



## Computing KS2 Curriculum Subject Skills 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 and 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.

### **NCSF**

**Nurture** Technology is changing the lives of everyone. Through teaching digital literacy and e-safety, we equip our children with the skills needed to stay safe online and be responsible computer users. Within the safety of our nurtured environment we will prepare our pupils for their future in the digital world. **Cherish** All children will be provided with opportunities to understand how Computing and Information Technology are beneficial and integral to everyday life. Through practical tasks set in real-world contexts, the children's understanding of the world in a local and global context will develop providing them with the motivation and enthusiasm to cherish their technological and computing skills.

**Shine** Through various competitions and challenges, children have the opportunity to shine individually or as part of a group. Our broad and balanced curriculum provides children with opportunities to be confident, innovative users of a range of ICT and devices, preparing them for their role in an ever-increasing technological world.

**Flourish** Through sequenced and progressive learning, children will understand the part Programming and Algorithms play in the world around them as well as how to present and manipulate various forms of media and communication tools to flourish as citizens in our digital world.

Skill	Year 3	Year 4	Year 5	Year 6	End of Key Stage expectations	Vocabulary
<b>Algorithms and Programming</b>	<p>I design a sequence of instructions.</p> <p>I write programs that accomplish specific goals.</p>	<p>I give an on-screen robot specific instructions that takes them from A to B.</p> <p>I debug a program.</p>	<p>I combine sequences of instructions and procedures to turn devices on and off.</p> <p>I use technology to control an external device.</p>	<p>I design a solution by breaking a problem up.</p> <p>I recognise that different solutions can exist for the same problem.</p> <p>I explore 'what if' questions by planning different scenarios for controlled devices.</p>	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p>	<p>design, write, debug, program, instructions, sequences, solution, controlled device, problems, decomposing, stimulating systems, physical systems</p>
	<p>I work with various forms of input.</p> <p>I work with various forms of output.</p>	<p>I experiment with variables to control models.</p>	<p>I design algorithms that use repetition and 2-way selection.</p>	<p>I use selection in programs.</p> <p>I work with variables.</p>	<p>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p>	<p>sequence, selection, variables, input, output, algorithms,</p>
		<p>I make an accurate prediction and explain why I believe something will happen (linked to programming).</p>		<p>I use logical reasoning to detect problems in algorithms.</p> <p>I explain how an algorithm works.</p>	<p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p>	<p>prediction, logical reasoning, algorithms,</p>



<b>Digital Literacy and Research</b>	I understand what computer networks do and how they provide multiple services.				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	networks, internet, world wide web, communication, collaboration,
	<p>I search for information on the web in different ways.</p> <p>I discern where it is best to use technology and where it adds little or no value.</p>		<p>I analyse information.</p> <p>I evaluate information.</p> <p>I understand how search results are selected and ranked.</p>		Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	digital literacy, analyse, evaluate, research, ranking, searching, digital content
<b>Information Technology</b>	<p>I use a range of software for similar purposes.</p> <p>I collect information.</p> <p>I design and create content.</p>	<p>I select and use software to accomplish goals.</p> <p>I collect and present data.</p>	I edit a film.	<p>I select, use and combine software on a range of digital devices.</p> <p>I use a range of technology for a specific project.</p>	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	research, communicate, software, design, create, present, data, edit, evaluate, technology, podcast,

	<p>I present data.</p> <p>I manipulate and improve digital images.</p>	<p>I produce and upload a podcast.</p>			<p>given goals, including collecting, analysing, evaluating and presenting data and information</p>	
<b>E-safety</b>	<p>I use technology respectfully and responsibly.</p> <p>I know different ways I can get help if I am concerned.</p>	<p>I recognise acceptable and unacceptable behaviour using technology.</p>	<p>I understand that you have to make choices when using technology and that not everything is true and/or safe.</p>	<p>I discuss the risks of online use of technology.</p> <p>I identify how to minimise risks.</p>	<p>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>	<p>respectful, responsible, acceptable, unacceptable, safety, passwords,</p>