

Larchwood Primary School

Subject Overview



Computing

Reception

Computing (non-statutory)

Within the new EYFS curriculum the 'Technology' strand has been removed from 'Understanding the World' and has not been replaced with any updated guidance. However, computing and technology are still vitally important subjects to teach to Foundation children. Teaching computing within the curriculum ensures that children enter Year 1 with a strong foundation of knowledge. Computing lessons in the EYFS also ensure that children develop listening skills, problem-solving abilities and thoughtful questioning — as well as improving subject skills across the seven areas of learning. We live in a technological world and there is no escape from the reality that technology is integrated into the lives of young children. Just as we ensure the children in our care are ready for the adult world by teaching them maths and literacy, we should also make sure that they are fluent in computer literacy and all-important e-safety.

Computing will be woven into different areas of learning and the non-statutory guidance from Birth to 5 will be used.

ELG Links

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.

ELG Expressive Arts and Design (Creating with Materials)

Children at the expected level of development will:

Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Birth to Five Matters:

Children require access to a range of technologies, both digital and non-digital in their early lives. Exploring with different technologies through play provides opportunities to develop skills that children will go on to develop in their lifetimes. Investigations, scientific inquiry and exploration are essential components of learning about and with technology both digitally and in the natural world. Through technology children have additional opportunities to learn across all areas in both formal and informal ways. Technologies should be seen as tools to learn both from and with, in order to integrate technology effectively within early years practice

Autumn			Spring				Summer		
Theme Key Objectives Knowledge and Skills (Chris Quigley)				Key Objectives (Chris Quigley)	Knowledge and Skills	The m e	Key Objectives (Chris Quigley)	Knowledge and Skills	

Year 1 1 st half term	Espresso block coding Unit 1a	> To code	 Understand what an algorithm is Move skills to drag and drop Write and test simple programmes Predict behaviour of simple programmes 	We are TV chefs	 To communicate To collect To connect To code 	 Investigate recipes and TV cookery programmes Programme a sandwich making robot Film a recipe video on iPads Edit and review video Upload to iMovie 	We are rhythmic	 To communicate To collect To code 	 Record audio on an i-Pad Programme ScratchJr to create repeating patterns Explore different effects that can be applied to audio. Experiment with a range of virtual instruments
2 nd half term	We are treasure hunters	> To code > To collect	 Record a simple algorithm Begin to programme beebots Create a debug simple programs. Debug algorithms 	We are digital artists	 ➢ To connect ➢ To communicate ➢ To collect 	 Design own illustrations on paper Create and store illustrations using 2simple Retrieve and manipulate illustration Add texts to illustrations to design an e-book 	We are detectives	To collectTocommunicate	 Organise data into groups and subgroups Organise data into a table Present data in different formats.
Year 2 1 st half term	Espresso block coding- start, 2a	> To code	 Understand what an algorithm is Build blocks to create a simple algorithm Write and test simple programs Predict behaviour using simple programmes Begin to debug simple algorithms 	We are game testers	➢ To code➢ To connect	 Understand what an algorithm is Begin to programme an algorithm using scratch Predict simple programme behaviour Use technology safely 	We are animators	> To communicate	 Understand how animation works Storyboard to plan animation Create characters, props and backgrounds Record audio to accompany animation
2 nd half term	We are astronauts	> To code	 Understand what algorithms are Use beebots to familiarise with algorithms and inputs Use Scratch to create sprites and backgrounds 	We are photographers	To connectTo communicate	 Consider technical and artistic merits of photographs Review, reject and pick images Edit and enhance photographs 	We are zoologists	To communicateTo collect	 Record information as a tally Write data in excel Produce bar chart/graphs Discover google maps

			 Creating multiple images 						
			 Simple algorithms to control movement 						
Year 3 1 st half term	Espresso coding	> To code	 Design and write for specific goals Use sequence, selection, and repetition in programs Work with variables and various forms of input and output Generate appropriate inputs and predicted outputs to test programs Use logical reasoning to explain simple algorithms, detect and correct errors 	We are bug fixers	> To code	 Develop a number of strategies for finding errors in programs Build up resilience and strategies for problem solving Increase their knowledge and understanding of Scratch Recognise a number of common types of bug in software. 	We are co-authors	 ➢ To collect ➢ To communicate ➢ To connect 	 Practise research skills Write for a target audience Develop collaborating and proofreading skills Be aware of their responsibilities when editing other people's work
2 nd half term	We are programmers	> To code	 Plan and create an algorithm for an animated scene. Write a program in Scratch to create characters, dialogue, costumes, backdrops and sound. Review and correct mistakes 	We are presenters	➤ To connect ➤ To collect ➤ To communicate	 Review sport and camera shots Record videos using iPads Edit videos using iMovie Improve videos Evaluate videos 	We are opinion pollsters	 ➤ To communicate ➤ To collect ➤ To connect 	Understand some elements of survey Design, carry out and assess survey Use online data collection Produce charts to analyse data Interpret results.

Year 4 1 st half term	Espresso coding- HTML Unit 1: Introduction to HTML	 ➤ To code ➤ To communicate ➤ To collect ➤ To connect 	 Understand different elements of a URL Understand terms HTML Add headings and subheadings to a web page. Add Images to a webpage. Add text to a webpage. Debug a system. 	We are makers	> To code > To communicate	 Design, write and debug programs that accomplish specific goals. Use sequence, selection and repetition in programs. Test and debug programs using micro:bit. 	We are artists	> To code > To communicate	 Use cloning tools and repeating tools to create tessellating designs Use scratch to code a short algorithm that will create repeating patterns Refine and develop work using Inkscape Evaluate it and receive feedback from their peers Develop awareness of computergenerated art
2 nd half term	We are software developers	 ➢ To code ➢ To communicate ➢ To connect 	 Use Excel to use reporter operations to solve calculations Develop a game using selection and repetition Use methods to debug Use a range of input and output of computer games 	We are musicians	 To connect To communicate To collect 	Use sequence software to arrange sound clips Record samples Use Isle of Tune and Garage Band to edit music Create and develop a musical composition Refine ideas through reflection and discussion	We are meteorologists	 ➢ To collect ➢ To communicate ➢ To connect ➢ To code 	Use data collected from weather station to understand and interpret data Input data into excel Create graphs Create report and discuss Use a green screen to report on the weather.

Year 5 1 st half term	Espresso Coding- HTML Unit 3: HTML Links	> To code > To communicate > To connect > To collect	 Create links using HTML Create links from pictures to websites Create links from separate website page using divs Create multiple divs with multiple links inside Edit text, colour, background of website page Debug a system 	We are cryptographers	> To communicate > To connect > To code	 Transmit information in semaphore Use simple circuits to send and receive Morse code Make connections between the internet and semaphore and Morse code Research and use a mono-alphabetic cipher and a Caesar cipher Identify importance of unique passwords and develop own 	We are adventure gamers	> To communicate > To connect > To code	 Plan non-linear presentations Add and edit images in a presentation Use hyperlinks for navigation Record and add audio narration to a presentation Use commenting tools to give feedback on a presentation
2 nd half term	We are game developers	 ➢ To code ➢ To connect ➢ To communicate ➢ To collect 	 Create a storyboard for an original game Create backgrounds and sprites on Scratch Begin to use code to bring the game to life Detect errors and debug the code 	We are architects	> To code > To communicate	 Understand the work of architects, designers and engineers. Develop familiarity with a simple CAD (computer-aided design) tool. Develop spatial awareness by exploring and experimenting with 3-D virtual environment 	We are VR designers	> To communicate > To connect > To code > To collect	 Explore real-world and imagined locations in VR. Create 360 degrees photosphere images Link physical objects to digital content using QR codes Create their own VR scene Program objects and interactions in VR.

Year 6 1 st half term	Espresso Python Unit 2- Python Graphics	> To code	 Introduce movements with Python graphics Use codes for shapes and colour Use codes for backgrounds, lines, shapes and graphics Debug systems Use https://repl.it/ and/ or Thonny to input codes used and develop skills 	We are computational thinkers	➤ To connect ➤ To communicate	 Reason logically about algorithms Understand that some algorithms are more efficient than others. Use algorithms for searching and sorting a list. 	We are Al developers	> To communicate > To collect	 Use decision trees to classify data Consider ethical principles when designing Al systems Learn how speech recognition works
2 nd half term	We are toy makers	➤ To code ➤ To connect	 How computers use stored programs to connect input to output. Work with the physical components of a system Design and write a program for an embedded system Plan a complex project by decomposing it into smaller parts. 	We are advertisers	> To communicate > To collect	Identify and research features of successful adverts Plan storyboard for collaborative advert Shoot video footage using iPads Assemble footage and edit using iMovie Export a completed TV advert	We are publishers	 ➢ To connect ➢ To communicate ➢ To collect 	 Research and source content Develop word processing skills Combine text and images from a range of sources together Contribute to a class leavers' book