

St Thomas More Computing Long Term Planning  
**Long Term Computing Units with key objectives**



TERM	NURSERY	RECEPTION	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>TERM 1</b>	<p><b>Ongoing Continuous Provision</b></p> <p><b>Personal, Social and Emotional Development</b> Remember rules without needing an adult to remind them.</p> <p><b>Physical Development</b> Match their developing physical skills to tasks and activities in the setting.</p> <p><b>Mathematics</b> Solve real world mathematical problems with numbers up to 5.</p>	<p><b>Ongoing Continuous Provision</b></p> <p><b>Personal, Social and Emotional Development</b>  Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health and wellbeing: - sensible amounts of 'screen time'.</p> <p><b>Physical Development</b> Develop their small motor skills so that they can use a</p>	<p><b>Technology around us</b> Identify technology Identify a computer and its main parts Use a mouse in different ways Use a keyboard to type on a computer Use a keyboard to edit text Create rules for using technology responsibly</p>	<p><b>Computing systems and networks – IT around us</b> To recognise the uses and features of information technology To identify the uses of information technology in the school To identify information technology beyond school To explain how information technology helps us To explain how to use information technology safely To recognise that choices are made when using information technology</p>	<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 that 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>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 (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To recognise how the content of the WWW is created by people To evaluate the consequences</p>	<p><b>Systems and Searching</b> To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives 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</p>	<p><b>Communication and collaboration</b> To explain the importance of internet addresses To recognise how data is transferred across the internet To explain how sharing information online can help people to work together To evaluate different ways of working together online To recognise how we communicate using technology To evaluate different methods of</p>

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	<ul style="list-style-type: none"> <li>• Discuss routes and locations, using words like ‘in front of’ and ‘behind’.</li> <li>• Notice and correct an error in a repeating pattern.</li> <li>• Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then’.</li> </ul> <p><b>Understanding the World</b>          Explore how things work.</p>	<p>range of tools competently, safely and confidently</p> <p><b>Mathematics</b>          Count objects, actions and sounds.</p> <ul style="list-style-type: none"> <li>• Link the number symbol (numeral) with its cardinal number value.</li> <li>• Select, rotate and manipulate shapes to develop spatial reasoning skills.</li> <li>• Continue, copy and create repeating patterns.</li> </ul> <p><b>Expressive Arts and Design</b></p> <p>Explore, use and refine a variety of artistic effects</p>				of unreliable content		online communication
<b>TERM 2</b>			<p><b>Creating Media Digital Painting</b>          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</p>	<p><b>Creating Media – Digital photography</b>          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</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>Creating media – Audio production</b>          To identify that sound can be recorded          To explain that audio recordings can be edited          To recognise the different parts of creating a podcast project          To apply audio editing skills independently          To combine audio to enhance my podcast project          To evaluate the effective use of audio</p>	<p><b>Creating media – Video production</b>          To explain what makes a video effective          To use a digital device to record video          To capture video using a range of techniques          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>Creating Media – 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>

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<p><b>TERM 3</b></p>		<p>to express their ideas and feelings</p> <p><b>Personal, Social and Emotional Development</b></p> <ul style="list-style-type: none"> <li>• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.</li> <li>• Explain the reasons for rules, know right from wrong and try to behave accordingly</li> </ul> <p><b>Expressive Arts and Design</b></p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting</p>	<p><b>Programming A Moving a robot</b></p> <p>To explain what a given command will do</p> <p>To act out a given word</p> <p>To combine 'forwards' and 'backwards' commands to make a sequence</p> <p>To combine four direction commands to make sequences</p> <p>To plan a simple program To find more than one solution to a problem</p>	<p><b>Programming A – Robot algorithms</b></p> <p>To describe a series of instructions as a sequence</p> <p>To explain what happens when we change the order of instructions</p> <p>To use logical reasoning to predict the outcome of a program</p> <p>To explain that programming projects can have code and artwork</p> <p>To design an algorithm</p> <p>To create and debug a program that I have written</p>	<p><b>Programming A – Sequencing sounds</b></p> <p>To explore a new programming environment</p> <p>To identify that commands have an outcome</p> <p>To explain that a program has a start</p> <p>To recognise that a sequence of commands can have an order</p> <p>To change the appearance of my project</p> <p>To create a project from a task description</p>	<p><b>Programming A – Repetition in shapes</b></p> <p>To identify that accuracy in programming is important</p> <p>To create a program in a text-based language</p> <p>To explain what 'repeat' means</p> <p>To modify a count-controlled loop to produce a given outcome</p> <p>To decompose a task into small steps</p> <p>To create a program that uses count-controlled loops to produce a given outcome</p>	<p><b>Programming A – Selection in physical computing</b></p> <p>To control a simple circuit connected to a computer</p> <p>To write a program that includes count-controlled loops</p> <p>To explain that a loop can stop when a condition is met</p> <p>To explain that a loop can be used to repeatedly check whether a condition has been met</p> <p>To design a physical project that includes selection</p> <p>To create a program that controls a physical computing project</p>	<p><b>Programming A – Variables in games</b></p> <p>To define a 'variable' as something that is changeable</p> <p>To explain why a variable is used in a program</p> <p>To choose how to improve a game by using variables</p> <p>To design a project that builds on a given example</p> <p>To use my design to create a project</p> <p>To evaluate my project</p>
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		with colour, design, texture, form and function						
<b>TERM 4</b>			<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>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>Branching databases</b>            To create questions with yes/no answers            To identify the attributes needed to collect data about an object            To create a branching database            To explain why it is helpful for a database to be well structured            To plan the structure of a branching database            To independently create an identification tool</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 recognise how a computer can help us analyse data            To identify the data needed to answer questions            To use data from sensors to</p>	<p><b>Flat File Databases</b>            To use a form to record information            To compare paper and computer-based databases            To outline how you can answer questions by grouping and then sorting data            To explain that tools can be used to select specific data            To explain that computer programs can be used to compare data visually            To use a real-world database to answer</p>	<p><b>Introduction to spreadsheets</b>            To create a data set in a spreadsheet            To build a data set in a spreadsheet            To explain that formulas can be used to produce calculated data            To apply formulas to data            To create a spreadsheet to plan an event            To choose suitable ways to present data</p>

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						answer questions	questions	
<b>TERM 5</b>			<b>Creating Media 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 typing on a computer to writing on paper	<b>Creating Media – Digital Music</b> 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 To review and refine our computer work	<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	<b>Photo editing</b> To explain that the composition of digital images can be changed To explain that colours can be changed in digital images To explain how cloning can be used in photo editing To explain that images can be combined To combine images for a purpose To evaluate how changes can improve an image	<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 apply what I have learned about vector drawings	<b>Creating Media – 3D modelling</b> To recognise that you can work in three dimensions on a computer To identify that digital 3D objects can be modified To recognise that objects can be combined in a 3D model To create a 3D model for a given purpose To plan my own 3D model To create my own digital 3D model
<b>TERM 6</b>			<b>Programming Programming animations</b>	<b>Programming B – Programming Quizzes</b>	<b>Programming B – Events and actions in programs</b>	<b>Repetition in Games</b>	<b>Programming B- Selection in quizzes</b>	<b>Programming – Sensing</b>

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			<p>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>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>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>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 that 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>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 that uses selection          To create a program that uses selection          To evaluate my program</p>	<p>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>
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