Computing and Esafety

at Liscard Primary School

Computing: Progression Map EYFS –Year 6

Intent

Cross curricular learning, developing the digital literacy of our students and learning how to be a responsible "digizen" online is paramount to our computing curriculum, where teachers plan highly focused and engaging activities to hone the children's skills and knowledge. Across the key stages, there is a great emphasis on learning skills for computing; this includes programming, debugging and exchanging information. It is our intent to teach our children how to access information, evaluate its suitability, store it, share it with others and tailor it to meet their own needs. Learning how to use ICT safely is at the heart of lessons where regular e-safety sessions on topics such as cyber bullying, online privacy or keeping information safe are targeted through our computing topics and via regular class council sessions.

Implementation

Our Computing curriculum amalgamates the best components of several schemes of learning, including i*Learn2, Google, Education for a Connected World* and our own developed computing sessions.

- Computing skills are taught both discretely and through the cross-, supporting other areas of learning across the school.
- Our progressive medium and short term planning ensures that children develop subject knowledge and their computing skills as they work through sequences of lessons, revisiting and building on prior learning.
- With 1:1 devices in Year 6 and 1:2 ratios in all other year groups, children have access to technology throughout every session. Y4-Y6 also have banks of laptops. More recently, Liscard have invested in Virtual Reality Headsets, Lego We Do, Parrot Drones and Micro:bits to further support the coding and control areas of the computing curriculum.

E safety is of paramount importance at Liscard, where we utilise *Google's Be Internet Legends* and *Education for the Connected World's* objectives to ensure that children are being taught how to build a positive digital profile.

Impact

- It is our intention to support children on their personal journeys in becoming responsible, respected and mature digital citizens. With the plethora of outstanding computing sessions which are taught at Liscard, our children are given experiences which will not only prepare them for their transitions to secondary school and further education, but provide the building blocks for future workplaces.
- We aim that our exciting and engaging computing curriculum will have direct impact on the lives of our children, inspiring them to pursue the digital careers of the future - particularly highlighting the opportunities for female coders!
- Finding the right balance of integrating technology into our lives is also important and through our Health and Well Being objectives, our children will be able to monitor and assess their own screen time and online behaviours.
- Impact of teaching and learning is measured by end of topic assessments and audio-visual evidence collated through Google Classroom, Class Dojo and our whole school Computing Portfolio, with children being able to successfully demonstrate their skills and knowledge.
- We hope to have great impact on our children's lives and we are continually adapting and honing our curriculum to meet their needs in the ever changing world of the internet.

Development Matters		
Birth to Three	Three and Four-Year-Olds	Children in Reception
Personal, Social and Emotional Development Expresses preferences and decisions. Tries new things and is starting to establish autonomy. **Physical Development** Developing manipulation and control. Explores different materials and tools. **Understanding the World** Explores materials with different properties. Repeats actions that have an effect.	**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.	**Personal, Social, and Emotional Development** Show resilience and perseverance in the face of a challenge. Know and talk about different factors that support their overall health and well-being. 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.
Early Learning Goals		
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.		

National Curriculum: Subject Content – Computing
Key Stage 1
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.
Key Stage 2
Pupils should be taught to: • 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.

Computing: Progression Map EYFS –Year 6

Programming (1)

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
BEEBOTS (Physical Output) 1. Can you explore and play with programmable toys for example Beebots?	BEEBOTS (Physical Output) 1. Do you understand that we can give instructions (algorithms) to toys to make them move? 2. Can you give directions using arrows to move an on screen character? 3. Can you predict the outcome of simple algorithms? 4. Can you sequence commands in the correct order? 5. Can you write, predict, and execute instructions for Code-a-pillar and Beebot? 6. Can you debug a program?	CODESPARK 1. Can you give instructions (algorithms) to a human robot? 2. Can you create simple algorithms and sequences ? 3. Can you decompose the steps needed to solve a problem into a precise sequence of instructions? 4. Can you explain what debugging is? 5. Can you be persistent to debug and solve a problem? 6. Can you use trial and error to solve a program error?	KODU 1. Can you create a 3D place using various design tools? 2. Can you write a program to control using keyboard inputs? 3. Can you write a program with conditions? 4. Can you write a program with variables?	LEGO WE DO 2.0 (Physical Output) 1. Can you follow the instructions to build the recycle truck? 2. Can you program the model using blocks to move forward to a set distance? 3. Can you program your model to tilt and drop recyclable material? 4. Can you generate different modifications to your design for sorting the rubbish? 5. Can you develop your design to make improvements?	LEGO WE DO 2.0 (Physical Output) 1. Can you use technology to control an external device? 2. Can you build and program a space rover to move? 3. Can you program a motion sensor to detect the presence of an object? 4. Can you program a device to make sound? 5. Can you program a tilt sensor to send a specific message? 6. Can you collaborate with another external device?	MICRO:BITS (Physical Output) 1. Can you use code blocks to create an interactive badge and export to a Micro:bit? 2. Can you write your own coding for your own badge design using images and scrolling text? 3. Can you use programming to create a basic program with variables? 4. Can you use "if" and "random" blocks and edit the code to give an answer when the Micro:bit is shaken? 5. Can you create a step counter using an accelerometer? 6. Can you use the broadcast function to send radio messages?

Programming (2)

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
REMOTE CONTROLS 1. Can you explore and use remote controlled toys successfully?	SCRATCH JNR 1. Can you pick a background and a character, and use a motion block to make a car drive across the city? 2. Can you use the speed block to speed up or slow down a character? 3. Can you make a character disappear? 4. Can you add a new page to change scene? 5. Can you make multiple characters with their own scripts? 6. Can you use the repeat block to dribble a basketball?	SCRATCH JNR 1. Can you program movements? 2. Can you program outputs for audio or text? 3. Can you find errors in a program (debug)? 4. Can you program inputs (touch or clicking)? 5. Can you program conditions (if statements)?	SCRATCH 1. (RockBand) Can you use code to change a sprite's costume in Scratch? 2. (RockBand) Can you use code to make sprites react to input in Scratch? 3. (LostInSpace) Can you use a repeat loop to animate a sprite in Scratch? 4. (LostInSpace) Can you use a forever loop to repeat an animation indefinitely? 5. (Ghostbusters) Can you use code to generate random numbers in Scratch? 6. (Ghostbusters) Can you add a variable to store a game score in Scratch?	SCRATCH 1. (Chatbot) Do you know that variables can be used to store user input? 2. Can you use conditional selection to respond to user input? 3. (Paintbox) Can you use broadcasts to control a sprite? 4. Can you recall how to respond to mouse events? 5. (Boat Race) Can you add code to detect when a sprite is touching a colour? 6. Can you use a variable to record the time?	DRONES 1. Can you add code to manoeuvre: take off and land safely? 2. Can you add code to move in multi directions? 3. Can you add code for your drone to perform and aerobatic manoeuvre? 4. Can you debug coding to solve puzzles and challenges?	HTML 1. Can you use and recognise HTML tags and CSS to format the style of your webpage? 2. Can you make and design my own interactive birthday card? 3. Can you edit the content of a HTML coded webpage? 4. Can you insert a picture and edit text to create my own cartoon strip using HTML? 5. Can you align text, add borders and edit background colour of a webpage using padding, RGB codes and adding a variety of headings? 6. Can you create your own event advertisement using HTML?

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Creating Media (1)

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
1.Do you know how to use a simple program on a computer or ipad independently e.g. can access and play a chosen game or app?	TEXT AND IMAGES 1. Can you add, move and resize images the add text and adjust size and placement? 2. Can you add, resize and place images on a page then add and position text to label and describe images? 3. Can you use word banks to write sentences about images? 4. Can you change the font choice, size and colour? 5. Can you continue to practice touch typing on the keyboard?	WORD PROCESSING 1. Can you revise your touch type keyboard skills? 2. Can you use CTRL A shortcut to highlight text to change: font style, size and colour? 3. Can you save your document to the shared drive and then use CTRL S regularly to save? 4. Do you understand how a computer saves?	DOCS CREATION 1. Can you access Google Classroom to view the resources? 2. Can you use copy and paste text and images? 3. Can you find and replace words? 4. Can you format text for a purpose? 5. Can you use Google Docs? 6. Can you find and save your work in G Drive?	E BOOK DESIGN 1. Can you add page colour and style then position and format text? 2. Can you add and position images from camera/internet? 3. Can you add audio, including hiding it behind an object? 4. Can you add hyperlinks to text and images? 5. Can you add and format shapes? 6. Can you use hyperlinks for navigation?	NON LINEAR SLIDES 1. Can you use Prezi to create a presentation? 2. Can you use multi direction formatting to edit frames? 3. Can you search for and insert images? 4. Can you insert hyperlinks? 5. Can you insert animation? 6. Can you use tools to organise and order a presentation?	IF THEN SLIDES 1. Can you complete the Google Apps Pre-Teach survey? 2. Can you brainstorm a variety of different ideas for your story and add to a Google Doc? 3. Can you set up your If Then story in Google Slides? 4. Can you work collaboratively to produce an expansive story with linked slides? 5. Can you write a wrap up slide? 6. Can you test yours and other group's If Then stories and give constructive feedback?

Creating Media (2)

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
	COMIC CREATION 1. Can you add a suitable background to a panel(s)? 2. Can you use different controls to move around a comic and make space. E.g zoom, minimise menus? 3. Can you add, resize, move and rotate objects, including characters? 4. Can you add and resize text boxes and speech bubbles? 5. Can you continue to practice touch typing on the keyboard?	PRESENTATIONS 1. Can you take photographs and add filters? 2. Can you add your photos to a slideshow and reorder? 3. Can you add background music? 4. Can you add text? 5. Can you add a short voice over? 6. Can you save and export your film to Camera Roll?	GIF GRAPHIC 1. Can you use various lines and fill tools plus copy/paste and rotation to create pattern effects? 2. Can you use shapes, fill, copy/paste, zoom and flip to create reflective symmetry effects? 3. Can you use stamps, copy/paste, layers and multiple frames to create animated GIF computer graphic?	GIF ANIMATION 1. Can you access Google Classroom to view resources in Google Slides? 2. Can you create a stop-motion video by duplicating slides (frames)? 3. Can you create animation using transition effects (motion paths, pulse etc)? 4. Can you animate individual elements of objects? 5. Can you create animated GIF files by animating pixels?	APP CREATION 1. Can you adjust slide size to mimic a phone/tablet size? 2. Can you add text and images to a slide? 3. Can you add icons and text to use as navigation? 4. Can you duplicate slides to create multiple pages of the app 5. Can you create hyperlinks to create navigation	WEBSITE CREATION 1. Can you create a webpage using WYSIWYG? 2. Can you add and organise pages within your website? 3. Can you create and upload your own content to your website? 4. Can you add buttons with internal and external hyperlinks? 5. Can you edit the settings for your website? 6. Can you publish and share your website?

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Computer Systems and Networks

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
1. Do you understand that you can use technology to find out information, watch videos and communicate to others?	1. Can you recognise where we use computers in our everyday lives? 2. Do you know how to turn on a computer? 3. Can you move the cursor to the correct place and left click an object? 4. Can you use drag and drop? 5. Can you use a physical keyboard to find a specific letter and begin to position hands correctly for touch typing?		1. Do you know and understand how word order affects the results returned? 2. Can you bookmark or favourite a page and name different types of online communication? 3. Can you reference the correct source of information? 3. Can you be discerning in evaluating digital content? 4. Can you check the internet for fake news by cross-referencing facts?		1. Do you understand what each part of a computer network does, the internet and cloud computing plus the advantages/disadvantages of each? 2. What is email and how can we use it safely? 3. How and why can we collaborate online? 4. Can you collaborate via Google Docs on Google Classroom?	

Data Handling

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
	CHANGE Y1 and Y2 OBJECTIVES TO TEACH COMPUTING	1. Do you understand what data is and collect it as a tally? 2. Can you label a pictogram and add data to each column? 3. Can you edit a table with correct titles and numbers? 4. Can you create a bar chart/pie chart/line chart suitable for the data? 5. Can you explain what a pictogram/ bar chart/line chart shows?		1. Can you find and present data as a table and suitable chart? 2. Can you give chart a suitable title and label axis correctly? 3. Can you select and use non-adjacent cells and resize multiple cell widths?		1. Can you use the basic functions for writing formula in spreadsheets? 2. Can you present data in a spreadsheet as a table and a chart? 3. Can you add, edit and use shortcut functions within a spreadsheet? 4. Can you create a party plan and keep within a budget? 5. Can you design your own spreadsheet?

Computing: Progression Map EYFS –Year 6

Multimedia - Photography, Sound Recording, Art, Video

EYFS	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
PHOTOGRAPHY 1. Can you use ipads and cameras to capture specific images e.g. taking ipads on a mini-beast hunt?	DIGITAL ART 1. Can you add a suitable background to a panel(s)? 2. Can you use different controls to move around a comic and make space. E.g zoom, minimise menus? 3. Can you add, resize, move and rotate objects, including characters? 4. Can you add and resize text boxes and speech bubbles? 5. Can you continue to practice touch typing on the keyboard?	DIGITAL ART 1. Can you use lines and fill tools to make interesting patterns? 2. Can you add a variety of shapes (outlines and fill) and label them with text?	MUSIC CREATION 1. Can you create ascending and descending scales? 2. Can you add chords evenly across the scales? 3. Can you add arpeggios and melodies? 4. Can you add a steady and even beat? 5. Can you use sampled sounds to create an effective mix? 6. Can you build beats, melody (tones) and effects?	PODCAST 1. Can you record voice clips with clarity? 2. Can you add clips, order and resize them? 3. Can you add interludes between clips? 4. Can you add a backing track and adjust volumes appropriately? 5. Can you export a project?	3D MODELLING 1. Do you have an understanding of 3D spacial awareness? 2. Can you add 3D shapes, resize, adjust height, duplicate and use the different perspective? 3. Can you re-create different types of buildings using 3D shapes? 4. Can you create roads/paths by adjusting the height of 3D shapes? 5. Can you add windows and door shapes? **Use iLearn2 Year Four 3D Design**	VIDEO PRODUCTION 1. Can you produce a flow chart plan for your film? 2. Can you record raw footage from a variety of angles? 3. Can you edit, manipulate and merge footage? 4. Can you app smash your film to add further special effects? 5. Can you upload and share your film with your peers? 6. Can you evaluate your final film?

Use the KEY below to view progression across the Computing topics.

Word Processing

Data Handling

Multimedia Presentations

Coding - external devices

Coding - screen based responses

Creating Digital Content

Computer Systems

Recognising Technology

Computing: Progression Map EYFS –Year 6

E Safety Objectives: Progression from EYFS, KS1 to KS2

Autumn A	Autumn B	Spring A	Spring B	Summer A	Summer B
Pre - School					
 **Look After the Equipment** Learning to handle technology carefully.		 **Child Friendly Apps** Understanding not to click on apps or buttons without an adult.		 **Always Ask for Help** Learning to ask adults for help with technology, when needed.	
Foundation Stage One					
 **Look After the Equipment** Learning to handle technology carefully.	 **Child Friendly Apps** Understanding you should only use games and apps that an adult has given permission to use.	 **Always Tell an Adult** Recognising the importance of telling an adult if they see something that upsets them.	 **Always Check with an Adult** Learning to check with an adult before clicking onto something new.	 **Wellbeing and Lifestyle** Discussing the importance of sharing technology with others and limiting time spent online.	 **Always Ask for Help** Learning to ask adults for help and with technology.
Foundation Stage Two					
 **Self Image and Identity** Learning to check with any adults before entering personal information online.	 **Child Friendly Apps** Understanding they only use specific apps that have been approved by adults.	 **Always Tell an Adult** Recognising the importance of telling an adult if they see something that upsets them.	 **Adult Permissions** Discussing the importance of asking an adult's permission before using certain types of technology.	 **Wellbeing and Lifestyle** Discussing the importance of sharing technology with others and limiting time spent online.	 **Online with an Adult** Understanding of accessing certain types of technology in the presence of an adult.
Year One					
 **Self Image and Identity** Learning that there may be people online who can make me feel sad, embarrassed or upset.	 **Cyber Bullying Protect and Prevent** Describing how to behave online in ways that do not upset others.	 **Safer Internet Day** Learning the rules we follow to keep ourselves safe online.	 **Building Positive Online Relationships** Learning how to communicate with people you don't know well online with adult support.	 **Wellbeing and Lifestyle** Discussing the rules to keep us safe online at home and in school.	 **Privacy and Security Online** Recognising which information is personal to you e.g. address, names, school
Year Two					
 **Self Image and Identity** Recognising how other people's identity online can be different to their identity in real life.	 **Cyber Bullying Protect and Prevent** Studying bullying behaviour online and learning how to report it.	 **Safer Internet Day** Learning about how to use the internet safely with Lee and Kim.	 **Building Positive Online Relationships** Learning how to communicate with people you don't know well online.	 **Wellbeing and Lifestyle** Learning about using technology in different environments and settings.	 **Copyright and Ownership Online** Recognising that content on the internet may belong to other people.

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Year Three

					
Self Image and Identity Studying why you might change your identity depending on what you are doing online.	**Cyber Bullying Protect and Prevent** Generating rules about how to behave online and how you follow them.	**Google's Be Internet Legends - UPSTANDERS** Learning about bystanders and upstanders.	**Building Positive Online Relationships** Exploring what it means to 'know someone' online vs. knowing someone in real life.	**Wellbeing and Lifestyle** Recognising that spending too much time online can have a negative impact on you.	**Building Positive Online Reputations** Recognising the importance of thinking before sharing.

Year Four

					
Self Image and Identity Studying how your online identity can be different to the identity presence in "real life."	**Cyber Bullying Protect and Prevent** Learning about the different ways people can be bullied through a range of media.	**Google's Be Internet Legends - SCAMMING** Learning about phishing and online scamming.	**Building Positive Online Relationships** Learning how to recognise acceptable behaviour when using technology.	**Wellbeing and Lifestyle** Recognising that technology can distract you from other things you might do or should be doing.	**Privacy and Security Online** Learning strategies for keeping your personal information private.

Year Five

					
Self Image and Identity Learning about how identity online can be copied, modified or altered.	**Cyber Bullying Protect and Prevent** Identifying and reporting online bullying.	**Google's Be Internet Legends - SECURITY** Learning about how to block, create secure passwords and turn on two-factor authentication.	**Building Positive Online Relationships** Making positive contributions to online social groups and reporting those who may want to cause harm.	**Wellbeing and Lifestyle** Recognise ways technology can affect healthy sleep and describe some of the issues.	**Copyright and Ownership Online** Learning to assess and justify when it is acceptable to use the work of yours and others.

Year Six

					
Self Image and Identity Rejecting and reporting inappropriate online behaviour towards gender in the media.	**Cyber Bullying Protect and Prevent** Identifying and reporting online bullying.	**Google's Be Internet Legends - PRIVACY** Recognising the importance of thinking before sharing.	**Building Positive Online Relationships** Understanding the responsibilities of looking after others in online social groups.	**Wellbeing and Lifestyle** Learning different strategies to limit the impact of technology on your own health.	**Building Positive Online Reputations** Discussing how to develop an online reputation which will allow other people to form an opinion of you.

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Use the KEY below to view progression across the E Safety topic

 **Child Friendly Apps**  **Asking for Help and Permission**  **Always Tell and Adult**  **Wellbeing and Lifestyle**	 **Self-Image and Identity**  **Cyber Bullying Protect and Prevent**  **Privacy and Security Online**  **Copyright and Ownership Online**	 **Building Positive Reputations Online**  **Building Positive Relationships Online**  **Online Safety**  **Looking After the Equipment**