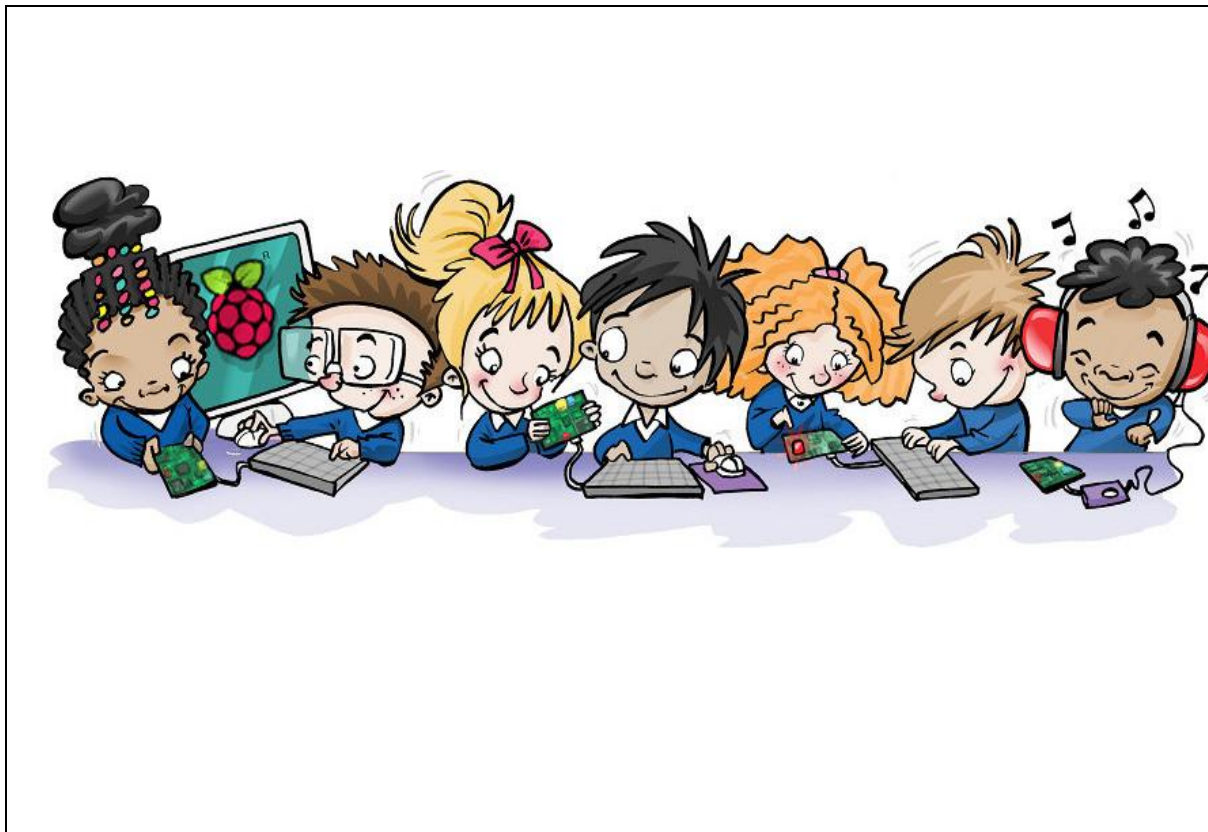
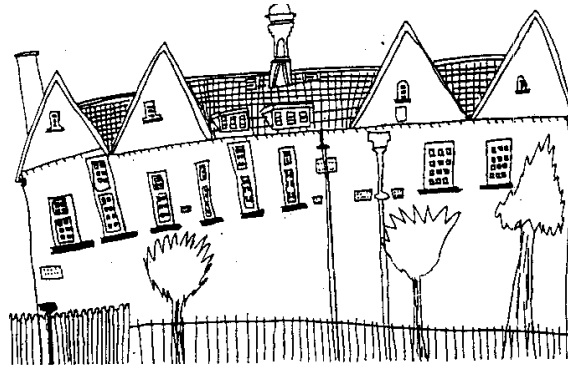


Computing at Letchmore Infants' and Nursery School



Subject Intent Statement

At Letchmore we aim to prepare our children to be 'lifelong learners' with the confidence and ability to develop their skills and understanding when meeting new challenges. Their learning environment should contribute to the development of these skills and they should have access to suitable, up-to-date equipment and emerging technologies. As technology is an increasing part of life today, it is essential that all pupils gain the confidence and ability that they need in this subject, to prepare them for the challenge of a rapidly developing and changing technological world. The use of ICT will enhance and extend children's learning across the whole curriculum whilst developing motivation and social skills.

Our vision is that the use of these technologies will enrich the experience of all pupils and that these resources will help to provide an environment without boundaries, where opportunities can be explored in safety and confidence.

Subject Implementation

Our school uses Purple Mash to support the learning of each strand of the Computing curriculum. Each child has a log in and password to use at school and at home, meaning children can access their school work at home as a way of extending their Computing learning. Purple Mash also offers opportunities for children to complete cross curricular work, helping to embed Computing skills at every opportunity.

All classrooms have interactive whiteboards to enhance children's learning. Children have access to google chrome-books, laptops, digital cameras and programable toys. To further support the development of the Computing curriculum and to support Digital Literacy across our school, the children have access to iPads. Each iPad has a variety of apps for the children to use to support their learning across the curriculum. We use a range of software packages to enhance learning including; Monster phonics, Espresso, Power Maths and Active Learn. Children are taught about online safety as part of the Computing curriculum and as part of PSED. At our school we actively promote the use of devices and online resources and teach children about online safety by actively modelling using resources appropriately. We also support parents and carers with online safety, delivering annual e safety workshops and running competitions and focus weeks.

Distance and Home Learning

The coronavirus pandemic had a profound effect on our ability to connect with, and teach our students. As a result Letchmore signed up for Google education. This platform allows us to set up virtual classrooms and connect in person via the google meet app, set learning activities for the children to complete at home, and offer feedback on a daily basis. We are very proud of the way the staff, children and parents adapted to this new way of teaching and learning.

Provision for vulnerable groups and children with SEND:

Class teachers make adaptations to the curriculum appropriate to the needs of individual children. Learning activities and outcomes are differentiated to ensure **all** pupils are able to participate fully and make progress. Resources and hardware are adapted as appropriate to ensure **all** pupils can access **all** aspects of learning. Adaptations may include: use of visual and concrete resources, use of a adapted keyboards for recording, pre-teaching key vocabulary and concepts, assessment of understanding and progress through discussion rather than a finished product. It is widely recognised in our school that technology is a highly valuable resource, enabling all children to access the wider curriculum.

Computing Curriculum

EYFS

The new Development Matters Curriculum guidance (2021) does not make specific reference to computing as a strand of learning. However, as a school we recognise the intrinsic part that technology plays in many young children's lives, and the importance early access to technology can have on children experiences and engagement with the subject as they progress through school. We therefore strive to provide our early years children with many varied and opportunities to engage with tech whilst in the foundation stage.



Pupils are encouraged to:

- Use recording devices to talk about the processes they are using when exploring their own creativity e.g. capture on a voice recorder the stages of creating a painting.
- To be creative by using painting programs.
- Explore ways in which technology can be used to create digital content, including sound, writing and drawing
- Begin to create digital content; text, drawing, pictures and sound using simple digital applications e.g. recording their voice describing a photo in a photo album, creating a digital image on an interactive whiteboard.
- Capture digital and still images including using magnification and investigating the effect of light. E.g. use of camera and dark dens.
- Edit the content and appearance of digital images using simple software or apps.
- Investigate, listen and respond to a range of digital sound and music on varied devices, comparing this to live sound (rhyme, sound, stories, and songs). E.g., compare a digital book with a story read by the teacher.
- Capture their own sound and share with others.
- Create simple tunes using digital resources
- Use simple software with speech support to help with reading, e.g. phonics software, Clicker Phonics, digital books/apps etc.
- Discuss similarities and differences in using digital and non-digital media and share what they have discovered.

Online Safety

- Know who to tell if something they see makes them worried or uncomfortable.
- Use safe sites to create art.
- Ask permission before using the internet.
- To use age appropriate games and music.
- Ask permission when capturing an image or recording a sound of others.
- Keep their personal information (name, photo, school and address) private.
- Write, record and share polite messages.

Keystage 1

Pupils are 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 or content



- Recognise common uses of information technology beyond school
- Use technology safely and respectfully

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Whole School Long Term Plan

Theme Key:																																					
	Coding and Computational thinking	Spreadsheets	Internet and Email	Art and Design	Music	Databases and graphing	Writing and Presenting	Communication and networks																													
YEAR 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
	Unit 1.1 Online Safety & Exploring Purple Mash				Unit 1.2 Grouping & Sorting		Unit 1.3 Pictograms		Unit 1.4 Lego Builders			Unit 1.5 Maze Explorers			Unit 1.6 Animated Story Books			Unit 1.7 Coding			Unit 1.8 Spreadsheets		Unit 1.9 Technology outside school														
	Weeks – 4				Weeks – 2		Weeks – 3		Weeks – 3			Weeks – 3			Weeks – 5			Weeks – 6			Weeks – 3		Weeks – 2														
	Programs – Various				Programs – 2DIY		Programs – 2Count		Programs – 2DIY			Programs – 2Go			Programs – 2Create A Story			Programs – 2Code			Programs – 2Calculate		Programs – Various														
	YEAR 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32				
		Unit 2.1 Coding					Unit 2.2 Online Safety			Unit 2.3 Spreadsheets				Unit 2.4 Questioning				Unit 2.5 Effective Searching			Unit 2.6 Creating Pictures			Unit 2.7 Making Music		Unit 2.8 Presenting Ideas											
		Weeks – 5					Weeks – 3			Weeks – 4				Weeks – 5				Weeks – 3			Weeks – 5			Weeks – 3		Weeks – 4											
		Programs – 2Code					Programs – Various			Programs – 2Calculate				Programs – 2Investigate				Programs – Browser			Programs – 2PaintAPicture			Programs – 2Sequence		Programs – Various											

Skills Progression

EYFS		
Strand	Links to Relevant ELGS	Outcomes
Computer Science	CL: Listening and attention CL: Speaking PD: Gross motor	Children in the Early Years are already immersed in a programmed world. They experience it every day of their lives when: <ul style="list-style-type: none"> • the doors at the supermarket open automatically when they approach, • the hand drier starts when they place their hands underneath • the price of an item shows as you scan • the streetlights come on automatically when it gets dark. In the EYFS, continuous provision draws on these common uses of control technology for children to experience first-hand and

		<p>to explore their uses through play. Children in the Early Years will</p> <ul style="list-style-type: none"> • ‘program’ friends by telling them how to move around like a robot or • Follow a ‘recipe’ to make jam sandwiches • Give instructions to control toys like remote control cars, BeeBots or apps on iPads.
Information Technology	PD: Fine Motor EAD: Creating	<p>Practitioners will support the children as they explore digital apparatus with discussion about what it does, how it works and how to use it safely. Children in Early Years will:</p> <ul style="list-style-type: none"> • Log in to Purple Mash • Independently select an app and engage using an iPad • Use a mouse to rearrange objects and pictures on a screen • Recognise text, images and sound when using ICT • Use a camera or sound recorder to collect photos or sound • Use paint programs to create pictures • Begin to use a keyboard • Develop an interest in ICT by using age-appropriate websites or programs
Digital Literacy	UW: People, culture & communities PSED: Managing self	<p>Children’s natural curiosity has always driven them to develop an understanding of the world around them and this is no different when it comes to understanding technology; both how it works and what it can do for us. Children’s experiences in this area should include exploring: Children in the Early years will:</p> <ul style="list-style-type: none"> • Recognise purposes for using technology in school and at home (e.g. role play toys, photocopiers, iPads etc.) • Understand that things they create belong to them and can be shared with others using technology • Recognise that they can use the Internet to play and learn
Online Safety	PSED: Managing self PSED: Building relationships CL: Listening and attention	<p>With the very youngest children, many of the key online safety messages will be conveyed through guided use, continuous provision and adult modelling in the school or setting. Additionally, and importantly, this will be alongside and with the involvement of parents and carers at home.</p>

KS1			
Strand	Statement KS1	Outcome YR1	Outcome YR2
Computer Science	Understand what algorithms are; how they are implemented as programs	Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that an algorithm written for a computer is called a program.	Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they

	<p>on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs.</p> <p>Use logical reasoning to predict the behaviour of simple programs</p>	<p>Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity.</p> <p>Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code.</p> <p>When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.</p>	<p>can be successfully converted into code.</p> <p>Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp.</p> <p>Children’s program designs display a growing awareness of the need for logical, programmable steps.</p> <p>Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause-and-effect sentence of what will happen in a program.</p>
Information Technology	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.	Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.
Digital Literacy	<p>Recognise common uses of information technology beyond school.</p> <p>Use technology safely and</p>	<p>Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.</p> <p>Children understand the importance of keeping</p>	Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in

	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.	information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.	school e.g. animations, interactive code and programs. Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.
Online Safety	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.	Children demonstrate an understanding of the importance of online safety, using their own private usernames and passwords for Purple Mash Children will be able to demonstrate an understanding of the reasons for keeping their password private including talking about the meaning of 'private information' and actively demonstrate this in lessons. Children take ownership of their work and will be able to save their work, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later	Children understand how to use the Purple Mash search bar and know the implications of inappropriate searches Most Children will be able to explain what a digital footprint is, that it is permanent and their online behaviour influences what it shows. Children will be able to give reasons for keeping their password safe that include protecting their personal information. Most Children will be able to express the good and bad sides of digital technology. They can give examples of positive effects on life as well as negative.

Online Safety

The theme of online safety threads through all the other computing strands. Children are encouraged to use technology and the internet to research and share understanding with the key principle **THINK**. In all aspects of their computing learning ensuring that their communication is:

Thoughtful

Helpful

Inspiring

Necessary and

Kind.

Information for parents

Below are some fantastic apps and websites that you can use to support learning across the curriculum.

- Phonics with Phonzy (app)
- Tiki Bear Phonics (app)
- ABC pocket phonics (app)
- Scratch junior (app) - Singing fingers (app)
- Writers hat (app)
- Educreations Interactive Whiteboard (app)
- Earthviewer (app)
- Clicker sentences (app)
- Mr Thorne's Spellbook (app)
- <https://www.natgeokids.com/uk/>
- <http://www.historyforkids.net/>
- <https://www.bbc.co.uk/cbeebies>
- <https://www.phonicsplay.co.uk/>

Glossary

algorithm - procedure or precise step-by-step guide to solve a problem or achieve a particular objective.

data - a structured set of numbers, representing digitised text, images, sound or video, which can be processed or transmitted by a computer.

debug - to detect and correct the errors in a computer program.

digital content - any media created, edited or viewed on a computer, such as text

(including the hypertext of a web page), images, sound, video (including animation), or virtual environments, and combinations of these (i.e. multimedia).

information - the meaning or interpretation given to a set of data by its users, or which results from data being processed.

input - data provided to a computer system, such as via a keyboard, mouse, microphone, camera or physical sensors.

internet - the global collection of computer networks and their connections - to communicate.

logical reasoning - a systematic approach to solving problems or deducing information using a set of universally applicable and totally reliable rules.

output - the information produced by a computer system for its user, typically on a screen, through speakers or on a printer, but possibly through the control of motors in physical systems.

program - a stored set of instructions encoded in a language understood by the computer that does some form of computation, processing input and/ or stored data to generate output.

search - to identify data that satisfies one or more conditions, such as web pages containing supplied keywords, or files on a computer with certain properties.

sequence - to place programming instructions in order, with each executed one after the other..

software - computer programs, including both application software (such as office programs, web browsers, media editors and games) and the computer operating system. The term also applies to 'apps' running on mobile devices and to web based services.

variables - a way in which computer programs can store, retrieve or change simple data, such as a score, the time left, or the user's name.

World Wide Web - a service provided by computers connected to the internet (web servers), in which pages of hypertext (web pages) are transmitted to users; the pages typically include links to other web pages and may be generated by programs automatically.