Photography Year 2.</p>	<p>algorithms Year 2, alongside the use of ScratchJr through Programming animations Year 1 and Programming quizzes Year 2. The Year 3 Programming A unit introduces the Scratch programming environment and the concept of sequences.</p>
Year 4	<p>This unit progresses students' knowledge and understanding of networks from that developed in the Year 3 Connecting Computers unit. In Year 5, they will continue to develop their knowledge and understanding of computing systems and understand how search engines work via the internet and the world wide web.</p>	<p>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.</p>	<p>This unit progresses students' knowledge and understanding of programming. Within the Year 3 units, Programming A- Sequencing Sounds and Programming B- Events and Actions in programs, learners will have an awareness of the sequence of commands in a program. This unit progresses on to using count-controlled loops in those sequences. Pupils will create</p>	<p>This unit progresses learners' knowledge and understanding of data and how it can be collected over time to answer questions. Specifically, it builds on the concept of answering questions with data which is first introduced in the KS1 data and information units. The unit also introduces the idea of automatic data collection. Learners are also introduced to data in tables and graphs,</p>	<p>This unit progresses students' knowledge and understanding of digital photography and using digital devices to create media. Learners will have had some exposure to images and their manipulation through the Teach Computing Digital Photography- Year 2 unit. Following this unit, learners will further develop their image editing skills in Year 5 – Vector drawing.</p>	<p>This unit assumes that learners will have some prior experience of programming. The KS1 NCCE units cover floor robots and ScratchJr, and Scratch, and the skill of sequence, is introduced in the Year 3 programming units: Sequencing Sounds and Events and actions in programs. However, experience of other languages or environments may also be useful.</p>

			algorithms and then implement those algorithms as code.	knowledge they will build on in the Year 5 unit (flat file databases) and the Year 6 unit (spreadsheets).		
Year 5	<p>This unit progresses students' knowledge and understanding of the internet from that developed in the Year 4 The Internet unit. In Year 6, they will continue to develop their knowledge and understanding of the internet, looking at how data is transferred and how the internet facilitates communication and collaboration online.</p>	<p>This unit progresses learners' knowledge and understanding of creating media by guiding them systematically through the process involved in creating a video. The unit builds on the Year 4 Photo editing unit where composition is introduced and the Year 3 unit 'Stop-frame animation' where learners explored some of the features of video production. By the end of this unit, learners will have developed the skills required to plan, record, edit, and share a video.</p>	<p>This unit assumes that learners will have prior experience of programming using a block-based language (e.g. 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.</p>	<p>This unit progresses learners' 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 learners create a presentation showing understanding and application of all the tools used within the unit.</p>	<p>This unit progresses learners' knowledge and understanding of digital painting and has some links to the Year 3 'Creating media – Desktop publishing' unit, in which learners used digital images. In this Year 5 unit, learners create images that could be used in desktop publishing documents.</p>	<p>This unit assumes that learners will have prior experience of programming using block-based construction (e.g. Scratch), understand the concepts of 'sequence' (Year 3 units: Sequencing Sounds and Events and actions in programs) and 'repetition' (Year 4 units: Repetition in shapes and Repetition in games), 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'.</p>

Year 6	<p>This unit progresses students' knowledge and understanding of computer systems and networks developed in the Year 5 Systems and Searching unit, looking at how data is transferred and how the internet facilitates communication and collaboration online.</p>	<p>This unit progresses students' knowledge and understanding from a variety of lessons from the Teach Computing, across different strands: digital writing, digital painting, desktop publishing, photo editing, and vector drawing.</p>	<p>This unit assumes that learners will have prior experience of programming using block-based construction (e.g. Scratch), understand the concepts of 'sequence' (Year 3 units: Sequencing Sounds and Events and actions in programs), 'repetition' (Year 4 units: Repetition in shapes and Repetition in games), and 'selection' (Year 5 units: Selection in Physical Computing and Selection in quizzes). The constructs covered in the previous year groups will include at least one unit that develops the concept through the use of Scratch.</p>	<p>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 unit and Y5 Branching Database unit.</p> <p>This unit focuses on the learners applying number formats to alter cells. It is important to understand that this type of formatting changes how a spreadsheet interacts with the data and is different to applying style formatting (bold, italics, etc.), which only changes the appearance of data.</p> <p>In Lesson 5 of this unit, learners have been provided with the mathematical</p>	<p>This unit progresses students' knowledge and understanding of creating 3D graphics using a computer. Prior to undertaking this unit, learners should have worked with 2D graphics applications.</p>	<p>This unit presumes that pupils are already confident in their understanding of sequence, repetition and selection independently within programming. If pupils are not yet ready for this, you may wish to revisit earlier programming units where these constructs are introduced.</p>
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				calculations they need to complete the activities in the unit, the calculations can be found in the 'Data calculations' handout. It is important that learners are given the opportunity to demonstrate their ability to use the computational skills required, regardless of their mathematical ability.		
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