Computing Curriculum Overview

KS1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Technology Around Us** In this unit, we develop learner'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.	**Digital Painting** Children will explore the world of digital art and its exciting range of creative tools. We empower them to create their own paintings, while getting inspiration from a range of other artists. The unit concludes by asking them to consider their preferences when painting with, and without, the use of digital devices.	**Moving a Robot** This unit introduces children to early programming concepts by exploring the use of individual commands, both with other learners and as part of a computer program. Children are also introduced to the early stages of program design through the introduction of algorithms.	**Grouping Data** This unit introduces our children to data and information. 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.	**Digital Writing** In this unit, we promote the 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, considering the differences between using a computer and writing on paper to create text.	**Programming Animations** We conclude Year 1 learning by introducing learners to on-screen programming through ScratchJr. Children will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs.
Year 2	**IT Around Us** How is information technology (IT) being used for good in our lives? With an initial focus on IT networks in the home, children 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.	**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 this knowledge to recognise that images they see may not be real.	**Robot Algorithms** This unit develops children's' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Children will use given commands in different orders to investigate how the order affects the outcome. They will also design algorithms and then test those algorithms as programs and debug them.	**Pictograms** This unit introduces children to the term 'data'. They will begin to understand what data means and how this can be collected. 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.	**Digital 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. To conclude, they will share their creations and compare creating music digitally and non-digitally.	**Programming Quizzes** This unit recaps learning from the Year 1 Scratch Junior unit above. They will use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code.

LKS2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	**Connecting Computers** In this unit we challenge our children to develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. We start by comparing digital and non-digital devices, before introducing them to computer networks that include network infrastructure devices like routers and switches.	**Stop- Frame Animation** Children use a range of techniques to create a stop-frame animation using tablets. They will thenapply 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.	**Sequencing Sounds** 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 learners in lower key stage 2. The children will also apply stages of program design through this unit.	**Branching Databases** In this unit we develop understanding of what a branching database is and how to create one. Children will create physical and on-screen branching databases. To conclude the unit, they will create an identification tool using a branching database, which they will test by using it.	**Desktop Publishing** During this unit, 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. The children will then look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world.	**Events and Actions in programs** Children will explore the links between events and actions, whilst consolidating prior learning relating to sequencing. 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 learners designing and coding their own maze tracing program.
Year 4	**The Internet** Children 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 be given the opportunity to evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.	**Audio Production** In this unit, children will identify the input device and output devices required to work with sound digitally. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. *Podcast Project*	**Repetition in Shapes (Programming A)** This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming. Children will create programs by planning, modifying, and testing commands to create shapes and patterns.	**Data Logging** Children will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Pupils will collect data as well as access data captured over long periods of time.	**Photo Editing** Children will develop their understanding of how digital images can be changed and edited, and how they can then be re-saved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices.	**Repetition in Games (Programming B)** This unit explores the concept of repetition in programming using the Scratch environment. It begins with a Scratch activity similar to that carried out in Programming unit A, where learners can discover similarities between two environments.

UKS2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5	**Systems & Searching** In this unit, children will develop their understanding of computer systems and how information is transferred between systems and devices. They will discover how information is found 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	**Video Production** As children progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-by-step support to take their idea from conception to completion.	**Selection in Physical Computing** In this unit, learners 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.	**Flat File Databases** In this unit, children will use tools within a database to order and answer questions about data. They will 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.	**Introduction to Vector Graphics** Children will start to create vector drawings. They learn how to use different drawing tools to help them create images. They will recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. To conclude, children will layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work.	**Selection in Quizzes** 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 represent this understanding in algorithms and then by constructing programs using the Scratch programming environment.
Year 6	**Communication & Collaboration** Children will explore how data is transferred over the internet and analyse 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.	**Webpage Creation** This unit introduces children 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.	**Variables in Games** This unit explores the concept of variables in programming through games in Scratch. First, learners find out what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard.	**Introduction to Spreadsheets** This unit introduces the learners to spreadsheets. They will be supported in organising data into columns and rows to create their own data set. Learners will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data.	**3D Modelling** Learners will develop their knowledge and understanding of using a computer to produce 3D models. 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.	**Sensing Movement** This unit is the final KS2 programming unit and 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 pupils the opportunity to use all of these constructs in a different, but still familiar environment, while also utilising a physical device — the micro:bit.

At Corpus Christi School, we pride ourselves on ensuring our pupils are secure, confident, and fully prepared for the transition to secondary school, both holistically and academically. This transition project, using the micro:bit and the MakeCode environment, is an integral part of underpinning our commitment to computational thinking throughout our computing curriculum and the National Curriculum as a whole. It provides a valuable opportunity for students to smoothly progress from Key Stage 2 to Key Stage 3, while aligning teaching approaches and learning objectives between both stages.

By engaging students with the micro:bit and fostering a hands-on learning approach, we aim to build confidence and familiarity with the technological tools they will encounter in their secondary education. This unit not only challenges students academically but also helps them adjust to the new school environment, including their teachers and classmates, facilitating a seamless transition. Furthermore, it ensures continuity in curriculum delivery, enhancing students' readiness to tackle the academic demands of Key Stage 3.

Through this transition unit, students are empowered to grow in both their computational skills and personal development, ensuring they are well-prepared for the exciting journey ahead.

Transition Unit: Using the microbit for Primary to Secondary transition

Over 2 lessons, our learners will apply their knowledge of sequence, inputs, and variables from KS2 computing lessons to create a sports counter using the micro:bit.

They will plan their algorithm, before using the micro:bit MakeCode to code and run their creations. Learners will then practically test their sports counters before evaluating their effectiveness.