

# Arboretum knowledge progression Grid

## Computing

	EYFS	KS1	LKS2	UKS2
Coding – NC	Although the Early Years no longer includes Computing in its new Framework, we recognise the many skills and opportunities early computing brings to our youngest pupils.	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.to</p> <p>Create and debug simple programs.</p> <p>Use logical reasoning to predict the behaviour of simple programs.</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>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</p> <p>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p>	
	Programmable toys to be available when appropriate to the children’s learning.	<p>To understand that an <b>algorithm</b> is a precise <b>sequence</b> of instructions to perform a specific task e.g. instructions for making a sandwich, building a Lego model. (1 &amp; 2)</p> <p>To understand that <b>input</b> is information (<b>data</b>) provided to a computer system such as via a keyboard, mouse, microphone or camera and <b>output</b> is the information produced by a computer system such as on screen, through speakers or the movement of a programmable toy. (1 &amp; 2)</p> <p>To write a set of commands (<b>algorithm</b>) for a Bee-Bot and implement them as a <b>program</b> (a set of instructions written in a language a computer can understand). (1 &amp; 2)</p> <p>To test the program for <b>bugs</b> (mistakes) and <b>debug</b> (fix mistakes) (2)</p> <p>To predict the outcome of a simple program e.g. predicting the end point of a Bee-bot. (2)</p> <p>To begin to use Scratch Jnr (2)</p>	<p>To write a <b>program</b> to create an <b>animation</b> (3 &amp; 4)</p> <p>To design an <b>algorithm</b> for an animation (storyboard that breaks down what will happen into chunks) (3 &amp; 4)</p> <p>To create character and background for an animation. (3 &amp; 4)</p> <p>To use a microphone (input) to create sound (output) for an animation. (3 &amp; 4)</p> <p>To understand the terms <b>input</b> (keyboard, mouse, microphone, camera) and <b>output</b> (on screen, through speakers, on a printer) (3 &amp; 4)</p> <p>To test the program for <b>bugs</b> (mistakes) and <b>debug</b> (fix mistakes) (3 &amp; 4)</p> <p>To <b>sequence</b> blocks in Scratch to program an animation. (3 &amp; 4)</p> <p>To use <b>variables</b> to create an effect e.g. <b>selection</b> instructions <i>if, when, otherwise</i> or <b>repetition until</b> (4)</p> <p>To create quiz in Scratch as second unit (4)</p>	<p>To write a <b>program</b> to create a Pong game in Scratch (5 and 6)</p> <p>To design an <b>algorithm</b> for a Pong game that breaks down what will happen. (5 and 6)</p> <p>To create a <b>backdrop</b> and ball for the game (5 and 6)</p> <p>To add a <b>paddle</b> that is <b>controlled</b> by the player (5 and 6)</p> <p>To <b>sequence blocks</b> in Scratch to program a game (5 and 6)</p> <p>To use <b>variables</b> to create an effect e.g. <b>selection</b> instructions <i>if, when, otherwise</i> or <b>repetition until</b> (5 and 6)</p> <p>To add a <b>variable</b> to keep score (6)</p> <p>To add sound and colour effects (6)</p> <p>To test small bits of code at a time for <b>bugs</b> and <b>debug</b>. (5 and 6)</p>

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IT – NC	Although the Early Years no longer includes Computing in its new Framework, we recognise the many skills and opportunities early computing brings to our youngest pupils.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	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.	
	When appropriate to learning, items such as keyboards will be placed in the home corner.	<p><b>Word</b></p> <p>To develop keyboard skills (1)</p> <p>To add text to a Word document (1 &amp; 2)</p> <p>To copy and paste images into a Word document (from a given source 1, found from a different file or internet 2)</p> <p>To save (1 &amp; 2), <b>retrieve</b> (1 &amp; 2) and organise <b>documents</b> (2)</p> <p>To manipulate content for a specific purpose or audience e.g. change <b>font</b>, resize, change colour (2)</p> <p>(Paint – digital art to present in Word doc term 3)</p>	<p><b>Power Point</b></p> <p>To search for information on the <b>web</b> (3 and 4)</p> <p>To create <b>slide templates</b> (3 and 4)</p> <p>To add a <b>text box</b> to a Power Point presentation (3 and 4)</p> <p>To organise slides with <b>hyper-links</b> (4)</p> <p>To create different effects e.g. slide <b>transitions</b>, animations, action settings</p> <p>To insert different types of <b>media</b> e.g. video, sound, images</p> <p>To select appropriate <b>software</b> to create content (e.g. Word for a letter, Power Point for a presentation) (4)</p> <p>Continue to provide opportunities for the children to use Word – point out that there are similarities between Word and Power Point</p>	<p><b>Excel</b></p> <p>To become familiar with <b>spreadsheets</b> using a given template (5)</p> <p>To enter and edit text in <b>cells</b> (5 and 6)</p> <p>To begin to use the <b>SUM formula</b> for a given purpose (5) using own data (6)</p> <p>To order data using <b>sort function</b> (6)</p> <p>To produce a <b>graph</b> to present data (5 and 6)</p> <p>To <b>format</b> graph in different ways (6)</p> <p>To add, edit and calculate data by following instructions (6)</p> <p>To use a spreadsheet to solve a given problem (6)</p> <p>To plan and calculate a <b>spending budget</b> using given information (5 and 6)</p> <p>To design a spreadsheet for a specific purpose (6)</p> <p>Continue to provide opportunities for the children to use Word and Power Point</p>

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DL - NC	<p>Although the Early Years no longer includes Computing in its new Framework, we recognise the many skills and opportunities early computing brings to our youngest pupils.</p>	<p>Recognise common uses of information technology beyond school.</p> <p>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.</p>	<p>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.</p> <p>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</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>Online safety to be introduced through a range of stories.</p>	<p>To recognise the difference between <b>digital technology</b> and non-digital technology. (1)</p> <p>To identify technology in the home (1)</p> <p>To identify technology in the wider world (2)</p> <p>To use the <b>internet</b> to find information (QR codes 1, access given websites 2)</p> <p>To keep personal information private</p> <p>To be respectful online</p> <p>To know who to talk to if they are worried or concerned about online content or inappropriate behaviour online (cyberbullying)</p> <p>To follow the rules of the school internet use policy</p> <p>(Information for a Connected World document)</p>	<p>To add websites to a favourites list (3 and 4)</p> <p>To use search tools to find and use an appropriate website and content (3 and 4)</p> <p>To use strategies to improve results when searching online (4)</p> <p>To understand how online actions impact on other people</p> <p>To show respect for intellectual property rights</p> <p>To create secure passwords to keep personal data safe</p> <p>To be aware of their digital footprint (data automatically generated when online services are used)</p> <p>To be aware of and abide by school internet policy</p> <p>(Information for a Connected World document)</p>	<p>To understand that <b>computer networks</b>, including the internet are made up of computers connected together (5 and 6)</p> <p>To recognise that computer networks can provide multiple services e.g. email, blogs, social networks (5 and 6)</p> <p>To appreciate how search results are ranked (6)</p> <p>To be discerning in evaluating digital content</p> <p>To understand how online actions impact on other people</p> <p>To show respect for intellectual property rights</p> <p>To create secure passwords to keep personal data safe</p> <p>To be aware of their digital footprint (data automatically generated when online services are used)</p> <p>To be aware of and abide by school internet policy</p> <p>(Information for a Connected World document)</p>