



# Curriculum Map – Computing

Specifying the cumulative knowledge and skills that should be taught in this subject

## Aims of The National Curriculum for computing

The national curriculum for computing aims to ensure that all pupils: can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. They can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. They can evaluate and apply information technology, including new or unfamiliar technologies to analytically solve problems. They are responsible, competent, confident and creative users of information and communication technology.

## Aim of the Manor Primary School computing curriculum map

ICT is changing the lives of everyone. Through teaching ICT, we equip children to participate in a rapidly changing world where work and leisure activities are increasingly transformed by technology. We enable them to find, explore, analyse, exchange and present information. We also focus on developing the skills necessary for children to be able to use information in a discriminating and effective way. ICT skills are a major factor in enabling children to be confident, creative and independent learners. Computing lessons are taught using the NCCE Teach Computing lessons and resources and the units have been selected to teach our children skills progressively that build year upon year.

Year Group	Unit 1	Unit 2	Unit 3	Unit 4
1	<b>Computing Systems and Networks – Technology Around Us</b>	<b>Programming A – Moving a Robot</b>	<b>Creating Media – Digital Painting</b>	<b>Programming B – Programming Animations</b>
	Children will develop their understanding of technology. They will develop their keyboard and mouse skills and start to understand how to use technology responsibly.	Children will be introduced to early programming concepts and will be introduced to algorithms.	Children will begin to learn about the world of digital art and create their own artwork taking inspiration from other artists.	Children will be introduced to Scratch Jr and start to explore sprites and blocks as well as using blocks to modify and create simple programmes through the use of early algorithms.



	secure. They will learn about the World Wide Web before evaluating online content assessing the information for reliability, accuracy and honesty.		evaluating their work and giving feedback.	difference between count-controlled and infinite loops, using their knowledge to modify existing animations using repetition.
<b>5/6 Year A</b>	<b>Computing Systems and Networks – Systems and Searching</b>	<b>Programming A – Selection in Physical Computing</b>	<b>Creating Media – Introduction to Vector Graphs</b>	<b>Programming B – selection in quizzes</b>
	Children will develop their understanding of computer systems and how information is transferred between systems and devices. They will explain the input, output, and process aspects of a variety of different real-world systems. Learners will also take part in a collaborative online project with other class members and develop their skills in working together online.	Children will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program components (including output devices- LEDs and motors) through the application of their existing programming knowledge.	Children will learn to create vector drawings. They will learn how to use different drawing tools to help them create images recognising that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object.	Children will develop their knowledge of selection by revisiting how conditions can be used in programs and then learning how the If... Then... Else structure can be used to select different outcomes depending on whether a condition is true or false. They will 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 in response to a given task and implement it as a program.
<b>5/6 Year B</b>	<b>Computing Systems and Networks – Communication and Collaboration</b>	<b>Programming A – Variables in Games</b>	<b>Creating Media – 3D Modelling</b>	<b>Programming B – Sensing Movement</b>
	Children will explore how data is transferred over the internet. Learners initially focus on	Children find out what variables are and relate them to real-world examples of values that can be set	Children will develop their knowledge and understanding of using a computer to produce 3D	In this unit, the children will bring together elements of all the four programming constructs: sequence

	<p>addressing, before they move on to the makeup and structure of data packets. Children then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet.</p>	<p>and changed. Then they use variables to create a simulation of a scoreboard. Children experiment with variables in an existing project, then modify them, before they create their own project.</p>	<p>models. They will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, the children will examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building.</p>	<p>from Year 3, repetition from Year 4, selection from Year 5, and variables (introduced in Year 6 – ‘Programming A’). The children will develop a simple program to build in and test within the new programming environment, before transferring it to their micro:bit.</p>
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