



EYFS Curriculum		
Autumn - Computing Systems and Networks Technology around us	Spring - Creating Media Digital painting	Summer - Programming Moving a Robot
<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly 	<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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
Mastery Questions		
Which items can be defined as technology? How does different technology help us? Do you know the different parts of a computer? How do you open a program/browser? Can you save a file? Can you locate and open your saved file? Can you delete letters? Why do we name our files sensibly? What rules do we need for using a computer safely?	What do the different tools in the painting programme do? What can you tell me about the painting you have drawn? Which tools could we use to replicate this image? How effective were the tools you used? How would you describe your work to your partner? What clues can you see that tell you how this painting was made? Which medium (paint or paper) did you prefer?	What do you think the buttons are for? How is it moving? Can you instruct your partner on how to move? Where should our robot start from? Which way is left? Which way is right? How do you command the robot to move? Which route should your robot take? Did you have any bugs in your programme?
Key Vocabulary		
Technology Computer Mouse Trackpad Keyboard Screen Double-click Typing	Paint program Tool Paintbrush Erase Fill Undo Piet Mondrian Primary colours Shape tools Line tool Fill tool Undo tool Henri Matisse Wassily Kandinsky Feelings Colour Brush style Georges Seurat Pointillism	Forwards Backwards Turn Clear Go Commands Instructions Directions Left Right Plan Algorithm Program Route



St Thomas More Primary School
Computing Whole School Overview



	Pictures Painting Computers Like Prefer Dislike	
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Substantive Knowledge

Disciplinary Knowledge



Year 1 Personalised Curriculum		
Flashback		
<p>Previous Year: Which items can be defined as technology? How does different technology help us? Do you know the different parts of a computer? How do you open a program/browser? Can you save a file? What do the different tools in the painting programme do? How do you command the robot to move? Which route should your robot take? Did you have any bugs in your programme?</p>		
	<p>Previous Unit: Is this object IT? What's the purpose of this IT? Where do we use IT in the World around us? Can you explain how rules keep us safe when using IT? Can you use IT for different purposes?</p>	<p>Previous Unit: What keys are on the keyboard? How do we move the text cursor? How do we remove text? How can we make this text bold/italic/underlined?</p>
Autumn – Computing Systems and Networks IT around us	Spring – Creating Media Digital Writing	Summer – Programming Introduction to animation
<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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 	<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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
Mastery Questions		
<p>Is this object IT? What's the purpose of this IT? Where do we use IT in the World around us? How do barcodes work on products? Can you explain how rules keep us safe when using IT? Can you use IT for different purposes?</p>	<p>What keys are on the keyboard? How do we move the text cursor? How do we remove text? How can we make this text bold/italic/underlined? How do we highlight text? How would you change the look of your text? What tools could you use? Do you like writing on paper or computer best?</p>	<p>Can you compare ScratchJr and Bee-Bots? Can you use this algorithm to create a program? Can you predict the outcome of your program? What are the differences in these programs? What happens if I change the values? Can you add a matched sprite to a program? Can you create an algorithm to control your sprite? Can you share success of your program? Where there any problems you faced?</p>
Key Vocabulary		
Information Technology (IT)	Word Processor	ScratchJr



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<p>Computer Barcode Scanner/Scan</p>	<p>Keyboard Keys Letters Type Numbers Space Backspace Text Cursor Capital Letters Toolbar Bold Italic Underline Mouse Select Font Undo Redo Format Compare Typing Writing</p>	<p>Bee-Bot Command Sprite Compare Programming Programming area Block Joining Command Start block Run Background Delete Reset Algorithm Predict Effect Change Value Block Instructions delete algorithm</p>
Year 2 Personalised Curriculum		
Flashback		
<p>Previous Year: Is this object IT? What's the purpose of this IT? Where do we use IT in the World around us? What keys are on the keyboard? How do we move the text cursor? How do we remove text? How can we make this text bold/italic/underlined? Can you use this algorithm to create a program?</p>		
<p>Previous Unit: Can you use this algorithm to create a program? Can you predict the outcome of your program? What happens if I change the values? Can you create an algorithm to control your sprite?</p>	<p>Previous Unit: How can we group these objects? Do computers need humans to perform tasks? What properties have these objects been grouped by?</p>	<p>Previous Unit: Can you explain why you like these photographs? What are the steps to take a good photograph? How could we edit this image to make a new image? Which images are real and which have been changed?</p>
<p>Autumn – Data and Information Grouping Data</p>	<p>Spring – Creating Media Digital Photography</p>	<p>Summer – Programming Robot Algorithms</p>
<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • To label objects • To identify that objects can be counted • To describe objects in different ways 	<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • 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 	<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions

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<ul style="list-style-type: none"> To count objects with the same properties To compare groups of objects To answer questions about groups of objects 	<ul style="list-style-type: none"> To use tools to change an image To recognise that photos can be changed 	<ul style="list-style-type: none"> 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
Mastery Questions		
<p>How can we group these objects? Do computers need humans to perform tasks? What word can we use to describe these objects? What properties have these objects been grouped by? Can you compare the different groups?</p>	<p>Can you explain why you like these photographs? What are the steps to take a good photograph? Does your photo look better in landscape or portrait, why? What do you need to do next time to capture a better picture? Why is lightening important when taking a photograph? How could we edit this image to make a new image? Which images are real, and which have been changed?</p>	<p>Can you issue two or three instructions at once? Can you enter your algorithm as programs? What are your predictions about your algorithm? What would happen if we added an obstacle? How can you adapt your programming? Can you draw an algorithm before programming? Can you combine two programs into one larger program?</p>
Key Vocabulary		
<p>Object Label Group Search Image Object Property Colour Size Shape Value data set more less most fewest the same</p>	<p>Device Camera Photograph Capture Image Digital Landscape Portrait Framing Subject Compose Editing Filter Format Framing Lighting focus</p>	<p>Instruction Sequence Clear Unambiguous Algorithm Program Sequence Order Instructions Prediction Artwork Design Route Mat Debugging decomposition</p>
Year 3 Personalised Curriculum		
Flashback		
<p>Previous Year: How can we group these objects? Do computers need humans to perform tasks? Can you compare the different groups? Can you explain why you like these photographs? What are the steps to take a good photograph? Which images are real, and which have been changed? Can you issue two or three instructions at once? Can you enter your algorithm as programs? How can you adapt your programming?</p>		

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<p>Previous Unit: Can you issue two or three instructions at once? Can you enter your algorithm as programs? What are your predictions about your algorithm? What would happen if we added an obstacle? Can you combine two programs into one larger program?</p>	<p>Previous Unit: Can you identify inputs, processes, and outputs? What is the relationship between inputs, processes, and outputs? What is the role of a switch, server, and wireless access point? How are different components connected with one another?</p>	<p>Previous Unit: How does animation work? Can you create a simple storyboard? How do you remove frames?</p>
<p>Autumn – Computing Systems and Networks Connecting Computers</p>	<p>Spring – Creating Media Animation</p>	<p>Summer – Programming Events and Actions</p>
<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • 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>Mastery Questions</p>		
<p>Can you identify inputs, processes, and outputs? What is the relationship between inputs, processes, and outputs? What are the similarities and differences between digital and non-digital tools? What's a switch in the network? What is the role of a switch, server, and wireless access point? How are different components connected with one another?</p>	<p>How does animation work? What is the difference between on screen and flip book? Can you create a simple storyboard? How would you improve your animation? How do you remove frames? What is the impact of adding other media to your project?</p>	<p>Can you design a new algorithm to change a set project? Can you debug a program? Can you translate an algorithm into code? What design flaws can you identify? Can you create and complete a design template? Can you apply 'bug' and 'debug' into real-world experiences? Can you systematically test your project?</p>
<p>Key Vocabulary</p>		
<p>Digital device Input Process Output Digital Non-digital Connection Network Network switch Server Wireless access point Network cables Network sockets</p>	<p>Animation, flip book Stop-frame animation Frame Sequence Image Photograph Setting Character Events Onion skinning Consistency Evaluation</p>	<p>Motion Event Sprite Algorithm Logic Move Resize Extension block pen up set up Pen Design Event</p>

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	<p>Animation Delete Media Import Transition</p>	<p>Action Algorithm Debugging Errors Setup Code Test Debug Actions</p>
Year 4 Personalised Curriculum		
Flashback		
<p>Previous Year: Can you identify inputs, processes, and outputs? What is the relationship between inputs, processes, and outputs? What is the role of a switch, server, and wireless access point? How are different components connected with one another? How does animation work? Can you create a simple storyboard? What is the impact of adding other media to your project? Can you design a new algorithm to change a set project? Can you debug a program? Can you translate an algorithm into code</p>		
<p>Previous Unit: Can you design a new algorithm to change a set project? Can you debug a program? Can you translate an algorithm into code? Can you apply 'bug' and 'debug' into real-world experiences?</p>	<p>Previous Unit: Can you organise these objects into a tree structure? Can you follow a branching database? Why does this branching database not work? Why does different information need to be presented in different ways?</p>	<p>Previous Unit: Why are digital editing tools might be useful for editing images? Can you verbally explain the different tools? How can images be changed for different uses? What are the negative and positive aspects of retouching images? What images around us have been altered? How do we know?</p>
Autumn – Data and Information Branching Databases	Spring – Creating Media Photo Editing	Summer – Programming Repetition in Shapes
<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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
Mastery Questions		
<p>Can you create yes/no questions related to an attribute? Can you organise these objects into a tree structure? Can you follow a branching database? What attribute is this question</p>	<p>Why are digital editing tools might be useful for editing images? Can you reflect on the tools you've used and how effect they were? Can you verbally explain the different</p>	<p>Can you read this code? Can you use an algorithm to create a code? When would we use the repeat function? How would we use repeat? Can you modify the code to</p>



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<p>inferring to? Why would this branch flow quicker? Why does this branching database not work? Why does different information need to be presented in different ways?</p>	<p>tools? How does your editing choice fit the scenario? How can images be changed for different uses? What are the negative and positive aspects of retouching images? Why are tools used for certain purposes? What images around us have been altered? How do we know?</p>	<p>create a range of shapes? Can you explain why a computer can only followed what has been programmed? How can a range of debugging strategies improve your work?</p>
Key Vocabulary		
<ul style="list-style-type: none"> Attribute Value Questions Table Objects Branching database Database Equal Even Separate Structure Compare Order Organise J2data Pictogram Information Decision tree 	<ul style="list-style-type: none"> Image Edit Arrange Select Digital Crop Undo Save Image Search Copyright Composition Pixels Rotate Flip Adjustment Effects Colours Hue/Saturation Sepia Version Illustrator Vignette Retouch Clone Recolour Magic wand Select Adjust Sharpen Brighten Fake Real Composite 	<ul style="list-style-type: none"> Program Turtle Commands Code Snippet Algorithm Design Debug Pattern Repeat Repetition Count-controlled loop Value Trace Decompose Procedure

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	<p>Cut Copy Paste Alter Background Foreground Publication Elements Original Font style Shapes Border Layer</p>	
Year 5 Personalised Curriculum		
Flashback		
<p>Previous Year: Can you create yes/no questions related to an attribute? Can you follow a branching database? Why does this branching database not work? Why does different information need to be presented in different ways? Why are digital editing tools might be useful for editing images? Can you verbally explain the different tools? How can images be changed for different uses? What are the negative and positive aspects of retouching images? Can you use an algorithm to create a code? How would we use repeat? How can a range of debugging strategies improve your work?</p>		
<p>Previous Unit: Can you read this code? Can you use an algorithm to create a code? When would we use the repeat function? How would we use repeat? s? Can you explain why a computer can only followed what has been programmed? How can a range of debugging strategies improve your work?</p>	<p>Previous Unit: What is an input/output? What steps make up a computer system? What is the impact on humans when computer systems are used? How do you find appropriate content online? What collaboration skills are required to work online together? Why is it good to share work? What is copyright?</p>	<p>Previous Unit: What is a video?? Which filming techniques have been used What theme can we use to scale our video? How could you share your video?</p>
Autumn – Computing Systems and Network Sharing Information	Spring – Creating Media Video Editing	Summer – Programming Selection in Quizzes
<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> To explain that computers can be connected to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet 	<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> To explain what makes a video effective To identify digital devices that can 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> 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

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<ul style="list-style-type: none"> 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 		<ul style="list-style-type: none"> To create a program which uses selection To evaluate my program
Mastery Questions		
<p>What is an input/output? What steps make up a computer system? What is the impact on humans when computer systems are used? Can you send a 'packet' through the 'internet' correctly? How do you find appropriate content online? What collaboration skills are required to work online together? Why is it good to share work? What is copyright?</p>	<p>What is a video? What are the similarities' and differences between video shots? Which filming techniques have been used? Can you evaluate the effectiveness of your video? What theme can we use to scale our video? Which issues need a reshoot and why? How could you share your video?</p>	<p>How are conditions used in programs and what is the impact of that condition? What is the outcome of a program in relation to the condition? Can you construct a program that uses selection to direct the flow? How will selection control the flow in your program? What is the benefit of sharing programs? Can you identify improvements that need to made? How does your program meet requirements?</p>
Key Vocabulary		
<p>System Connection Digital Input Process Output Protocol Address Packet Chat Explore Reuse Remix Collaboration</p>	<p>Video Audio Camera Talking head Panning Close Video camera Microphone Lens Close up Mid-range Long shot Moving subject Side by side High angle Low angle Normal angle Static camera Zoom Pan Tilt Storyboard Filming Review</p>	<p>Selection Condition True False Count-controlled loop Outcomes Conditional statement Algorithm Program Debug Question Answer Task Design Input Program Share Evaluate Constructive</p>



	<ul style="list-style-type: none"> Import Split Trim Clip Edit Reshoot Delete Reorder Export Evaluate Share 	
Year 6 Personalised Curriculum		
Flashback		
<p>Previous Year: What is an input/output? What steps make up a computer system? What is the impact on humans when computer systems are used? Why is it good to share work? What is copyright? What is a video? Which filming techniques have been used? How could you share your video? How are conditions used in programs and what is the impact of that condition? What is the outcome of a program in relation to the condition? What is the benefit of sharing programs?</p>		
<p>Previous Unit: How are conditions used in programs and what is the impact of that condition? How will selection control the flow in your program? What is the benefit of sharing programs?</p>	<p>Previous Unit: How do we effectively enter data into a spreadsheet? How to apply formatting to a data set? How do we duplicate a formula? Why would this be useful? How would we represent this data?</p>	<p>Previous Unit: What does website, web page, and browser mean? What is HTML? What are the features of a webpage? Where are good places to find content? What makes a picture acceptable/unacceptable? How can we make a webpage appropriate for all devices? Why would we need subpages and hyperlinks? What are the implications of linking to external websites?</p>
Autumn – Data and Information Spreadsheets	Spring – Creating Media Web page creation	Summer – Programming Variables in Games
<p>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • To identify questions which can be answered using data • To explain that objects can be described using data • To explain that formulas 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • 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>By the end of the unit, children will be able:</p> <ul style="list-style-type: none"> • 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
Mastery Questions		



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<p>How do we effectively enter data into a spreadsheet? How to apply formatting to a data set? Can you construct and use formula successfully? How do we duplicate a formula? Why would this be useful? Can you create an organised spreadsheet using formulas? How would we represent this data?</p>	<p>What does website, web page, and browser mean? What is HTML? What are the features of a webpage? Can you design your own webpage on paper? Where are good places to find content? What makes a picture acceptable/unacceptable? How can we make a webpage appropriate for all devices? Why would we need subpages and hyperlinks? What are the implications of linking to external websites? Can you evaluate our websites?</p>	<p>What variables can hold letters or numbers? Can you create and change variables? What will happen when a variable is updated more than once? What is a program flow and can you apply it to your algorithm? How would you debug your program? Can you identify variables in an unfamiliar project? How can you improve your program?</p>
Key Vocabulary		
<p>Data Collecting Table Structure Spreadsheet Cell cell reference data item format Formula Calculation Data Input Output Operation Range Duplicate Evaluate Results Comparison Questions Software Tools</p>	<p>Website Web page Browser Media Hypertext Markup Language (HTML), Logo Layout Header Media Purpose Copyright Fair use Home page Preview Evaluate Device Google Sites Breadcrumb trail Navigation Hyperlink Subpage Implication External link Embed</p>	<p>Variable Name Value Set Change Design Event Algorithm Code Task Artwork Program Project Code Test Debug Improve Evaluate Share</p>

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