Stanton-in-Peak Church of England Primary School

Computing Whole School Overview

"Life in all its fullness." John 10:10

Our Curriculum intent and aims:

Early Year Framework	
Personal, Social and Emotional Development	**Expressive Arts and Design**
Explain the reasons for rules, know right from wrong	Explore, use and refine a variety of artistic effects to express their ideas and feelings.
Remember rules without being reminded by an adult	
Show independence resilience and perseverance in the face of challenge	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
Know about factors that affect health and wellbeing: 'screen time'	

Cycle 1							
	I	Computer /. Word processing skills	Online Safety	Programming Toys	Painting	Programming with Scratch Jnr	Using and Applying
	J1	Online Safety	Internet research & communication	Presentation & word processing	Drawing & Desktop Publishing	Turtle Logo & Scratch	Using and Applying
	J2	Online Safety	Flowol	Radio Station	3D Modelling: Sketch Up	Scratch 3.0: Developing Games	Using and Applying

Cycle 2							
	I	Computer /. Word processing skills	Online Safety & using the internet	Presentation Skills	Computer Art	Turtle Logo & Scratch	Using and Applying
	J1	Online Safety	Scratch: Quizzes & Questions	Word Processing	Animation	Programming Turtle Logo	Using and Applying
	J2	Online Safety	Spreadsheets	Scratch: Animated Stories	Film Making	Kodu Programming	Using and Applying

Infants	**C1**	Computer /. Word processing skills	Online Safety	Programming Toys	Painting	Programming with Scratch Jnr	Using and Applying
	C2	Computer /. Word processing skills	Online Safety & using the internet	Presentation Skills	Computer Art	Turtle Logo & Scratch	Using and Applying

Junior 1	**C1**	Online Safety	Internet research & communication	Presentation & word processing	Drawing & Desktop Publishing	Turtle Logo & Scratch	Using and Applying
	C2	Online Safety	Scratch: Quizzes & Questions	Word Processing	Animation	Programming Turtle Logo	Using and Applying

Junior 2	**C1**	Online Safety	Flowol	Radio Station	3D Modelling: Sketch Up	Scratch 3.0: Developing Games	Using and Applying
	C2	Online Safety	Spreadsheets	Scratch: Animated Stories	Film Making	Kodu Programming	Using and Applying

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Infants

	Cycle 1		Cycle 2
Autumn 1	**Computer and Word processing skills:** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives :** recognise common uses of information technology beyond school; using technology safely and respectfully;	**Autumn 1**	**Computer and Word processing skills:** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives :** recognise common uses of information technology beyond school; using technology safely and respectfully;
Autumn 2	**Online Safety** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives :** recognise common uses of information technology beyond school; using technology safely and respectfully; **Online Safety:** the need to keep personal information private; where to go for help and support when they have concerns about content or contact on the Internet or other online technologies	**Autumn 2**	**Online Safety and Using the Internet** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school; using technology safely and respectfully; **Online Safety:** the need to keep personal information private; where to go for help and support when they have concerns about content or contact on the Internet or other online technologies
Spring 1	**Programming Toys** **Coding and Programming:** algorithms and what they are; how algorithms are implemented as programs on digital devices; using logical reasoning to predict the behaviour of simple programs; **Multimedia Text and Images:** use technology purposefully to create	**Spring 1**	**Presentation Skills** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school; using technology safely and respectfully;
Spring 2	**Painting** **Coding and Programming:** algorithms and what they are; how algorithms are implemented as programs on digital devices; using logical reasoning to predict the behaviour of simple programs; **Multimedia Text and Images:** use technology purposefully to create	**Spring 2**	**Computer Art** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school;
Summer 1	**Programming with scratch Jnr** **Coding and Programming:** algorithms and what they are; how algorithms are implemented as programs on digital devices; using logical reasoning to predict the behaviour of simple programs;	**Summer 1**	**Turtle Logo and Scratch** **Coding and Programming:** algorithms and what they are; how algorithms are implemented as programs on digital devices; using logical reasoning to predict the behaviour of simple programs;
Summer 2	**Using and Applying** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content;	**Summer 2**	**Using and Applying** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school;

Junior 1

	Cycle 1		Cycle 2
Autumn 1	**Online Safety** **Technology in our lives:** computer networks including the Internet; how computer networks can provide multiple services, such as the world wide web; opportunities computer networks offer for communication and collaboration; **Online Safety:** how to recognise acceptable and unacceptable behaviour; how to identify a range of ways to report concerns about content and contact.	**Autumn 1**	**Online Safety** **Technology in our lives:** using technology safely and respectfully; **Online Safety:** how to recognise acceptable and unacceptable behaviour; how to identify a range of ways to report concerns about content and contact.
Autumn 2	**Internet Research and Communication** **Technology in our Lives:** how results are selected and ranked; how to be discerning in evaluating digital content; using technology safely, respectfully and responsibly; **Online Safety:** how to recognise acceptable and unacceptable behaviour; how to identify a range of ways to report concerns about content and contact.	**Autumn 2**	**Scratch: Quizzes and Questions** **Data Handling:** designing, writing and debugging programs that accomplish specific goals including controlling or simulating physical systems; solving problems by decomposing into smaller parts; using sequence, selection and repetition in programs;
Spring 1	**Presentation and Word Processing** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Online Safety:** how to recognise acceptable and unacceptable behaviour; how to identify a range of ways to report concerns about content and contact.	**Spring 1**	**Word Processing** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school;
Spring 2	**Drawing and Desktop Publishing** **Data Handling:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school;	**Spring 2**	**Animation** **Coding and Programming:** selecting, using and combining a variety of software (including Internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information;
Summer 1	**Turtle Logo and Scratch** **Coding and Programming:** designing, writing and debugging programs that accomplish specific goals including controlling or simulating physical systems; solving problems by decomposing into smaller parts; using sequence, selection and repetition in programs; working with variables and various forms of input and output; using logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;	**Summer 1**	**Programming Turtle Logo** **Coding and Programming:** designing, writing and debugging programs that accomplish specific goals including controlling or simulating physical systems; solving problems by decomposing into smaller parts; using sequence, selection and repetition in programs; working with variables and various forms of input and output; using logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;
Summer 2	**Using and Applying** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content;	**Summer 2**	**Using and Applying** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school;

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Junior 2

	Cycle 1		Cycle 2
Autumn 1	**Online Safety** **Technology in our Lives:** how results are selected and ranked; how to be discerning in evaluating digital content; using technology effectively safely, respectfully and responsibly; **Online Safety:** how to recognise acceptable and unacceptable behaviour; how to identify a range of ways to report concerns about content and contact.	**Autumn 1**	**Online Safety** **Technology in our lives:** using technology safely, responsibly and respectfully;
Autumn 2	**Flowol** **Data Handling:** designing, writing and debugging programs that accomplish specific goals including controlling or simulating physical systems; solving problems by decomposing into smaller parts; using sequence, selection and repetition in programs; working with variables and various forms of input and output; using logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;	**Autumn 2**	**Spread Sheets** **Data Handling:** selecting, using and combining a variety of software (including Internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information;
Spring 1	**Radio Station** **Multimedia and Sound:** selecting, using and combining a variety of software (including Internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information;	**Spring 1**	**Scratch Animated Stories** **Coding and Programming:** designing, writing and debugging programs that accomplish specific goals including controlling or simulating physical systems; solving problems by decomposing into smaller parts; using sequence, selection and repetition in programs; working with variables and various forms of input and output; using logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;
Spring 2	**3d Modelling: Sketch Up** **Multimedia and Sound:** selecting, using and combining a variety of software (including Internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information;	**Spring 2**	**Film Making** **Multimedia and Sound:** selecting, using and combining a variety of software (including Internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information;
Summer 1	**Scratch 3.0 Developing Games** **Coding and Programming:** designing, writing and debugging programs that accomplish specific goals including controlling or simulating physical systems; solving problems by decomposing into smaller parts; using sequence, selection and repetition in programs; working with variables and various forms of input and output; using logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;	**Summer 1**	**Kudu Programming** **Coding and Programming:** designing, writing and debugging programs that accomplish specific goals including controlling or simulating physical systems; solving problems by decomposing into smaller parts; using sequence, selection and repetition in programs; working with variables and various forms of input and output; using logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;
Summer 2	**Using and Applying** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** using technology safely and respectfully;	**Summer 2**	**Using and Applying** **Multimedia Text and Images:** use technology purposefully to create, organise, store, manipulate and retrieve digital content; **Technology in our lives:** recognise common uses of information technology beyond school;

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Computing Whole School Progression

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	KS1	LKS2	UKS2
Multimedia Text and Imaging	Children begin to understand the particular purposes technology can be used for and that by adding text and images you can communicate with technology. Children develop their skills in typing, selecting tools and organising information. **KS1 Computing National Curriculum** Children use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children can: a add text strings, text boxes and images, manipulating the features; b use various tools, such as brushes, pens, eraser, and set the size, colour and shape; c use applications and devices in order to communicate ideas, work, messages and demonstrate control; d save, retrieve and organise work; e use key vocabulary to demonstrate knowledge and understanding in this strand: paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present.	Children develop their skills of formatting using keyboard commands, organising their work to demonstrate effect. In LKS2, they will have the opportunity to express themselves more through digital technology, art, PowerPoint and posters. Children should continue to demonstrate control when operating tools as in KS1. **KS2 Computing National Curriculum** Children understand 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. They select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Children can: a use appropriate keyboard commands to amend text on a device; b use applications and devices in order to communicate ideas, work, and messages; c save, retrieve and evaluate work, making amendments; d insert a picture/text/graph/hyperlink from the internet or a personal file; e use key vocabulary to demonstrate knowledge and understanding in this strand: draw, object, shape, line,	Children begin to look at new software, creating 3D models and learning how to orbit, zoom and develop their editing skills further. They become more confident in inserting links, images and formatting text to create effect. **KS2 Computing National Curriculum** Children select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Children can: a use the skills already developed to create content using unfamiliar technology; b select, use and combine the appropriate technology tools to create effect; c review and improve their own work and support others to improve their work; d save, retrieve and evaluate their work, making amendments; e insert a picture/text/graph/hyperlink from the internet or personal file; f use key vocabulary to demonstrate knowledge and understanding in this strand: window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement,

		line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck.	guide.
Multimedia, Sound and Motion	Children begin to develop their creativity using technology through recording sound. Children will also begin to develop their editing skills and control of the tools. **KS1 Computing National Curriculum** Children use technology purposefully to create, organise, store, manipulate and retrieve digital content. Children can: a use software to record sounds; b save, retrieve and organise work; c use key vocabulary to demonstrate knowledge and understanding in this strand: commands, add sound.	Children develop their editing skills further by cropping, organising and arranging film clips. They are able to share work and offer feedback and ideas for improvement with animation and film, giving their opinion on which software to use. In LKS2, children also look at the history of animation and reflect upon the changes over time. **KS2 Computing National Curriculum** Children select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Children can: a use software to record, create and edit sounds and capture still images; b change recorded sounds, volume, duration and pauses; c use software to capture video for a purpose; d crop and arrange clips to create a short film; e plan an animation and move items within each animation for playback; f use key vocabulary to demonstrate knowledge and understanding in this strand: audio, sound, video, movie, embed, link, file format, animate, animation, still image, thaumatrope, zoetrope, zoopraxiscope, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame.	Children begin to look more into multimedia broadcasting, learning new skills including recording jingles, podcasts and narration. They become more confident in post-production with editing, trimming and refining their work based on plans they have made. **KS2 Computing National Curriculum** Children select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Children can: a collect audio from a variety of resources including own recordings and internet clips; b use a digital device to record sounds and present audio; c trim, arrange and edit audio levels to improve quality; d publish their animation and use a movie editing package to edit/refine and add titles; e use key vocabulary to demonstrate knowledge and understanding in this strand: audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload.
Data Handling		Children begin to explore expressing information in tables, sorting and organising information for others to be able to understand. **KS2 Computing National Curriculum** Children select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Children can: a talk about the different ways data can be organised;	Data Handling in UKS2 focuses on selecting the correct method to display data and using software such as spreadsheets. Children also learn how to check the accuracy of data and compare data for a specific purpose. **KS2 Computing National Curriculum** Children select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Children can:

	b sort and organize information to use in other ways; c search a ready-made database to answer questions; d use key vocabulary to demonstrate knowledge and understanding in this strand: Google Docs, insert, table.	e construct data on the most appropriate application; f know how to interpret data, including spotting inaccurate data and comparing data; g use keyboard shortcuts and functions to input data on spreadsheets and create formulas for spreadsheets; h add data to an existing database; i use key vocabulary to demonstrate knowledge and understanding in this strand: Google Docs, insert, table, spreadsheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending.
Technology In Our Lives	Children begin to make links to how they use technology outside of the classroom. They begin to think about the benefits of using technology in their lives, making links to learning about online safety. **KS1 Computing National Curriculum** Children recognise common uses of technology beyond school. They use technology safely and respectfully, keeping personal information private; they identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Children can: a recognise ways that technology is used in the home and community, e.g. taking photos, blogs, shopping; b use links to websites to find information; c recognise age-appropriate websites; d use safe search filters; e use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure.	Children refer to online safety rules when discussing technology in their lives. They are able to navigate between websites and use safe search terms on trusted search engines. They become more confident in using email for communication, including attaching and saving files from emails. **KS2 Computing National Curriculum** Children understand 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. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content. Children can: a explain ways to communicate with others online; b describe the world wide web as the part of the internet that contains websites; c add websites to a favourites list; d use search tools to find and use an appropriate website and content; e use strategies to improve results when searching online; f use key vocabulary to demonstrate knowledge and understanding in this strand: filter, Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media.	Children can use safe search terms on trusted search engines, and evaluate websites based on layout and information. They become more confident in understanding Google rankings, adverts and the reliability of websites. **KS2 Computing National Curriculum** Children understand 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. They use search technologies effectively, appreciate how results are selected and ranked, and are discerning in evaluating digital content. Children can: a search for information using appropriate websites and advanced search functions within Google; b use strategies to check the reliability of information (cross-check with another source such as books); c talk about the way search results are selected and ranked; d check the reliability of a website, including the photos on site; e tell you about copyright and acknowledge the sources of information; f use key vocabulary to demonstrate knowledge and understanding in this strand: world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.

Coding and Programming

Children begin to understand their influence on technology by developing their programming skills to determine output. They begin to understand that an algorithm is a series of steps for solving problems and a code is a series of steps that machines can execute. They begin to explore debugging, predicting when codes may not work and changing them. **KS1 Computing National Curriculum** Children understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions. They create, debug and use logical reasoning to predict the behaviour of simple programs. Children can: a give commands one at a time to control direction and movement, including straight, forwards, backwards, turn; b control the nature of events: repeat, loops, single events and add and delete features; c give a set of instructions to follow and predict what will happen; d improve/change their sequence of commands by debugging; e use key vocabulary to demonstrate knowledge and understanding in this strand: algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink.	Children build on their programming skills by solving problems and programming commands to achieve a specific outcome. They begin to write programs, explain algorithms and identify errors in their work. **KS2 Computing National Curriculum** Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children can: a use logical thinking to solve an open-ended problem by breaking it up into smaller parts; b write a program, putting commands into a sequence to achieve a specific outcome; c give a set of instructions to follow and predict what will happen; d keep testing a program and recognise when it needs to be debugged; e use variables to create an effect, e.g. repetition, if, when, loop; f use key vocabulary to demonstrate knowledge and understanding in this strand: decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable.	Children build on their programming skills by using new systems such as a flowchart. They continue to break down problems and create algorithms to solve them. They are able to explain the outcome of an algorithm with confidence and accuracy. **KS2 Computing National Curriculum** Children design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; they solve problems by decomposing them into smaller parts. They use sequence, selection, and repetition in programs and work with variables and various forms of input and output. They use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Children can: a use external triggers and infinite loops to demonstrate control; b follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols; c use conditional statements and edit variables; d decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program; e keep testing a program and recognise when it needs to be debugged; f use key vocabulary to demonstrate knowledge and understanding in this strand: flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise.