St Alban & St Stephen Catholic Primary School & Nursery
Computing – Whole School Curriculum Coverage

Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	**Unit of Work**	**Computing throughout continuous provision.**	**Computing Systems and Networks 1:** Using a computer.	**Programming 1:** Instructions.	**Computing systems and networks 2:** Exploring Hardware	**Programming 2:** Beebots	**Data Handling:** Introduction to data.
	Summary	Computing throughout continuous provision.	Learning about the main parts of a computer and how to use the keyboard and mouse. Learning how to log in and out.	The children learn to receive and give instructions and understand the importance of precise instructions.	Tinkering and exploring with different computer hardware and learning to operate a camera.	Children learn about directions, experiment with programming a bee-bot/Blue-bot and tinker with hardware.	Children sort and categorise data and are introduced to branching databases and pictograms.
	Resources	**Computing throughout continuous provision.**	**Hardware:** Chromebook with mouse.	N/A	**Hardware:** iPads	**Hardware:** Bee-bots or Blue-bots **Software:** Virtual Bee-Bots.	**Hardware:** Chromebook with mouse. Interactive Whiteboard

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EYFS		Autumn 1:	Autumn 2:	Spring 1:	Spring 2:	Summer 1:	Summer 2:
	Success Criteria	Computing throughout continuous provision.	To be able to understand what a computer keyboard is and recognise some letters and numbers. To know that a mouse can be used to click, drag and create simple drawings. To know that to use a computer you need to log in to it and then log out at the end of your session.	To know that being able to follow and give simple instructions is important in computing. To understand that it is important for instructions to be in the right order. To understand why a set of instructions may have gone wrong.	To know that different types of technology can be found at home and in school. To know that you can take simple photographs with a camera or iPad. To know that you must hold the camera still and ensure the subject is in the shot to take a photo.	To know that you can program a Bee-Bot with some simple commands. To understand that debugging means how to fix some simple programming errors. To understand that an algorithm is a set of clear and precise instructions.	To know that sorting objects into various categories can help you locate information. To know that using yes/no questions to find an answer is known as a branching database. To know that a pictogram is a way of showing information.

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Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Unit of Work**	**Computing Systems and Networks 1:** Improving Mouse Skills	**Skills Showcase:** Rocket To The Moon	**Programming 1:** Algorithms - Unplugged	**Programming 2:** Beebots	**Creating Media:** Digital Imagery	**Data Handling:** Introduction to data.
	Summary	Learning how to login and navigate around a computer; developing mouse skills; learning how to drag, drop, click and control a cursor to create works of art.	Developing keyboard and mouse skills through designing, building and testing. Creating a digital list of materials, using drawing software and recording data.	Algorithms, decomposition and debugging are made relatable to familiar contexts, following directions, learning why instructions need to be specific.	Introducing programming through the use of a Bee-Bot and exploring its functions.	Taking and editing photos, searching for and adding images to a project.	Learning what data is and the different ways it can be represent.
	Resources	**Hardware:** Chromebook with mouse. **Website or Software:** Sketchpad	**Hardware:** Chromebook with mouse. **Website or Software:** Sketchpad Microsoft Word Microsoft Excel	N/A	**Hardware:** Bee-bots or Blue-bots iPads (BeeBot App)	**Hardware:** Chromebook with mouse. iPads **Website or Software:** Powerpoint Pixlr App	**Hardware:** Chromebook with mouse. iPads **Website or Software:** Sketchpad Just2Easy

Year 1	Success Criteria	Autumn 1:	Autumn 2:	Spring 1:	Spring 2:	Summer 1:	Summer 2:
		To know that "log in and log out" means to begin and end a connection with a computer. To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art. To know that passwords are important for security	To know that when we create something on a computer it can be more easily saved and shared than a paper version. To know some of the simple graphic design features of a piece of online software. To know that a spreadsheet is an electronic 'table' for sorting data.	To understand that an algorithm is when instructions are put in an exact order To know that input devices get information into a computer and that output devices get information out of a computer. To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'.	To understand the basic functions of a Bee-Bot To know that you can use a camera/tablet to make simple videos. To know that algorithms move a Bee-Bot accurately to a chosen destination.	To understand that holding the camera still and considering angles and light are important to take good pictures. To know that you can edit, crop and filter photographs. To know how to search safely for images online.	To know how that charts and pictograms can be created using a computer. To understand that a branching database is a way of classifying a group of objects. To know that computers understand different types of 'input'.

Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 2	**Unit of Work**	**Computing Systems and Networks 1:** What is a computer?	**Programming 1:** Algorithms and Debugging	**Computing Systems and Networks 2:** Word Processing	**Programming 2:** Scratch Junior	**Creating Media:** Stop Motion	**Data Handling:** International Space Station
	Summary	Exploring what a computer is by identifying how inputs and outputs work and how computers are used in the wider world to design their own computerised invention.	Developing an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops.	Developing touch typing skills, learning keyboard shortcuts and simple editing tools.	Exploring what 'blocks' do' by carrying out an informative cycle of predict > test > review. Programming a familiar story and make a musical instrument.	Learning how to create simple animations from storyboarding creative ideas.	Learning how data is collected, used and displayed and the scientific learning of the conditions needed for plants and humans, to survive.
	Resources	**Hardware:** Chromebook with mouse. iPads **Website or Software:** Sketchpad	**Hardware:** Chromebook with mouse. **Website or Software:** Google Earth Scratch Lightbot	**Hardware:** Chromebook with mouse. **Website or Software:** Google Docs Microsoft Office	**Hardware:** Chromebook with mouse. iPads **Website or Software:** Scratch Jr	**Hardware:** iPads **Software:** J2E's JIT5 - Animate	**Hardware:** Chromebook with mouse. **Software:** Sketchpad

Year 2	Success Criteria	Autumn 1:	Autumn 2:	Spring 1:	Spring 2:	Summer 1:	Summer 2:
		To know the difference between a desktop and laptop computer. To know that people control technology To know some input devices that give a computer an instruction about what to do (output). To know that computers often work together.	To understand what machine learning is and how it enables computers to make predictions. To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times. To know that abstraction is the removing of unnecessary detail to help solve a problem.	To know that touch typing is the fastest way to type. To know that I can make text a different style, size and colour. To know that "copy and paste" is a quick way of duplicating text.	To know that coding is writing in a special language so that the computer understands what to do. To understand that the character in ScratchJr is controlled by the programming blocks. To know that you can write a program to create a musical instrument or tell a joke.	To understand that an animation is made up of a sequence of photographs. To know that small changes in my frames will create a smoother looking animation. To understand what software creates simple animations and some of its features e.g. onion skinning.	To understand that you can enter simple data into a spreadsheet. To understand what steps you need to take to create an algorithm. To know what data to use to answer certain questions. To know that computers can be used to monitor supplies.

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Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	**Unit of Work**	**Computing Systems and Networks 1:** Networks and the Internet	**Programming 1:** Scratch	**Computing Systems and Networks 2:** Emailing	**Computing Systems and Networks 3:** Journey Inside A Computer	**Creating Media:** Video Trailers	**Data Handling:** Comparison Cards Databases
	Summary	Learning what a network is and how devices communicate and share information.	Exploring the programme Scratch, following the predict > test > review cycle. Learning about 'loops' and programming an animation, story and game.	Sending emails with attachments and understanding what cyberbullying is.	Assuming the role of computer parts and creating paper versions of computers to consolidate understanding of how a computer works.	Developing digital video skills to create trailers, with special effects and transitions.	Learning about records, fields and data and sorting and filtering data.
	Resources	**Hardware:** Chromebook with mouse. **Website or Software:** Sketchpad, Scratch, Pixlr Powerpoint, GSuite Traceroute	**Hardware:** Chromebook with mouse. **Website or Software:** Scratch	**Hardware:** Chromebook with mouse. **Website or Software:** Gmail Kidsemail Google Forms	**Hardware:** Chromebook with mouse. iPads **Website or Software:** PicCollage, BeFunky, Pixlr, Sketchpad, Canva	**Hardware:** Chromebook with mouse. iPads **Website or Software:** WeVideo, Shotcut, Kapwing, iMovie	**Hardware:** Chromebook with mouse. **Website or Software:** Google Sheets, Microsoft Excel, Gmail, Kidsemail

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Year 3	Success Criteria	Autumn 1:	Autumn 2:	Spring 1:	Spring 2:	Summer 1:	Summer 2:
		To understand what a network is and how a school network might be organised. To know that a server is central to a network and responds to requests made. To know how the internet uses networks to share files. To know that a router connects us to the internet. To know what a packet is and why it is important for website data transfer.	To know that Scratch is a programming language and some of its basic functions. To understand how to use loops to improve programming. To understand how decomposition is used in programming. To understand that you can remix and adapt existing code.	To understand that email stands for 'electronic mail.' To know that an attachment is an extra file added to an email. To understand that emails should contain appropriate and respectful content. To know that cyberbullying is bullying using electronics such as a computer or phone.	To know the roles that inputs and outputs play on computers. To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together. To know what a tablet is and how it is different from a laptop/desktop computer.	To know that different types of camera shots can make my photos or videos look more effective. To know that I can edit photos and videos using film editing software. To understand that I can add transitions and text to my video.	To know that a database is a collection of data stored in a logical, structured and orderly manner. To know that computer databases can be useful for sorting and filtering data. To know that different visual representations of data can be made on a computer.

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Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 4	**Unit of Work**	**Computing Systems and Networks 1:** Collaborative Learning	**Programming 1:** Further programming with Scratch	**Creating Media:** Website Design	**Skills Showcase:** HTML	**Programming:** Computational Thinking	**Data Handling:** Investigating Weather
	Summary	Learning how to work collaboratively and exploring a range of collaborative tools.	Revisiting the key features and beginning to use 'variables' in code scripts.	Learning how web pages and sites are created and how to embed media and links.	Learning about the markup language behind a webpage; becoming familiar with HTML tags, changing HTML and CSS code to alter images and 'remix' a live website	Solving problems effectively using the four areas of abstraction, algorithm design, decomposition and pattern recognition.	Researching and storing data on spreadsheets and designing a weather station.
	Resources	**Hardware:** Chromebook with mouse. **Website or Software:** G Suite (Gmail, Google Docs, Slides, Sheets, Forms)	**Hardware:** Chromebook with mouse. **Website or Software:** Scratch	**Hardware:** Chromebook with mouse. **Website or Software:** Google Slides	**Hardware:** Chromebook with mouse. **Website or Software:** Glitch, Creative, Commons.	**Hardware:** Chromebook with mouse. **Software:** Scratch	**Hardware:** Chromebook with mouse. **Software:** Google Sheets, Microsoft Excel, Sketchpad, WeVideo, Shotcut, Kapwing.

		Autumn 1:	Autumn 2:	Spring 1:	Spring 2:	Summer 1:	Summer 2:
Year 4	**Success Criteria**	To understand that software can be used collaboratively online to work as a team. To know what type of comments and suggestions on a collaborative document can be helpful. To know that you can use images, text, transitions and animation in presentation slides.	To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch. To know what a conditional statement is in programming. To understand that variables can help you to create a quiz on Scratch.	To know that a website is a collection of pages that are all connected. To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks To know that websites should be informative and interactive.	To understand and identify examples of HTML tags. To understand what changing the HTML and CSS does to alter the appearance of an object on the web. To understand that copyright means that those images are protected and to understand that we should do a "creative commons" image search if we wish to use images from the internet. To know what "fake news" is and ways to spot websites that carry this type of misinformation. To know what the "inspect" elements tool is and ways of using it to explore and alter text and images.	To know that combining computational thinking skills can help you to solve a problem. To understand that pattern recognition means identifying patterns to help them work out how the code works. To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.	To know that computers can use different forms of input to sense the world around them so that they can record and respond to data ('sensor data'). To know that a weather machine is an automated machine that respond to sensor data. To understand that weather forecasters use specific language, expression and pre-prepared scripts to help create weather forecast films.

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Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5	**Unit of Work**	**Computing Systems and Networks 1:** Search Engines	**Data Handling:** Mars Rover 1	**Programming 1:** Music	**Programming:** Micro: Bit	**Creating Media:** Stop Motion and Animation	**Skills Showcase:** Mars Rover 2
	Summary	Learning about how page rank works and how to identify inaccurate information.	Learning about the Mars Rover, exploring how and why it transfers data including instructions, and how messages can be sent using binary code.	Building-on programming and music skills to create different sounds, beats and melodies which are put to the test with a Battle of the Bands performance!	Creating algorithms and programs that are used in the real world. Using the 'predict, test and evaluate' cycle to create and debug programs with specific aims.	Creating animations, storyboard ideas and decomposing a story into small parts before putting it together to create the illusion of a moving image.	Exploring how the Mars rover: moves, follows instructions, collects and sends data; understanding how computers work, what data is and how it is transferred.
	Resources	**Hardware:** Chromebook with mouse. **Website or Software:** Canva for Education, Sketchpad, Socrative.	**Hardware:** Chromebook with mouse. **Website or Software:** N/A	**Hardware:** Chromebook with mouse. **Website or Software:** Scratch	**Hardware:** Chromebook with mouse. BBC Micro:bits (if unavailable, use the online emulator). **Website or Software:** Micro:bit	**Hardware:** iPads **Website or Software:** Stop Motion Studio, iMovie, Microsoft Photos	**Hardware:** Chromebook with mouse. **Website or Software:** Google Sheets, Microsoft Excel, Tinkercad

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Year 5	Success Criteria	Autumn 1:	Autumn 2:	Spring 1:	Spring 2:	Summer 1:	Summer 2:
		To know how search engines work. To understand that anyone can create a website and therefore we should take steps to check the validity of websites. To know that web crawlers are computer programs that crawl through the internet. To understand what copyright is.	To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock. To know what numbers using binary code look like and be able to identify how messages can be sent in this format. To understand that RAM is Random Access Memory and acts as the computer's working memory. To know what simple operations can be used to calculate bit patterns.	To know that a soundtrack is music for a film/video and that one way of composing these is on programming software. To understand that using loops can make the process of writing music simpler and more effective. To know how to adapt their music while performing.	To know that a Micro:bit is a programmable device. To know that Micro:bit uses a block coding language similar to Scratch. To understand and recognise coding structures including variables. To know what techniques to use to create a program for a specific purpose (including decomposition).	To know that decomposition of an idea is important when creating stop-motion animations. To understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph. To know that editing is an important feature of making and improving a stop motion animation.	To understand that bit patterns represent images as pixels. To understand that the data for digital images can be compressed. To know the difference between ROM and RAM. To understand various techniques that will improve the design of a 3D object (using CAD software).

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Year Group		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 6	**Unit of Work**	**Programming 1:** Intro to Python	**Data Handling** Big Data 1	**Data Handling** Big Data 2	**Computing Systems and Networks 1:** Bletchley Park 1	**Creating Media** Bletchley Park 2 History Of Computers	**Skills Showcase** Inventing A Product
	Summary	Discovering the history of Bletchley and learning about code breaking and password hacking. Demonstrating digital literacy skills by creating presentations.	Using the programming language 'Python' to create designs and art. Learning how to create loops and nested loops to make their code more efficient.	Identifying how barcodes and QR codes work. Learning how infrared waves are used for the transmission of data while recognising the uses of RFID.	Writing, recording and editing radio plays set during WWII, learning about how computers have evolved.	Further developing understanding of how networks and the Internet are able to share information. Learning how big data can be used to design smart buildings.	Designing a product, pupils: evaluate, adapt and debug code to make it suitable for their needs and designing products in CAD and creating a website and video.
	Resources	**Hardware:** Chromebooks and/or iPads **Software:** Turtle Academy, MSWLogo, Simple Turtle, Trinket, Google Slides, Powerpoint	**Hardware:** Chromebooks and/or iPads **Website or Software:** QR code reader app, Google Sheet, Microsoft Excel	**Hardware:** Chromebooks and/or iPads **Software:** Micropolise, Micro:bit	**Hardware:** Chromebooks and/or iPads **Website or Software:** Google Slides, Microsoft Powerpoint	**Hardware:** Chromebooks and/or iPads **Website or Software:** Scratch, Audacity, Garageband, Google Slides, Microsoft Powerpoint.	**Hardware:** Chromebooks and/or iPads **Software:** Tinkercad

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Year 6	Success Criteria	Autumn 1:	Autumn 2:	Spring 1:	Spring 2:	Summer 1:	Summer 2:
		To know that there are text-based programming languages such as Logo and Python. To know that nested loops are loops inside of loops. To understand the use of random numbers and remix Python code.	To know that data contained within barcodes and QR codes can be used by computers. To know that infrared waves are a way of transmitting data. To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. To know that data is often encrypted so that even if it is stolen it is not useful to the thief.	To know that data can become corrupted within a network but this is less likely to happen if it is sent in 'packets'. I know that devices that are not updated are most vulnerable to hackers. To know the difference between mobile data and WiFi.	To understand the importance of having a secure password and what "brute force hacking" is. To know that the first computers were created at Bletchley Park to crack the Enigma code to help the war effort in World War 2 To know about some of the historical figures that contributed to technological advances in computing. To understand what techniques are required to create a presentation using appropriate software.	To know that radio plays are plays where the audience can only hear the action so sound effects are important. To know that sound clips can be recorded using sound recording software. To know that sound clips can be edited and trimmed.	To know what designing an electronic product involves. To know which programming software/ language is best to achieve a purpose To know the building blocks of computational thinking e.g. sequence, selection, repetition, variables and inputs and outputs.

E Safety

Year 1:

Learning how to stay safe online and how to manage feelings and emotions when someone or something has upset us.

- To know that the internet is many devices connected to one another.
- To know what to do if you feel unsafe or worried online - tell a trusted adult.
- To know that people you do not know on the internet (online) are strangers and are not always who they say they are.
- To know that to stay safe online it is important to keep personal information safe.
- To know that 'sharing' online means giving something specific to someone else via the internet and 'posting' online means placing information on the internet.

Year 2:

Learning: how to keep information safe and private online; who we should ask before sharing things online and how to give, or deny permission online.

- To understand the difference between online and offline.
- To understand what information I should not post online.
- To know what the techniques are for creating a strong password.
- To know that you should ask permission from others before sharing about them online and that they have the right to say 'no.'
- To understand that not everything I see or read online is true.

Year 3:

Learning: the difference between fact, opinion and belief; and how to deal with upsetting online content. Knowing how to protect personal information online.

- To know that not everything on the internet is true: people share facts, beliefs and opinions online.
- To understand that the internet can affect your moods and feelings.
- To know that privacy settings limit who can access your important personal information such as your name, age, gender etc.
- To know what social media is and that age restrictions apply

Year 4:

Searching for information and making a judgement about the probable accuracy; recognising adverts and pop-ups; understanding that technology can be distracting.

- To understand some of the methods used to encourage people to buy things online.
- To understand that technology can be designed to act like or impersonate living things.
- To understand that technology can be a distraction and identify when someone might need to limit the amount of time spent using technology
- To understand what behaviours are appropriate in order to stay safe and be respectful online.

Year 5:

Learning about app permissions; the positive and negative aspects of online communication; that online information is not always factual; how to deal with online bullying and managing our health and wellbeing.

- To know different ways we can communicate online.
- To understand how online information can be used to form judgements.
- To understand some ways to deal with online bullying.
- To know that apps require permission to access private information and that you can alter the permissions.
- To know where I can go for support if I am being bullied online or feel that my health is being affected by time online.
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Year 6:

Learning to deal with issues online; about the impact and consequences of sharing information online; how to develop a positive online reputation; combating and dealing with online bullying and protective passwords.

- To know that a digital footprint means the information that exists on the internet as a result of a person's online activity.
- To know what steps are required to capture bullying content as evidence
- To understand that it is important to manage personal passwords effectively.
- To understand what it means to have a positive online reputation.
- To know some common online scams.