Aims

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
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

	Early Years (Nursery & Reception) Skills and knowledge	
3 and 4 Year Olds	**Personal, Social & Emotional Development**	• Remember rules without needing an adult to remind them.
	Physical Development	• Match their developing physical skills to tasks and activities in the setting.
	Understanding the World	• Explore how things work.
Reception	**Personal, Social & Emotional Development**	• Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'
	Physical Development	• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
	Expressive Arts & Design	• Explore, use and refine a variety of artistic effects to express their ideas and feelings.
ELG	**Personal, Social & Emotional Development – Managing Self**	• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly.
	Expressive Arts & Design – Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

	Year 1 & 2 – Key Stage 1 Computing Progression of skills and knowledge	
	Year A	Year B
Autumn 1 **Driver - Play**	**Technology Around Us (Computer Systems & Networks)** • Recognise common uses of information technology beyond school • Use technology purposefully to create, organise, store, manipulate, & retrieve digital content • 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.	**IT Around Us (Computer Systems & Networks)** • Recognise common uses of information technology beyond school
Autumn 2 **Driver - Wonder**	**Digital Painting (Creating Media)** • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content (Computing) • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space (Art & Design) • About the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and disciplines and making links to their own work (Art & Design)	**Digital Photography (Creating Media)** • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content (Computing) • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space (Art & Design)
Spring 1 **Driver - Insight**	**Digital Writing (Creating Media)** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content • Use technology safely and respectfully, keeping personal information private	**Making Music (Creating Media)** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content (Computing) • Play tuned and untuned instruments musically (Music) • Listen with concentration and understanding to a range of high-quality live and recorded music • Experiment with, create, select and combine sounds using the inter-related dimensions of music
Spring 2 **Driver - Risk**	**Grouping Data (Data & Information)** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content • Use technology safely and respectfully	**Pictograms (Data & Information)** • use technology purposefully to create, organise, store, manipulate and retrieve digital content • 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.
Summer 1 **Driver - Voice**	**Moving Robots (Programming)** • Understand what algorithms are; how they are implemented as programs on digital • devices; and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs	**Robot Algorithms (Programming)** • Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs
Summer 2 **Driver - Experience**	**Introduction to Animation (Programming)** • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • Create and debug simple programs • Use logical reasoning to predict the behaviour of simple programs	**Introduction to Quizzes (Programming)** • understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs

	Year 3 & 4 – Lower Key Stage 2 Computing progression of skills and knowledge	
	Year A	**Year B**
Autumn 1 **Driver - Play**	**Connecting Computers (Computer Systems & Networks)** • 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	**The Internet (Computer Systems & Networks)** • 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
Autumn 2 **Driver - Wonder**	**Animations (Creating Media)** • 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	**Audio Editing (Creating Media)** • 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
Spring 1 **Driver - Insight**	**Desktop Publishing (Creating Media)** • 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	**Photo Editing (Creating Media)** • Use search technologies effectively • 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
Spring 2 **Driver - Risk**	**Branching Databases (Data & Information)** • 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	**Data Logging (Data & Information)** • work with various forms of input • 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 • making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers (Science) • learn how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data. (Science)
Summer 1 **Driver - Voice**	**Sequences in Music (Programming)** • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in 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	**Repetition in Shapes (Programming)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in 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
Summer 2 **Driver - Experience**	**Events & Actions (Programming)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in 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	**Repetition in Games (Programming)** • Design, write, and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in 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

	Year 5 & 6 – Upper Key Stage 2 Computing progression of skills and knowledge	
	Year A	Year B
Autumn 1 **Driver - Play**	**Sharing Information (Computer Systems & Networks)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • 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 • 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	**Communication (Computer Systems & Networks)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • 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 • 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
Autumn 2 **Driver - Wonder**	**Vector Drawing (Creating Media)** • 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.	**3D Modelling (Creating Media)** • 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
Spring 1 **Driver - Insight**	**Video Editing (Creating Media)** • 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	**Web Pages (Creating Media)** • 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.
Spring 2 **Driver - Risk**	**Databases (Data & Information)** • 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	**Spreadsheets (Data & Information)** • 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
Summer 1 **Driver - Voice**	**Selection (Programming)** • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in 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	**Variables in Games (Programming)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in 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
Summer 2 **Driver - Experience**	**Selection in Quizzes (Programming)** • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in 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	**Sensing (Programming)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Use sequence, selection, and repetition in 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