St Mary's CE Primary School
Computing Overview

	Computing Systems and Networks	Data and Information	Programming A	Programming B	Creating Media	Creating Media
Year 1/2 Cycle 1	Technology Around Us	Grouping Data	Moving a Robot	Introduction to animation	Digital Painting	Digital Writing
Year 1/2 Cycle 2	Information Technology Around Us	Pictograms	Robot algorithms	Quizzes	Digital Photographs	Making Music
Year 3/4 Cycle 1	Connecting Computers	Branching Databases	Sequence in music	Events and actions	Stop Frame Animation	Desktop Publishing
Year 3/4 Cycle 2	The Internet	Data Logging	Repetition in shapes	Repetition in games	Audio Editing	Photo Editing
Year 5/6 Cycle 1 2025-26	Y5 U1 *Computing systems & networks* systems & searching	Y5 U2 *Creating media* Video production	Y5 U3 *Programming A* Selection in physical computing	Y5 U5 *Data & Information* Flat file databases	Y5 U5 *Creating Media* Introduction to vector graphics	Y5 U2 *Programming B* Selection in Quizzes
Year 5/6 Cycle 2 2026-27	Y6 U1 *Computing systems & networks* Communication	Y6 U4 *Data & Information* Spreadsheets	Y6 U3 *Programming A* Variables in games	Y6 U6 *Programming B* Sensing (microbits)	Y6 U5 *Creating Media* 3D Modelling	Y6 U2 Web Page Creation

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	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1/2 Cycle 1	**Computing systems and networks – Technology around us** Develop learners' 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.	**Data and information – Grouping data** Learners will begin by using labels to put objects into groups, and labelling these groups. They will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data.	**Programming A – Moving a robot** Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. Learners are also introduced to the early stages of program design through the introduction of algorithms.	**Programming B – Introduction to animation** Using 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 are also introduced to the early stages of program design through the introduction of algorithms.	**Creating Media – Digital Painting** Explore the world of digital art and its exciting range of creative tools with learners. Empower them to create their own paintings, while getting inspiration from a range of other artists. Conclude by asking them to consider their preferences when painting with, and without, the use of digital devices.	**Creating Media – Digital Writing** Promote your learners' understanding of the various aspects of using a computer to create and change text. Learners will familiarise themselves with typing on a keyboard and begin using tools to change the look of their writing, and then they will consider the differences between using a computer and writing on paper to create text.

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Year 1/2 **Cycle 2**	**Computing systems and networks – IT around us** How is information technology (IT) being used for good in our lives? With an initial focus on IT in the home, learners explore how IT benefits society in places such as shops, libraries, and hospitals. Whilst discussing the responsible use of technology, and how to make smart choices when using it.	**Data and information – Pictograms** Learners will begin to understand what data means and how this can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions.	**Programming A – Robot algorithms** Pupils will use given commands in different orders to investigate how the order affects the outcome. Pupils will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.	**Programming B – An introduction to quizzes** Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects.	**Creating media – Digital photography** Learners 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 this knowledge to recognise that images they see may not be real.	**Creating media – Making music** Learners 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 will also create different rhythms and tunes, using the movement of animals for inspiration. Finally, learners will share their creations and compare creating music digitally and non-digitally.

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Year 3/4 **Cycle 1**	**Computing systems and networks – Connecting computers** Challenge your learners to develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. Start by comparing digital and non-digital devices, before introducing them to computer networks that include network infrastructure devices like routers and switches.	**Data and information – Branching databases** Learners will develop their understanding of what a branching database is and how to create one. They will gain an understanding of what attributes are and how to use them to sort groups of objects. The learners will create physical and on-screen branching databases. Finally, they will evaluate the effectiveness of them and will decide what types of data should be presented.	**Programming A – Sequence in music** Using Scratch, learners will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design.	**Programming B – Events and actions** Learners will explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of pen blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with learners designing and coding their own maze tracing program.	**Creating media – Animation** Learners will use a range of techniques to create a stop frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text.	**Creating media – Desktop publishing** Learners will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. They will start to add text and images to create their own pieces of work using desktop publishing software. Learners will look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why it is used in the real world.

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Year 3/4 **Cycle 2**	**Computing systems and networks – The Internet** Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and be given opportunities to explore it for themselves. Pupils will evaluate online content - how honest, accurate, or reliable it is, and understand the consequences of false information.	**Data and information – Data logging** Pupils will consider how and why data is collected over time. Pupils will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.	**Programming A – Repetition in shapes** Learners will look at repetition and loops within programming. Pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language.	**Programming B – Repetition in games** Learners look at the difference between count-controlled and infinite loops, and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout.	**Creating media – Audio editing** Learners will examine devices capable of recording digital audio (identifying the input device and output devices). Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. Learners will use Audacity to produce a podcast (editing their work, adding multiple tracks, and opening and saving the audio files). Learners will evaluate their work and give feedback to their peers.	**Creating media – Photo editing** Learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices.

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Year 5/6 **Cycle 1**	**Computing systems and networks – Sharing information** Learners will develop their understanding of computer systems and how information is transferred between systems and devices. Learners will consider small-scale and large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will take part in a collaborative online project with other class members and develop working together.	**Data and information – Flat-file databases** Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question, and present their work to others.	**Programming A – Scratch: Animated stories** Children continue to develop their skills in writing their own algorithms as well as editing and debugging existing codes. New skills are introduced to structure code and animate characters and scenes, gradually building to create a short animated story.	**Programming B – Selection in quizzes** Pupils will be learning how the If… Then… Else structure can be used to select different outcomes depending on whether a condition is true or false. They represent this understanding in algorithms and then by constructing programs using the Scratch programming environment. They use their knowledge of writing programs and using selection to control outcomes to design a quiz.	**Creating media – Vector drawing** In this unit learners will find out that vector images are made up of shapes. They will learn how to use the different drawing tools and how images are created in layers. They will explore the ways in which images can be grouped and duplicated to support them in creating more complex pieces of work. This unit is planned using the Google Drawings app other alternative pieces of software are available.	**Creating media – Video editing** Learners have the opportunity to learn how to create short videos in groups. They will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. The use of green screen can be incorporated into this unit.

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Year 5/6 **Cycle 2**	**Computing systems and networks – Communication** The children will learn about the World Wide Web as a communication tool. They will learn how we find information, through learning how search engines work and what influences searching. They will investigate different methods of internet-based communication. Finally, they will evaluate which methods to use for particular purposes.	**Data and information – Spreadsheets** Learners are introduced to formulas and begin to understand how these can be used to produce calculated data. Learners will use spreadsheets to plan an event and answer questions. Also, learners create graphs and charts and evaluate their results in comparison to questions asked.	**Programming A – Variables in games** Using Scratch, pupils will learn what variables are, and relate them to real-world examples of values that can be set and changed. Pupils will then use variables to create a simulation of a scoreboard Pupils will experiment with variables in an existing project, then modify them, then they will create their own project.	**Programming B – Sensing** This brings together elements of all the four programming constructs: sequence from year 3, repetition from year 4, selection from year 5 and variables, introduced in year 6, programming A. It offers learners the opportunity to use all of these constructs in a different, but still familiar environment whilst also utilising a physical device - the micro:bit.	**Creating media – 3D Modelling** Learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, including combining 3D objects to make a house and examining the differences between working digitally with 2D and 3D graphics. Learners will plan, develop, and evaluate their own 3D model.	**Creating media – Web page creation** Learners are introduced to the creation of websites for a chosen purpose. Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.

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