Subject: Computing

Long Term Plan Including Key Knowledge

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Reception	Recognises that a range of technology is used in places such as homes and schools Selects and uses technology for particular purpose • To know that technology exists and is able to recognise its purpose • To know the purpose and safe use of a range of technologies and select appropriately.		Uses ICT hardware to interact with age-appropriate computer software • To know and demonstrate initial skills in using keyboard and mouse. • To know how to operate a range of devices. • To discuss how technology is used at school and home.		Complete a simple program on a computer • To know and use program, such as 2-simple, in their everyday learning	
Year 1	**Technology around us** • Recognising technology in school and using it responsibly • To name different types of technology **Key vocabulary:** Technology Computer, keyboard, screen, click, drag, Shift, space bar, Safely, Responsibly.	**Digital painting** • Choosing appropriate tools in a program to create art, and • making comparisons with working non-digitally. **Key vocabulary:** Tool, erase, fill, undo primary colours, shape tools, line tool, brush style, Pointillism, brush size.	**Moving a robot** • Writing short algorithms and programs for floor robots and predicting program outcomes. **Key vocabulary:** Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, plan, algorithm, program, route.	**Grouping data** • Exploring object labels, then using them to sort and group objects by properties. **Key vocabulary:** Object, label, group, search, image, property, colour, size, shape, value, data, more, less, most, fewest, least, the same.	**Digital writing** • Using a computer to create and format text, before comparing to writing non-digitally. **Key vocabulary:** Word processor, keys, numbers, space, backspace, text, shift, cursor, toolbar, bold, italic, underline, select, font.	**Programming animations** • Designing and programming the movement of a character on screen to tell stories. **Key vocabulary:** Command, sprite, compare, programming area, Block, joining, command, start block, run, background, delete, reset, predict, effect, change, value, instructions, design, programming blocks.
Online safety – Project evolve	**Managing Online Information** • Describe and demonstrate how to get help from a trusted adult or helpline if I find content that makes me feel sad, uncomfortable, worried or frightened **Online reputation**.	**Copyright & Ownership** • explain why work I create using technology belongs to me. • say why it belongs to me • save my work so that others know it belongs to me (e.g. filename, name on content)	**SAFER INTERNET DAY** **Online bullying** **Privacy and security**	**Online relationships**	**Health well-being and lifestyle**	**Self- image and identify**

Year 2	**Information technology around us** • Identifying IT and how its responsible use improves our world in school and beyond. • To know that if something online is upsetting, it needs to be reported to an adult. **Key vocabulary:** Information technology (IT), computer, barcode, scan.	**Digital photography** • Capturing and changing digital photographs for different purposes. **Key vocabulary:** Device, capture, image, digital, landscape, portrait, field of view, narrow, wide, format, framing, focal point, subject matter, compose, natural lighting, artificial lighting, flash, focus, background, foreground editing, tools, filter, changed, real.	**Robot algorithms** • Creating and debugging programs, and using logical reasoning to make predictions. **Key vocabulary:** Instruction, sequence, clear, order, commands, prediction, design, route, debugging.	**Pictograms** • Collecting data in tally charts and using attributes to organise and present data on a computer. **Key vocabulary:** Organise, tally chart, votes, total, pictogram, enter, compare, count, explain, attribute, difference, most/least popular, conclusion, block diagram.	**Digital music** • Using a computer as a tool to explore rhythms and melodies, before creating a musical composition **Key vocabulary:** Music, quiet, loud, feelings, emotions, pattern, rhythm, pulse/beat, pitch, tempo, notes, instrument, create, open, edit.	**Programming quizzes** • Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz **Key vocabulary:** Start, outcome, predict, blocks, actions, change, build, match, compare, evaluate.
Online safety – Project evolve	**Managing Online Information**	**Copyright & Ownership**	**SAFER INTERNET DAY** **Online bullying** **Privacy and security**	**Online relationships**	**Health well-being and lifestyle**	**Self- image and identify**
Year 3	**Connecting computers** • Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. **Key vocabulary:** Digital device, input, output, process, program, connection, network.	**Stop-frame animation** • Capturing and editing digital still images to produce a stop-frame animation that tells a story. **Key vocabulary:** Animation, flip book, stop-frame animation, frame, sequence, image, photograph, setting, character, events, onion skinning, media, import, transition.	**Sequencing sounds** • Creating sequences in a block-based programming language to make music. **Key vocabulary:** Scratch, programming, blocks, code, sprite, costume, stage, backdrop, motion, point in direction, go to, event, task, run the code, order, note, chord, bug. Events and Actions:	**Branching databases** • Building and using branching databases to group objects using yes/no questions. **Key vocabulary:** Attribute, value, questions, table, objects, branching database, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree.	**Desktop publishing** • Creating documents by modifying text, images, and page layouts for a specified purpose. **Key vocabulary:** Text, images, font style, template, orientation, placeholder, desktop publishing, copy, paste, layout, purpose.	**Events and actions in programs** • Writing algorithms and programs that use a range of events to trigger sequences of actions. **Key vocabulary:** Motion, event, logic, Move, Resize, Extension block, Pen, Action, errors, test.

Online safety – Project evolve	Managing Online Information Online reputation.	Health well-being and lifestyle	SAFER INTERNET DAY Online bullying Privacy and security	Online relationships	Copyright & Ownership	Self- image and identify
Year 4	**The internet** • Recognising the internet as a network of networks including the WWW, and why we should evaluate online content **Key vocabulary:** Network, router, network security, network switch, Server, wireless access point (WAP), browser, World Wide Web, content, links, files, download, sharing, ownership, permission, information.	**Audio production** • Capturing and editing audio to produce a podcast, ensuring that copyright is considered **Key vocabulary:** Audio, record, playback, input, output, sound, podcast, selection, mixing, time shift, Export, Sound file.	**Repetition in shapes** • Using a text-based programming language to explore count-controlled loops when drawing shapes. **Key vocabulary:** Commands, code snippet, pattern, repeat, repetition, value, trace, decompose,	**Data logging** • Recognising how and why data is collected over time, before using data loggers to carry out an investigation. **Key vocabulary:** Input device, sensor, data logger, logging, data point, interval, analyse, data set, import, export, logged, collection, review, conclusion.	**Photo editing** • Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled **Key vocabulary:** Arrange, digital, crop, undo, copyright, composition, pixels, rotate, flip, effects, hue/saturation, sepia, illustrator, vignette, retouch, clone, recolour, sharpen, brighten, composite, cut, copy, paste, original, border, layer.	**Repetition in games** • Using a block-based programming language to explore count-controlled and infinite loops when creating a game **Key vocabulary:** Loop, repeat, value, forever, infinite, count-controlled loop, animate, event block, duplicate, modify/refine.
	Managing Online Information Online reputation.	Copyright & Ownership	SAFER INTERNET DAY Online bullying Privacy and security	Online relationships	Self- image and identify	Health well-being and lifestyle
Year 5	**Systems and searching** • Recognising IT systems in the world and how some can enable searching on the internet. **Key vocabulary:** System, connection, digital, input, process, output, protocol, address, chat, I.P address, collaboration.	**Video production** • Planning, capturing, and editing video to produce a short film. **Key vocabulary:** Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, AV (audio-visual), Videographer, Video techniques: Zoom, pan, tilt,	**Selection in physical computing** • Exploring conditions and selection using a programmable microcontroller. **Key vocabulary:** election in Physical Computing: Programming If…then…else… variable Random Direction Navigation	**Flat-file databases** • Using a database to order data and create charts to answer questions. **Key vocabulary:** Database, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter	**Introduction to vector graphics** • Creating images in a drawing program by using layers and groups of objects. **Key vocabulary:** Vector, drawing tools, icons, toolbar, vector drawing, move, resize, rotate, duplicate/copy, organise, zoom, select, alignment grid,	**Selection in quizzes** • Exploring selection in programming to design and code an interactive quiz. **Key vocabulary:** Selection, condition, true, false, count controlled loop, outcomes, conditional statement

		angle, lighting, setting, export, split, trim/clip, titles, timeline, transitions, content, retake, special effects, title screen, end credits	Motion Sensor Input Output Motor Alarm Signal Flat-		handles, consistency, modify, layers, object, paste, group, ungroup, reuse, improvement, alternatives.	
Online safety – Project evolve	**Managing Online Information** **Online reputation**.	**Copyright & Ownership**	**SAFER INTERNET DAY** **Online bullying** **Privacy and security**	**Online relationships**	**Health well-being and lifestyle**	**Self- image and identify**
Year 6	**Communication and collaboration** • Exploring how data is transferred by working collaboratively online. **K,ey vocabulary:** Search engine, refine, index, web crawler, ranking, links, searching, selection, communication, public, private, SMS, Blog, World Wide Web.	**Webpage creation** • Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. **Key vocabulary:** Website, web page, browser, media, Hypertext Markup language (HTML), logo, layout, header, Purpose, copyright, home page, preview, navigation, subpage, external link, embed.	**Variables in games** • Exploring variables when designing and coding a game. **Key vocabulary:** Variable, change, name, value, set, design, event, code, task, test, motion, callout.	**Introduction to spreadsheets** • Answering questions by using spreadsheets to organise and calculate data. **Key vocabulary:** Spreadsheet, data heading, cells, columns and rows, data, format, common attribute, formula, calculation, cell reference, operation, range, graph, chart, evaluate, results, comparison.	**3D modelling** • Planning, developing, and evaluating 3D computer models of physical objects. **Key vocabulary:** Modelling, Three-dimensional, Workspace, Faces, Vertices, Edges, Handles resize, position, hole, design, modify.	**Sensing movement** • Designing and coding a project that captures inputs from a physical device **Key vocabulary:** Programming, If…then…else…., variable, random, direction, navigation, motion sensor, input, output, motor, alarm
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