



Computing Progression of Skills



	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	<p>Increasingly follow rules, understanding why they are important.</p> <p>Explore how things work.</p>	<p>Show resilience and perseverance in the face of a challenge.</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Be confident to try new activities and show independence,</p>	<p>Use the word algorithm correctly, explaining that it is a list of clear instructions.</p> <p>Can follow a simple algorithm (like a recipe, or rules for a game).</p> <p>Can put a sequence in the correct order.</p> <p>Know that if one part of the algorithm changes then the</p>	<p>Explain what the word algorithm means using the words 'unambiguous' and 'precise' correctly in their definition.</p> <p>Create their own simple (linear) algorithms.</p> <p>Explain what the endpoint of an algorithm will be (e.g. predict where a BeeBot will travel to by</p>	<p>Can read simple linear algorithms in a familiar programming language (e.g. Scratch, Lego WeDo).</p> <p>Are able to predict what the outcome of a program will be, run the program and check their results.</p>	<p>Read increasing complex programs in a familiar programming language and can suggest plausible meanings for new blocks of code.</p> <p>Can produce diagrams to show how the code could look before creating blocks</p>	<p>Plan and design a solution (algorithm) that uses repetition and two-way selection i.e. if, then and else.</p> <p>Can explain the difference between 'if', 'then' and 'else' statements.</p> <p>Can independently declare and assign variables.</p>	<p>Use decomposition to plan and design solutions for different parts of a problem.</p> <p>Design, write and debug modular programs using procedures.</p> <p>Know that a procedure can be used to hide the detail with a sub-solution</p>



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		<p>resilience and perseverance in the face of challenge.</p> <p>Explain the reasons for rules, know right from wrong and try to behave accordingly.</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p>	<p>end result will be different.</p> <p>Can name devices in school and at home that use an algorithm to work (a washing machine, alexa, BeeBot).</p> <p>Can construct their own algorithm (pictures, symbols, emergent writing or verbally) to complete an action (draw a face, move a BeeBot, make a sandwich).</p>	<p>reading a program of arrows).</p> <p>Identify mistakes/errors in algorithms and make suggestions about how to make improvements (debug).</p>	<p>Plan and design a program for a specific task.</p> <p>Find and correct errors i.e. debugging in an algorithm written in a familiar programming language.</p> <p>Show the use of sequence and repetition in programs.</p>	<p>of code on screen.</p> <p>Know that programs can work with different types of data (text, numbers, sound).</p> <p>Are able to use a range of input and output devices (sensors, motors etc.)</p>	<p>Show an awareness of tasks best completed by humans or computers.</p> <p>Know that different solutions exist for the same problem.</p>	<p>(procedural abstraction).</p>
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<p>IT and Digital Literacy</p>	<p>Increasingly follow rules, understanding why they are important.</p> <p>Explore how things work.</p>	<p>Show resilience and perseverance in the face of a challenge.</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.</p>	<p>Can open a program and create work for a given task (e.g. open 2paint and produce a digital image, open 2publish+ and input text and images).</p> <p>Name different types of computer produced work (e.g. words, pictures, music, films).</p> <p>Talk about their work and suggest ways to improve it.</p> <p>Are beginning to save their work in the correct folders as directed by staff.</p>	<p>Can select or name software/app that would be appropriate for a simple given task.</p> <p>Use a wider range of programs to accomplish more complex tasks (e.g. produce graphs, access age appropriate databases).</p> <p>Can open a saved piece of work, edit the project and resave with</p>	<p>Refine projects that include text, sound and graphics that produce a digital artefact with a given purpose.</p> <p>Collect images from devices or the internet and use simple editing tools.</p> <p>Collect information from a range of sources and use this to find answers to questions.</p>	<p>Capture good quality still and moving images considering the purpose and the audience.</p> <p>Plan, produce and edit a media project (presentation, animation, film) taking into account the audience and the copyright of resources.</p> <p>Can explain the difference between data</p>	<p>Know the difference between the internet and internet service e.g. the World Wide Web.</p> <p>Compare the difference between hardware and application software, and the roles within a computer system.</p> <p>Produce their own success criteria to evaluate their</p>	<p>work with increasing confidence both independently and as a group to create a digital project, which</p> <ul style="list-style-type: none"> ○ Meets a brief / solves a problem ○ Has used a range of appropriate software ○ Has been created for a targeted audience



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		<p>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.</p> <p>Explain the reasons for rules, know right from wrong and try to behave accordingly.</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture,</p>	<p>Share their use of technology outside of school, naming common devices and their functions (computer/laptop, tablet devices, smart home devices).</p> <p>Login and off the school network with increasing speed and accuracy using appropriate scaffolding.</p> <p>List what personal information to keep private.</p> <p>Name at least one action to follow if they have concerns about their online safety.</p>	<p>increasing accuracy.</p> <p>Can find relevant content for a topic from the world wide web using a web browser.</p> <p>Login without support.</p> <p>Explain how to use technology safely.</p> <p>Can explain the importance of keeping passwords secret and protecting other personal information.</p>	<p>Discuss how to improve their work and knows that by using technology any editing can be made more quickly.</p> <p>Use the internet to carry out simple web searches to collect digital content.</p> <p>Show an awareness of copyright and understand that digital work belongs to the author.</p>	<p>and information.</p> <p>Can organise data in a table to make it useful.</p> <p>Use a spreadsheet to produce simple graphs.</p> <p>Explain how and when to use range on online services responsibly, identifying possible risks and how they can be reduced.</p>	<p>own work and that of others.</p> <p>Use the criteria to improve the content and design of their digital project.</p> <p>Collect data in a variety of ways; use this to produce graphs or charts which are used in appropriate software to present the analysis.</p> <p>Make spreadsheet models to answer given problems, using a range of</p>	<ul style="list-style-type: none"> ○ Demonstrates an awareness of copyright ○ Shows evidence of evaluation and improvement. Analyse and evaluate data and know that poor quality data leads to unreliable results, and inaccurate conclusions. Can represent data in a variety of formats (charts, tables, graphs, infographics) and can explain
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		form and function.			<p>Know a range of ways to report unacceptable content they might encounter online.</p> <p>Discuss what is appropriate contact when online.</p>		<p>simple calculations and functions.</p>	<p>when each would be appropriate.</p> <p>Know how to effectively use search engines, and know how search results are selected, including that search engines use 'web crawler programs'.</p> <p>Perform more complex searches for information e.g. using Boolean and relational operators.</p>
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