Computing Progression

Purpose of Study:

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge an understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

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.

Key Reception Year Education programmes/Development Matters	NC Key Objectives Coverage in KS1	NC Key Objectives Coverage in LKS2	NC Key Objectives Coverage in UKS2
	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.	Pupils should be taught to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design.	
● Show resilience and perseverance in the face of a challenge. ● Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	**Coding** ● 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	**Coding** ● 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	**Coding** ● 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
Graphics ● Explore, use and refine a variety of artistic effects to express their ideas and feelings.	**Combining text and graphics** ● Use technology purposefully to create, organise, store, manipulate and retrieve digital content	**Combining text and graphics** ● 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	**Combining text and graphics** ● 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
● Listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and	**Computing in the wider world**	**Internet and Networks** ● Understand computer networks including the internet; how they can provide multiple services,	**Internet and Networks** ● Understand computer networks including the internet; how they can provide multiple services,

ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. (Understanding the world)	● Recognise common uses of information technology beyond school	such as the world wide web; and the opportunities they offer for communication and collaboration ● Use search technologies effectively	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
● Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.	**Online Safety** ● 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	**Online Safety** ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; ● identify a range of ways to report concerns about content and contact.	**Online Safety** ● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.