Blackmoor Park Junior School Computing Curriculum overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y3	**Connecting Computers** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	**Stop-frame Animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story.	**Sequence in music** Creating sequences in a block-based programming language to make music	**Branching Databases** Building and using branching databases to group objects using yes/no questions	**Desktop Publishing** Creating documents by modifying text, images, and page layouts for a specified purpose.	**Events and Actions** Writing algorithms and programs that use a range of events to trigger sequences of actions.
	Key Vocab digital device, input, output, process, program, connection, network, network switch, network switch, server, wireless access point (WAP)	**Key Vocab** animation, flip book, stop-frame animation, frame, sequence, image, photograph, setting, character, events, onion skinning, evaluation, delete, media, import, transition	**Key Vocab** 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, design, algorithm, bug, debug	**Key Vocab** attribute, value, questions, table, objects, branching database, database, attribute, value, questions, objects, equal, even, separate , structure, compare, order, organise , selecting, pictogram, compare, information, decision tree	**Key Vocab** text, images, advantages, disadvantages, communicate , font, font style, communicate, template, landscape, portrait, orientation, placeholder, template, desktop publishing, copy, paste, layout, purpose, benefits	**Key Vocab** motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, code, test, debug
	At the end of this unit, children will know What a digital device is and compare digital and non-digital devices. Have an introduction to how devices make up a network infrastructure.	**At the end of this unit, children will know** How to create stop frame animation based on a story. Learn how to add music and text to animation, creating an end product.	**At the end of this unit, children will know** How to sequence in Scratch and an introduction to program design. Use simple programs, exploring motion, sound and event blocks.	**At the end of this unit, children will know** Investigate branching databases as an identification tool. They will create their own physical and online branching database.	**At the end of this unit, children will know** How we use both text and images to communicate messages clearly to an audience. Learn how & why desktop publishing is used in real world.	**At the end of this unit, children will know** How to use Scratch to create a maze using pen blocks and movement to navigate their Sprite.

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Y4	**The Internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	**Audio Editing** Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	**Repetition in Shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes.	**Data Logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	**Photo Editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	**Repetition in Games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game.
	Key Vocab Internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, route tracing, browser, World Wide Web, content, links, files, download, sharing, ownership, permission, information, accurate, honest, adverts	**Key Vocab** Audio, record, playback, microphone, speaker, headphones, input, output, sound, start, pause, stop, podcast, save, file, edit, playback, save, selection, mixing, time shift, export, mp3, evaluate, feedback	**Key Vocab** Program, turtle, commands, code, snippet, algorithm, design, debug, Logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure	**Key Vocab** Data, table, input device, sensor, data logger, logging, data point, interval, analyse, data set, import, export, logged, collection, review, conclusion	**Key Vocab** image, edit, arrange, select, crop, undo, save, search, copyright, composition, pixels, rotate, flip, adjustments, effects, colours, hue/saturation, sepia, version, illustrator, vignette, retouch, clone, recolour, magic wand, adjust, sharpen, brighten, fake, real, cut, paste, alter, background, foreground, publication, elements, font, shapes, border, layer	**Key Vocab** Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, costume, repetition, animate, costume, event block, duplicate, modify, design, sprite, algorithm, duplicate, debug, refine, evaluate
	At the end of this unit, children will know Apply knowledge of networks to appreciate internet as networks. Explore WWW, who owns content and what they can create. Evaluate online content and understand consequences of false information.	**At the end of this unit, children will know** Understand what an output and input device is. Understand ownership and copyright implications of audio content. Record and playing audio through planning and recording a podcast .	**At the end of this unit, children will know** How to use programming to create shapes and patterns using Logo. They will be able to use a text-based language programme using repetition and loops.	**At the end of this unit, children will know** Consider how and why we collect data over a period of time. Will be able to collect data using data loggers, and analyse their results to answer questions.	**At the end of this unit, children will know** How digital images can be changed and edited, and how they can be resaved and reused. Consider the Impact that editing images can have.	**At the end of this unit, children will know** Explore repetition in programming. Create their own animation and games through applying stages of programming.

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Y5	**Sharing Information** Recognising IT systems around us and how they allow us to search the internet.	**Video Editing** Planning, capturing, and editing video to produce a short film.	**Selection in Physical Computing** Exploring conditions and selection using a programmable microcontroller	**Flat-file Databases** Using a database to order data and create charts to answer questions	**Vector Drawing** Creating images in a drawing program by using layers and groups of objects.	**Selection in Quizzes** Exploring selection in programming to design and code an interactive quiz.
	Key Vocab System, connection, digital, input, process, output, Protocol, address, packet, Chat, explore, slide deck, Reuse, remix, collaboration	**Key Vocab** Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, storage, digital, tape, AV (audiovisual), save, videographer, video techniques: zoom, pan, tilt, angle, lighting, setting, YouTuber, audio/sound, camera, colour, export, computer, Microsoft Movie Maker, split, trim/clip, edit, titles, end credits, timeline, transitions, soundtrack, retake, special effects, title screen, constructive feedback	**Key Vocab** Microcontroller, Crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, count-controlled loop, true, false, input, output devices, selection, condition, action, task, design, repetition, switch, algorithm, program, debug, evaluate	**Key Vocab** Database, data, information, record, field, sort, order, group, search, criteria, graph, chart. Axis, compare, filter, presentation.	**Key Vocab** Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, oraganize, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, order, paste, group, ungroup, vector drawing, reuse	**Key Vocab** Selection, condition, true, false, count controlled loop, outcomes, conditional statement (the linking together of a condition and outcomes) algorithm, program, debug, question, answer, algorithm, task, design, input, test, run
	At the end of this unit, children will know Develop understanding of computer systems and how information is transferred between systems and devices. Take part in a collaborative online project.	**At the end of this unit, children will know** Create short videos developing the language and skills of capturing, editing and manipulating video	**At the end of this unit, children will know** How to use a microcontroller (Crumble controller) to control a simple model with input (selection) and output devices.	**At the end of this unit, children will know** How to organise data in a flat-file database. They will order and answer questions about data and create graphs and charts to present their findings to others.	**At the end of this unit, children will know** Know how to create a vector drawing. They will be able to use different drawing tools and create images in layers to make complex pieces of work.	**At the end of this unit, children will know** Know how to use the If… Then… Else structure to select outcomes. They will be able to plan, create and test a quiz using Scratch.

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Y6	**Communication and Collaboration** Identifying and exploring how data is transferred and information is shared online.	**Web Page Creation** Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation	**Variables in Games** Exploring variables when designing and coding a game.	**Introduction to Spreadsheets** Answering questions by using spreadsheets to organise and calculate data	**3D Modelling** Planning, developing, and evaluating 3D computer models of physical objects.	**Sensing** Designing and coding a project that captures inputs from a physical device.
	Key Vocab search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine, index, crawler, bot, ranking, links, web crawlers, content creator, selection, communication, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround .	**Key Vocab** 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, subpag, implication, external link, embed	**Key Vocab** Variable, change, name, value, set, change, design, algorithm, code, task, artwork, program, project, test, debug Improve, evaluate, share.	**Key Vocab** Spreadsheet, data, data heading, data set, cells, columns and rows, data item, object, spreadsheet application, format, common attribute, formula, calculation, input, output, cell reference, operation, range, duplicate, sigma, propose, question, graph, chart, evaluate, results, comparison, , software, tools	**Key** 2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, resize, design, modify, evaluate, improve	**Key Vocab** Micro:bit, MakeCode, input, process, output, flashing, USB, selection, condition, if… then… else, variable, random, input, sensing, accelerometer, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug
	At the end of this unit, children will know How to use the WWW as a communication tool, how search engines work and what influences searching; privacy & security.	**At the end of this unit, children will know** How to design, create and evaluate their own website, paying attention to copyright and fair use of media.	**At the end of this unit, children will know** What variables are in scoreboard simulation and be able to design and improve a game using variables.	**At the end of this unit, children will know** How to organise and format data in spreadsheets, formulae and graphs.	**At the end of this unit, children will know** How to produce 3D models, examining the differences between working digitally and 2D and 3D graphics	**At the end of this unit, children will know** The language of sequence, repetition, selection and variables using MicroBits.