



Through our Computing curriculum at St Matthew's, we equip pupils with knowledge and experiences to be digitally literate citizens, with an astute awareness of their online presence and its lasting impact. As a result of the curriculum, they can use computational thinking and apply their knowledge, take all technological opportunities available confidently, and use their core IT skills to shape their ambitions.

<b>Year 7 Curriculum</b>					
<b>Learning Focus</b>	<b>Safe, Respectful and Responsible Use of Digital Technologies</b>	<b>Introduction to Computer Science</b>	<b>Algorithmic thinking &amp; logic</b>	<b>Scratch Programming</b>	<b>Digital Literacy (PowerPoint)</b>
<b>Learning Hours Associated</b>	Week 1-6 6 Hours Approx.	Week 7-12 6 Hours Approx.	Week 13-17 4 Hours Approx.	Week 18-26 8 Hours Approx.	Week 27-39 8 Hours Approx.
What pupils will know, understand and be able to do.	<ul style="list-style-type: none"> <li>✓ Know the dangers of using digital technologies.</li> <li>✓ Know the dangers of using digital platforms.</li> <li>✓ Know what inappropriate content, contact and conduct is.</li> <li>✓ Understand the impact of their behaviours when using technology.</li> <li>✓ Understand the impact of others behaviours when using technology.</li> <li>✓ Understand the measures in place to keep yourself safe when using digital technologies.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know the Input, process &amp; output process.</li> <li>✓ Understand the difference between input/output devices.</li> <li>✓ Able to justify the choices between input/output</li> <li>✓ Know the different parts of the computer.</li> <li>✓ Understand how the different parts of the computer work</li> <li>✓ Able to justify the choice of hardware in a system.</li> <li>✓ To know what a network is.</li> <li>✓ Understand the two main types of network LAN/WAN</li> </ul>	<ul style="list-style-type: none"> <li>✓ Understand what algorithms are and how to represent them using lists and flow charts.</li> <li>✓ Understand what iteration and selection are within algorithmic thinking.</li> <li>✓ To know the different shapes used to create a flow chart.</li> <li>✓ Be able to apply algorithmic thinking to scenarios.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Understand the basic UI of scratch.</li> <li>✓ To know how to use algorithmic logic within the scratch UI (block based messages).</li> <li>✓ Know how to create their own variables to store integers.</li> <li>✓ Understand how to represent selection using if statements.</li> <li>✓ Know how to use iteration correctly within a programming context.</li> <li>✓ Know how to use the design features for using different sprites and backgrounds.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know how to use custom shapes for design purposes and placing of text.</li> <li>✓ Know how to use shapes to create buttons and using links effectively.</li> <li>✓ Understand how to use animations appropriately.</li> <li>✓ Understand how to use transitions effectively.</li> <li>✓ Know how to use the format options to customise different aspects of PowerPoint.</li> <li>✓ Understand design techniques such as wireframing, storyboarding, and colour theory.</li> </ul>

	<ul style="list-style-type: none"> <li>✓ Able to utilise the tools available to protect their online identity, privacy and platforms.</li> <li>✓ Able to report concerns and access the support offered by others to keep themselves safe.</li> <li>✓ Able to advise and support others to keep themselves safe online.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Able to evaluate the best type of network for different scenarios</li> <li>✓ Know what binary code.</li> <li>✓ Understand why binary code is used.</li> <li>✓ Able to interpret binary code.</li> <li>✓ Able to use 5-bit binary and convert it to denary values.</li> <li>✓ Understand what AI is and how it is currently used.</li> </ul>			
Subject Vocabulary	Content, Platform, Livestreaming, Mitigate, Policies, Sexting, Grooming, Cyberbullying	Input, Output, Process, Hardware, Software, CPU, GPU, Motherboard, PSU, RAM, ROM, binary, denary. Network, LAN, WAN.	Algorithms, Logical thinking, Instruction, Flow chart, iteration, selection.	Programming, statement, string, integer, float, iteration, loop, variable, sprite, stage.	Text box, shapes, insert, format, link, button, animation, transition, background, foreground,
Subject Texts Used	Online Safety Bill Guardian News Article (Twitter makes more cuts to online safety teams) TikTok Community Guidelines	<a href="#">What is a Network? - beanz Magazine - beanz Magazine - Kids, Code, and Computer Science (kidscodecs.com)</a>	<a href="#">Computational Thinking For Children   Safe Search (safesearchkids.com)</a>	<a href="#">Scratch - About (mit.edu)</a>	<a href="#">Deloitte UK   My life through tech and what it's taught me</a>
Cultural Enrichment Opportunities	Digi Teen Online Conference – Industry and Policing Q and A Opportunity.	YouTube – Building a PC guide	BBC Bitesize - Algorithms	BBC – Microbit BBC Bitesize introduction to programming Youtube/TikTok shorts	Youtube/TikTok shorts
Learning Behaviours	To develop empathy towards others. Respect to people both physically and virtually.	High praise with focus on achievement points and positive postcards towards positive behaviours so students feel encouraged and can model. Promote purposeful conversation through guided discussions. We will support pupils to be reflective, responsible and use inference	We will encourage resilience to errors/mistakes. Model the ability to show its ok and come up with solutions. Develop problem solving skills and “thinking outside the box” to problems. Develop application of ideas and skills to real world examples.	We will encourage resilience to errors/mistakes. Model the ability to show its ok and come up with solutions. Teach persistence to carry out tasks successfully even with mistakes. Develop problem solving skills and creative thinking. Encourage collaboration with classwork and show	We will encourage resilience to errors/mistakes. Model the ability to show its ok and come up with solutions. Teach persistence to carry out tasks successfully even with mistakes. Nurture persistence to carry out tasks successfully even with mistakes.

				how it aids for a positive atmosphere.	
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Year 8 Curriculum					
Learning Focus	Intermediate Computer Science	Applying Programming Skills Physically	Introduction to Python	Cyber Security	Media - Photoshop
Learning Hours Associated	Week 1-6 7 Hours Approx.	Week 7-12 7 Hours Approx.	Week 13 – 20 7 Hours Approx	Week 21 – 27 7 Hours Approx	Week 28-34 7 hours Approx
What pupils will know, understand and be able to do.	<ul style="list-style-type: none"> <li>✓ Know the different types of storage and memory: internal/external.</li> <li>✓ Understand the different types of external/internal media and their uses.</li> <li>✓ Able to fully justify when storage/memory is invoked.</li> <li>✓ Know the three different network typologies.</li> <li>✓ Understand the advantages/disadvantages of the different network typologies.</li> <li>✓ Know what an operating system is.</li> <li>✓ Understand the role of the operating system.</li> <li>✓ Able to justify the choice of operating system, for different devices.</li> <li>✓ Know how to interpret 8-bit binary.</li> <li>✓ Able to perform binary addition.</li> <li>✓ Know the different health &amp; safety risks when using computers.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know basic the basic programming concepts (sequencing, selection &amp; iteration)</li> <li>✓ Understand what algorithms are and how they are used in the real world.</li> <li>✓ Able to create text/flowchart-based algorithms.</li> <li>✓ Know how to program physical devices (MicroBit)</li> <li>✓ Able to program using block based or text-based languages.</li> <li>✓ Know how to use sensors, inputs &amp; output for programming.</li> <li>✓ Able to evaluate programs using psychical devices.</li> <li>✓ Know the difference between</li> </ul>	<ul style="list-style-type: none"> <li>✓ To know different data types (string, integers, floats).</li> <li>✓ Know how to create basic messages.</li> <li>✓ Know how to design custom variables.</li> <li>✓ Know how to use Python arithmetically (using different operators. + - / * %)</li> <li>✓ Understanding selection and if statements.</li> <li>✓ Know the two different types of iteration (if and while).</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know the different types of network topology.</li> <li>✓ Understand what these topologies look like and where each would be used in real world settings</li> <li>✓ Know of the different methods that attack computers and can compromise user data (malware/hacking/social engineering)</li> <li>✓ Understand what these attacks look like and how they can be stopped.</li> <li>✓ Know the main points of the Computer Misuse and Data protection Act</li> <li>✓ Able to identify breaches in the law surrounding computer misuse, in particular hacking and social engineering</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know how digital graphics are used across a variety of media.</li> <li>✓ Know how to set up a new project /canvas.</li> <li>✓ Know how to use the brush tool effectively.</li> <li>✓ Know how to use selection tools such as wand, quick selection and lasso.</li> <li>✓ Understand the use of layers.</li> <li>✓ Know how to apply different filters effectively.</li> <li>✓ Know how to customise fonts.</li> <li>✓ Know how to effectively use different methods of transform.</li> <li>✓ Understand different principles behind design of</li> </ul>

	<ul style="list-style-type: none"> <li>✓ Understand the risks and be able to offer solutions.</li> <li>✓ Know the laws involved with health &amp; safety with computers.</li> </ul>	<p>syntax/logical errors and how to debug them.</p>		<ul style="list-style-type: none"> <li>✓ Know how AI is used and the impact it has on existing technology.</li> </ul>	<p>digital graphics (layout, colours and purpose).</p> <ul style="list-style-type: none"> <li>✓ Know how to use AI to generate images and editing those.</li> </ul>
Subject Vocabulary	<p>Storage, internal, external, optical, magnetic, solid state, volatile, non-volatile, Ring, Star &amp; Bus network, server, node, router, ethernet, windows, Linux, MacOSX, iOS, android, kernel, RSI, eye strain.</p>	<p>Programming, MicroBit, Low/High level programming language, sequencing, selection, iteration, algorithm, flowchart, sensors, debugging, syntax/logical errors.</p>	<p>Programming, string, float, integer, selection, iteration, loop, sequence, statement, logic, syntax, debugging, errors.</p>	<p>Social engineering, Hacking, Shouldering, Blagging, Phishing, Malware, Virus, Trojan, Worm, DDos, Data protection, Computer misuse, LAN, WAN, Bus, Ring, Star, Mesh. Server, Router, Hub</p>	<p>Digital graphics, brush, selection, lasso, filters, layers, layer styles, brush styles, transform, warp, canvas, background.</p>
Subject Texts Used	<p>UK Health and Safety Legislation</p>	<p><a href="#">Newsela   Instructional Content Platform</a> – the math behind bits and bytes.  <a href="#">Artificial Intelligence For Dummies – A Guide For Beginners   liberties.eu</a></p>	<p><a href="#">How to become a software developer: Hannah's story - BBC Bitesize</a></p>	<p><a href="#">Newsela   Data of 40 million-plus exposed in latest T-Mobile breach</a></p> <p><a href="#">Newsela   TikTok CEO grilled by skeptical lawmakers on safety, content</a></p> <p><a href="#">Newsela   TikTok and privacy: Would the popular app give your data to China?</a></p>	<p><a href="#">Graphic Design for Kids: The Ultimate Guide - Create &amp; Learn (create-learn.us)</a></p>
Cultural Enrichment Opportunities	<p>Building computers from the beginning.</p>	<p>Programming with MicroBit series</p>	<p><a href="#">codefinity</a>  Mobile app – Learn Python  Youtube – kidscancode</p>	<p>GDPR (Tech news)  Amazon - apprenticeships  BAE – apprenticeships</p>	<p>TikTok – short videos, downloaded,  Youtube – Photopea course.</p>
Learning Behaviours	<p>Risk taking and confidence – pupils encouraged to explore software and hardware and learn from mistakes that may be made. To be resilient in attempting the same task using different approaches until a successful outcome is achieved.</p>	<p>Respect of expensive equipment.  Supporting peers.</p>	<p>We will encourage resilience to errors/mistakes. Model the ability to show its ok and come up with solutions.  Teach persistence to carry out tasks successfully even with mistakes.</p>	<p>Promote purposeful conversation through guided discussions.</p>	<p>We will encourage resilience to errors/mistakes. Model the ability to show its ok and come up with solutions.  Teach persistence to carry out tasks successfully even with mistakes.</p>

			<p>Teach persistence to carry out tasks successfully even with mistakes.</p> <p>Develop problem solving skills and creative thinking.</p> <p>Encourage collaboration with classwork and show how it aids for a positive atmosphere.</p>		<p>Teach persistence to carry out tasks successfully even with mistakes.</p> <p>Develop problem solving skills and creative thinking.</p> <p>Encourage collaboration with classwork and show how it aids for a positive atmosphere.</p>
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<b>Year 9 Curriculum</b>					
<b>Learning Focus</b>	<b>Advanced Computer Science</b>	<b>Digital Literacy (Excel)</b>	<b>Enterprise</b>	<b>Further Python</b>	<b>Mobile App Development</b>
<b>Learning Hours Associated</b>	Week 1-7 7 Hours Approx.	Week 8-15 7 Hours Approx.	Week 16-23 7 Hours Approx.	Week 24-31 7 Hours Approx.	Week 32-39 7 Hours Approx.
What pupils will know, understand and be able to do.	<ul style="list-style-type: none"> <li>✓ Know the different network protocols</li> <li>✓ Understand the need for the different network protocols.</li> <li>✓ Able to justify when different protocols would be used and why.</li> <li>✓ Understand the different base systems 2, 10 &amp; 16</li> <li>✓ Able to convert binary to denary and hexadecimal</li> <li>✓ Know how computers represent images &amp; audio</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know the different between information/data</li> <li>✓ Understand how information is captured.</li> <li>✓ Able to add data into Excel and turn it into information.</li> <li>✓ Understand the importance of formatting information within a spreadsheet</li> <li>✓ Know how to format information within a spreadsheet</li> <li>✓ Able to justify different formatting choices.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know what enterprise is.</li> <li>✓ To understand what makes an enterprise successful.</li> <li>✓ To understand the different stages in production.</li> <li>✓ To know the different scale and sizes of Enterprise.</li> <li>✓ To know the different ownership structures of enterprise.</li> <li>✓ To know how enterprises can grow.</li> <li>✓ To understand the competitive</li> </ul>	<ul style="list-style-type: none"> <li>✓ Know how to properly store/collect the 5 main data types and output them to the screen</li> <li>✓ Know how to use selection, sequence and iteration to create small 'useful' programs</li> <li>✓ Understand how to store data to external files and retrieve it</li> <li>✓ Know how to construct arrays of at least two dimensions.</li> <li>✓ Able to create procedures and</li> </ul>	<ul style="list-style-type: none"> <li>✓ Understand how some external devices can be used to complete daily tasks (microbit)</li> <li>✓ Understand the process of decomposition, abstraction, pattern recognition and algorithms</li> <li>✓ Understand the coding environments/languages needed to develop for external devices</li> <li>✓ Know how to create functional apps/programs to solve</li> </ul>

		<ul style="list-style-type: none"> <li>✓ Know how to create conditional formatting.</li> <li>✓ Understand what formulae is and why it is used in spreadsheets.</li> <li>✓ Know which formulae to use, for different calculations.</li> <li>✓ Know how to create different graphs/charts.</li> <li>✓ Able to justify the choice of graph/chart, based on the information being used.</li> </ul>	<p>environment and its impact on enterprise.</p> <ul style="list-style-type: none"> <li>✓ To understand the social environment and its impact on enterprise</li> </ul>	<p>functions within a programming environment and distinguish between the two</p> <ul style="list-style-type: none"> <li>✓ Able to create a program from a given scenario which covers the 3 main programming constructs (SSI)</li> </ul>	<p>real world problems (Accessibility)</p> <ul style="list-style-type: none"> <li>✓ Able to use emulated and physical applications and components to demonstrate small working programs(microbit, tinkercad)</li> <li>✓ Understand the process of decomposition, abstraction, pattern recognition and algorithms and apply it to a project</li> </ul>
Subject Vocabulary	<p>Transmission Control Protocol (TCP)  Internet Protocol (IP)  User Datagram Protocol (UDP)  Post office Protocol (POP)  Simple mail transport Protocol (SMTP)  File Transfer Protocol (FTP)  Hyper Text Transfer Protocol (HTTP)  Hyper Text Transfer Protocol Secure (HTTPS)  Base number system, hexadecimal, representation, audio, images, pixel, resolution, sample, wave</p>	<p>Data, information, excel, spreadsheet, cell, cell reference, column, row, formatting, formulae, conditional formatting, graph, chart.</p>	<p>Enterprise  Entrepreneur  Revenue  Profit  Primary, Secondary and Tertiary Sector  Scale  Liability  Integration</p>	<p>Integer, float, boolean, string, character, 2D and 3D lists, selection, sequence and iteration, open(), readlines(), write(), functions, return values, external files, robust coding, permissions</p>	<p>Microbit, circuitboards, interpreters, compilers, abstraction, decomposition, pattern recognition, algorithms, accessibility features, emulation, physical components, microsoft testing model, product/development lifecycle, trace tables, testing documents, white and black box testing, debugging, logical errors</p>
Subject Texts Used	<p><a href="#">What Are Network Protocols? - IT Glossary   SolarWinds</a></p>	<p><a href="#">5 things everyone should know about spreadsheets - Teacher Tech (alicekeeler.com)</a></p>	<p>ONS Census report</p> <p>Passages from entrepreneur biographies</p>	<p><a href="#">Learn to Code - for Free   Codecademy</a></p> <p><a href="#">Learn Python - Free Interactive Python Tutorial</a></p>	<p><a href="#">Micro:bit Educational Foundation   micro:bit (microbit.org)</a></p> <p><a href="#">Microsoft MakeCode for micro:bit (microbit.org)</a></p>

	<a href="#">The Surprising Facts About Pixels and How They Affect Your Photography   Fstoppers</a>				<a href="#">Tinkercad   Create 3D digital designs with online CAD</a>
Cultural Enrichment Opportunities	<a href="#">App Lab - Code.org</a> <a href="#">Flippy bird hexadecimal game</a>	TikTok – Spread Sheet guys, short videos, downloaded.	Case study video clips – entrepreneurs that have set up their own enterprises. Story of perseverance and resilience.  Study of ONS census data for local area. Understanding their local context and population and what this means for them.	Game Jam.	Game Jam competitions. Manchester science and industry Trips and competition. Young computer scientist competition, Mindstorms competition. BBC microbit affiliate programs
Learning Behaviours	Being able to apply previous knowledge to new topics.	Logic in creating a formula and functions.  Accuracy and Precision	Strategic Thinking  Analytical  Innovative  Competitive	Teach persistence to carry out tasks successfully even with mistakes. Develop problem solving skills and creative thinking. Encourage collaboration with classwork and show how it aids for a positive atmosphere.	Being mindful of accessibility options available to cover a wide range of people.

### **For Information:**

Autumn Term – 15 Weeks (Week 1 – 15)

Spring Term – 11 Weeks (Week 16 – 26)

Summer Term – 13 Weeks (Week 27-39)

Computing Curriculum Time – 2 hours per fortnight (2 Week Timetable)