

## Computing Knowledge

Year 3	Year 4	Year 5	Year 6
<p><b>Connecting Computers</b> Identify that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.</p>	<p><b>The internet</b> Recognise the internet as a network of networks including the WWW, and know why we should evaluate online content.</p>	<p><b>Systems and searching</b> Recognise IT systems around us and how they allow us to search the internet.</p>	<p><b>Communication and collaboration</b> Identify and explore how data is transferred and information is shared online.</p>
<p><b>Stop-frame animation</b> To know how to capture and edit digital still images to produce a stop-frame animation that tells a story.</p>	<p><b>Audio production</b> Know how to capture and edit audio to produce a podcast, ensuring that copyright is considered.</p>	<p><b>Video production</b> Know how to plan, capture and edit video to produce a short film.</p>	<p><b>Webpage creation</b> Know how to design and create webpages, giving consideration to copyright, aesthetics, and navigation.</p>
<p><b>Sequencing sounds</b> Know that creating sequences in a block-based programming language can make music.</p>	<p><b>Repetition in shapes</b> Know how to use a text-based programming language to explore count-controlled loops when drawing shapes.</p>	<p><b>Selection in physical computing</b> Know how to explore conditions and selection using a programmable microcontroller.</p>	<p><b>Variables in games</b> Know how to explore variables when designing and coding a game.</p>
<p><b>Branching databases</b> To know how to build and use branching databases to group objects using yes/no questions.</p>	<p><b>Data logging</b> Recognise how and why data is collected over time, before using data loggers to carry out an investigation.</p>	<p><b>Flat-file databases</b> Know how to use a database to order data and create charts to answer questions.</p>	<p><b>Introduction to spreadsheets</b> Know how to answer questions by using spreadsheets to organise and calculate data.</p>
<p><b>Desktop publishing</b> Know how to create documents by modifying text, images, and page layouts for a specified purpose.</p>	<p><b>Photo editing</b> Know how to manipulate digital images, and reflect on the impact of changes and whether the required purpose is fulfilled.</p>	<p><b>Vector drawing</b> Know how to create images in a drawing program by using layers and groups of objects.</p>	<p><b>3D modelling</b> Know how to plan, develop and evaluate 3D computer models of physical objects.</p>
<p><b>Events and actions in programs</b> Know how to write algorithms and programs that use a range of events to trigger sequences of actions.</p>	<p><b>Repetition in games</b> Know how to use a block-based programming language to explore count-controlled and infinite loops when creating a game.</p>	<p><b>Selection in quizzes</b> Know how to explore selection in programming to design and code an interactive quiz.</p>	<p><b>Sensing</b> Know how to design and code a project that captures inputs from a physical device.</p>

Key vocabulary	Key vocabulary	Key vocabulary	Key vocabulary
<p><b>Connecting computers</b> digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets</p>	<p><b>The internet</b> internet, 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>	<p><b>Systems and searching</b> 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><b>Communication and collaboration</b>  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, one-way, two-way, one-to-one, one-to-many.</p>
<p><b>Stop-frame animation</b> animation, flip book, stop-frame, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.</p>	<p><b>Audio production</b> 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><b>Video production</b> video, 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>	<p><b>Webpage creation</b> 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, embed.</p>
<p><b>Sequencing sounds</b> 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><b>Repetition in shapes</b> Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure</p>	<p><b>Selection in physical computing</b> 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><b>Variables in games</b> variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare</p>

<p><b>Branching databases</b> attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree</p>	<p><b>Data logging</b> data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.</p>	<p><b>Flat-file databases</b> database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.</p>	<p><b>Introduction to spreadsheets</b> 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><b>Desktop publishing</b> text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits</p>	<p><b>Photo editing</b> 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>	<p><b>Vector drawing</b> vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection</p>	<p><b>3D modelling</b> TinkerCAD, 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><b>Events and actions in programs</b> motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions.</p>	<p><b>Repetition in games</b> 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>	<p><b>Selection in quizzes</b> 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><b>Sensing</b> 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>