



St Luke's Computing Progression of Learning

	<p>At St Luke's we recognise that although there is no longer an Early Learning Goal which explicitly references computing we understand it's importance in today's world and want to provide our children with the skills and exposure needed to be successful throughout their education and to be able to access technology safely in their wider life. Therefore our computing curriculum for the EYFS is centred around play-based, unplugged (no computer) activities that focus on building children's listening skills, curiosity and creativity and problem solving whilst raising the profile of online safety as well as the importance of reduced screen time.</p>	<p>Key stage 1 Pupils should be taught to:</p> <ul style="list-style-type: none"> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school 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>Key stage 2 Pupils should be taught to:</p> <ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 			
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Computer Science	<p>Computer Science in our Early Years means:</p> <ul style="list-style-type: none"> Problem solving during play to learn. Through interactions with teachers and peers, the children are encouraged to consider why something has gone wrong and what can be done to solve this. Through modelling and discussions during play our Reception children are preparing for such times as they will need to correct and improve code. Many communication and language activities and enhancements to support children and their understanding of instructions both how to follow and how to give them. 	<p>Knowledge: Explain that an algorithm is a set of instructions. (1.4 / 1.7)</p> <p>Know that a computer program turns an algorithm into code that the computer can understand. (1.4, 1.7)</p> <p>When the steps are out of order in instructions, know they are. (1.4, 1.5) Know that if something does not work how it should it is because the code is incorrect. (1.7)</p> <p>Skills: Attempts to fix code if it isn't working properly. (1.7)</p> <p>Predict what is going to happen in a program. For example, where the turtle might go. (1.5, 1.7)</p>	<p>Knowledge: Explain an algorithm is a set of instructions to complete a task. (2.1)</p> <p>Know algorithms need to be planned so it will work when made into code. (2.1)</p> <p>Skills: Identify something in a program that has an action or effect (does something). (2.1) Find and correct errors in my program. (2.1)</p> <p>Say what will happen in a program. (2.1)</p> <p>Design a simple program using 2Code that achieves a purpose. (2.1)</p>	<p>Skills: Turn a real-life situation into an algorithm for a program. (3.1)</p> <p>Design an algorithm carefully, thinking about what I want it to do and how I can turn it into code. (3.1)</p> <p>Identify an error in my program and fix it. (3.1)</p> <p>Use timers in a program. (3.1) Identify the difference and effect of using a timer or repeat command in code.(3.1)</p> <p>Read programs with several steps and predict what it will do. (3.1)</p> <p>Identify 'If' statements, repetition and variables. (3.1)</p> <p>Use email such as 2Email to respond to others appropriately and attach files. (3.5)</p> <p>Knowledge: Know and Identify different ways that the internet can be used for communication. (3.5)</p> <p>Know that a variable stores information while a program is running (executing). (3.1)</p>	<p>Skills: Turn a real-life situation to solve into an algorithm, using a design that shows how to accomplish this in code. (4.1, 4.5)</p> <p>Use repetition in my code. For example, using a loop that continues until a condition is met such as the correct answer being entered. (4.1) Use variables within my program and know how to change the value. (4.1)</p> <p>Identify errors in code by using different methods, such as stepping through lines of code and fixing them. (4.1)</p> <p>Use timers within my program designs more accurately to create repetition effects. For example, create a counting machine. (4.1)</p> <p>Read programs that contain several steps and predict the outcomes with increasing accuracy. (4.1, 4.5)</p> <p>Use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths. (4.1)</p> <p>Use the user inputs and output features within my program, such as 'Print to screen'. (4.1)</p> <p>Knowledge: Recognise the main component parts of hardware which allow computers to join and form a network. (4.8) Understand that network and communication components can be found in many different devices which allow them to join the internet. (4.2, 4.7, 4.8)</p>	<p>Skills: Make more complex real-life problems into algorithms for a program. (5.1)</p> <p>Use sequence, selection, repetition, and some other coding structures in my code. (5.1)</p> <p>Translate algorithms that contain sequence, selection and repetition into code that works. (5.1)</p> <p>Use logical methods to identify the cause of any bug with support to identify the specific line of code.(5.1) Organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently. (5.1) Test and debug my programs as I work. (5.1, 5.5)</p> <p>I can use the most appropriate form of online communication according to the digital content. For example, use 2Email, 2Blog and Display Boards. (5.2 & others)</p> <p>Knowledge: Know the importance of computer networks and how they help solve problems and enhance communication. (5.2) Recognise the main dangers that can be perpetuated via computer networks. (5.2) Explain what personal information is and know strategies for keeping this safe. (5.2)</p>	<p>Skills: Turn a complex programming task into an algorithm. (6.1)</p> <p>Identify the important aspects of a programming task (abstraction). (6.1) Use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object (6.1, 6.7)</p> <p>Translate algorithms that include sequence, selection and repetition into code and nest these structures within each other. (6.1)</p> <p>Decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work. (6.1) Identify a specific line of code that is causing a problem in my program and attempt a fix. (6.1)</p> <p>Test and debug my program as I work on it and use logical methods to identify a cause of a bug. (6.1)</p> <p>Interpret (understand) a program in parts and can make logical attempts to put the separate parts together in an algorithm to explain the program as a whole. (6.1)</p> <p>Knowledge: Explain the difference between the internet and the World Wide Web. (6.2, 6.4,6.6) Explain what a WAN and LAN is and describe the process of how access to the internet in school is possible. (6.2,6.6)</p>



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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Information Technology</p>	<p>Information Technology in our Early Years means:</p> <ul style="list-style-type: none"> • Taking a photograph with a camera or tablet • Working with an adult to search for information on the internet supporting their child led play and interests as they arise. • Playing games on the interactive whiteboard • Having access to range of 'unplugged' resources to use in their play such as phones, keyboards, cameras etc. Using these resources will support the children's FMS development helping them be more successful when accessing computing devices. • Watching video clips or listening to music to find out more or hear information in a different way. Showing the children that the internet can enable us to learn more or find out about things we might not otherwise know. • The children will observe adults using a computer during inputs, adults will model and 'think out loud' to expose children to the different purposes of a computer, reducing their cognitive load when they are expected to use similar skills in future as it will be more familiar to them. • Children will become familiar with how technology can be used to share information. • Using a CD player to play music and audiobooks. 	<p>Skills: Sort sound, pictures and text.(1.2)</p> <p>Add sound, pictures and text to a program such as 2Create a Story. (1.6) Change content on a file such as text, sound and images. (1.3, 1.6, 1.7, 1.8)</p> <p>Name work. (1.2, 1.3, 1.6, 1.7, 1.8) Save work. (1.2, 1.3, 1.6, 1.7, 1.8) Find work. (1.2, 1.3, 1.6, 1.7, 1.8)</p>	<p>Skills: Organise data – for example, using a database such as 2Investigate. (2.3, 2.4) Find data using specific searches – for example, using 2Investigate. (2.4, 2.5) Use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate. (2.4, 2.8)</p> <p>Edit digital data such as data in music composition software like 2Sequence. (2.7 and most units)</p> <p>Include photos, text and sound in creations. (2.8, 2.6)</p> <p>Name, save and find my work. (2.3, 2.4, 2.6, 2.7, 2.8 & most units)</p>	<p>Skills: Carry out searches to find digital content on a range of online systems, such as within Purple Mash or on an internet search engine.(Across units) Collect data and input it into software. (3.3, 3.6, 3.8) Analyse data using features within software to help such as, formula in 2Calculate (spreadsheets). (3.3, 3.6, 3.8)</p> <p>Present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool). (3.3, 3.6, 3.8,3.9) Create purposeful and appropriate content and attach this to emails. (3.3, 3.5, 3.6, 3.7, 3.8, 3.9)</p> <p>Consider what the most appropriate software to use when given a task. (Across units)</p>	<p>Skills: Understand the purpose of a search engine and the main features within it. (4.7) Look at information on a webpage and make predictions about the accuracy of information contained within it. (4.7)</p> <p>Share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards. (Across units)</p> <p>Review solutions that others have created, using a checklist of criteria. (4.1, 4.2) Create and improve my solutions to a problem based on feedback. For example, create a program using 2Code. (4.1, 4.2)</p> <p>Work collaboratively to create content and solutions. (4.1, 4.3, 4.4,48)</p>	<p>Skills: Search precisely when using a search engine. For example, I know I can add additional words or removes words to help find better results. (5.2) Explain in detail how accurate, safe and reliable the content is on a webpage. (5.2)</p> <p>Make appropriate improvements to digital work I have created. (Across units)</p> <p>Comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers. (Across units)</p> <p>Work collaboratively with others creating solutions to problems using appropriate software such as 2Code. (Across units) Use collaborative modes such as within 2Connect to work with others and share it. (5.7)`</p>	<p>Skills: Use filters when searching for digital content. (6.2,6.9) Explain in detail how accurate and reliable a webpage and its content is. (6.2) Compare a range of digital content sources and rate them in terms of content quality and accuracy. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)</p> <p>Consider the intended audience carefully when I design and make digital content. (6.1, 6.3, 6.4, 6.5, 6.7,6.9) Design and create my own online blogs. (6.4)</p> <p>Use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements. (6.1, 6.3, 6.4, 6.5, 6.7,6.9)</p>



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<p>Digital Literacy</p>	<p>Digital Literacy in our Early Years means:</p> <ul style="list-style-type: none"> • Learning about whom our safe adults are and how to ask for help when they see something they do not like or do not understand. • Learning about the different ways to communicate through digital devices and why this is preferable to many due to the immediate nature. • Identifying what uses electricity and what does not. • Children will participate in Safer Internet Day (Worship, inputs and activities) 	<p>Knowledge:</p> <p>Say what technology is. (1.9) Say what examples of technology are in school. (1.9) Say what examples of technology are at home. (1.9) Know that a chair uses old technology and a smart phone uses new technology. (1.9)</p> <p>Skills: Keep my login information safe. (1.1 and most units)</p> <p>Save my work in a safe place such as 'My Work' folder (1.1 and most units)</p>	<p>Knowledge: Know the consequences of not searching online safely. (2.2, 2.5)</p> <p>See where technology is used at school such as in the office or canteen. (2.2) Understand that my creations such as programs in 2Code, need similar skills to the adult world. e.g. The program used for collecting money for school trips. (2.1)</p> <p>Skills:</p> <p>Share work and communicate electronically – for example using Email or the display boards. (2.2 and others) Find information I need using a search engine. (2.5)</p> <p>Report unkind behaviour and things that upset me online, to a trusted adult. (2.2)</p>	<p>Knowledge: Understand the importance of keeping safe online and behaving respectfully. (3.2)</p> <p>Explain the importance of having a secure password and not sharing it with others. (3.2, 3.5) Explain the negative consequences of not keeping passwords safe and secure. (3.2, 3.5)</p> <p>Skills: Create a secure password. (3.2) Use communication tools such as 2Email respectfully and use good etiquette. (3.2, 3.5)</p> <p>Report unacceptable content and contact online in more than one way to a trusted adult. (3.2)</p>	<p>Knowledge: Have a good understanding of the online safety rules we learn at school. (4.2 & across curriculum) Demonstrate how to use a few different online services safely. (4.2 & across curriculum)</p> <p>Know I have a right to privacy both on and offline. (4.2 & across curriculum)</p> <p>Skills: Demonstrate how to use different online technologies safely. (4.2 & across curriculum)</p> <p>Recognise that my wellbeing can be affected by how I use technology. (4.2 & across curriculum)</p> <p>Report with ease any concerns with content and contact online and know immediate strategies to keep safe. (4.2 & across curriculum)</p>	<p>Knowledge: Have a secure knowledge of online safety rules taught at school. (5.2 & across units)</p> <p>Always relate appropriate online behaviour to my right to have personal privacy. (5.2 & across units)</p> <p>Skills: Demonstrate the safe and respectful use of different online technologies and online services. (5.2 & across units)</p> <p>Know how to not let my mental wellbeing or others be affected by use of online technologies and services. (5.2 & across units)</p>	<p>Knowledge:</p> <p>Know the value of protecting my privacy and others online. (6.2, 6.4)</p> <p>Skills: Demonstrate safe and respectful use of a range of different technologies and online services. (6.2, 6.4)</p> <p>Identify more discrete inappropriate behaviours online. For example, someone who may be trying to groom me or someone else. (6.2) Use critical thinking to help me stay safe online. (6.2)</p>
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