



## Progression in Computing



	<b>Nursery</b>	<b>Reception</b>	<b>ELG</b>
<b>Personal, Social and Emotional Development</b>	Remember rules without needing an adult to remind them.	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'.	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.
<b>Physical</b>	Match their developing physical skills to tasks and activities in the setting.	Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	
<b>Understanding the World</b>	Explore how things work.		

**Computer Science**

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Give instructions to a friend and follow their instructions to move around a space.</p> <p>Describe what happens when buttons are pressed on a robot or device.</p> <p>Press buttons in the correct order to make a robot follow a short sequence.</p> <p>Understand what an algorithm is and be able to create a simple algorithm.</p> <p>Understand and explain how algorithms are used in every day life.</p> <p>Begin to predict what will happen for a short sequence of instructions.</p> <p>Begin to use different software or applications to</p>	<p>Understand what an algorithm is and demonstrate simple linear algorithms.</p> <p>Be able to explain the order needed to do things to make something happen and to talk about it as an algorithm.</p> <p>Programme a robot or software to do a particular task.</p> <p>Look at a basic program and explain what will happen.</p> <p>Use programming software and applications to make objects move.</p> <p>Use logical reasoning to predict and debug more complex programs.</p> <p>Can create and debug with improved confidence &amp; efficiency.</p> <p>Begin to program using simple block code.</p>	<p>Understand how an algorithm is implemented using a sequence of precise instructions.</p> <p>Can predict the outcome of a sequence of precise instructions.</p> <p>Repeatedly test a program and recognise when they need to debug it.</p> <p>Detect a problem in an algorithm, which could result in a different outcome to the one intended.</p> <p>Understand what inputs and outputs are, how they can be used.</p> <p>Provide examples of how to use inputs and outputs effectively.</p> <p>Designs, writes, executes and debugs programs of increasing complexity that accomplish a specific goal.</p> <p>Use logical reasoning to predict and debug more complex programs including inputs and outputs.</p>	<p>Design simple algorithms using loops and repeats, whilst detecting and correcting errors is debugging.</p> <p>Write and execute an efficient program, using loops such as forever, repeat &amp; repeat until commands.</p> <p>Decompose a problem into smaller parts with some verbal reasoning.</p> <p>Has an understanding of how sequencing, using inputs and repetition in programs has specific effects on the output, works with 'loops' and understands their effect.</p> <p>Recognise that an algorithm will help to sequence more complex programs.</p> <p>Use logical reasoning to predict and debug more complex programs including loops and repeats.</p>	<p>Program a condition that uses a sensor to detect a change, which can select an action within a program.</p> <p>Decomposes more openended problems into smaller parts, provides some reasoning for their choices.</p> <p>Approaches a range of problems using computationally thinking concepts, helping them to design other algorithms for other specific outcomes.</p> <p>Design, write and execute an efficient program, including selection (IF...THEN) command.</p> <p>Change an input to a program to achieve a different output.</p> <p>Use logical reasoning to predict and debug more complex programs including selection.</p> <p>Uses programs linked to physical systems and sensors e.g. the alarm goes off when the sensor is triggered.</p>	<p>Understand the importance of planning, testing and correcting algorithms.</p> <p>Demonstrate a range of different strategies to solve a problem including: abstraction, decomposition, logic &amp; evaluation.</p> <p>Understand why sequence &amp; patterns are important when creating simple algorithms that are part of a more complex program.</p> <p>Gives reasoning for each step within algorithms and applying them to a program.</p> <p>Understand &amp; develop complex flow diagrams.</p> <p>Use a variable to increase programming possibilities.</p> <p>Use a variable and relational operators (e.g. &lt; = &gt;) within a loop to stop a program.</p> <p>Evaluate the effectiveness and efficiency of an algorithm while continually testing the programming of that program.</p>

<p>create movement and patterns on a screen.</p> <p>Use the word debug to correct an algorithm that doesn't work in the way it was intended.</p>				<p>Design, write and execute an efficient program, which demonstrates and understanding of the difference between, and appropriate use of IF...THEN, IF...THEN...ELSE, and nested IF statements.</p>	<p>Use different inputs (including sensors) to control a device or onscreen action and predict what will happen.</p> <p>Use logical reasoning to predict and debug more complex programs including: selection, variables and operators.</p>
--	--	--	--	--	---

**Digital Literacy**

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Understand why we need passwords.</p> <p>Understand that we must keep passwords private.</p> <p>Explain what personal information is.</p> <p>Understand that we must keep personal information private.</p> <p>Communicate safely and respectfully online.</p> <p>Know what to do when concerned about online content.</p> <p>Know what to do if someone tries to contact you online</p>	<p>Understand the need to keep a password private.</p> <p>Understand the need to keep personal information private.</p> <p>Demonstrate the use of technology responsibly in terms of how we use it and the time we spend using it.</p> <p>Know how to report inappropriate content or contact online.</p>	<p>Children consider their responsibilities and actions to others online.</p> <p>Children consider that all of the media they see could have been altered.</p> <p>Understand how to use a search engine responsibly and safety</p>	<p>Understand that media can be edited online for advertising and other purposes.</p> <p>Recognise what is acceptable and unacceptable behaviour when using technology and online services.</p> <p>Children understand how effective a strong password is and what a strong password looks like.</p>	<p>Be aware of their digital footprint.</p> <p>Understand the dangers of building online relationships.</p> <p>Explain what the consequences might be to using technology inappropriately or accessing inappropriate content intentionally.</p>	<p>Be aware of fake news and how to dissect it.</p> <p>Understand the difference between misinformation and disinformation.</p> <p>Understand what Copywriting is and using someone else’s work responsibly.</p> <p>Manage their conduct and contact appropriately and safely when using technology and online services.</p>

**ICT Beyond School**

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Recognise that a range of digital devices and products can be considered computers.</p> <p>Recognise the ways in which technology is used in their homes and community.</p> <p>Understand that computers have no intelligence and can do nothing without being programmed.</p> <p>Begin to identify some of the benefits to using technology.</p>	<p>Children can explain why they use technology in the classroom, in their homes and in the community.</p> <p>Identify the benefits of using technology, such as creating content and communicating efficiently.</p> <p>Can identify a computer by knowing that it has inputs, a processor and outputs.</p> <p>Can identify parts of a computer including what an input and output is.</p>	<p>Save and retrieve work online, on the school network and their own device.</p> <p>Tell you ways to communicate with others online.</p> <p>Knows how navigate the web responsibly.</p> <p>Can carry out effective web searches to collect digital content.</p> <p>Think about whether they can use images that they find online in their own work.</p>	<p>Understand the difference between the Internet and online services such as the World Wide Web, instant messaging and email.</p> <p>Tell you whether a resource they are using is from the World Wide Web, the school network or their own work.</p> <p>Identify key words to use when searching safely on the World Wide Web.</p> <p>Show an awareness of a range of Internet services such as the World Wide Web, email and instant messaging.</p> <p>Explain how to check who owns photos, text and clipart.</p>	<p>Use different online tools for different purposes.</p> <p>Use a search engine effectively to find appropriate information and check the reliability of a website.</p> <p>Understand how search results are selected and ranked and the algorithms they use.</p> <p>Recognise and evaluate different types of information they find on the World Wide Web.</p> <p>Think about the reliability of information they read on the World Wide Web or other Internet services (Fake News).</p>	<p>Explain the Internet services they need to use for different purposes.</p> <p>Describe the different parts of a webpage.</p> <p>Understands how to construct a website using basic HTML tags.</p> <p>Explain what copyright is and acknowledge the sources of information that they find online.</p> <p>Understands how data is transmitted across a network.</p> <p>Understand what IP is and how it's used.</p> <p>Can explain how networks use the Internet to send and receive data.</p>