



Computing Curriculum Intent

At Linden Road Academy, we value the fundamental role that technology plays in the life of the school and in the future of our children. In line with the 2014 National Curriculum for Computing, we aim to provide a high quality computing education, which equips children to use computational thinking and creativity to understand and prepare for the changing world. We prepare our learners for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Knowledge and understanding of computing is of increasing importance for children's future. Our Computing curriculum focuses on a progression of skills in digital literacy (including on-line safety), computer science and information technology to ensure that children become competent in safely using and understanding technology. Our intention is that this learning is embedded; knowledge is successfully developed and that Computing supports children's creativity and cross curricular learning: engaging children and enriching their experiences in school.

In such a fast-moving curriculum, we are constantly looking at new ways of delivering relevant and exciting activities, while still delivering the fundamental knowledge needed for computing. Using technology safely and responsibly is a main priority and ensuring all pupils are able to use the internet and equipment appropriately is of paramount importance. We encourage our pupils to make links across the curriculum, the world and our local community, to reflect on their own experiences, which are designed in our curriculum, allowing horizontal and vertical links with previous year groups.

Implementation

We aim to provide our children with a high quality computing education. Our whole curriculum is shaped by our school vision which aims to enable all children to flourish and excel becoming the very best version of themselves they can possibly be. We teach the National Curriculum, supported by a clear knowledge progression. This ensures that procedural and declarative knowledge is built on year by year and sequenced appropriately to maximise learning for all children. To ensure a broad range of knowledge and understanding, Computing is taught across three main strands: digital literacy, computer science and information technology. As part of information technology, children learn to use and express themselves and develop their ideas through ICT. Within digital literacy, children develop practical knowledge in the safe use of technology and the ability to apply this knowledge to solving relevant, worthwhile problems. In computer science, we teach children to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. At Linden Road Academy, we give children access to a wide range of good quality resources and provide cross-curricular opportunities for children to apply their Computing knowledge. Online safety is taught within each Computing lesson as part of a retrieval starter activity, as well as being taught as individual lessons each half term. Safer Internet Day is celebrated annually. Wherever possible, the computing strands will be linked to the topic covered.

Impact

The implementation of this curriculum ensures that when children leave Linden Road Academy, they are competent and safe users of ICT with an understanding of how technology works. Our approach to the curriculum results in a fun, engaging, and high-quality computing education. They will have developed knowledge to express themselves and be creative in using digital media and be equipped to apply this knowledge in Computing to different challenges they will face in the future.




The impact this curriculum will have shows that:

- Children will be confident users of technology, able to use it to accomplish a wide variety of goals, both in school and at home.
- Children will have a secure and comprehensive knowledge of the implications of technology and digital systems, which is important in our ever-evolving society.
- Children will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.
- Children will be able to solve problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Children will be able to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Children are responsible, competent, confident and creative users of information and communication technology.



Computing Strands

The curriculum is split into three sections: **Computer Science** – coding, control and simulation **Digital Literacy** - online safety and research **Information Technology** – Communication, Data and Multi-Media

Computer Science	Digital Literacy	Information Technology		
				
Programming and Theory	E-Safety & Searching and selecting	Communication	Data	Multimedia

Computing Progression

In EYFS Computing is incorporated in: Personal Social and Emotional Development, Physical Development, Understanding the World and Expressive Arts and Design.

FS1	Personal, Social and Emotional Development		• Remember rules without needing an adult to remind them.
	Physical Development		• Match their developing physical skills to tasks and activities in the setting.
	Understanding the World		• Explore how things work.
FS2	Personal, Social and Emotional Development		• Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: - sensible amounts of 'screen time'.
	Physical Development		• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
	Expressive Arts and Design		• Explore, use and refine a variety of artistic effects to express their ideas and feelings.
ELG	Personal, Social and Emotional Development	Managing Self	• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly.
	Expressive Arts and Design	Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.



	EYFS	Year1	Year 2	Year 3	Year 4	Year 5	Year 6
Basic Computer Skills Automaticity	<ul style="list-style-type: none"> Turn on/off digital equipment. Start to learn key letters on a keyboard. 	<ul style="list-style-type: none"> Open and close programmes. Log on and logout of programs Print work. Log in practice Developing keyboard and mouse skills. 	<ul style="list-style-type: none"> Log on and off a computer. Save, find and open work Use a laptop mouse pad To understand what cut, copy and paste does. 	<ul style="list-style-type: none"> Find, open and edit work before re-saving. Log on to Teams To use keyboard shortcuts for underline and bold (Ctrl U, B) 	<ul style="list-style-type: none"> Create folders to store digital documents. Begin to upload work onto Teams To use keyboard shortcuts for Cut, copy and paste Ctrl X C, V 	<ul style="list-style-type: none"> Organise folders to store digital documents. Independently upload work onto Teams To use copy, paste in spreadsheet to automate formula. 	<ul style="list-style-type: none"> To use different types of mouse and keyboard combination such as drag and drop and two finger scrolling. To confidently use a range of keyboard shortcuts
Touch Typing	Use the keyboard to enter letter strings	To type upper and lower case letters	To use the correct finger for the home keys.	To use the correct finger for keys on a keyboard. To touch type 10 words per minute	To touch type 15 words per minute	To touch type 20 words per minute	To touch type 20 words per minute
Vocabulary	Turn on / Turn off Louder / Quieter Skip Remote control Camera Mobile phone Ipad / Tablet Computer Keyboard Google / safari Technology Bee-bot Instructions direction computer Technology Internet Personal information Rules On-line	Create Command Sequence Algorithm Code Debug Directional language Simple Program Digital Device Cut Copy Paste Home Keys Upper and lower case letters Pictogram EBook Storyboard Software Search engines Username and password	Computer Program Program / code (verb and noun) Repetition Blocks Sprite Predict Debug Data Content Network Word Processor Retrieve Photo editing Private Web page Navigate Voice-activated searching	Computational thinking Execute Input Output Loops Conditional Email Hardware World Wide Web Layers (photo editing) Air drop Cyberbullying (noun) Identity Safe search technologies Autocomplete Permission	Animation Decomposition Simulation Function QR Code Server Stop-motion Function hyperlink Digital artefacts / digital Operating system Bystander Up-stander HTTP Evaluate digital content Reliable In-app purchases	Logic Switch Encrypted Variables Micro-bit Browser Input Memory Network Selection Spreadsheet IP Address Mis-information Dis-information Validate Hoax Geolocation	Central Processing Unit (CPU) Client Control Cloud network Blogging HTML Sharepoint 3D modelling Screen Grab Age-rating Copyright Scams Phishing



	Knowledge	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	Understand what algorithms are	Using a list of instructions to complete tasks. Following instructions and looking at order (Literacy)	Introduction to the word Algorithm and what it means.	Using instructions in the right order to achieve desired results	To understand how different platforms have different but similar instructions	To use algorithms to make aspects of a game work.	To use a list of instructions to create a 3D game world.	To use algorithms to create an app
	Create and debug simple programs (that accomplish specific goals – KS2)	.	Learning that debugging is fixing wrong code – Tynker Jnr – directional problem solving. Up/down/left/right Getting code in the right order	Fixing the wrong code – Scratch Jnr Getting the right amount of code to solve the problem.	Presented with code problems, detect the error and debug the programme.	Create a maze game that others will play. Debug the ways others will try and cheat.	Create own controllable game that includes score, timer and lives. The game will need debugging in order to work correctly.	Developing an app to share with others – pupils must debug problems for app to work successfully.
	Use logical reasoning to predict the behaviour of simple programs (and to detect and correct errors – KS2)			Introduce the idea of how to predict the behaviour of code before it has run.	Predicting code using questions and showing errors to allow pupils to correct the code.	Use prediction to plan how someone might cheat in a maze game and patch any issues.	Predict the path of sprites that have been coded.	Predict how functions will act when coding an app.
	Use sequence, selection and repetition in programs; work with variables.		To introduce the term REPEAT and how programs can loop an action	To repeat a sequence of events and predict the behaviour.	To use repeat blocks to code a looped solution to problems.	To code forever a sequence that helps our maze game run without errors or cheating.	Introducing Variables and how they are used to code a scoreboard, timer and life counter.	Recognise and use variables and repetition when appropriate.
	Controlling or simulating physical systems	Using simple commands to control direction (Maths, Geog)	Using simple commands to reach a specified destination.	Using commands to create a range of motion. Using 1 sprite to control another.	Using commands to create a simple game.	Creating a simple game from scratch using a variety of control methods.	Create algorithms which control a micro-bit	Designing an app - control hyperlink and website destination.
	Solve problems by decomposing them into smaller parts		Phrase “What do I need to do next?” to be used to draw out the next step.	Code one aspect at a time.	Code one solution at a time.	Code one sprite until it works, then move onto the next.	Code the game until it works, add variables and other decorations after.	Code one app button at a time. Copy and edit code later.
	Work with various forms of input and output		Using the screen keyboard.	Drag and drop.	Begin to use airdrop	Use airdrop	Using multiple keys at the same time.	Using cloud sync to output to different devices. To use different platforms for coding.
	Understand how networks can provide multiple services, such as the world wide web.					To understand how a network used physical infrastructure to connect devices. How local devices communicate	Understand how networks search internally to return results. What an IP address it and how it is used on the world wide web	Using cloud networks to share documents.



Information Technology	Knowledge	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Use technology purposefully to organise, store and retrieve digital content.	To understand the ways in which digital equipment can be used to help us (Understanding the World – people and communities)	Learn how to find, save, show, and send images on iPad devices.	Using a computer to edit saved images.	Create and save documents to do with topic.	To use Word and PowerPoint to display work/projects To use emails to communicate ideas.	Save video/picture files to cloud storage (iCloud, OneDrive) for later use.	Create a website using SharePoint to advertise a business. Understand the use of copyright.
	Use technology purposefully to create and manipulate digital content.	Use Pic Collage App to take photographs and add headings and labels to them (numerous areas) Use Apps to create music and experiment with digital sound (music)	Use PicCollage to manipulate photos (Shrink, expand, turn)	To import images into documents and manipulate size and wrapping.	To use photo editing software to discover different layers in images.	Create and understand animation principles and use software to create animations	To use more advanced photo editing functions within animations (Keynote)	Use Computer Aided Design (CAD) software to create and manipulate 3D shapes
	Select, use and combine a variety of software (including internet services) on a range of digital devices. KS2			Use book creation apps to create eBooks.	Use browsers and apps/programs to import and display work	To use different apps/programs to photo edit to see how skills are transferable.	To use different software and platforms to create animations.	To use video creation tools and programs to create layers and effects for a video project. Use Apple and Windows devices to sync and transfer content.
	Design and create a range of programs, systems and content that accomplish given goals.			To use a range of applications to save and edit work to produce a newly created image.	To collect and organise topic work digitally to produce a display piece.	Use different programs to create videos using a range of techniques such as green screen and stop motion animation.	Using spreadsheets, we create formula that automatically completes the tasks at hand.	Video creation and effects. 3D modelling.
	Collecting, analysing, evaluating, and presenting data and information.	To use digital charts and pictograms to organise information (maths)	Create an eBook	Use Word to collect and save topic work.	Use PowerPoint to present work. Use Numbers to enter data and produce graphs.	Use iMovie to present information Use a website/Microsoft Sway to present information.	To understand spreadsheet formula. To understand Data is collected, entered and presented in spreadsheets	Create a mobile device app to display information



Digital Literacy linked to Education for a Connected World and taught through Project Evolve

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
DIGITAL LITERACY (including Education for a Connected World) objectives	<p><u>Self Image and Identity</u></p> <p>I can recognise, online or offline, that anyone can say 'no' - 'please stop' - 'I'll tell' - 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.</p>	<p><u>Self Image and Identity</u></p> <p>I can recognise that there may be people online who could make me feel sad, embarrassed or upset. If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust.</p>	<p><u>Self Image and Identity</u></p> <p>I can explain how other people's identity online can be different to their identity in real life. I can describe ways in which people might make themselves look different online. I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help.</p>	<p><u>Self Image and Identity</u></p> <p>I can explain what is meant by the term 'identity'. I can explain how I can represent myself in different ways online I can explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media).</p>	<p><u>Self Image and Identity</u></p> <p>I can explain how my online identity can be different to the identity I present in 'real life'. Knowing this, I can describe the right decisions about how I interact with others and how others perceive me.</p>	<p><u>Self Image and Identity</u></p> <p>I can explain how identity online can be copied, modified or altered. I can demonstrate responsible choices about my online identity, depending on context.</p>	<p><u>Self Image and Identity</u></p> <p>I can describe ways in which media can shape ideas about gender. I can identify messages about gender roles and make judgements based on them. I can challenge and explain why it is important to reject inappropriate messages about gender online. I can describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline. I can explain why I should keep asking until I get the help I need.</p>



	<p><u>Online Relationships</u></p> <p>I can recognise some ways in which the internet can be used to communicate.</p> <p>I can give examples of how I (might) use technology to communicate with people I know</p>	<p><u>Online Relationships</u></p> <p>I can use the internet with adult support to communicate with people I know.</p> <p>I can explain why it is important to be considerate and kind to people online.</p>	<p><u>Online Relationships</u></p> <p>I can use the internet to communicate with people I don't know well (e.g. email a penpal in another school/ country).</p> <p>I can give examples of how I might use technology to communicate with others I don't know well.</p>	<p><u>Online Relationships</u></p> <p>I can describe ways people who have similar likes and interests can get together online.</p> <p>I can give examples of technology-specific forms of communication (e.g. emojis, acronyms)</p> <p>I can explain some risks of communicating online with others I don't know well.</p> <p>I can explain why I should be careful who I trust online and what information I can trust them with.</p> <p>I can explain how my and other people's feelings can be hurt by what is said or written online.</p> <p>I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried.</p> <p>I can explain what it means to 'know someone' online and why this might be different from knowing someone in real life.</p> <p>I can explain what is meant by 'trusting someone online'. I can explain why this is different from 'liking someone online'.</p>	<p><u>Online Relationships</u></p> <p>I can give examples of how to be respectful to others online.</p> <p>I can describe strategies for safe and fun experiences in a range of online social environments.</p>	<p><u>Online Relationships</u></p> <p>I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault.</p> <p>I can make positive contributions and be part of online communities.</p> <p>I can describe some of the communities in which I am involved and describe how I collaborate with others positively.</p>	<p><u>Online Relationships</u></p> <p>I can show I understand my responsibilities for the well-being of others in my online social group.</p> <p>I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming).</p> <p>I can demonstrate how I would support others (including those who are having difficulties) online.</p> <p>I can demonstrate ways of reporting problems online for both myself and my friends.</p>
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	<p><u>Online Reputation</u> I can identify ways that I can put information on the internet.</p>	<p><u>Online Reputation</u> I can recognise that information can stay online and could be copied. I can describe what information I should not put online without asking a trusted adult first.</p>	<p><u>Online Reputation</u> I can explain how information put online about me can last for a long time. I know who to talk to if I think someone has made a mistake about putting something online.</p>	<p><u>Online Reputation</u> I can search for information about myself online. I can recognise I need to be careful before I share anything about myself or others online. I know who I should ask if I am not sure if I should put something online.</p>	<p><u>Online Reputation</u> I can describe how others can find out information about me by looking online. I can explain ways that some of the information about me online could have been created, copied or shared by others.</p>	<p><u>Online Reputation</u> I can search for information about an individual online and create a summary report of the information I find. I can describe ways that information about people online can be used by others to make judgments about an individual</p>	<p><u>Online Reputation</u> I can explain how I am developing an online reputation which will allow other people to form an opinion of me. I can describe some simple ways that help build a positive online reputation.</p>
	<p><u>Online Bullying</u> I can describe ways that some people can be unkind online. I can offer examples as to how this might make people feel.</p>	<p><u>Online Bullying</u> I can describe how to behave online in ways that do not upset others and can give examples.</p>	<p><u>Online Bullying</u> I can give examples of bullying behaviour and how it could look online. I understand how bullying can make someone feel. I can talk about how someone can/would get help about being bullied online or offline.</p>	<p><u>Online Bullying</u> I can explain what bullying is and can describe how people may bully others. I can describe rules about how to behave online and how I follow them.</p>	<p><u>Online Bullying</u> I can identify some online technologies where bullying might take place. I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). I can explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation).</p>	<p><u>Online Bullying</u> I can recognise when someone is upset, hurt or angry online. I can describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone. I can explain how to block abusive users. I can explain how I would report online bullying on the apps and platforms that I use. I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. Childline).</p>	<p><u>Online Bullying</u> I can describe how to capture bullying content as evidence (e.g. screen-grab, URL, profile) to share with others who can help me. I can identify a range of ways to report concerns both in school and at home about online bullying.</p>



	<p><u>Managing Online Information</u></p> <p>I can talk about how to use the internet as a way of finding information online. (Understanding the world)</p> <p>I can identify devices I could use to access information on the internet.</p>	<p><u>Managing Online Information</u></p> <p>I can use the internet to find things out. I can use simple keywords in search engines. I can 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.</p>	<p><u>Managing Online Information</u></p> <p>I can use keywords in search engines. I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). I can explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri). I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real'. I can explain why some information I find online may not be true.</p>	<p><u>Managing Online Information</u></p> <p>I can use key phrases in search engines. I can explain what autocomplete is and how to choose the best suggestion. I can explain how the internet can be used to sell and buy things. I can explain the difference between a 'belief', an 'opinion' and a 'fact'.</p>	<p><u>Managing Online Information</u></p> <p>I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. I can describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites). I can describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases, pop-ups) and can recognise some of these when they appear online. I can explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. I can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true.</p>	<p><u>Managing Online Information</u></p> <p>I can use different search technologies I can evaluate digital content and can explain how I make choices from search results. I can explain key concepts including: data, information, fact, opinion belief, true, false, valid, reliable and evidence. I understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead). I can explain what is meant by 'being sceptical'. I can give examples of when and why it is important to be 'sceptical'. I can explain what is meant by a 'hoax'. I can explain why I need to think carefully before I forward anything online. I can explain why some information I find online may not be honest, accurate or legal. I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation either by accident or on purpose).</p>	<p><u>Managing Online Information</u></p> <p>I can use search technologies effectively. I can explain how search engines work and how results are selected and ranked. I can demonstrate the strategies I would apply to be discerning in evaluating digital content. I can describe how some online information can be opinion and can offer examples. I can explain how and why some people may present 'opinions' as 'facts'. I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting'). I can demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important. I can identify, flag and report inappropriate content.</p>
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	<p><u>Health, well-being and lifestyle</u></p> <p>I can identify rules that help keep us safe and healthy in and beyond the home when using technology</p> <p>I can give some examples of these rules.</p>	<p><u>Health, well-being and lifestyle</u></p> <p>I can explain rules to keep us safe when we are using technology both in and beyond the home; I can give examples of some of these rules.</p>	<p><u>Health, well-being and lifestyle</u></p> <p>I can explain simple guidance for using technology in different environments and settings.</p> <p>I can say how those rules/guides can help me.</p>	<p><u>Health, well-being and lifestyle</u></p> <p>I can explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos).</p>	<p><u>Health, well-being and lifestyle</u></p> <p>I can explain how using technology can distract me from other things I might do or should be doing.</p> <p>I can identify times or situations when I might need to limit the amount of time I use technology.</p> <p>I can suggest strategies to help me limit this time.</p>	<p><u>Health, well-being and lifestyle</u></p> <p>I can describe ways technology can affect healthy sleep and can describe some of the issues.</p> <p>I can describe some strategies, tips or advice to promote healthy sleep with regards to technology.</p>	<p><u>Health, well-being and lifestyle</u></p> <p>I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose.</p> <p>I can assess and action different strategies to limit the impact of technology on my health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).</p> <p>I can explain the importance of self-regulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, avoiding accidents).</p>
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	<p><u>Privacy and Security</u> I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location) I can describe who would be trustworthy to share this information with; I can explain why they are trusted.</p>	<p><u>Privacy and Security</u> I can recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school). I can explain why I should always ask a trusted adult before I share any information about myself online.</p>	<p><u>Privacy and Security</u> I can describe how online information about me could be seen by others. I can describe and explain some rules for keeping my information private. I can explain what passwords are and can use passwords for my accounts and devices. I can explain how many devices in my home could be connected to the internet and can list some of those devices.</p>	<p><u>Privacy and Security</u> I can give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult. I understand and can give reasons why passwords are important. I can describe simple strategies for creating and keeping passwords private. I can describe how connected devices can collect and share my information with others</p>	<p><u>Privacy and Security</u> I can explain what a strong password is. I can describe strategies for keeping my personal information private, depending on context. I can explain that others online can pretend to be me or other people, including my friends. I can suggest reasons why they might do this. I can explain how internet use can be monitored.</p>	<p><u>Privacy and Security</u> I can create and use strong and secure passwords. I can explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others. I can explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.</p>	<p><u>Privacy and Security</u> I use different passwords for a range of online services. I can describe effective strategies for managing those passwords (e.g. password managers, acronyms, stories). I know what to do if my password is lost or stolen. I can explain what app permissions are and can give some examples from the technology or services I use. I can describe simple ways to increase privacy on apps and services that provide privacy settings. I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing).</p>
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	<p><u>Copyright and Ownership</u></p> <p>I know that work I create belongs to me. I can name my work so others know it belongs to me.</p>	<p><u>Copyright and Ownership</u></p> <p>I can explain why work I create using technology belongs to me. I can say why it belongs to me (e.g. 'it is my idea' or 'I designed it'). I can save my work so that others know it belongs to me (e.g. filename, name on content).</p>	<p><u>Copyright and Ownership</u></p> <p>I can describe why other people's work belongs to them. I can recognise that content on the internet may belong to other people.</p>	<p><u>Copyright and Ownership</u></p> <p>I can explain why copying someone else's work from the internet without permission can cause problems; I can give examples of what those problems might be.</p>	<p><u>Copyright and Ownership</u></p> <p>When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it: I can give some simple examples.</p>	<p><u>Copyright and Ownership</u></p> <p>I can assess and justify when it is acceptable to use the work of others. I can give examples of content that is permitted to be reused</p>	<p><u>Copyright and Ownership</u></p> <p>I can demonstrate the use of search tools to find and access online content which can be reused by others. I can demonstrate how to make references to and acknowledge sources I have used from the internet.</p> <p><u>Other</u></p> <p>I can explain the differences between a network, the internet and the world wide web</p>
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Computing – Vocabulary Map



Computing Concepts	Characteristics of Effective learning	Curriculum
EYFS	<u>Play</u> <u>Explore Engage Create</u> <u>Think critically</u> Being willing to 'have a go' Motivation Being involved and concentrating Enjoying achieving what they set out to do Having their own ideas Making links Choosing ways to do things	Computers Turn on Turn off Louder Quieter Skip Remote control Camera Mobile phone Ipad / Tablet Computer Mouse Keyboard Bee-bot Google Technology

Computing Concepts	Computer Science (Algorithms, programming, data and systems)	Digital Literacy (Mechanics, searching/selecting information and E-safety)	Information technology (Digital Artefacts and computing contexts)
Key Stage 1 and 2	<p>Algorithm - a sequence of instructions and/or set of rules.</p> <p>Animation - a way of creating a continuous motion and shape change of your graphic or sprite.</p> <p>Central Processing Unit (CPU) - the part of the computer that turns your commands in actions.</p> <p>Client – Devices used to access the services on a computer network. For example, to use programming software, such as Scratch or Kodu, or word processing software. Sometimes we have to log in to the network on these computers before we can use them.</p> <p>Code - the instructions used to write a computer program. Different pieces of code can be arranged in different ways to give the computer a set of instructions.</p> <p>Computer Program - a sequence of instructions written to perform certain tasks by the computer. It is a way of talking to the computer to ask it to do things for you.</p> <p>Computational thinking - a way of thinking that uses concepts and theories from computer science to solve problems. Conditional Code – code which will only run if something is true</p> <p>Control – commands placed in a sequence to perform a desired task.</p>	<p>Cyberbullying (noun): The use of electronic communication to bully a person, typically by sending messages of an intimidating or threatening nature</p> <p>E-safety - understanding and applying rules to prevent risks to personal safety and privacy of personal information in using digital devices of all kinds.</p> <p>Keywords - the most important words related to a subject, those which you type into a search engine to find the information you want.</p> <p>Operating system - the program that enables the computer to start and access different sorts of software on the computer, examples include Microsoft Windows and iOS for Mac.</p> <p>Output - the means by which the computer relays information e.g. printer or monitor.</p>	<p>3D modelling - the process of creating three-dimensional representations of an object or a surface.</p> <p>Blogging - a website containing a writer's or group of writers' own experiences, observations, opinions, etc.</p> <p>Browser - a piece of software that enables a user to locate, retrieve and display information on the World Wide Web.</p> <p>Data – information which can be stored, retrieved and manipulated in digital form using digital devices.</p> <p>Digital artefacts / digital content - images, videos, text or data, or a combination of these, which are made on a digital device.</p> <p>EBook - an electronic version of a printed book which can be read on a computer or a specifically designed handheld device.</p> <p>Email - messages distributed by electronic means from one computer user to one or more recipients via a network.</p> <p>Green screen (in film and video) - a subject is filmed in front of a green background which allows a separately filmed background/image to be added to the final video in the editing phase.</p>



<p>Debug - the process of finding errors or problems with your code and trying to fix it. Sometimes code will be in the wrong order or there could be bits of code missing, the process of fixing the code is called debugging.</p> <p>Decomposition - the process by which a complex problem or system is broken down into parts that are easier to understand and program.</p> <p>Directional language - forwards, backwards, left and right.</p> <p>Hardware - physical items of computing kit such as desktop hard drives, printers and scanners.</p> <p>HTML Web pages - files that are viewed using an internet browser. The pages are written in a language called HTML. HTML is made up of elements, or tags, that are used as instructions to tell the browser what should appear on a web page and how it should be structured. HTML stands for HyperText Markup Language.</p> <p>Input - devices or code that send instructions to the computer and allows us to interact with technology. These are the means of communicating with computers e.g. keyboard and mouse.</p> <p>Logic - a systematic approach to reasoning. The rules that underlie an algorithm used for an application. Can also refer to digital components in computer hardware.</p> <p>Program / code (verb) - to create or modify a program.</p> <p>Program / code (noun) - a sequence of instructions to perform a task.</p> <p>Repetition (loop) - the recurrence of actions or events. Repetition in programming means to repeat the execution of certain instructions. This can make a long sequence of instructions much shorter, and typically easier to understand.</p> <p>Sequence - a set of actions or events that must be carried out in the same order every time.</p> <p>Server - This computer provides services to (it serves) a computer network. Services include letting people log in to the network, running programs for you, letting you save to a shared area, and letting you print and access the internet.</p> <p>Simple Program - a sequence of instructions to perform a task.</p> <p>Simulation - the technique of representing the real world by a computer program.</p> <p>Software - the programs that enable computers to undertake specific functions, such as word processing, presentations, spreadsheet creation etc.</p> <p>Switch - This is used to join different devices on the network together so they can 'talk' to each other by exchanging data. The data travels along the cables which come out of this device.</p> <p>Variables - used to store information within computer code. Each variable will have a unique name and it will hold a known or unknown quantity or value. For example the number of points scored by each player would be stored in a variable.</p>	<p>Password - a secret word or phrase that are required to access certain information or websites</p> <p>Router - This lets wireless devices (laptops or tablets for example) connect to the network</p> <p>It works by passing data through the air using something called radio waves.</p> <p>Search technologies - algorithms used by applications known as search engines to trawl the internet for digital content matching search terms given by a user. Results are normally presented in the form of links to relevant content.</p> <p>Selection - means 'to choose something'.</p> <p>Wiki - a website developed collaboratively by a community of users, allowing any user to add and edit content.</p> <p>WWW – stands for 'World Wide Web', a collection of millions of pages of information stored on the internet on web servers that can include text, pictures, animations, sounds and video, and can be about anything.</p>	<p>Internet – a global computer network which provides a variety of information and communication facilities, which connects people across the world through computers, phones, or other digital devices.</p> <p>IP Address – stands for Internet Protocol, which is a set of numbers that all computers have to identify them.</p> <p>Memory - the electronic holding place for instructions and data that a computer's microprocessor can reach quickly.</p> <p>Network - a number of computational devices connected together, allowing sharing of resources and cooperation between devices in the solution of a problem</p> <p>Podcast - shows, similar to radio or TV shows that are produced and posted to the internet for download and listening or viewing.</p> <p>QR Code - Quick Recognition code, a machine- readable code consisting of an array of black and white squares, typically used for storing URLs or other information for reading by the camera on a smartphone.</p> <p>Storyboard - a sequence of drawings, representing the shots planned for a story/film/animation/computer program etc.</p>
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Curriculum Overview by Year Group

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Year 1	Health, wellbeing and lifestyle Self image and identity	Use Pic-collage to add text, images Automaticity	Privacy and security	Coding with Tynker JR	Managing online information	Information Technology: bug hunters Finding, saving, organising, sending, and presenting data	Online bullying	Computer Science: Scratch Jnr - introduction and fundamentals	Online relationships	Information Technology: Potty Painters - Digital Art and book design	Online reputation	Information Technology: Introduction to laptops
		Copyright and ownership										Automaticity / Touch typing
Year 2	Health, wellbeing and lifestyle Self image and identity	Computer Science: Scratch Jnr - introduction and fundamentals	Privacy and security	Information Technology: Research and word processing skills	Managing online information	Computer Science: Scratch Jnr - introduction and fundamentals	Online bullying	Information Technology: Photographs: taking, using and editing photos	Online relationships	Computer Science: Lightbot Algorithms (from Y3)	Online reputation	Information Technology: Presentations iOS
				Copyright and ownership								
Year 3	Health, wellbeing and lifestyle Self image and identity	Information Technology: Research and develop a topic To use keyboard shortcuts for underline and bold (Ctrl U, B)	Privacy and security	Computer Science: Tynker animations	Managing online information	Information Technology: Word processing /powerpoint To use keyboard shortcuts for underline and bold (Ctrl U, B)	Online bullying	Computer Science: Tynker – loops, debugging and events.	Online relationships	Information Technology: Photographs: taking, using and editing photos Paint.net	Online reputation	Computer Science: Tynker – if statements
						Copyright and ownership				Use Numbers (spreadsheet) to record and present data		

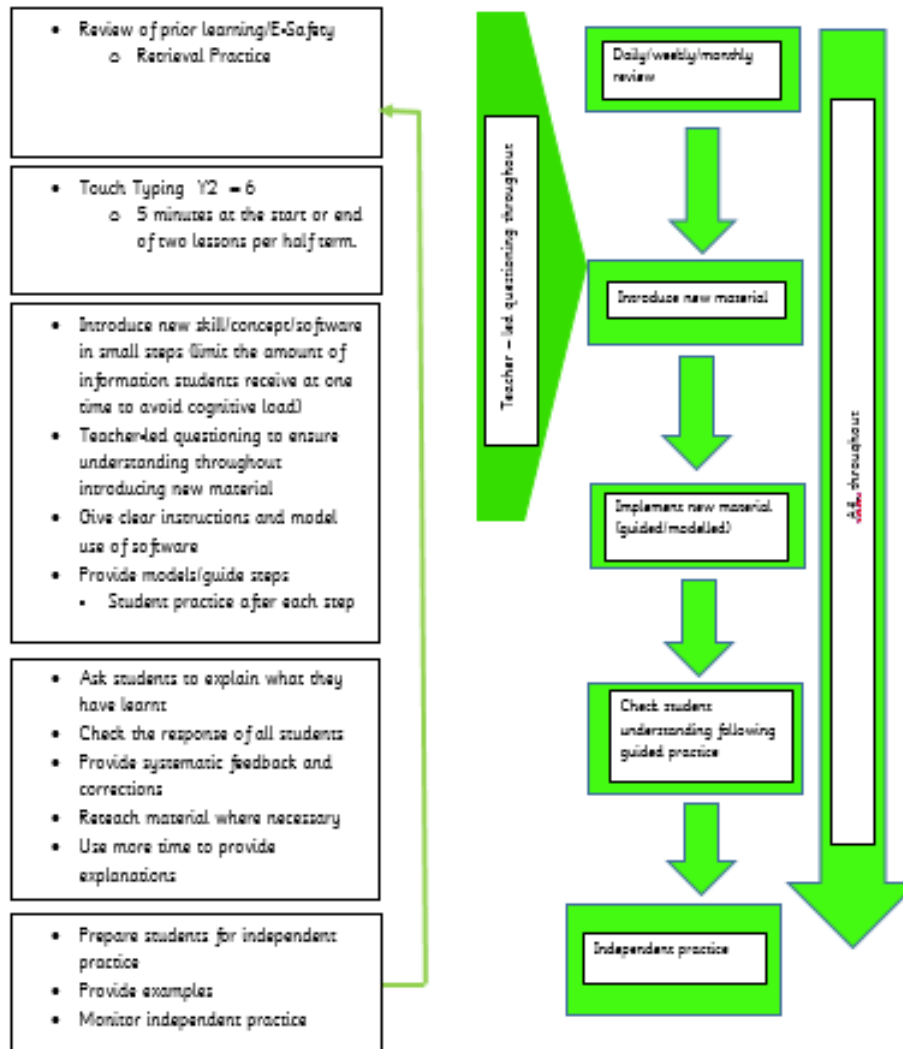


Year 4	Health, well-being and lifestyle Self image and identity	Information Technology: Word Processing / Powerpoint Email To use keyboard shortcuts for Cut, copy and paste Ctrl X C, V	Privacy and security	Computer Science: Tynker - Algorithms Conditions, Functions and App design	Managing online information	Information Technology: Stop motion animation Imovie	Online bullying	Computer Science: Microbits	Online relationships	Information Technology: photo editing functions Copyright and ownership	Online reputation	Computer Science: Scratch Creation of controllable maze game.
Year 5	Health, well-being and lifestyle Self image and identity	Computer Science Lightbot – Algorithms Procedures. Loops and Debugging Networks: Search Algorithms	Privacy and security	Information Technology Spreadsheets To use copy, paste in spreadsheet to automate formula.	Managing online information	Information Technology Animation through Keynote and Pivot Animator	Online bullying	Computer Science: Scratch – Simple Game creation	Online relationships	Computer Science: Microsoft Kodu – Advanced game creation	Online reputation	Information Technology: Website creation. Copyright and ownership
Year 6	Health, well-being and lifestyle Self image and identity	Information Technology: making videos	Privacy and security	Computer Science: Swift Playground Conditional Code, While loops and Logic.	Copyright and ownership	Information Technology: 3D modelling using Sketchup.		Computer Science: HTML Hacking and Python Coding		Information Technology:		Computer Science: MIT App Inventor– Making an app about secondary schools to take home Using IT beyond school



Computing Lesson Construct

Linden Road Academy – Computing Construct



This construct does not mean every lesson must look the same – components of lessons can be moved and altered in duration to suit the needs of the children.