



**Computing Long Term Plan**

**Year 1**

<b>Advent 1</b>	<b>Advent 2</b>	<b>Lent 1</b>	<b>Lent 2</b>	<b>Pentecost 1</b>	<b>Pentecost 2</b>
<p><b><u>Getting started</u></b></p> <p>Introducing children to logging in and using technology for a purpose, including creating art.</p> <p><b><u>Digital Literacy</u></b> Recognising common uses of information technology. Logging in and saving work on their own account. Knowing what to do if they have concerns about content or contact online. Understanding of how to create digital art using an online paint tool.</p> <p><b><u>Computers and Hardware</u></b></p> <p>Learning to locate where keys are on the keyboard. Developing basic mouse skills.</p>	<p><b><u>Programming: Bee-bots</u></b></p> <p>Using Bee-bots to navigate an area and constructing simple algorithms, through the story of The Three Little Pigs</p> <p><b><u>Computational Thinking</u></b> Learning how to explore and tinker with hardware to find out how it works. Constructing a series of instructions into a simple algorithm.</p> <p>Applying computing concepts to real world situation in an unplugged activity.</p>		<p><b><u>Algorithms Unplugged</u></b> Learning how computers handle information by exploring “unplugged” algorithms – completing tasks away from the computer.</p> <p><b><u>Computational Thinking</u></b> Understanding how to create algorithms.</p> <p>Learning that computers need information to be presented in a simple and clear way.</p> <p>Understanding how to break a computational thinking problem into smaller parts in order to solve it.</p>	<p><b><u>Digital Imagery</u></b> Taking and manipulating digital photographs, including adding images found via a search engine.</p> <p><b><u>Digital Literacy</u></b> Using technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Knowing what to do if they have concerns about content or contact online.</p> <p><b><u>Computational Thinking</u></b> Using logical reasoning to predict the behaviour of simple programs</p> <p><b><u>Computers and Hardware</u></b> Using cameras or tablets to take photos.</p>	<p><b><u>Introduction to data</u></b> Learning about what data is and how it can be represented and using these skills to show the findings of a mini beast hunt.</p> <p><b><u>Digital Literacy</u></b> Using technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>Selecting software appropriately.</p> <p><b><u>Computers and Hardware</u></b> Recognising uses of technology beyond school.</p>

## Year 2

Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
	<p><b><u>What is a computer?</u></b> Children explore exactly what a computer is, identifying and learning how inputs and outputs work, how computers are used in the wider world and designing their own computerised invention.</p> <p><b><u>Computational Thinking</u></b> Learning about inputs and outputs and how they are used in algorithms</p> <p><b><u>Computers and Hardware</u></b> Understanding what a computer is and the role of individual components.</p>	<p><b><u>Word Processing</u></b> Using their developing word processing skills, pupils write simple messages to friends and learn why we must be careful about who we talk to online.</p> <p><b><u>Digital Literacy</u></b> Using word processing software to type and reformat text. Understanding the importance of staying safe online.</p>	<p><b><u>Programming: Scratch Jnr</u></b> Using the app “Scratch Jnr”, pupils programme a familiar story and an animation of an animal, make their own musical instruments and follow an algorithm to record a joke.</p> <p><b><u>Computational Thinking</u></b> Creating and debugging simple programs.</p> <p>Using logical reasoning to predict the behaviour of simple programs.</p> <p>Understanding what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p>	<p><b><u>Algorithms and Debugging</u></b> Identifying problems with code using both unplugged and plugged systems to diagnose and correct errors in an algorithm – a process known as debugging.</p> <p><b><u>Computational Thinking</u></b> Creating and debugging simple programs.</p> <p>Using logical reasoning to predict the behaviour of simple programs.</p> <p>Understanding what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p>	<p><b><u>Stop Motion</u></b> Pupils create simple animations, storyboarding their ideas then decomposing it into small parts of action to be captured using Stop Motion animation software.</p> <p><b><u>Digital Literacy</u></b> Using technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p><b><u>Computers and Hardware</u></b> Understanding how to use tablets or computers to take photos.</p>

			<p><b>Digital Literacy</b> Using technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>		
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Year 3					
Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
<p><b>Emailing</b> Pupils learn how to send emails, including attachments and how to be responsible digital citizens.</p> <p><b>Digital Literacy</b> Learn about cyberbullying and fake emails. Understanding the purpose of emails.</p>	<p><b>Journey inside a computer</b> Children learn about the different parts of a computer through role-play and develop their understanding of how they follow instructions.</p> <p><b>Computers and Hardware</b> Understanding what different components of a computer do.</p> <p><b>Computational Thinking</b> Understanding that programs execute by following precise and unambiguous instructions.</p>	<p><b>Top Trump Databases</b> Developing their understanding of data and database, children play with and create their own Top Trumps cards, learning how to interpret information by ordering and filtering.</p> <p><b>Digital Literacy</b> Using technology purposefully to create, organise, store, manipulate and retrieve data.</p>	<p><b>Digital Literacy</b> Developing their video skills, pupils create a book trailer, storyboarding their trailers before then filming and editing their videos, adding effects, such as transition, music, voice and text.</p> <p><b>Digital Literacy</b> Using technology purposefully to create, organise, store, manipulate and retrieve digital content including searching for relevant information.</p>	<p><b>Programming: Scratch</b> Using Scratch, with its block-based approach to coding, pupils learn to tell stories and create simple games.</p> <p><b>Computational Thinking</b> Using logical reasoning to explain how simple algorithms work.</p> <p>Designing, writing and debugging programs that accomplish specific goals, including controlling or simulating physical systems.</p>	<p><b>Networks and the internet</b> To understand how computers, communicate, children learn about networks and the internet, and how they are used to share information.</p> <p><b>Computers and Hardware</b> Identifying network components and understand how they are used to connect to the internet and how data is transferred.</p> <p><b>Digital Literacy</b> Understanding computer networks,</p>

				<p>Solving problem by decomposing them into smaller parts.</p> <p>Using sequence, selections and repetition in programs.</p> <p>Working with variables and various forms of input and output.</p>	<p>including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.</p>
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Year 4					
Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
<p><b><u>Collaborative learning</u></b> Learning to work collaboratively in a responsible way using tools including Google Docs and Sheets.</p> <p><b><u>Digital Literacy</u></b> Selecting using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals.</p> <p>Understanding opportunities offered</p>	<p><b><u>Further coding with Scratch</u></b> The coding program Scratch is explored further by revisiting key features and introducing the children to the crucial concept and execution of using variables in code scripts.</p> <p><b><u>Computational Thinking</u></b> Using logical reasoning to explain how simple algorithms work.</p>	<p><b><u>Website design</u></b> Pupils design and create their own websites, considering content and style, as well as understanding the importance of working collaboratively.</p> <p><b><u>Digital Literacy</u></b> Selecting using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals.</p>	<p><b><u>HTML</u></b> Pupils explore the language behind well-known websites, while developing their understanding of how to change the core characteristics of website using HTML and CSS.</p> <p><b><u>Digital Literacy</u></b> Recognising that information on the internet might not be true or correct.</p> <p>Using technology safely, by recognising</p>	<p><b><u>Investigating weather</u></b> Children investigate the role of computers in forecasting and recording weather as well as how technology is used to present forecasts.</p> <p><b><u>Digital Literacy</u></b> Understanding why some sources are more trustworthy than others.</p> <p><b><u>Computational Thinking</u></b></p>	<p><b><u>Computational Thinking</u></b> Through developing their understanding of the four pillars of computational thinking, children learn to identify them in different contexts.</p> <p><b><u>Computational Thinking</u></b> Understand what decomposition is and how it facilitates problem solving.</p> <p>Designing, writing and debugging programs</p>

<p>by the World Wide Web for communication and collaboration.</p>	<p>Designing, writing and debugging programs that accomplish specific goals, including controlling or simulating physical systems.</p> <p>Solving problems by decomposing them into smaller parts.</p> <p>Using sequence, selection and repetition in programs.</p> <p>Working with variables and various forms of input and output.</p>	<p>Understanding opportunities offered by the World Wide Web for communication and collaboration.</p>	<p>acceptable/unacceptable behaviour.</p> <p>Knowing what to do when they have concerns about content or contact online</p> <p><b><u>Computational Thinking</u></b> Understanding that website can be altered by exploring the code beneath the site.</p> <p>Designing, writing and debugging programs that accomplish specific goals.</p> <p>Solving problems by decomposing them into smaller parts.</p>	<p>Understanding the role of input and outputs in computerised devices.</p>	<p>that accomplish specific goals.</p> <p>Understand abstraction and patterns recognition.</p>
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Year 5					
Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
<p><b><u>Online Safety</u></b> Pupils create an online safety resource for younger children using tools such as presentation software,</p>	<p><b><u>Micro:bit</u></b> Programming a small device called micro:bit to display animations or messages on its</p>	<p><b><u>Search Engines</u></b> To enable children to quickly and accurately find information and become independent learners, they need to</p>	<p><b><u>Sonic Pi</u></b> Composing music using code through Sonic Pi, pupils can import samples, add drum beats and compose</p>	<p><b><u>Mars Rover 1</u></b> Pupils explore inputs and outputs as well as Binary numbers to understand how the Mars Rover transmits</p>	<p><b><u>Mars Rover 2</u></b> Children learn how the Mars Rover is able to send images all way back to Earth and experiment with online</p>

<p>video tools or a simple stop-motion animation.</p> <p><b>Digital Literacy</b> Recognising that information on the internet might not be true or correct.</p> <p>Using technology safely, by recognising acceptable/unacceptable behaviour and knowing what to do when they have concerns about content or contact.</p>	<p>simple LED display using block coding</p> <p><b>Computational Thinking</b> Using block coding to program a device.</p> <p>To explore variables and different forms of input.</p> <p><b>Computers and Hardware</b> Understand how external devices can be programmed by a separate computer.</p>	<p>develop their searching skills and learn how to identify trustworthy sources.</p> <p><b>Digital Literacy</b> Recognising that information on the internet might not be true or correct.</p> <p>Know how to use key words to quickly find accurate information</p>	<p>simple tunes culminating in a battle of the bands using live loops of music.</p> <p><b>Digital Literacy</b> Selecting using and combing a variety of software to design and create a range of programs systems and content that accomplish given goals.</p> <p><b>Computational Thinking</b> Using programming language to create music, including use of loops</p>	<p>and receives data and how scientists are able to control it to explore another planet.</p> <p><b>Digital Literacy</b> Understanding a 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.</p> <p><b>Computers and Hardware</b> Using search technologies effectively, appreciating how results are selected and ranked and be discerning in evaluating digital content.</p> <p>Recognising that computers transfer data in binary and understand simple binary addition.</p>	<p>CAD software to designing new tyres for it.</p> <p><b>Digital Literacy</b> Developing their CAD skills</p> <p><b>Computers and Hardware</b> Understanding how image data is transferred.</p>
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Year 6					
Advent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
<p><b><u>Bletchley Park</u></b> Children learn about the history of Bletchley Park, including: key historical figures, how the first modern computers were created as part of a WWII code breaking team and consider how computers have evolved over time. They then go on to investigate secret codes and how they are created, exploring “brute force” hacking and learn how to make passwords more secure.</p> <p><b><u>Digital Literacy</u></b> Understanding the importance of secure passwords and using searching and word processing skills to create a presentation.</p> <p>Editing sound recordings for specific purposes.</p> <p><b><u>Computational Thinking</u></b> Using programming software to understand hacking, relating this to computer cracking codes in WWII.</p> <p><b><u>Computers and Hardware</u></b> Learning about the history of computers and how they evolved over time.</p>		<p><b><u>Intro to Python</u></b> Building on their knowledge of coding from previous years, children are introduced to the text-based programming language Python, which is the language behind any apps and programs, such as Dropbox.</p> <p><b><u>Computational Thinking</u></b> Understanding that websites can be altered by exploring the code beneath the site.</p> <p>Designing, writing and debugging programs that accomplish specific goals.</p> <p>Solving problems by decomposing them into smaller parts.</p>	<p><b><u>Big Data 1</u></b> Children how data is collected and stored by exploring barcodes, QR codes and RFID chips, and investigate how collecting big data can be used to help people in a variety of different scenarios.</p> <p><b><u>Digital Literacy</u></b> Understanding how learning can be applied to a real-world context.</p> <p>Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data.</p> <p><b><u>Computers and Hardware</u></b></p>	<p><b><u>Big Data 2</u></b> Children learn the difference between mobile data and WIFI and how data is transferred and use their understanding of big data to design their own smart school.</p> <p><b><u>Digital Literacy</u></b> Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data.</p>	<p><b><u>Skills Showcase</u></b> Reflecting on and showcasing their computing skills, pupils create an entire project around a specific.</p> <p><b><u>Digital Literacy</u></b> Showcasing their digital literacy skills</p> <p><b><u>Computational Thinking</u></b> Demonstrating their computational thinking skills by designing and debugging programs, using different inputs and outputs.</p> <p><b><u>Computers and Hardware</u></b> Understanding how search engines work and knowing how to use them safely and effectively.</p>

		<p>Understanding that computer networks provide multiple services.</p> <p>Understanding how barcodes and QR codes work.</p>		
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