



## Computer Science Knowledge and Skill Progression

### EYFS & Key Stage 1

	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer2</u>
<b>EYFS</b>	What is ICT? ICT in the world around us. Introducing ICT in our classroom and at home	App of the week Introduce and put out app each week for continuous provision	Paint Programme Draw your own pet. Following simple modelling from adult.	Simple City- our community. Using Google Earth to look around our community	Introduce E-safety using Project Evolve- Self image and Identity- EYFS strand

	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer2</u>
<b>Year 1</b>	Logging in and out Using our independent skills to log in to our own computer.	Coding App- I can input a simple algorithm.	Using our own camera- Photography	Beebots- Using and programming my own Bee-bot	Project Evolve Self image and Identity strand	Project Evolve Self Image and Identity strand 2

	<u>Computer systems and networks</u>	<u>Data and information</u>	<u>Programming</u>
<b>Year 2</b>	<ul style="list-style-type: none"> <li>-To know how to recognise common uses of information technology beyond school</li> <li>-To use technology safely and respectfully</li> </ul>	<ul style="list-style-type: none"> <li>-To know how to use technology to create, organise, store and manipulate and retrieve digital content</li> <li>-To know how to keep personal information private</li> <li>-To identify where to go for help and support (contact on the internet)</li> </ul>	<ul style="list-style-type: none"> <li>-To know what algorithms are</li> <li>-To know how they are implemented as programmes on digital devices</li> <li>-To create and debug simple programmes</li> <li>-To know the behaviour of simple programmes</li> </ul>

### Key Stage 2

	<u>Computer systems and networks</u>	<u>Creating Media</u>	<u>Data and information</u>	<u>Programming</u>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>• Know that digital devices have inputs, processes and outputs.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to capture and edit digital images to produce stop-frame animation that tells a story.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to build and use branching databases to group objects using yes/no questions.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to create sequences in a block-based programming language to make music.</li> </ul>

	<ul style="list-style-type: none"> <li>• Know how devices can be connected to make networks.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to create documents by modifying text, images and page layouts for a specified purpose.</li> </ul>		<ul style="list-style-type: none"> <li>• Know how to write algorithms and programs that use a range of events to trigger sequences of actions.</li> </ul>
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	<u>Computer systems and networks</u>	<u>Creating Media</u>	<u>Data and Information</u>	<u>Programming</u>
<b>Year 4</b>	<ul style="list-style-type: none"> <li>• To know how to develop an understanding of networks.</li> <li>• Appreciate the internet as a network of networks.</li> <li>• To know about the world wide web and learn about who owns content and what they can add, access and create. Evaluate online content.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to examine devices capable of recording digital audio.</li> <li>• To know how to use Audacity to produce podcast, including editing, adding multiple tracks, and opening and saving.</li> </ul>	<ul style="list-style-type: none"> <li>• To know how data is collected over time.</li> <li>• Know how computers use input devices called sensors to monitor environment.</li> <li>• Know how to collect data as well as access data captured over long periods of time.</li> <li>• Know how to use a computer to review and analyse data.</li> </ul>	<ul style="list-style-type: none"> <li>• To know how to create programs by planning, modifying and testing commands to create shapes and patterns.</li> <li>• To know how to modify existing animations and games using repetition.</li> <li>• To know how to design and create a game which uses repetition, applying stages of programming design throughout.</li> </ul>

	<u>Computer systems and networks</u>	<u>Creating Media</u>	<u>Data and information</u>	<u>Programming</u>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>• Know how information is transferred between systems and devices</li> <li>• Know the input, output and process aspects of a variety of different real work systems</li> </ul>	<ul style="list-style-type: none"> <li>• Know that Vectr images are made up of shapes</li> <li>• Know how to use different drawing tools and how images are created in layers</li> <li>• Know how images are grouped and duplicated to create more complex pieces of work</li> <li>• Know how to create short videos</li> </ul>	<ul style="list-style-type: none"> <li>• Know how a flat file database can be used to organise data in records</li> <li>• Know how to use tools within a database to order and answer questions</li> <li>• Know how to create graphs and charts from data to help solve problems</li> </ul>	<p>Know how to use physical computing to explore concepts of selections in programming</p> <p>Know how to connect and programme components of a micro controller</p> <p>Know how algorithms and programme\s can be used through the use of an input device. Know how to use repetition and conditions to write algorithms and programmes that utilise these concepts.</p> <p>Know how the 'if... then... else... ' structure can be used to select different outcomes depending on whether a condition is true or false.</p>

		<ul style="list-style-type: none"><li>• Know how to capture, edit and manipulate videos</li></ul>		<p>Know how to work a programme that asks questions and use selection to control the outcomes based on the answers given.</p> <p>Know how to implement knowledge of algorithms to design a quiz in response to a given task.</p> <p>Know how to evaluate programmes by identifying how it meets the requirements of the task, the ways they have improved it and further ways it could be improved (design, write, debug).</p>
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	<b><u>Computing and Networks</u></b>	<b><u>Creating Media</u></b>	<b><u>Data and Information</u></b>	<b><u>Programming</u></b>
<b>Year 6</b>	<p>Know how computer networks, including the internet work.</p> <p>Know how computer networks can provide multiple services e.g. the world wide web.</p> <p>Know the opportunities that computer networks offer for communication and collaboration.</p>	<p>Know how to use technology purposefully to create, organise and manipulate digital content.</p> <p>Know how to use technology purposefully to store and retrieve digital content and to recognise common uses of information technology beyond school.</p>	<p>Know how to select, use and combine a variety of software (including internet services) on a range of digital devices</p> <p>Know how to design and create a range of programs, systems and content that accomplish given goals including collecting, analysing, evaluating and presenting data and information.</p>	<p>Know how to 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>Know how to use sequence, selection and repetition in programs; work with variables and various forms of input and output.</p> <p>Know how to use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>Know how to 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.</p>