

# Computing at St Ives Primary – Skills Progression



	COMPUTING SYSTEMS & NETWORKS	CREATING MEDIA	DATA & INFORMATION	PROGRAMMING	E-SAFETY
<b>NURSERY</b>	<p><b>Technology around us</b> To begin to understand that there are different types of technology. To learn to operate some forms of technology. To learn how to select an app on an iPad.</p>	<p><b>Digital photos</b> To begin to understand that information technology can be used to record real life.</p> <p><b>Digital painting</b> To use a device to create digital art.</p>	<p><b>Grouping data</b> To understand that objects can be sorted into a group.</p>	<p><b>Following instructions</b> To understand that instructions can result in actions.</p>	<p>Begin to understand ways in which information can be put online and how devices can be used to communicate with others. Begin to recognise negative behaviour online and it's impact. Begin to identify the different technologies that can be used to access the Internet.</p>
<b>YEAR R</b>	<p><b>Technology around us</b> To understand that there are different types of technology. Understand that information technology can be used to communicate through text, images and sound. Understand that computers and other devices can be used to record and play back sounds. To learn what a mouse is and to develop basic mouse skills such as moving and clicking. To understand that a keyboard can be used to generate text on a computer and how to locate relevant keys.</p>	<p><b>Digital painting</b> To use a simple online paint tool to create digital art. To add text to digital art. To understand that created media can be printed from a computer.</p>	<p><b>Grouping data</b> To understand that information can be collected both practically and by using a computer program To sort objects into groups</p>	<p><b>Moving a robot</b> To understand that some devices need commands to operate and control them (e.g. traffic lights, car park barrier, games console) To understand that technology can be programmed to move. To control a Beebot using the command buttons.</p>	<p>To understand emotions and respond to scenarios that make them feel uncomfortable online. To identify the different technologies that can be used to access the Internet and how to stay safe and healthy. To understand the importance of labelling their work.</p>
<b>YEAR 1</b>	<p><b>Technology around us</b> To identify technology. To identify a computer and its main parts. To use a mouse in different ways. To use a keyboard to type. To use the keyboard to edit text. To create rules for using technology responsibly.</p>	<p><b>Digital painting</b> To describe what different freehand tools do. To use the shape tool and the line tools. To make careful choices when painting a digital picture. To explain why I chose the tools I used To use a computer on my own to paint a picture. To compare painting a picture on a computer and on paper.</p> <p><b>Digital writing</b> To use a computer to write To add and remove text on a computer To identify that the look of text can be changed on a computer To make careful choices when changing text To explain why I used the tools that I chose To compare writing on a computer with writing on paper</p>	<p><b>Grouping data</b> To label objects. To identify that objects can be counted. To describe objects in different ways. To count objects with the same properties. To compare groups of objects. To answer questions about groups of objects.</p>	<p><b>Moving a robot</b> 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. To plan a simple program. To find more than one solution to a problem.</p> <p><b>Introduction to animation</b> To choose a command for a given purpose. To show that a series of commands can be joined together. To identify the effect of changing a value. To explain that each sprite has its own instructions. To design the parts of a project. To use my algorithm to create a program.</p>	<p>Keep themselves safe while using digital technology. Understand that information on the internet can be seen by others. The child can understand what to do if they see disturbing content online at home or at school.</p>
<b>YEAR 2</b>	<p><b>Information technology around us</b> To recognise the uses and features of information technology. To identify information technology in the school. To identify information technology beyond school. To explain how information technology benefits us. To show how to use information technology safely. To recognise that choices are made when using information technology.</p>	<p><b>Digital photography</b> To know what devices can be used to take photographs. To use a digital device to take 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.</p> <p><b>Making music</b> To say how music can make us feel. To identify that there are patterns in music. To describe how music can be used in different ways. To show how music is made from a series of notes. To create music for a purpose. To review and refine our computer work.</p>	<p><b>Pictograms</b> 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.</p>	<p><b>Robot algorithms</b> To describe a series of instructions as a sequence. To explain what happens when we change the order of instructions. To use logical reasoning to predict the outcome of a program (series of commands). To explain that programming projects can have code and artwork. To design an algorithm. To create and debug a program that I have written.</p> <p><b>Introduction to quizzes</b> To explain that a sequence of commands has a start. To explain that a sequence of commands has an outcome. To create a program using a given design. To change a given design. To create a program using my own design. To decide how my project can be improved.</p>	<p>Keep themselves safe and show respect to others while using digital technology. Understand that they should not share personal information online. The child can understand what to do if they have concerns about content or contact online.</p>
<b>YEAR 3</b>	<p><b>Connecting computers</b> To explain how digital devices function. To identify input and output devices. To recognise how digital devices can change the way we work. To explain how a computer network can be used to share information. To explore how digital devices can be connected. To recognise the physical components of a network.</p>	<p><b>Stop-frame animation</b> To explain that animation is a sequence of drawings or photographs. To relate animated movement with a sequence of images. To plan an animation. To identify the need to work consistently and carefully. To review and improve an animation. To evaluate the impact of adding other media to an animation.</p> <p><b>Desktop publishing</b> To recognise how text and images convey information. To recognise that text and layout can be edited. To choose appropriate page settings. To add content to a desktop publishing publication. To consider how different layouts can suit different purposes. To consider the benefits of desktop publishing.</p>	<p><b>Branching databases</b> To create questions with yes/no answers. To identify the object attributes needed to collect relevant data. To create a branching database. To explain why it is helpful for a database to be well structured. To identify objects using a branching database. To compare the information shown in a pictogram with a branching database.</p>	<p><b>Sequence in music</b> To explore a new programming environment. To identify that commands have an outcome. To explain that a program has a start. To recognise that a sequence of commands can have an order. To change the appearance of my project. To create a project from a task description.</p> <p><b>Events and actions</b> To explain how a sprite moves in an existing project. To create a program to move a sprite in four directions. To adapt a program to a new context. To develop my program by adding features. To identify and fix bugs in a program. To design and create a maze-based challenge.</p>	<p>Use digital technology safely and show respect for others when working online. Recognise unacceptable behaviour when using digital technology. Know who to talk to about concerns and inappropriate online behaviour in school. Can decide whether a web page is relevant for a given purpose or question.</p>
<b>YEAR 4</b>	<p><b>The internet</b> To describe how networks physically connect to other networks. To recognise how networked devices make up the internet. To outline how websites can be shared via the World Wide Web. To describe how content can be added and accessed on the World Wide Web. To recognise how the content of the WWW is created by people. To evaluate the consequences of unreliable content.</p>	<p><b>Audio editing</b> To identify that sound can be digitally recorded. To use a digital device to record sound. To explain that a digital recording is stored as a file. To explain that audio can be changed through editing. To show that different types of audio can be combined and played together. To evaluate editing choices made.</p> <p><b>Photo editing</b> To explain that digital images can be changed. To change the composition of an image. To describe how images can be changed for different uses. To make good choices when selecting different tools. To recognise that not all images are real. To evaluate how changes can improve an image.</p>	<p><b>Data logging</b> To explain that data gathered over time can be used to answer questions. To use a digital device to collect data automatically. To explain that a data logger collects 'data points' from sensors over time. To use data collected over a long duration to find information. To identify the data needed to answer questions. To use collected data to answer questions.</p>	<p><b>Repetition in shapes</b> To identify that accuracy in programming is important. To create a program in a text-based language. To explain what 'repeat' means. To modify a count-controlled loop to produce a given outcome. To decompose a task into small steps. To create a program that uses count-controlled loops to produce a given outcome.</p> <p><b>Repetition in games</b> To develop the use of count-controlled loops in a different programming environment. To explain that in programming there are infinite loops and count controlled loops. To develop a design which includes two or more loops which run at the same time. To modify an infinite loop in a given program. To design a project that includes repetition. To create a project that includes repetition.</p>	<p>Demonstrate that they can act responsibly when using computers. Understand the difference between acceptable and unacceptable behaviours when using digital technology. Know who to talk to about concerns and inappropriate behaviour at home or in school. Can decide whether digital content is relevant for a given purpose or question.</p>

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<p><b>YEAR 5</b></p>	<p><b>Sharing information</b>                  To explain that computers can be connected together to form systems.                  To recognise the role of computer systems in our lives.                  To recognise how information is transferred over the internet.                  To explain how sharing information online lets people in different places work together.                  To contribute to a shared project online.                  To evaluate different ways of working together online.</p>	<p><b>Video editing</b>                  To recognise video as moving pictures, which can include audio.                  To explain what makes a video effective.                  To identify digital devices that can record video.                  To capture video using a digital device.                  To recognise the features of an effective video.                  To create a storyboard.                  To identify that video can be improved through reshooting and editing.                  To consider the impact of the choices made when making and sharing a video.</p> <p><b>Vector drawing</b>                  To identify that drawing tools can be used to produce different outcomes.                  To create a vector drawing by combining shapes.                  To use tools to achieve a desired effect.                  To recognise that vector drawings consist of layers.                  To group objects to make them easier to work with.                  To evaluate my vector drawing.</p>	<p><b>Flat-file databases</b>                  To use a form to record information.                  To compare paper and computer-based databases.                  To outline how grouping and then sorting data allows us to answer questions.                  To explain that tools can be used to select specific data.                  To explain that computer programs can be used to compare data visually.                  To apply my knowledge of a database to ask and answer real-world questions.</p>	<p><b>Selection in physical computing</b>                  To control a simple circuit connected to a computer.                  To write a program that includes count-controlled loops.                  To explain that a loop can stop when a condition is met, eg number of times.                  To conclude that a loop can be used to repeatedly check whether a condition has been met.                  To design a physical project that includes selection.                  To create a controllable system that includes selection.</p> <p><b>Selection in games</b>                  To explain how selection is used in computer programs.                  To relate that a conditional statement connects a condition to an outcome.                  To explain how selection directs the flow of a program.                  To design a program which uses selection.                  To create a program which uses selection.                  To evaluate my program.</p>	<p>Demonstrate that they can act responsibly when using the internet.                  Discuss the consequences of particular behaviours when using digital technology.                  Know how to report concerns and inappropriate behaviour in a range of contexts.                  Can decide whether digital content is reliable and unbiased.</p>
<p><b>YEAR 6</b></p>	<p><b>Communication</b>                  To identify how to use a search engine.                  To describe how search engines select results.                  To explain how search results are ranked.                  To recognise why the order of results is important, and to whom.                  To recognise how we communicate using technology.                  To evaluate different methods of online communication.</p>	<p><b>Web page creation</b>                  To review an existing website and consider its structure.                  To plan the features of a web page.                  To consider the ownership and use of images (copyright).                  To recognise the need to preview pages.                  To outline the need for a navigation path.                  To recognise the implications of linking to content owned by other people.</p> <p><b>3D modelling</b>                  To use a computer to create and manipulate three-dimensional (3D) digital objects.                  To compare working digitally with 2D and 3D graphics.                  To construct a digital 3D model of a physical object.                  To identify that physical objects can be broken down into a collection of 3D shapes.                  To design a digital model by combining 3D objects.                  To develop and improve a digital 3D model.</p>	<p><b>Spreadsheets</b>                  To identify questions which can be answered using data.                  To explain that objects can be described using data.                  To explain that formula can be used to produce calculated data.                  To apply formulas to data, including duplicating.                  To create a spreadsheet to plan an event.                  To choose suitable ways to present data.</p>	<p><b>Variables in games</b>                  To define a 'variable' as something that is changeable.                  To explain why a variable is used in a program.                  To choose how to improve a game by using variables.                  To design a project that builds on a given example.                  To use my design to create a project.                  To evaluate my project.</p> <p><b>Sensing</b>                  To create a program to run on a controllable device.                  To explain that selection can control the flow of a program.                  To update a variable with a user input.                  To use an conditional statement to compare a variable to a value.                  To design a project that uses inputs and outputs on a controllable device.                  To develop a program to use inputs and outputs on a controllable device.</p>	<p>Show that they can think through the consequences of their actions when using digital technology.                  Identify principles underpinning acceptable use of digital technologies.                  Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts.                  Can form an opinion about the effectiveness of digital content.</p>