



Liden Academy
Computing Curriculum

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Liden Academy Computing Curriculum

Purpose

We aim to provide a high-quality and engaging computing education that will equip our pupils to become independent, skilled, and computational thinkers. Through exploration and investigation activities, we develop our children’s creative and problem-solving skills, so they are able to adapt and develop a life-long fascination with our ever-changing technological world.

Our curriculum carefully plots the development of knowledge and understanding so that our pupils become equipped to use information technology confidently and effectively and they learn how digital systems work through learning age related computer science concepts. We aim for our pupils to become digitally literate – able to not just understand and master IT processes, but to also manipulate and use them to express themselves creatively and imaginatively.

We aim to provide a high-quality and well-rounded E-safety curriculum which is woven throughout the computing and PSHE Jigsaw curriculums to ensure pupils recognise keeping safe an integral part of using technology. Alongside being prioritised throughout the curriculum, E-safety is also celebrated every year on Safer Internet Day and pupils learn to celebrate and prioritise staying safe online.

Concepts

The key concepts / themes in Computing are used as key teaching points in computing lessons are:

Networks, creating media, data and information, design and development, computing systems, impact of technology, algorithms, programming, effective use of tools and safety and security.

Computing is segmented into five strands:

Computing systems and networks, creating media, data and information, creating media and programming.

Curriculum concepts overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Computing Strand →	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Networks	✓					
Creating media		✓			✓	
Data and information				✓		
Design & development		✓			✓	
Computing systems	✓					
Impact of technology	✓	✓	✓	✓	✓	✓
Algorithms			✓			✓
Programming			✓			✓
Effective use of tools	✓	✓	✓	✓	✓	✓
Safety and security	✓	✓	✓	✓	✓	✓

EYFS

Our curriculum is based on the Statutory Framework for the Early Years Foundation Stage document, Department for Education, 2021.

They learn that a range of technology is used in homes and schools; with support they are taught to select and use technology for different purposes. They discover the features of IT equipment starting with simple mechanical toys, looking at real objects such as cameras and mobile phones leading onto knowing that information can be retrieved from computers and interacting with age-appropriate computer software.

	Nursery to Reception
Breadth of study	Early Learning Goal Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for purposes

National Curriculum

KS1	KS2
<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Design, write and debug programs 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 discerning 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 and information.• Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Curriculum Overview 2024

	Term 4	Term 5	Term 6
Year 1	1.1 Computing systems and networks – Technology around us	1.3 Programming A Moving a robot	1.4 Data and Information – Grouping data
Main tool	Paintz.app	Bee-bot	Google slides or Microsoft PowerPoint
Year 2	2.3 Programming A – Robot algorithms	2.4 Data and Information – Pictograms	2.6 Programming B – Programming quizzes
Main tool	Bee-Bot	J2data - pictograms	ScratchJr
Year 3	3.5 Creating media – Desktop publishing	3.1 Computing systems and networks – Connecting computers	3.4 Data and information – Branching databases
Main tool	Canva	Any painting program	J2data – branch and pictograms
Year 4	4.3 Programming A – Repetition in shapes	4.4 Data and information – Data logging	4.1 Computing systems and networks – The internet
Main tool	FMSLogo	Dataloggers	Various websites
Year 5	5.1 Computing systems and networks – Systems and searching	5.6 Programming B – Selection in quizzes	5.5 – Creating media – Introduction to vector graphics
Main tool	Google slides	Scratch	Google drawings
Year 6	6.2 Creating media – Web page creation	6.3 Programming A – Variables in games	6.1 Computing systems and networks – Communication and collaboration
Main tool	Google sites	Scratch	Google slides

Curriculum Overview 24-25

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Computing Strand →	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
Year 1	Technology around us Recognising technology in school and using it responsibly.	Digital painting Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.	Moving a robot Writing short algorithms and programs for floor robots and predicting program outcomes.	Grouping data Exploring object labels, then using them to sort and group objects by properties.	Digital writing Using a computer to create and format text, before comparing to writing non-digitally.	Programming animations Designing and programming the movement of a character on screen to tell stories.
Year 2	Information technology around us Identifying IT and how its responsible use improves our world in school and beyond.	Digital photography Capturing and changing digital photographs for different purposes.	Robot algorithms Creating and debugging programs and using logical reasoning to make predictions.	Pictograms Collecting data in tally charts and using attributes to organise and present data on a computer.	Digital music Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	Programming quizzes Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.
Year 3	Connecting computers Identifying that digital devices have inputs, processes and outputs, and how devices can be connected to make networks.	Stop-frame animation Capturing and editing digital still images to produce a stop-frame animation that tells a story.	Sequencing sounds Creating sequences in a block-based programming language to make music.	Branching databases Building and using branching databases to group objects using yes/no questions.	Desktop publishing Creating documents by modifying text, images and page layouts for a specified purpose.	Events and actions in programs Writing algorithms and programs that use a range of events to trigger sequences of actions.
Year 4	The internet Recognising the internet as a network of networks including the WWW and why we should evaluate online content.	Audio production Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	Repetition in shapes Using a text-based programming language to explore count-controlled loops when drawing shapes.	Data logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	Photo editing Manipulating digital images and reflecting on the impact of changes and whether the required purpose is fulfilled.	Repetition in games Using block-based programming language to explore count-controlled and infinite loops when creating a game.
Year 5	Systems and searching Recognising IT systems in the world and how some can enable searching on the internet.	Video production Planning, capturing and editing video to produce a short film.	Selection in physical computing Exploring conditions and selection use a programmable microcontroller.	Flat-file databases Using a database to order data and create charts to answer questions.	Introduction to vector graphics Creating images in a drawing program by using layers and groups of objects.	Selection in quizzes Exploring selection in programming to design and code an interactive quiz.
Year 6	Communication and collaboration Exploring how data is transferred by working collaboratively online.	Webpage creation Designing and creating webpages, giving consideration to copyright, aesthetics and navigation.	Variables in games Exploring variables when designing and coding a game.	Introduction in spreadsheets Answering questions by using spreadsheets to organise and calculate data.	3D modelling Planning, developing and evaluating 3D computer models of physical objects.	Sensing movement Designing and coding a project that captures and inputs from a physical device.

E-Safety Overview 24-25

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Computing Strand	Computing systems and networks	Creating media	Programming A	Data and information	Creating media	Programming B
PSHE Jigsaw unit	Being Me in My World	Celebrating Difference	Dreams and Goals	Healthy Me	Relationships	Changing Me
Project Evolve Strand	Privacy and Security Self-image and identity	Online Bullying	Safer Internet Day Managing Online Information	Health, Well-being and Lifestyle	Online Relationships Copyright and Ownership	Online Reputation

Teachers use the knowledge map tool on project evolve or their own personal judgement based on their own class to choose appropriate objectives and resources to teach each term within the strand(s) specified.

Dorcan Secondary Feeder School Year 7 Curriculum

Year Group: 7	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic	Bullying (Including On-line and Internet Safety)	Bullying (Including On-line and Internet Safety)	Citizenship, Democracy & human Rights)	Citizenship, Democracy & human Rights	Employability - careers and the world of work part	Employability - careers and the world of work part
Key Content/ Knowledge	<ul style="list-style-type: none"> Difference forms of bullying Bullying through use of the internet Reporting bullying How to keep safe on the on-line How to protect yourself through digital media. 	<ul style="list-style-type: none"> Difference forms of bullying Bullying through use of the internet How to keep safe on the on-line How to protect yourself through digital media. 	<ul style="list-style-type: none"> Rules of Laws Court system Rights and responsibilities Human rights, Police & Case Study 	<ul style="list-style-type: none"> Rules of Laws Court system Human rights, Police & Case Study 	<ul style="list-style-type: none"> Types of jobs Budgeting Responsible spending Debit card safety/online banking 	<ul style="list-style-type: none"> Types of jobs Budgeting Responsible spending Debit card safety/online banking
Skills Covered	Computer functions and navigation of word processing applications.	Inserting images and appropriate formatting.	Developing skills in Power Point and the crossover functions in Microsoft applications.	Formatting features and quick functions.	Develop skills in Excel to use basic formulae.	Develop skills in Excel to use basic formulae.
Tier 2 and 3 words	Tier 2: Bullying, safety, talking, Microsoft Word, PowerPoint, slides, presentation, display, judge, jury, human rights, diversity, equality, careers, budget. Tier 3: E-safety, social media, format, font, judicial system, spreadsheet, formula, =sum, sector, APR, fraud.					