Computing Long Term Plan 2023

It is vitally important that children in nursery and EYFS are exposed to a broad range of both digital and analogue technology. We design our curriculum to ensure that children transition for EYFS to Year 1 with a strong foundational knowledge of the technological world around them. Our approach to computing in EYFS ensures that children are able to develop their listening skills, problem-solving abilities and thoughtful questioning, as well as develop their subject skills across the seven areas of learning. The most relevant statements for computing are taken from the following areas of learning:

- Personal, Social and Emotional Development
- Physical Development
- Understanding the World
- Expressive Arts and Design

Nursery	Reception
• Remember rules without needing an adult to remind them. • Match their developing physical skills to tasks and activities in the setting. • Explore how things work.	• 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'. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently. • Develop their small motor skills so that they can use a range of tools competently, safely and confidently.

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Value	**Resilience**	**Motivation**	**Curiosity**	**Challenge**	**Integrity**	**All Values**
Year 1	**Computing systems and networks – Technology around us** Develop children's understanding of technology and how it can help them. They will become more familiar with the different components of a computer by developing their keyboard and mouse skills, and also start to consider how to use technology responsibly.	**Creating media – Digital painting** Children will use a range of creative tools to create their own paintings inspired from a range of other artists.	**Creating media – Digital writing** Children will use a computer to create and change text. They will become familiar with typing on a keyboard and begin to use tools to change the look of their writing.	**Data information – Grouping data** This unit introduces children to data and information. They will begin by using labels to put objects into groups, and labelling these groups. They will use their ability to sort objects into different groups to answer questions about data.	**Programming A – Moving a robot** This unit introduces children to early programming concepts. Children will use and program floor robots and use their knowledge to start predicting the outcome of programs.	**Programming B – Introduction to animation** This unit introduces learners to on-screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs. Learners will also be introduced to the early stages of program design through the introduction of algorithms.
Year 2	**Computing systems and networks – IT around us** Children will think about how information technology (IT) being used for good in our lives? Focus on IT in the home and how IT benefits society in places such as shops,	**Creating Media – Digital Photography** Children will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use	**Creating Media – Making Music** Children will explore how music can make them think and feel. They will make patterns and use those patterns to make music with both percussion instruments and digital tools. They	**Data and Information – Pictograms** Children will begin to understand what data means and how this can be collected in the form of a tally chart, pictogram and block graph. They will learn the term	**Programming A – Robot algorithms** This unit develops children's understanding of instructions in sequences and the use of logical reasoning to predict outcomes. They will design algorithms and then	**Programming B – An introduction to quizzes** Begin to understand that sequences of commands have an outcome and make predictions based on their learning. Use and modify designs to create their own quiz questions in ScratchJr

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	libraries, and hospitals. Responsible use of technology, and how to make smart choices when using it.	this knowledge to recognise that images they see may not be real.	will also create different rhythms and tunes and share their creations and compare creating music digitally and non-digitally. Links to Music	'attribute' and use this to help them organise data.	test those algorithms as programs and debug them.	and realise these designs in ScratchJr using blocks of code. Children will evaluate their work and make improvements to their programming projects.
Year 3	**Computing systems and networks – Connecting computers** Children develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. Compare digital and non-digital devices and introduce computer networks that include network infrastructure devices like routers and switches.	**Creating Media – Animations** Children will use a range of techniques to create a stop-frame animation using tablets. They will apply those skills to create a story-based animation. Children will also add other types of media to their animation, such as music and text.	**Creating Media – Desktop publishing** Children will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents.	**Data and information – Branching databases** Children develop their understanding of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Children will create physical and on-screen branching databases.	**Programming A – Sequence in music** This unit explores the concept of sequencing in programming through Scratch. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences.	**Programming B – Events and actions** This unit explores the links between events and actions, whilst consolidating prior learning relating to sequencing. Learners will begin by moving a sprite in four directions (up, down, left and right). They will then explore movement within the context of a maze, using design to choose an appropriately sized sprite.
Year 4	**Computing systems and networks – the internet** Children will understand the internet as a network of networks which needs to be kept secure. Explore the www, who owns	**Creating media – Audio editing** Children will identify input and output devices, understand copyright and record audio for themselves (podcast)	**Creating media – photo editing** Children will understand how digital images can be changed and edited and how they can be resaved and reused.	**Data and information – data logging** Children will consider how and why data is collected dover time. Understand how sensors monitor the environment. Look at data points, data	**Programming – repetition in shapes** Children will understand repetition and loops within programming. Create programs by planning, modifying and testing commands to create	**Programming – repetition in games** Children will explore the concept of repetition in programming using Scratch. Look at the difference between count-controlled and infinite loops and their

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	content and what they can access, add and create. Understand false information.			sets and logging intervals.	shapes and patterns. (Programme Logo)	knowledge to modify existing animations and games using repetition.
Year 5	**Computing systems and networks – sharing information** Children will learn how information is transferred between systems and devices. They will consider small-scale systems as well as large-scale systems and explain the input, output, and process aspects of a variety of different real-world systems.	**Creating media – Vector drawing** Children will start to create vector drawings. They learn how to use different drawing tools to help them create images. Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object.	**Creating media – Video editing** Children will learn how to create short videos in groups. Investigate the use of devices and software.	**Data and Information – Flat-file databases** Children will learn how a flat-file database can be used to organise data in records. Use tools within a database to order and answer questions about data. Create graphs, charts and real-life databases to help solve problems.	**Programming – Selection in physical computing** Children will explore the concept of selection in programming through the use of the Crumble programming environment. Learn how to connect and program components (including output devices- LEDs and motors).	**Programming – Selection in quizzes** Children will develop their knowledge of selection. Represent this understanding in algorithms, construct programs using Scratch. Design a quiz in response to a given task and implement it as a program.
Year 6	**Computing Systems and networks - Communication** Children learn about WWW as a communication tool, how search engines work and what influences searching.	**Creating Media - 3D modelling** Children learn to use a computer to produce 3D models Moving, resizing and duplicating objects.	**Creating Media - Web Page Creation** Children will think about what makes a good web page? They will use info to design and evaluate own website and google sites.	**Data and information - Spread sheets** Children are given an understanding of spreadsheets and how they can be used. They will learn to use spreadsheets to solve specific problems	**Programming - Variables in games** Children will explain concepts of variables in programming using games and scratch.	**Programming - Sensing** Consolidation of KS2 programming elements (micro:bit)