



Computing – Progression of Knowledge and Skills



Resilience

Curiosity

Respectfulness

Creativity

Independence

Confidence

Computing in EYFS

Technology: Computing	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.			
	Development Matters	ELG	How this achieved in EYFS	Sticky Knowledge: By the end of EYFS the children will know...
	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.	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. Understanding the World: Past and Present: - Talk about the lives of people around them and their roles in society. - Know some differences and similarities between things in the past and now, drawing on their experiences. People, Culture and Communities: - Describe their immediate environment using knowledge from observation, discussion, texts, maps.	Continuous Provision – available throughout the day for both focused and self-chosen learning A range of technology is available within the classroom: - Tablets and iPads - Computers – games / activities linked to the topic or maths being covered each week. - Remote control toys – cars. - Battery operated toys - Beebots - Interactive white boards and accessible games for the children to use BusyThings, Phonics Play, Topmarks, ChromeLab, Google Earth, Digimap. - Purple Mash (mini mash) – drawing, sorting, information gathering. - Sound buttons – children can listen to a pr-recorded challenge or record their own answers. UTW: Exploring old and new toys and technology such as phones, type writers. E-safety week. Watching Think You Know - CEOP videos Jessie and Friends	Knowledge: Personal, Social and Emotional Development I can wait a short amount of time for something I want eg: a computer loading / an App to work.. I know how to complete a familiar task independently and with support will try new things. Eg: a computer programme / Beebot. I can select tools and resources that I need to complete a task of my own choosing. I know how to be safe online. I know that a password is secret. Physical Development I know how to use an iPad or tablet appropriately. I know how to use my fingers on a touch screen, and control a mouse/touchpad on a computer. Understanding the World I know how to use a camera ie: on an iPad. I know how to work a simple programable toy. I can select and use technology for particular purposes. I know how technology is used in my own home. I know that technology has changed since my adults were young. Expressive Art and Design Children can safely use a range of technology for a purpose.
				Vocabulary: Computer, iPad, tablet, App, button, mouse, screen, keyboard, Google, information, control, instruction, internet, robot, save, sequence, instructions, search, safety, online, password,

Computing

Computer Science

	EYFS	YEAR 1	YEAR 2
Hardware	• Learning how to operate a camera to take photographs of meaningful creations or moments. • Learning how to explore and tinker with hardware to develop familiarity and introduce relevant vocabulary. • Recognising and identifying familiar letters and numbers on a keyboard. • Developing basic mouse skills such as moving and clicking.	• Learning how to operate a camera or tablet to take photos and videos. • Learning how to explore and tinker with hardware to find out how it works. • Recognising that some devices are input devices and others are output devices. • Learning where keys are located on the keyboard.	• Understanding what a computer is and that it's made up of different components. • Recognising that buttons cause effects and that technology follows instructions. • Learning how we know that technology is doing what we want it to do via its output. • Using greater control when taking photos with cameras, tablets or computers. • Developing confidence with the keyboard and the basics of touch typing.

Computing

Computer Science

YEAR 1

YEAR 2

Computational thinking

- Learning that decomposition means breaking a problem down into smaller parts.
- Using decomposition to solve unplugged challenges.
- Using logical reasoning to predict the behaviour of simple programs.
- Developing the skills associated with sequencing in unplugged activities.
- Following a basic set of instructions.
- Assembling instructions into a simple algorithm.

- Articulating what decomposition is.
- Decomposing a game to predict the algorithms used to create it.
- Learning that there are different levels of abstraction.
- Explaining what an algorithm is.
- Following an algorithm.
- Creating a clear and precise algorithm.
- Learning that programs execute by following precise instructions.
- Incorporating loops within algorithms.

Programming

- Programming a Floor robot to follow a planned route.
- Learning to debug instructions when things go wrong.
- Using programming language to explain how a floor robot works.
- Learning to debug an algorithm in an unplugged scenario.

- Using logical thinking to explore software, predicting, testing and explaining what it does.
- Using an algorithm to write a basic computer program.
- Using loop blocks when programming to repeat an instruction more than once.

Computing

Information Technology

	YEAR 1	YEAR 2
Using software	- Using a basic range of tools within graphic editing software. - Taking and editing photographs. - Developing control of the mouse through dragging, clicking and resizing of images to create different effects. - Developing understanding of different software tools.	- Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. - Using word processing software to type and reformat text. - Using software (and unplugged means) to create story animations. - Creating and labelling images.
Using email and internet searches	- Recognising devices that are connected to the internet. - Searching and downloading images from the internet safely. - Understanding that we are connected to others when using the internet.	- Searching for appropriate images to use in a document. - Understanding what online information is.
Using data	- Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc. - Using representations to answer questions about data. - Using software to explore and create pictograms and branching databases.	Collecting and inputting data into a spreadsheet. Interpreting data from a spreadsheet.

<i>Wider use of technology</i>	• Recognising common uses of information technology, including beyond school. • Understanding some of the ways we can use the internet.	• Learning how computers are used in the wider world.
Computing		
Digital Literacy		
	YEAR 1	YEAR 2
	• Logging in and out and saving work on their own account. • When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable. • Understanding how to interact safely with others online. • Recognising how actions on the internet can affect others. • Recognising what a digital footprint is and how to be careful about what we post.	• Learning how to create a strong password. • Understanding how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable • Identifying whether information is safe or unsafe to be shared online. • Learning to be respectful of others when sharing online and ask for their permission before sharing content. • Learning strategies for checking if something they read online is true.

Computing systems and networks

	YEAR 1	YEAR 2
	• To know that "log in and log out" means to begin and end a connection with a computer. • To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art. • To know that passwords are important for security. • To know that when we create something on a computer it can be more easily saved and shared than a paper version. • To know some of the simple graphic design features of a piece of online software.	• To know the difference between a desktop and laptop computer. • To know that people control technology. • To know that buttons are a form of input that give a computer an instruction about what to do (output). • To know that computers often work together. • To know that touch typing is the fastest way to type. • To know that I can make text a different style, size and colour. • To know that "copy and paste" is a quick way of duplicating text.

Programming

	YEAR 1	YEAR 2
	• To understand that an algorithm is when instructions are put in an exact order. • To know that input devices get information into a computer and that output devices get information out of a computer. • To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing. • To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'. • To understand the basic functions of a Bee-Bot. To know that you can use a camera/tablet to make simple videos. • To know that algorithms move a bee-bot accurately to a chosen destination.	• To understand what machine learning is and how that enables computers to make predictions. • To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times. • To know that abstraction is the removing of unnecessary detail to help solve a problem. • To know that coding is writing in a special language so that the computer understands what to do. • To understand that the character in ScratchJr is controlled by the programming blocks. • To know that you can write a program to create a musical instrument or tell a joke.

Creating media

	YEAR 1	YEAR 2
	• To understand that holding the camera still and considering angles and light are important to take good pictures. • To know that you can edit, crop and filter photographs. • To know how to search safely for images online.	• To understand that an animation is made up of a sequence of photographs. • To know that small changes in my frames will create a smoother looking animation. • To understand what software creates simple animations and some of its features e.g. onion skinning.

Data Handling

	YEAR 1	YEAR 2
	• To know how that charts and pictograms can be created using a computer. • To understand that a branching database is a way of classifying a group of objects. • To know that computers understand different types of 'input'.	• To understand that you can enter simple data into a spreadsheet. • To understand what steps you need to take to create an algorithm. • To know what data to use to answer certain questions. • To know that computers can be used to monitor supplies.

Online Safety

	YEAR 1	YEAR 2
	• To know that the internet is many devices connected to one another. • To know that you should tell a trusted adult if you feel unsafe or worried online. • To know that people you do not know on the internet (online) are strangers and are not always who they say they are. • To know that to stay safe online it is important to keep personal information safe. • To know that 'sharing' online means giving something specific to someone else via the internet and 'posting' online means placing information on the internet.	• To understand the difference between online and offline. • To understand what information I should not post online. • To know what the techniques are for creating a strong password. • To know that you should ask permission from others before sharing about them online and that they have the right to say 'no.' • To understand that not everything I see or read online is true.