Computing Progression Map

Digital Literacy	Computer Science	Information Technology
Digital literacy is the ability to use information and communication technologies to generate, remix, repurpose, and share new knowledge as well as simply deliver existing information	Computer science & computational thinking allows us to develop skills and techniques to help us solve problems effectively, with or without the aid of a computer. Computational thinking is made up of four parts: decomposition, pattern recognition, abstraction, algorithms.	Internet technology explores the creative and productive use and application of computer systems, e safety, privacy and evaluating appropriate technology.

	Y1	Y2	Y3	Y4	Y5	Y6
Computing Systems and networks	Recognising technology in school and using it responsibly (AU1)	Identifying IT and how its responsible use improves our world in school beyond (AU1)	Identifying that digital devices have inputs, processes, and outputs and how devices can be connected to make networks (AU1)	Recognising the internet as a network of networks including WWW. And why we should evaluate online content (AU1)	Identifying and exploring how information is shared between digital systems (AU1)	Recognising how the WWW can be used to communicate and be searched to find information (AU2)

	Y1	Y2	Y3	Y4	Y5	Y6
Creating Media 1	Choosing appropriate tools in a program to crate art and making comparisons with working non-digitally (AU2)	Capturing and changing digital photographs for different purposes (SU2)	Capturing and editing digital still images to produce a stop-frame animation that tells a story (SP2)	Capturing and editing audio to produce a podcast, ensuring that copyright is considered (SU2)	Planning, capturing and editing video to produce a short film (SU2)	Designing and creating webpages, giving consideration to copyright, aesthetics and navigation (SP2)

	Y1	Y2	Y3	Y4	Y5	Y6
Programming A	Writing short algorithms and programs for floor robots, and predicting program outcomes (SP1)	Creating and debugging programs, and using logical reasoning to make predictions (SP1)	Creating sequences in a block-based programming language to make music (SP1)	Using a text-based programming language to explore count-controlled loops when drawing shapes (SP1)	Exploring conditions and selection using a programmable microcontroller (SP1)	Exploring variables when designing and coding a game (AU1)

	Y1	Y2	Y3	Y4	Y5	Y6
Data and Information	Exploring object labels, then using them to sort and group objects by properties (SU1)	Collecting dada in tally charts and using attributes to organise and present data on a computer (AU2)	Building and using branching databases to group objects using yes./no questions (AU2)	Recognising how and why data is collected over time, before using data loggers to carry out an investigation (AU2)	Using database to order data and create charts to answer questions (AU2)	Answering question by using spreadsheets to organise and calculate data (SU1)

	Y1	Y2	Y3	Y4	Y5	Y6
Creating Media 2	Using a computer to create and format text, before comparing to writing non-digitally (SU2)	Using a computer as a tool to explore rhythms and melodies, before creating a musical composition (SP2)	Creating documents by modifying text, images and page layouts for a specific purpose (SU1)	Manipulating digital images and reflecting on the impact of changes whether the required purpose is fulfilled (SP2)	Create images in a drawing program by using layers and groups of objects (SP2)	Planning, developing and evaluating 3D computer models of physical objects (SU2)

	Y1	Y2	Y3	Y4	Y5	Y6
Programming B	Designing and programming the movement of a character on screen to tell stories (SP2)	Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz (SU1)	Writing algorithms and programs that use a range of events to trigger a sequences of actions (SU2)	Using a block-based programming language to explore count-controlled and infinite loops when creating a game (SU1)	Exploring selection in programming to design and code an interactive quiz (SU1)	Designing and coding a project that captures inputs from a physical device (SP1)

	Y1	Y2	Y3	Y4	Y5	Y6
Self-image and self-identity	To recognise common uses of information technology beyond school. To know where to go for help and support when they have concerns (AU1)	To recognise common uses of information technology beyond school. Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about material on the internet or other online technologies (AU1)	Understanding the term 'identity'. Exploring different ways people represent themselves online depending on what I am doing online (e.g. gaming; using an avatar; social media) (AU1)	Exploring the difference between online identify and real life identity. Can describe the right decisions about how I interact with others and how others perceive me (AU1)	Explore ways identity online can be copied, modified or altered. Learn how to demonstrate responsible choices about my online identity, depending on context (AU1)	Explore identity online and ways to reject inappropriate messages about gender online. Can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened, knowing how to get help when needed (AU1)

	Y1	Y2	Y3	Y4	Y5	Y6
Online relationships	Use the internet with adult support to communicate with people. Know why it is important to be considerate and kind to people online (AU1)	Use the internet to communicate with people I don't know well and ways to do this that safe and responsible (AU2)	Explore different ways to communicate online. Explore ways to communicate with people in a way that is considerate to their feelings. Identify people that are trusted online users (AU2)	To describe strategies for safe and fun experiences in a range of online social environments. Explore examples of how to be respectful to others online (AU1)	To join an online community and how to reach out to others online. Knowing when this is safe to do so (AU2)	Can understand ways to contribute to online safety to promote positive wellbeing. Is able to explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming (AU1)

	Y1	Y2	Y3	Y4	Y5	Y6
Online reputation	To recognise that information can stay online and could be copied. Identify information I should not put online without asking a trusted adult first (AU2)	Explore the impact of a digital footprint and identify safe adults to share concerns with (SP1)	To search identity online and learn which information is safe to share with others online. Identify safe adults to share concerns with (SP1)	Explore ways information about others can be obtained, copied and altered (AU2)	Explore others online identity and how information can be gathered from a range of sources (AU1)	To build a positive online reputation and understand why this is important (AU2)

	Y1	Y2	Y3	Y4	Y5	Y6
Online bullying	Learn rules to behave online in ways that do not upset others and can give examples (AU2)	Explore online bullying scenarios and create your own. Discuss how someone can/would get help about being bullied online or offline (SP2)	Develop a definition of bullying and describe how people may bully others. Look at rules about how to behave online and how to follow them (AU1)	Identify some online technologies where bullying might take place and describe how this may happen on different platforms. Identify which content is appropriate/ inappropriate to post online (AU2)	Can identify those that are being bullied online, explore ways to report online bullying (SP1)	Develop ways to record – screen grab- content that shows any form of bullying or causes offence. Explore ways to report any concerns (AU2)

	Y1	Y2	Y3	Y4	Y5	Y6
Managing online information	To use search engines to look up key words (SP1)	To navigate a simple web page, using key words to obtain more information. Explore why some information online may not be true (SU1)	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 (SP2)	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (SP1)	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. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (SP2)	. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact (SP1)

	Y1	Y2	Y3	Y4	Y5	Y6
Health, well-being and lifestyle	Explain rules to keep us safe when using technology both in and beyond the home with examples of some of these rules (SP2)	Explore simple guidance for using technology in different environments and settings and can explore how those rules/guides can help others (AU1)	Explain why spending too much time using technology can sometimes have a negative impact on your well being (SP1)	Explore how using technology can be used as a distraction and ways to control the length of screen time you have (SP2)	Develop some strategies, tips or advice to promote healthy sleep with regards to technology (SU1)	Developing a helathy lifestyle by limiting screen time and using features of technology to support a healthy lifestyle- eg, nightshift mode. Explore age ratings and responsible usage (SP2)

	Y1	Y2	Y3	Y4	Y5	Y6
Privacy and security	Explore personal information, and why it is always important to ask a trusted adult before I share any information about myself online. Identify passwords and why they are used (SU1)	Explore ownership of others work, and recognise that content on the internet may belong to other people (SU2)	Develop an understanding of who to share personal information with and give reasons why information can only be shared with trusted adults (SU1)	Explore personal information and keeping things private with a password. Explain what a strong password is and describe strategies for keeping my personal information private, depending on context (SU1)	To set up a strong password for apps and look at why some apps require payment before being used (SU2)	Explore what to do if a password is lost or stolen. I can describe simple ways to increase privacy on apps and services that provide privacy settings and identify emails that may be a scam (SU1)

	Y1	Y2	Y3	Y4	Y5	Y6
Copyright and ownership	To explore why work I create using technology belongs to me and explain why it belongs to them (SU2)	To explore why other work belongs to them and can recognise that content on the internet may belong to other people (SP1)	To explore why copying someone else's work from the internet without permission can cause problems and give examples of what those problems might be (SU2)	Exploring online content, and ownership of content. I can give some simple examples (SU2)	To assess and justify when it is acceptable to use the work of others, to explore examples of this (SP1)	Access search tools to find and access online content which can be reused by others. Explore how to make references to and acknowledge sources I have used from the internet (SU2)

	Key vocabulary					
Year 1	COMPUTING SYSTEMS AND NETWORKS **Technology around us** **Online Safety** Technology, computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift, spacebar, capital letter, full stop, safely, responsibly	CREATING MEDIA **Digital Painting** Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, George Seurat, Pointillism, prefer, dislike, like	PROGRAMMING A **Moving a robot** Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program	DATA AND INFORMATION **Grouping data** **Online Safety** Object, label, group, search, image, colour, shape, property, value, data set, less, most, fewest, the same	CREATING MEDIA **Digital writing** **Online Safety** Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar	PROGRAMMING B **Introduction to animation** ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate, design
Year 2	COMPUTING SYSTEMS AND NETWORKS **Information technology around us** **Online safety** Information technology (IT), computer, barcode, scanner/scan	CREATING MEDIA **Digital photography** Device, camera, photograph, capture, image, digital, landscape, portrait, horizontal, vertical, field of view, narrow, wide, format, framing, focal point, subject, matter, flash, focus, background, foreground, editing, filter, Pixl, changed, real	PROGRAMMING A **Robot algorithms** Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging	DATA AND INFORMATION **Pictograms** **Online safety** More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular	CREATING MEDIA **Making music** **Online safety** Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions, pattern, rhythm, pulse, Neptune, pitch, tempo, notes, instrument, create, open, edit	PROGRAMMING B **Introduction to quizzes** Sequence, command, program, run, program, start, predict, blocks, actions, sprite, modify, match, debug, features, evaluate

Year 3	COMPUTING SYSTEMS AND NETWORKS Connecting Computers Digital device, input, output, process, program, connection, network, network switch, server, wireless access point (WAP)	CREATING MEDIA Stop frame animation Online safety Animation, flip book, stop frame, animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, delete, frame, media, import, transition	PROGRAMMING A Sequence in music Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, event, task, design, code, run the code, order, note, chord, algorithm, bug, debug	DATA AND INFORMATION Branching databases Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, j2data, selecting, pictogram, information, decision tree, questions	CREATING MEDIA Desktop publishing Online safety Text, images, advantages, disadvantages, communicate, font, style, template, desktop publishing, copy, paste, layout, purpose, benefits	PROGRAMMING B Events and actions Motion, event, sprite, algorithm, logic, move, resize, algorithm, extension block, pen up, set up, design, action, debugging, errors, setup, test

Year 4	COMPUTING SYSTEMS AND NETWORKS The internet Internet, network, router, network security, network switch, wireless access point (WAP), router, website, web page, web address, router, routing, route tracing, browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, accurate, honest, adverts	CREATING MEDIA Audio editing Online safety Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback	PROGRAMMING A Repetition in shapes Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure	DATA AND INFORMATION Data logging Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion	CREATING MEDIA Photo editing Online safety Image, edit, arrange, select, digital, crop, undo, save, search, copyright, composition, save, pixels, rotate, flip, adjustments, effects, colours, hue/saturation, sepia, version, illustrator, clone, recolour, magic wand, sharpen, brighten, fake, real, composite, background, foreground, retouch, paste, alter, publication, elements, original, font style, border, layer	PROGRAMMING B Repetition in games Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate, modify, debug, refine, evaluate, algorithm
Year 5	COMPUTING SYSTEMS AND NETWORKS Sharing information Online safety System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration	CREATING MEDIA Video editing Online safety Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback	PROGRAMMING A Selection in physical computing Microcontroller, crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate	DATA AND INFORMATION Flat-file databases Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation	CREATING MEDIA Vector drawing Online safety Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives	PROGRAMMING B Selection in quizzes Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive
Year 6	COMPUTING SYSTEMS AND NETWORKS Communication Online safety Search, search engine, Google, Bing, Yahoo, Swisscows, DuckDuckGo, refine. index, crawler, bot, optimisation, links, web crawlers, content creator, ranking, communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	CREATING MEDIA Web page creation Online safety Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation, hyperlink, subpage, implication, external link, embed	PROGRAMMING A Variables in games Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share	DATA AND INFORMATION Spreadsheets Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results, comparisons, questions, software, tools, data, propose	CREATING MEDIA 3D modelling Online safety 2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve	PROGRAMMING B Sensing Micro-bit, MakeCode, input, process, output, flashing, USB, selection, condition, if… then… else, variable, random, navigation, design, task, step counter, plan, create, code, test, debug