



Computing Curriculum for St Erth Primary

Year	Cycle	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS		Computing isn't in the EYFS curriculum Teachers to go by a needs met approach, using technology where it fits in with their current areas of learning.					
1/2	A	<p style="text-align: center;">Connecting systems and networks Technology around us (Y1) Recognising technology in school and using it responsibly (Paintz.app)</p> <ol style="list-style-type: none"> 1. To identify technology 2. To identify a computer and its main parts 3. To use a mouse in different ways 4. To use a keyboard to type on a computer 5. To use the keyboard to edit text 6. To create rules for using technology responsibly <p>Vocabulary technology, computer, mouse, trackpad, keyboard, screen, double-click, typing.</p> <p style="text-align: center;">-</p>	<p style="text-align: center;">Creating Media Digital painting (Y1) Choosing appropriate tools in a program to create art and making comparisons with working non-digitally. (Microsoft Paint or similar)</p> <ol style="list-style-type: none"> 1. To describe what different freehand tools do 2. To use the shape tool and the line tools 3. To make careful choices when painting a digital picture 4. To explain why I chose the tools I used 5. To use a computer on my own to paint a picture 6. To compare painting a picture on a computer and on paper <p>Vocabulary paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers</p>	<p style="text-align: center;">Creating Media Digital Photography (2) Capturing and changing digital photographs for different purposes iPads and pixlr.com</p> <ol style="list-style-type: none"> 1. To use a digital device to take a photograph 2. To make choices when taking a photograph 3. To describe what makes a good photograph 4. To decide how photographs can be improved 5. To use tools to change an image 6. To recognise that photos can be changed <p>Vocabulary paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers</p>	<p style="text-align: center;">Data and information Grouping Data (1) Exploring object labels, then using them to sort and group objects by properties</p> <ol style="list-style-type: none"> 1. To label objects 2. To identify that objects can be counted 3. To describe objects in different ways 4. To count objects with the same properties 5. To compare groups of objects 6. To answer questions about groups of objects <p>Vocabulary object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same</p>	<p style="text-align: center;">Programming Block A Moving a robot (1) Creating and debugging programs and using logical reasoning to make predictions. (Bee-bot, Blue-bot)</p> <ol style="list-style-type: none"> 1. To explain what a given command will do 2. To act out a given word 3. To combine forwards and backwards commands to make a sequence 4. To combine four direction commands to make sequences 5. To plan a simple program 6. To find more than one solution to a problem <p>Vocabulary Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.</p>	<p style="text-align: center;">Programming Block B Robot algorithms (2) Creating and debugging programs and using logical reasoning to make predictions. (Bee-bot, Blue-bot)</p> <ol style="list-style-type: none"> 1. To design an algorithm 2. To create and debug a program that I have written 3. To describe a series of instructions as a sequence 4. To explain what happens when we change the order of instructions 5. To use logical reasoning to predict the outcome of a program 6. To explain that programming projects can have code and artwork <p>Vocabulary ScratchJr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design.</p>



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B	<p style="text-align: center;">Connecting systems and networks</p> <p style="text-align: center;">Technology around us (2)</p> <p>Information technology around us Identifying IT and how its responsible use improves our world in school and beyond. (PowerPoint)</p> <ol style="list-style-type: none"> 1. To recognise the uses and features of information technology 2. To identify the uses of information technology in the school 3. To identify information technology beyond school 4. To explain how information technology helps us 5. To explain how to use information technology safely 6. To recognise that choices are made when using information technology <p>Vocabulary Information technology (IT), computer, barcode, scanner/scan</p>	<p style="text-align: center;">Creating Media</p> <p style="text-align: center;">Digital writing (1)</p> <p>Using a computer to create and format text, before comparing to writing non-digitally. (Microsoft Word)</p> <ol style="list-style-type: none"> 1. To use a computer to write 2. To add and remove text on a computer 3. To identify that the look of text can be changed on a computer 4. To make careful choices when changing text 5. To explain why I used the tools that I chose 6. To compare typing on a computer to writing on paper <p>Vocabulary word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.</p>	<p style="text-align: center;">Creating Media</p> <p style="text-align: center;">Digital music (2)</p> <p>Using a computer as a tool to explore rhythms and melodies, before creating a musical composition. (Chrome Music Lab)</p> <ol style="list-style-type: none"> 1. To say how music can make us feel 2. To identify that there are patterns in music 3. To experiment with sound using a computer 4. To use a computer to create a musical pattern 5. To create music for a purpose 6. To review and refine our computer work <p>Vocabulary music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit.</p>	<p style="text-align: center;">Data and information</p> <p style="text-align: center;">Pictograms (2)</p> <p>Collecting data in tally charts and using attributes to organise and present data on a computer. (j2data pictogram)</p> <ol style="list-style-type: none"> 1. To recognise that we can count and compare objects using tally charts 2. To recognise that objects can be represented as pictures 3. To create a pictogram 4. To select objects by attribute and make comparisons 5. To recognise that people can be described by attributes 6. To explain that we can present information using a computer <p>Vocabulary more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing</p>	<p style="text-align: center;">Programming Block</p> <p style="text-align: center;">Introduction to animations (1)</p> <p>Designing and programming the movement of a character on screen to tell stories. (Laptops - Scratch Jnr)</p> <ol style="list-style-type: none"> 1. To choose a command for a given purpose 2. To show that a series of commands can be joined together 3. To identify the effect of changing a value 4. To explain that each sprite has its own instructions 5. To design the parts of a project 6. To use my algorithm to create a program <p>Vocabulary instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition</p>	<p style="text-align: center;">Programming Block B</p> <p style="text-align: center;">Programming animations (2)</p> <p>Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. Laptops – Scratch Jnr</p> <ol style="list-style-type: none"> 1. To explain that a sequence of commands has a start 2. To explain that a sequence of commands has an outcome 3. To create a program using a given design 4. To change a given design 5. To create a program using my own design 6. To decide how my project can be improved <p>Vocabulary sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code</p>
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3/4	A	<p style="text-align: center;">Connecting systems and networks</p> <p style="text-align: center;">Connecting Computers (3)</p> <p>Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks (Painting program)</p> <ol style="list-style-type: none"> 1. To explain how digital devices function 2. To identify input and output devices 3. To recognise how digital devices can change the way we work 4. To explain how a computer network can be used to share information 5. To explore how digital devices can be connected 6. To recognise the physical components of a network <p>Vocabulary digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets</p>	<p style="text-align: center;">Creating Media</p> <p style="text-align: center;">Desktop Publishing (3)</p> <p>Creating documents by modifying text, images, and page layouts for a specified purpose. (Canva.com)</p> <ol style="list-style-type: none"> 1. To recognise how text and images convey information 2. To recognise that text and layout can be edited 3. To choose appropriate page settings 4. To add content to a desktop publishing publication 5. To consider how different layouts can suit different purposes 6. To consider the benefits of desktop publishing <p>Vocabulary text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits.</p>	<p style="text-align: center;">Programming Block A</p> <p style="text-align: center;">Sequencing Sounds (3)</p> <p>Creating sequences in a block-based programming language to make music (Scratch)</p> <ol style="list-style-type: none"> 1. To explore a new programming environment 2. To identify that commands have an outcome 3. To explain that a program has a start 4. To recognise that a sequence of commands can have an order 5. To change the appearance of my project 6. To create a project from a task description <p>Vocabulary Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code.</p>	<p style="text-align: center;">Data and information</p> <p style="text-align: center;">Branching databases (3)</p> <p>Building and using branching databases to group objects using yes/no questions. (j2data Branch and Pictogram)</p> <ol style="list-style-type: none"> 1. To create questions with yes/no answers 2. To identify the attributes needed to collect data about an object 3. To create a branching database 4. To explain why it is helpful for a database to be well structured 5. To plan the structure of a branching database 6. To independently create an identification tool <p>Vocabulary Attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree</p>	<p style="text-align: center;">Creating Media</p> <p style="text-align: center;">Audio Production (4)</p> <p>Capturing and editing audio to produce a podcast, ensuring that copyright is considered. (Laptops-audacity)</p> <ol style="list-style-type: none"> 1. To identify that sound can be recorded 2. To explain that audio recordings can be edited 3. To recognise the different parts of creating a podcast project 4. To apply audio editing skills independently 5. To combine audio to enhance my podcast project 6. To evaluate the effective use of audio <p>Vocabulary audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.</p>	<p style="text-align: center;">Programming Block B</p> <p style="text-align: center;">Events and actions in programs (3)</p> <p>Writing algorithms and programs that use a range of events to trigger sequences of actions. (Scratch)</p> <ol style="list-style-type: none"> 1. To explain how a sprite moves in an existing project 2. To create a program to move a sprite in four directions 3. To adapt a program to a new context 4. To develop my program by adding features 5. To identify and fix bugs in a program <p>To design and create a maze-based challenge</p> <p>Vocabulary motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions.</p>
	B	<p style="text-align: center;">Connecting systems and networks</p> <p style="text-align: center;">The internet (4)</p> <p>Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.</p>	<p style="text-align: center;">Creating Media</p> <p style="text-align: center;">Stop frame animation (3)</p> <p>Capturing and editing digital still images to produce a stop-frame animation that tells a story. (iMotion)</p>	<p style="text-align: center;">Programming Block A</p> <p style="text-align: center;">Repetition in Shapes (4)</p> <p>Using a text-based programming language to explore count-controlled loops when drawing shapes. (FMSLogo/Turtle academy)</p>	<p style="text-align: center;">Data and information</p> <p style="text-align: center;">Data logging (4)</p> <p>Recognising how and why data is collected over time, before using data loggers to carry out an investigation. (Data logger or similar)</p>	<p style="text-align: center;">Creating Media</p> <p style="text-align: center;">Photo editing (4)</p> <p>Manipulating digital images and reflecting on the impact of changes and whether the required purpose is fulfilled. (Laptops-Paint.NET)</p>	<p style="text-align: center;">Programming Block B</p> <p style="text-align: center;">Repetition in games (4)</p> <p>Using a block-based programming language to explore count-controlled and infinite loops when creating a game. (Scratch)</p>



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	<p>(Various websites)</p> <ol style="list-style-type: none"> 1. To describe how networks physically connect to other networks 2. To recognise how networked devices make up the internet 3. To outline how websites can be shared via the World Wide Web (WWW) 4. To describe how content can be added and accessed on the World Wide Web (WWW) 5. To recognise how the content of the WWW is created by people 6. To evaluate the consequences of unreliable content <p>Vocabulary nternet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts</p>	<ol style="list-style-type: none"> 1. To explain that animation is a sequence of drawings or photographs 2. To relate animated movement with a sequence of images 3. To plan an animation 4. To identify the need to work consistently and carefully 5. To review and improve an animation 6. To evaluate the impact of adding other media to an animation <p>Vocabulary nimation, flip book, stopframe, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition</p>	<ol style="list-style-type: none"> 1. To identify that accuracy in programming is important 2. To create a program in a text-based language 3. To explain what 'repeat' means 4. To modify a count-controlled loop to produce a given outcome 5. To decompose a task into small steps 6. To create a program that uses count-controlled loops to produce a given outcome <p>Vocabulary Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure.</p>	<ol style="list-style-type: none"> 1. To explain that data gathered over time can be used to answer questions 2. To use a digital device to collect data automatically 3. To explain that a data logger collects 'data points' from sensors over time 4. To recognise how a computer can help us analyse data 5. To identify the data needed to answer questions 6. To use data from sensors to answer questions <p>Vocabulary ata, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.</p>	<ol style="list-style-type: none"> 1. To explain that the composition of digital images can be changed 2. To explain that colours can be changed in digital images 3. To explain how cloning can be used in photo editing 4. To explain that images can be combined 5. To combine images for a purpose 6. To evaluate how changes can improve an image <p>Vocabulary image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font.</p>	<ol style="list-style-type: none"> 1. To develop the use of count-controlled loops in a different programming environment 2. To explain that in programming there are infinite loops and count controlled loops 3. To develop a design that includes two or more loops which run at the same time 4. To modify an infinite loop in a given program 5. To design a project that includes repetition 6. To create a project that includes repetition <p>Vocabulary Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate.</p>
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5/6	A	<p style="text-align: center;">Saxons Connecting systems and networks Systems and searching (5)</p> <p>Recognising IT systems in the world and how some can enable searching on the internet. (PowerPoint)</p> <ol style="list-style-type: none"> 1. To explain that computers can be connected together to form systems 2. To recognise the role of computer systems in our lives 3. To experiment with search engines 4. To describe how search engines select results 5. To explain how search results are ranked 6. To recognise why the order of results is important, and to whom <p>Vocabulary system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking.</p>	<p style="text-align: center;">Explorers Creating Media 3D modelling (6)</p> <p>Planning, developing, and evaluating 3D computer models of physical objects. (Tinkercad)</p> <ol style="list-style-type: none"> 1. How do work in three dimensions on a computer? 2. What digital 3D objects can be modified? 3. How can objects can be combined in a 3D model? 4. How do you create a 3D model for a given purpose? 5. Can I plan my own 3D model? 6. Can I create my own digital 3D model? <p>Vocabulary inkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify</p>	<p style="text-align: center;">By the Sea Data and information Flat file databases (5)</p> <p>Using a database to order data and create charts to answer questions. (j2data Database)</p> <ol style="list-style-type: none"> 1. How do you use a form to record information? 2. Can you compare paper and computer-based databases? 3. How you can answer questions by grouping and then sorting data? 4. What tools can be used to select specific data? 5. How can computer programs can be used to compare data visually? 6. Can you use a real-world database to answer questions? <p>Vocabulary atabase, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.</p>	<p style="text-align: center;">WW2 Creating Media (6) Website creation</p> <p>Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. (Google sites)</p> <ol style="list-style-type: none"> 1. What are existing website like and how are they structured? 2. Can you plan the features of a web page? 3. What does ownership and use of images (copyright) mean? 4. Why is it important to preview pages? 5. Why is a navigation path needed? 6. What are the implications of linking to content owned by other people? <p>Vocabulary website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link,</p>	<p style="text-align: center;">Vikings Programming Block 5A Selection in physical computing (5)</p> <p>Exploring conditions and selection using a programmable microcontroller. (Crumble controller)</p> <ol style="list-style-type: none"> 1. How do you control a simple circuit connected to a computer? 2. How do you write a program that includes count-controlled loops? 3. How do you stop a loop can stop when a condition is met? 4. How can a loop can be used to repeatedly check whether a condition has been met? 5. Can you design a physical project that includes selection? 6. Can you create a program that controls a physical computing project? <p>Vocabulary microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, Input, output, selection, action, debug, circuit, power, cell, buzzer</p>	<p style="text-align: center;">Changes Programming Block 5B Selection in quizzes (5)</p> <p>Create a quiz link to change</p> <p>Exploring selection in programming to design and code an interactive quiz. (Scratch)</p> <ol style="list-style-type: none"> 1. Can you explain how selection is used in computer programs? 2. Can you relate that a conditional statement connects a condition to an outcome? 3. How does selection direct the flow of a program? 4. Can you design a program that uses selection? 5. Can you create a program that uses selection? 6. What are the worked well and can be improved in my programme? <p>Vocabulary Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator</p> <p>duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection</p>
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B	<p style="text-align: center;">Creating Media Introduction to vector graphics (5)</p> <p style="text-align: center;">Creating images in a drawing program by using layers and groups of objects. (Google Drawings/Publisher)</p> <ol style="list-style-type: none"> 1. How are drawing tools used to produce different outcomes? 2. Can you create a vector drawing by combining shapes? 3. Can you use tools to achieve a desired effect? 4. How do you know vector drawings consist of layers? 5. Can you group objects to make them easier to work with? 6. Can you apply what you have learned about vector drawings? <p>Vocabulary ector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate,</p>	<p style="text-align: center;">Programming Block 6A Variables in Games</p> <p style="text-align: center;">Exploring variables when designing and coding a game. (Scratch)</p> <ol style="list-style-type: none"> 1. What is a 'variable' as something that is changeable? 2. Why is a variable is used in a program? 3. How can I improve a game by using variables? 4. How do I design a project that builds on a given example? 5. How do I use my design to create a project? 6. What are the worked well and can be improved in my project? <p>Vocabulary variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare</p>	<p style="text-align: center;">Connecting systems and networks Communication and collaboration (6)</p> <p style="text-align: center;">Exploring how data is transferred by working collaboratively online. (PowerPoint)</p> <ol style="list-style-type: none"> 1. Can you explain the importance of internet addresses? 2. How is data transferred across the internet? 3. Can you explain how sharing information online can help people to work together? 4. Can you evaluate different ways of working together online? 5. How do we communicate using technology? 6. Can you evaluate different methods of online communication? <p>Vocabulary Communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, oneway, two-way, one-to-one, one-to-many.</p>	<p style="text-align: center;">Programming: Sensing and Moving Sensing Movement (6)</p> <p style="text-align: center;">Designing and coding a project that captures inputs from a physical device (microbits)</p> <ol style="list-style-type: none"> 1. Can you create a program to run on a controllable device? 2. How does selection control the flow of a program? 3. Can you update a variable with a user input? 4. Can you use a conditional statement to compare a variable to a value? 5. Can you design a project that uses inputs and outputs on a controllable device? 6. Can you develop a program to use inputs and outputs on a controllable device? <p>Vocabulary micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug.</p>	<p style="text-align: center;">Data and information Introduction to spreadsheets (6)</p> <p style="text-align: center;">Answering questions by using spreadsheets to organise and calculate data. (Excel)</p> <ol style="list-style-type: none"> 1. Can you create a data set in a spreadsheet? 2. Can you build a data set in a spreadsheet 3. How can formulas be used to produce calculated data? 4. Can you apply formulas to data? 5. Can you create a spreadsheet to plan an event? <p>Vocabulary data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools</p>	<p style="text-align: center;">Video Production (5)</p> <p style="text-align: center;">Planning, capturing, and editing video to produce a short film. (Microsoft Photos)</p> <ol style="list-style-type: none"> 1. What makes a video effective? 2. How do you use a digital device to record video? 3. How do you capture video using a range of techniques? 4. How do you create a storyboard? 5. How can a video can be improved through reshooting and editing? 6. What is the impact of the choices made when making and sharing a video? <p>Vocabulary Ideo, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.</p>
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