LEIGHSWOOD SCHOOL

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Leighswood Curriculum Progression Map - COMPUTING

Level Expected at the end of EYFS	Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
Understanding the world (Technology) • Children recognise that a range of technology is used in places such as homes and schools. • They select and use technology for particular purposes.	**Pupils should be taught to:** • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs • Use technology purposefully to create, organise, store, manipulate and retrieve digital content • 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 content or contact on the internet or other online technologies.	**Pupils should be taught to:** • Design, write and debug programmes that accomplish specific goals, including controlling or simulating physical systems, solve problems by decomposing them into smaller parts. • Use sequence, selection and repetition in programs, work with variables and various forms of input and output • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • 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 disconcerting in evaluating digital content • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data information • Use technology safely, respectfully and responsibly recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about content and contact.

Intent

We offer a structured sequence of learning, ensuring that the children learn the skills required to meet the aims of the national curriculum. The content allows for a broad, deep understanding of computing and how it links to children's lives. The computing curriculum offers a range of opportunities for consolidation, challenge and variety which allows the children to apply the fundamental principles and concepts of computer science. The children develop analytical problem-solving skills and learn to evaluate and apply information technology. It enables them to become responsible, competent and confident and creative users of information technology.

Implementation

Discrete lessons are delivered by a specialist practitioner as well as embedded by class teachers across the curriculum. Each lesson contains revision, analysis and problem-solving. Through a sequence of lessons, the children are inspired to develop a love of the digital worlds and see its place in their future. Cross-curricular links are important in supporting other areas of learning. Learning blocking help children build on prior knowledge at the same time introducing new skills and challenge. In KS1 the focus is on developing the use of algorithms, programming and how technology can be used safely and purposefully. In KS2 lessons skill focus on algorithms, programming and coding in a more complex way and for different purposes. Data handling is featured more heavily in UKS2. Skills learnt in KS1 and LKS2 are used to support data presentation. The development and understanding of key vocabulary form an important part of the progressions of skills.

Impact

Learning in computing is enjoyed across the school. Teachers have high expectations and quality evidence will be presented in a variety of forms. Children will use digital and technological vocabulary accurately, alongside a progression in their technical skills. They will be confident using a range of hardware and software and will produce high quality products. Children will see the digital world as part of their world, extending beyond school, and understand that they have choices to make. They will be confident and respectful digital citizens going on to lead healthy happy digital lives.

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	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multimedia Text and Images	*Children begin to understand the particular purposes technology can be used for and that by adding text and images you can communicate with technology. Children develop their skills in typing, selecting tools and organising information.*		*Children develop their skills of formatting using keyboard commands, organising their work to demonstrate effect. In LKS2, they will have the opportunity to express themselves more through digital technology, art, PowerPoint and posters. Children should continue to demonstrate control when operating tools as in KS1.*		*Children begin to look at new software, creating 3D models and learning how to orbit, zoom and develop their editing skills further. They become more confident in inserting links, images and formatting text to create effect.*	
	Children can:	**Children can:**	**Children can**:	**Children can:**	**Children can**:	**Children can:**
	add text strings	confidently add text strings, text boxes and an introduction to show and hide objects and images, manipulating the features	use PowerPoint to create different effects with different technological tools, demonstrating control	further develop presentation skills	use the skills already developed to create content applying to other forms of technology (Microsoft Office)	use and already developed with more confidence to create content using unfamiliar technology applying skills already learnt
	use various tools, such as brushes, pens, eraser, stamps and shapes	use various tools, such as brushes, pens, eraser, stamps and shapes, and set the size, colour and shape;	use appropriate keyboard commands to amend text on a device (Save, Print)	Further develop the range of keyboard commands they use to amend text (Copy, Paste, Cut)	select, use and combine with guidance when needed the appropriate technology tools to create effect	independently select, use and combine the appropriate technology tools to create effect
		use basic applications and devices in order to communicate ideas, work, messages in an email style message.	use applications and devices in order to communicate ideas, work, and messages	use applications and devices in order to communicate ideas, work, and messages; add attachments to email style message		review and improve their own work and support others to improve their work
	save, retrieve and organise work on a laptop	save, retrieve and organise work	save, retrieve and evaluate work, making amendments	save, retrieve and evaluate work, making amendments;	save, retrieve and evaluate their work, making amendments	save, retrieve and evaluate their work, making amendments; appropriate choices to improve the finished published piece fix for purpose.
			insert a picture	insert a picture/text/web address from the internet	insert a picture/text/graph/ hyperlink from the internet or personal file	
	f use key vocabulary to demonstrate knowledge and understanding in this strand: *colour, tools, settings, undo, redo, text, image, size, software, window, minimise, restore, size, move, screen, close, click, log on, log off, keyboards, keys, mouse, click, button, double click, drag*.	f use key vocabulary to demonstrate knowledge and understanding in this strand: *paint, colour, brush, tools, settings, undo, redo, text, image, size, poster, launch, application, software, window, minimise, restore, size, move, screen, close, click, drag, log on, log off, keyboards, keys, mouse, click, button, double click, drag, present.*	f use key vocabulary to demonstrate knowledge and understanding in this strand: *draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text,, image, minimise, restore, size, move, screen, create, organise, file, folder, close, exit, search, print, password, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck.*	f use key vocabulary to demonstrate knowledge and understanding in this strand: *draw, object, shape, line, line colour, fill colour, group, ungroup, font, size, text box, format, image, wrap text, plan, link, image, object, link, hyperlink, minimise, restore, size, move, screen, split, create, organise, file, folder, close, exit, search, print, password, screenshot, snipping tool, shift, undo, redo, menu, dictionary, highlight, cursor, toolbar, spellcheck.*	f use key vocabulary to demonstrate knowledge and understanding in this strand: *window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, zoom, eraser,*	f use key vocabulary to demonstrate knowledge and understanding in this strand: *window, layout, text, font, colour, format, heading, hyperlink, 2D shape, 3D shape, orbit, pan, zoom, eraser, dimension, measurement, guide.*

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	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Multimedia Sound and Motion	*Children begin to develop their creativity using technology through recording sound. Children will also begin to develop their editing skills and control of the tools.*		*Children develop their editing skills further by cropping, organising and arranging film clips. They are able to share work and offer feedback and ideas for improvement with animation and film, giving their opinion on which software to use. In LKS2, children also look at the history of animation and reflect upon the changes over time.*		*Children begin to look more into multimedia broadcasting, learning new skills including recording jingles, podcasts and narration. They become more confident in post-production with editing, trimming and refining their work based on plans they have made.*	
	Children can:	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
	use software to record sounds		use software to record, create and edit sounds and capture still images		collect audio from a variety of resources including own recordings and internet clips	
	change sounds recorded			change recorded sounds, volume, duration and pauses	with support, use a digital device to record sounds and present audio	use a digital device to record sounds and present audio, combining with other media
	save, retrieve and organise work			use software to capture video for a purpose		trim, arrange and edit audio levels to improve quality
			with support, crop and arrange clips to create a short film	independently crop and arrange clips to create a short film		publish their animation and use a movie editing package to edit/refine and add titles
			plan a simple animation and move items within each animation for playback	plan an animation thinking carefully of the finished piece and move items within each animation for playback		
	use key vocabulary to demonstrate knowledge and understanding in this strand: *commands, add sound.*		use key vocabulary to demonstrate knowledge and understanding in this strand: *movie, embed, link, animate, animation, still image, flip book, frame, loop, frame rate, record, stop, play, stop motion, stop frame.*	use key vocabulary to demonstrate knowledge and understanding in this strand: *audio, sound, video, movie, embed, link, file format, animate, animation, still image, thaumatrope, zoetrope, zoopraxiscope, stereoscope, flip book, frame, onion skinning, loop, frame rate, record, stop, play, stop motion, stop frame.*	use key vocabulary to demonstrate knowledge and understanding in this strand: *audio, record, edit, play stop, skip, input, output, record, edit, play podcast, downloadable, backing track, voiceover, mute, gain, documentary, project, evaluation, screening,*	use key vocabulary to demonstrate knowledge and understanding in this strand: *audio, record, edit, play stop, skip, waveform, input, output, record, edit, play podcast, digital content, downloadable, backing track, voiceover, mute, gain, production, post-production, documentary, project, evaluation, screening, ceremony, upload*

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Handling Data			*Children begin to explore expressing information in tables, sorting and organising information for others to be able to understand.*		*Data Handling in UKS2 focuses on selecting the correct method to display data and using software such as spread sheets. Children also learn how to check the accuracy of data and compare data for a specific purpose*	
		Children can:		**Children can:**	**Children can:**	**Children can:**
		Talk about how data is organised in a branching database		talk about the different ways data can be organised	with guidance construct data on the most appropriate application	Independently construct data on the most appropriate application
		sort information using a basic branching database		sort and organise information to use in other ways	know how to interpret data	Spot inaccurate data and compare data
				search a ready-made database to answer questions	use keyboard shortcuts and functions to input data on spread sheets and create formulas for spread sheets	summarise their data findings
		create own database using card prompts			add data to an existing database	
				use key vocabulary to demonstrate knowledge and understanding in this strand: *Google Docs, insert, table*	use key vocabulary to demonstrate knowledge and understanding in this strand: *Google Docs, insert, table, spread sheet, cell, row, column, formula/formulas, calculate,*	use key vocabulary to demonstrate knowledge and understanding in this strand: *Google Docs, insert, table, spread sheet, cell, row, column, formula/formulas, calculate, format, edit, insert, ascending, descending.*

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Technology and Lives	*Children begin to make links to how they use technology outside of the classroom. They begin to think about the benefits of using technology in their lives, making links to learning about online safety*		*Children refer to online safety rules when discussing technology in their lives. They are able to navigate between websites and use safe search terms on trusted search engines. They become more confident in using email for communication, including attaching and saving files from emails.*		*Children can use safe search terms on trusted search engines, and evaluate websites based on layout and information. They become more confident in understanding Google rankings, adverts and the reliability of websites.*	
	Children can:	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
	recognise ways some that technology is used in the home and community, e.g. taking photos, blogs, shopping	recognise all ways that technology is used in the home and community, e.g. taking photos, blogs, shopping	explain ways to communicate with others online	explain ways to communicate with others online	search for information using appropriate websites	search for information using advanced search functions within Google
	log on and off school devices	turn on and off school devise safely, opening the appropriate programme for the task.				
	use links to websites to find information	use links to websites to find information		describe the world wide web as the part of the internet that contains websites	use strategies to check the reliability of information (cross-check with another source such as books)	confidently use strategies to check the reliability of information
	recognise age-appropriate websites	recognise age-appropriate websites	add websites to a favourites list	Use HTML, editing URLs	talk about the way search results are selected and ranked	
		use safe search filters	use search tools to find and use an appropriate website and content		check the reliability of a website, including the photos on site	
				use strategies to improve results when searching online	tell you about copyright and acknowledge the sources of information	
	use key vocabulary to demonstrate knowledge and understanding in this strand: filter, *Google, search engine, image, keyboard, email, internet, subject, address, , safe, secure*	use key vocabulary to demonstrate knowledge and understanding in this strand: filter, *Google, search engine, image, keyboard, email, internet, subject, address, communicate, sender, safe, secure*.	use key vocabulary to demonstrate knowledge and understanding in this strand: filter, *Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media*.	use key vocabulary to demonstrate knowledge and understanding in this strand: filter, *Google, search engine, image, keyboard, email, subject, address, communicate, sender, safe, secure, internet, world wide web, social media*.	use key vocabulary to demonstrate knowledge and understanding in this strand: *world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar.*	use key vocabulary to demonstrate knowledge and understanding in this strand: *world wide web, search, search engine, advanced search, results, Google, browser, terms of use, bias, authority, citation, plagiarism, source, website, secure, https, site, domain, website, browser, address bar*.

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Coding and Programming	*Children begin to understand their influence on technology by developing their programming skills to determine output. They begin to understand that an algorithm is a series of steps for solving problems and a code is a series of steps that machines can execute. They begin to explore debugging, predicting when codes may not work and changing them*		*Children build on their programming skills by solving problems and programming commands to achieve a specific outcome. They begin to write programs, explain algorithms and identify errors in their work.*		*Children build on their programming skills by using new systems such as a flowchart. They continue to break down problems and create algorithms to solve them. They are able to explain the outcome of an algorithm with confidence and accuracy.*	
	Children can:	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
	give commands to blue bots one at a time to control direction and movement, including straight, forwards, backwards, turn	give commands on apps and mobile devices (Beebot, Bluebot, Scratch)		use logical thinking to solve an open-ended problem by breaking it up into smaller parts;	use external triggers and infinite loops to demonstrate control;	
	with support control the nature of events: repeat, loops, single events and add and delete features	Independently control the nature of events: repeat, loops, single events and add and delete features	write a program, putting commands into a sequence to achieve a specific outcome	Independently write a program, putting commands into a sequence to achieve a specific outcome;	follow a sequence of instructions, e.g. in a flowchart and modify a flowchart using symbols;	
	give a set of instructions to follow and predict what will happen;		give a set of instructions to follow and predict what will happen		with support, use conditional statements and edit variables;	use conditional statements and edit variables;
	with support improve/change their sequence of commands by debugging	Independently improve/change their sequence of commands by debugging	keep testing a program and recognise when it needs to be debugged	keep testing a program and recognise when it needs to be debugged;		decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program;
				use variables to create an effect, e.g. repetition, if, when, loop	keep testing a program and recognise when it needs to be debugged;	
	use key vocabulary to demonstrate knowledge and understanding in this strand: *instruction, order, program, turn, left, right, clockwise, anticlockwise, repeat,*	use key vocabulary to demonstrate knowledge and understanding in this strand: *algorithm, instruction, order, debug, program, turn, left, right, clockwise, anticlockwise, blocks, sequence, project, repeat, repeat forever, invisible, grow, shrink, input*	use key vocabulary to demonstrate knowledge and understanding in this strand: *sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs),*	use key vocabulary to demonstrate knowledge and understanding in this strand: *decompose, decomposing, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, errors, program, algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable*	use key vocabulary to demonstrate knowledge and understanding in this strand: *flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise*	use key vocabulary to demonstrate knowledge and understanding in this strand: *flowchart, algorithm, control, output, symbol, start, stop, delay, process, decision, loop, backdrop, script, block, repeat, commentary, sequence, consequence, debug, program, Kodu, world, object, tool palette, program environment, smooth, flatten, raise*

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Online Safety	*Children begin to consider their activity on the internet and learn about ways to keep themselves safe and why it is important to do so. They also compare appropriate and inappropriate activity on the internet and decide what to do next.*		*Children become more aware of their digital footprint by reflecting on their experience on the internet. They are able to understand more about age-appropriate websites and adverts and how adverts are used by companies. Children are also introduced to the concept of plagiarism and citation.*		*Children are encouraged to identify online risks and share their knowledge of the risks and consequences for people online. They begin to think more critically about what they see online and look at the concept of fake news and false photographs*	
	Children can:	**Children can:**	**Children can:**	**Children can:**	**Children can:**	**Children can:**
	identify what things count as personal information including logging on to the school system	Keep personal log in details for the school system, private	begin to understand their own digital footprint and behaviour online	reflect on their own digital footprint and behaviour online	protect their password and other personal information	evaluate their own digital footprint and the effect on their future
	with support, identify what is appropriate and inappropriate behaviour on the internet	identify what is appropriate and inappropriate behaviour on the internet	identify what is appropriate and inappropriate behaviour on the internet, recognising the term cyberbullying	always behave appropriately on line	be a good online citizen and friend	ensure they are good role models and friends online.
	agree and follow sensible online safety rules, e.g. taking pictures,	agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords;	agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords	agree and follow sensible online safety rules, e.g. taking pictures, sharing information, storing passwords in and outside school	judge what sort of privacy settings might be relevant to reducing different risks	judge what sort of privacy settings might be relevant to reducing different risks inside and outside school
	seek help from an adult when they see something that is unexpected or worrying;	seek help from an adult when they see something that is unexpected or worrying;	seek help from an adult when they see something that is unexpected or worrying;	seek help from an adult when they see something that is unexpected or worrying;	seek help from an adult when they see something that is unexpected or worrying	seek help from an adult when they see something that is unexpected or worrying;
	demonstrate how to safely open and close applications	log on and log off from website safely	demonstrate understanding of age-appropriate websites and adverts		discuss scenarios involving online risk and Spam	
	use key vocabulary to demonstrate knowledge and understanding in this strand: *safe, meet, accept, tell, online, trusted, adult, information, safety, personal, tell, safe, share, stranger, danger, internet*	use key vocabulary to demonstrate knowledge and understanding in this strand: *safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, key, question, tell, safe, share, stranger, danger, internet.*	use key vocabulary to demonstrate knowledge and understanding in this strand: *safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public*	use key vocabulary to demonstrate knowledge and understanding in this strand: *safe, meet, accept, reliable, tell, online, trusted, adult, information, safety, personal, internet, world wide web, communicate, message, social media, email, password, cyberbullying/bullying, plagiarism, profiles, account, private, public.*	use key vocabulary to demonstrate knowledge and understanding in this strand: *spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal.*	use key vocabulary to demonstrate knowledge and understanding in this strand: *spam, link, privacy, virus, scam, phishing, inbox, junk, sender, subject, secure, safe, account, online, private, social media, adverts, cyberbullying, reporting, anonymous, victim, fraud/fraudulent, policy, private/personal*