Computing Curriculum Overview

	Term 1		Term 2		Term 3		Term 4		Term 5		Term 6	
	A	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**	**A**	**B**
Year 1/2	Online Safety – year 2	Online Safety – year 1	Creating Media: Digital Writing	Creating Media: Digital Painting	Creating Media: Making Music	Creating Media: Digital Photography	Data and Information: Pictograms	Data and Information: Groping Data	Programming: Introduction to Animation	Programming: Moving a Robot	Programming: Introduction to Quizzes	Programming: Robot Algorithms
Year 3/4	Creating Media: Audio Editing	Creating Media: Stop Frame Animation	Creating Media: Photo Editing	Creating Media: Desktop Publishing	Programming: Repetition in Games	Programming: Sequencing Sounds	Programming: Events and Actions	Programming: Repetition in Shapes	Data and Information	Online Safety – year 3	Online Safety – year 4	Computing Systems and Networks: The Internet
Year 5/6	Programming: Selection in Physical Computing	Creating Media: Vector Drawing	Data and Information: Flat File Databases	Creating Media: 3D Modelling	Creating Media: Video Editing	Programming: Exploring selection in programming to design and code an interactive quiz	Data and Information: Introduction to Spreadsheets	Creating Media: Webpage Creation	Online Safety – year 5	Online Safety – year 6	Programming; Sensing	Programming: Variables in Games

National Curriculum Subject Content	
Key Stage 1	**Key Stage 2**
Pupils should be taught to: • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instruction. • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs. • Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Recognise common uses of information technology beyond school. • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	Pupils should be taught to: • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems be decomposing them into smaller parts. • Use sequence, selection and repetition programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

	• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

EYFS
Within the new EYFS curriculum the 'Technology' strand has been removed from 'Understanding the World' and has not been replaced with any updates guidance. However, computing and technology re still vitally important subjects to teach our Reception children. Teaching computing within the curriculum ensures that children enter Year 1 with a strong foundation of knowledge. Computing activities in the EYFS ensure that children develop listening skills, problem solving abilities and thoughtful questioning – as well as improving subject skills across the different areas of learning. We live in a technological world and technology is integrated into the daily lives of young children. Just as we ensure the children in our care are ready for the adult world by teaching them Maths and English, we should also make sure they are fluent in computer literacy and online safety. Technology available to the EYFS children includes: • Ipads • Laptop computers • Remote control toys • Beebots • Interactive whiteboard

Progression of Knowledge/Skills

	Year 1/2	Year 3/4	Year 5/6
Creating Media	**Digital Writing** • To use a computer to write • To add and remove text on a computer • To identify that the look of text can be changed on a computer • To explain why I used the tools that I chose • To compare writing on a computer to writing on paper **Making Music** • To say how music can make us feel • To identify that there are patterns in music • To show how music is made from a series of notes • To create music for a purpose • To review and refine our computer work **Digital Photography** • To use a digital device to take a photograph • To make choices when taking a photograph	**Stop Frame Animation** • To explain that animation is a sequence of drawings or photographs • To relate animated movement with a sequence of images • To plan an animation • To identify the need to work consistently and carefully • To review and improve an animation • To evaluate the impact of adding other media to an animation **Desktop Publishing** • To recognise how text and images convey information • To recognise that text and layout can be edited • To choose appropriate page settings]to add content to a desktop publishing publication	**Video Editing** • To explain what makes a video effective • To identify digital devices that can record video • To capture video using a range of techniques • To create a storyboard • To identify that video can be improved through reshooting and editing • To consider the impact of choices made when making and sharing a video **Webpage Creation** • To review an existing webpage ad consider its structure • To plan the features of a webpage • To consider the ownership and use of images (copyright) • To recognise the need to preview pages • To outline the need for a navigation path

	• To describe what makes a good photograph • To decide how photographs can be improved • To use tools to change an image • To recognise that photographs can be changed **Digital Painting** • To describe what different freehand tools do • To use the shape tool and the line tools • To make careful choices when painting a digital picture • To explain why I chose the tools I used • To use a computer on my own to paint a picture • To compare painting a picture on a computer and on paper	• To consider how different layouts can suit different purposes • To consider the benefits of desktop publishing **Audio Editing** • To identify that sound can be digitally recorded • To use a digital device to record sound • To explain that a digital recording is stored as a file • To explain that audio can be changed through editing • To show that different types of audio can be combined and played together • To evaluate editing choices made **Photo Editing** • To explain that digital images can be changed • To change the composition of an image • To describe how images can be changed for different uses • To make good choices when selecting different tools • To recognise that not all images are real • To evaluate how changes can improve an image	• To recognise the implications of linking to content owned by other people **Vector Drawing** • To identify that drawing tools can be used to produce different outcomes • To create vector drawings by combining shapes • To use tools to achieve a desired effect • To recognise that vector drawing, consist of layers • To group objects to make them easier to work with • To evaluate my vector drawing **3D Modelling** • To use a computer to create and manipulate 3D digital objects • To compare working digitally with 2D and 3D graphics • To construct a digital 3D model of a physical object • To identify that physical objects can be broken down into a collection of 3D shapes • To design a digital model by combining 3D objects • To develop and improve a digital 3D model
Programming	**Moving a Robot** • To explain what a given command will do • To act out a given word • To combine forward and backwards commands to make a sequence • To combine four direction commands to make a sequence • To plan a simple program • To find more than one solution to a problem **An Introduction to Quizzes** • To explain that a series of commands has a start	**Sequencing Sounds** • To explore a new programming environment • To identify that commands have an outcome • To explain that a program has a start • To recognise that a sequence of commands can have an order • To change the appearance of my project • To create a project from a task description **Repetition in Shapes** • To identify that accuracy in programming is important • To create a program in text based language • To explain what 'repeat' means	**Selection in Physical Computing** • To control a simple circuit connected to a computer • To write s program that included count-controlled loops • To explain that a loop can stop when a condition is met • To explain that a loop can be used to repeatedly check whether a condition has been met • To design a physical project that includes selection • To create a program that controls a physical computing project

	• To explain that a sequence of commands has an outcome • To create a new program using a given design • To change a given design • To create a program using my own design • To decide how my program can be improved **Robot Algorithms** • To describe a series of instructions as a sequence • To explain what happens when we change the order of instructions • To use logical reasoning to predict the outcome of a program (series of commands) • To explain that programming projects can have code and artwork • To design an algorithm • To create and debug a program I have written **Introduction to Animation** • To choose a command for a given purpose • To show that a series of commands can be joined together • To identify the effect of changing a value • To explain that each sprite has its own instructions • To design the parts of a project • To use my algorithm to create a program	• To modify a count-controlled loop to produce a given outcome • To decompose a task into small steps • To create a program that uses count-controlled loops to produce a given outcome **Repetition in Games** • To explain how a sprite moves in an existing project • To create a program to move a sprite in four directions • To adapt a program to a new context • To develop my program by adding features • To identify and fix bugs in my program • To design and create maze-based challenge **Events and Actions in Programs** • To develop the use of count-controlled loops in a different programming environment • To explain that in programming there are infinite loops and count-controlled loops • To develop a design that included two or more loops which run at the same time • To design and create a program that includes repetition	**Selection in Quizzes** • To explain how selection is used in computer programs • To relate that a conditional statement connects a condition to an outcome • To explain how selection directs the flow of a program • To design, create and evaluate a program which uses selection **Variable in Games** • To define a 'variable' as something that is changeable • To explain why a variable is used in a program • To choose how to improve a game by using variables • To design a project that builds on a given example • To use my design to create a project • To evaluate my project
Computing Systems and Networks	**IT Around Us** • To recognise the uses an features of IT • To identify uses of information technology in school • To identify information technology beyond school • To explain how information technology helps us • To explain how to use information technology safely	**Connecting Computers** • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way we work • To explain how a computer network can be used to share information • To explore how digital devices can be connected	**Sharing Information** • To explain that computers can be connected together to form systems • To recognise the role of computers in our lives • To recognise how information is transferred over the internet • To explain how sharing information online lets people in different places work together • To contribute to a shared project online

	• To recognise that choices are made when using IT **Technology and the World Around Us** • To identify technology • To identify a computer and its main parts • To use a mouse in different ways • To use a keyboard to type on a computer • To use the keyboard to edit text • To create rules for using technology responsibly	• To recognise the physical components of a network **The Internet** • To describe how networks physically connect to other networks • To recognise how networked devices make up the internet • To outline how websites can be share via the World Wide Web (WWW) • To describe how content can be added and accessed on the World Wide Web • To recognise how the content of the WWW is created by people • To evaluate the consequences of unreliable content	• To evaluate different ways of working together online **Internet Communication** • To identify how to use a search engine • To describe how search engines select results • To explain how search results are ranked • To recognise why the order of results is important • To recognise how we communicate using technology • To evaluate different methods of online communication
Data and Information	**Grouping Data** • To label objects • To identify that objects can be counted • To describe object in different ways • To count objects with the same properties • To compare groups of objects • To answer questions about groups of objects **Pictograms** • To recognise that we can count and compare objects using tally charts • To recognise objects can be represented as pictures • To create a pictogram • To select objects by attribute and make comparisons • To recognise that people can be described by attributes • To explain that we can present information using a computer	**Databases** • To create questions with yes/no answers • To identify the object attributes needed to collect relevant data • To create a branching database • To explain why it is helpful for a database to be well structured • To identify objects using a branching database • To compare the information shown in pictograms with a branching database **Data Logging** • To recognise how and why data is collected over time • To explain that data gathered over time can be used to answer questions • To use a digital device to collect data automatically • To explain that a data logger collects 'data points' from sensors over time • To use data collected over a long duration to find information • To collect the data needed to answer questions	**Flat File Databases** • To use a form to record information • To compare paper and computer-based databases • To outline how grouping and then sorting data allows us to answer questions • To explain that tools can be used to select specific data • To explain that computer programs can be used compare any data visually • To apply my knowledge of a database to ask and answer real-world problems **Introduction to Spreadsheets** • To identify questions which can be answered using data • To explain that objects can be described using data • To explain that formulas can be used to produce calculated data • To apply formulas to data, including duplicating • To create spreadsheet to plan an event • To choose suitable ways to present data

		• To use collected data to answer questions	