Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Children will learn how to switch equipment on and off. They will learn that information can be retrieved from computers.		Children will learn how to complete simple programs on a computer or tablet.		Children will begin to understand how computers are used in the wider world. They will begin to select and use technology for particular purposes.	
Year 1 and 2	**ving a Robot** ldren 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. The children are also introduced to the early stages of program design through the introduction of algorithms.	**Programming animations** ldren are introduced to on-screen programming through ScratchJr. They will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs.	**hnology around us** children will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. They will also consider how to use technology responsibly.	**Computing systems and networks** ldren will look at information technology at school and beyond, in settings such as shops, hospitals, and libraries. They will investigate how information technology improves our world, and they will learn about using information technology responsibly.	**Robot Algorithms** children will develop their understanding of instructions in sequences and the use of logical reasoning to predict outcomes. They will use given commands in different orders to investigate how the order affects the outcome. They 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 quizzes** s unit initially recaps on learning from the Year 1 'Programming animations' unit. The children will 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, the children will evaluate their work and make improvements to their programming projects.

Year 3 and 4	**quencing sounds** e children will explore the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most of the children. They 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.	**nts and actions in programs** e children will explore the links between events and actions, while consolidating prior learning relating to sequencing. They will begin by moving a sprite in four directions (up, down, left, and right). They then 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. Children are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with the children designing and coding their own maze-tracing program.	**Connecting computers** ing this unit, the children will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They also compare digital and non-digital devices. Following this, the children are introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. The unit concludes with the children discovering the benefits of connecting devices in a network.	**The internet** ldren 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 the World Wide Web for themselves to learn about who owns content and what they can access, add, and create. Finally they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.	**Repetition in shapes** ldren will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language.	**Repetition in games** ldren will explore the concept of repetition in programming using the Scratch environment. The children can discover similarities between two environments. They will 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.

Year 5 and 6	**ection in physical computing** ldren will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. They 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. They will be introduced to conditions as a means of controlling the flow of actions, and explore how these can be used in algorithms and	**Selection in quizzes** ldren will develop their knowledge of 'selection' by revisiting how 'conditions' can be used in programming, 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 represent this understanding in algorithms, and then by constructing programs using the Scratch programming environment. They learn how to write programs that ask questions and use selection to control the outcomes based on the answers given. They use this knowledge to design a quiz in response to a given task and implement it as a program. To conclude the unit, the children evaluate their program	**Sharing information** In this unit, children will develop their understanding of computer systems and how information is transferred between systems and devices. They will consider small-scale systems as well as large-scale systems. They will explain the input, output, and process aspects of a variety of different real-world systems. Children will also take part in a collaborative online project with other class members and develop their skills in working together online.	**Communication** his unit, the class will learn about the World Wide Web as a communication tool. First, they will learn how we find information on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. They will then investigate different methods of communication, before focusing on internet-based communication. Finally, they will evaluate which methods of internet communication to use for particular purposes.	**Variables in games** This unit explores the concept of variables in programming through games in Scratch. First, the children will learn what variables are, and relate them to real-world examples of values that can be set and changed. Children will then use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, they will experiment with variables in an existing project, then modify them, then they will create their own project. In Lesson 4, they will focus on design. Finally, in Lesson 6, pupils will apply their knowledge of variables and design to improve their game in Scratch.	**Sensing** s unit is the final KS2 programming unit and It offers learners the opportunity to use all of their previously learnt constructs in a different, but still familiar environment, while also utilising a physical device — the micro:bit. The unit begins with a simple program for the children to build in and test in the programming environment, before transferring it to their micro:bit.

	programs through the use of an input device (push switch).	by identifying how it meets the requirements of the task, the ways they have improved it, and further ways it could be improved.				