



Knowledge and Skills Progression Map : Computing

		End of Year Expectations	Greater Depth
EYFS	Computer Science	<ul style="list-style-type: none"> • ELG 02 Understanding: can children follow instructions involving several ideas or actions? They answer 'how' and 'why' questions about their experiences and in response to stories or events. • ELG 04 Moving and handling: can children show good control and co-ordination in large and small movements. They move confidently in a range of ways, safely negotiating space and following instructions. 	<ul style="list-style-type: none"> • Can children can move and predict route of programmable toys such as Beebots?
	Digital Literacy	<ul style="list-style-type: none"> • ELG 16 Exploring and using media and materials: Can children sing songs, make music and dance, and experiment with ways of changing them? They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • ELG 17 Being imaginative: Can children use what they have learnt about media and materials in original ways, thinking about uses and purposes? They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories. <p><i>NB: Aspects of almost all of the other ELGs could be enhanced or evidenced though the use of technology e.g. ELGs 01, 02, 09 and 10 would all benefit from the use of eBooks and recording devices.</i></p>	<ul style="list-style-type: none"> • Can they access a website and navigate around it? • Can they use apps on a tablet and make things happen?

	Information Technology	<ul style="list-style-type: none"> • ELG 13 People and communities: can children talk about past and present events in their own lives and in the lives of family members? They know that other children don't always enjoy the same things, and are sensitive to this. • ELG 15 Technology: can children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. 	<ul style="list-style-type: none"> • Can they create audio using digital instruments and recordings • Do they know about similarities and differences between themselves and others, and among families, communities and traditions.
Year 1	Computer Science	<ul style="list-style-type: none"> • Can they physically follow instructions • Can they give others instructions to move around • Can they predict outcomes from sequences • Can they begin to identify an algorithm to achieve a specific purpose • Can they create an algorithm to execute a program on a digital device • Are they beginning to predict what will happen for a short sequence of instructions in a program • Are they beginning to use software to create movement and patterns on a screen • Can they use Computer Science vocabulary accurately 	<ul style="list-style-type: none"> • Can they physically follow instructions including turns (right angle) • Can they create an algorithm for a specific purpose • Are they able to sequence and programme a digital device specifying distance and turns, and drawing a trail • Can they use the word debug to correct any mistakes and explain what they have done
	Digital Literacy	<ul style="list-style-type: none"> • Can they access a website and navigate around it • Can they recognise how they use technology in their home and at school • Are they beginning to evaluate web sites by giving opinions • Do they have strategies if they see something inappropriate on a website and/or digital device 	<ul style="list-style-type: none"> • Can they use a search engine to find information using agreed key words? • Can they navigate to a website by entering a simple web address? • Do they know about the risks of advertising or pop-up windows? • Do they understand that some information online may be untrue?

			<ul style="list-style-type: none"> • Can they keep their password secret? • Can they contribute to online class blogs? • Do they understand the need to be respectful online • Do they know that they need to check information before uploading?
	Information Technology	<ul style="list-style-type: none"> • Can they create audio using digital instruments and recordings • Can they create/edit an image using a range of 'tools' both on and offline • Can they use a keyboard effectively • Can they use a word bank for help and use online spelling tools • Can they add text to photographs and pictures • Are they beginning to explain reasons why they have made choices to a teacher or talk partner • Can they save their work to the appropriate location • Are they beginning to retrieve their work • Can they print work and pictures • Can they make a pictogram and understand what it shows • Can they understand that technology can help to create and edit a range of document styles 	<ul style="list-style-type: none"> • Can they use a search engine to find information using agreed key words? • Can they navigate to a website by entering a simple web address? • Do they know about the risks of advertising or pop-up windows? • Do they understand that some information online may be untrue ? • Can they keep their password secret ? • Can they contribute to online class blogs? • Do they understand the need to be respectful online? • Do they know that they need to check information before uploading?
Year 2	Computer Science	<ul style="list-style-type: none"> • Can they physically follow instructions including turns (right angle) • Can they create an algorithm for a specific purpose • Are they able to sequence and programme a 	<ul style="list-style-type: none"> • Can they plan and enter a sequence of instructions on a robot/sprite to achieve specific outcomes? • Can they test and improve/debug programmed

		<p>digital device specifying distance and turns, and drawing a trail</p> <ul style="list-style-type: none"> • Can they predict what will happen and test results • Can they use software to create movement and patterns on a screen • Are they able to talk about similarities and differences between physical devices and onscreen robots • Can they use the word debug to correct any mistakes and explain what they have done • Have they experience a range of control devices such as a microscope, sound recorders, cameras and other devices 	<p>sequences ?</p> <ul style="list-style-type: none"> • Can they use loops (repeat/forever) to achieve solutions to tasks ?
	<p>Digital Literacy</p>	<ul style="list-style-type: none"> • Can they use a search engine to find information using agreed key words? • Can they navigate to a website by entering a simple web address? • Do they know about the risks of advertising or pop-up windows? • Do they understand that some information online may be untrue? • Can they keep their password secret? • Can they contribute to online class blogs? • Do they understand the need to be respectful online • Do they know that they need to check information before uploading? 	<ul style="list-style-type: none"> • Do they know the difference between fact, fiction and opinion online?

	Information Technology	<ul style="list-style-type: none"> • Can they use a search engine to find information using agreed key words? • Can they navigate to a website by entering a simple web address? • Do they know about the risks of advertising or pop-up windows? • Do they understand that some information online may be untrue ? • Can they keep their password secret ? • Can they contribute to online class blogs? • Do they understand the need to be respectful online? • Do they know that they need to check information before uploading? 	<ul style="list-style-type: none"> • Can they create and manipulate digital artwork? • Can they use reasoning about the quality and composition of images? • Can they perform basic editing on images/video – crop, re-colour, resize?
Year 3	Computer Science	<ul style="list-style-type: none"> • Can they plan and enter a sequence of instructions on a robot/sprite to achieve specific outcomes? • Can they test and improve/debug programmed sequences ? • Can they use loops (repeat/forever) to achieve solutions to tasks ? • Can they use computational thinking to solve open ended problems? • Can they talk about algorithms planned by others and identify any problems and the expected outcome? • Can they explain how algorithms work, predicting outcomes and debugging? 	<ul style="list-style-type: none"> • Can they use an algorithm to sequence and order more complex programming?
	Digital Literacy	<ul style="list-style-type: none"> • Can they use an age appropriate search engine independently? 	<ul style="list-style-type: none"> • Can they use an internet search to answer questions on a topic and know there are

		<ul style="list-style-type: none"> • Can they understand plagiarism when using copy/paste from a webpage? • Do they know the difference between fact, fiction and opinion online? • Can they explore and discuss the benefits of a range of online communication tools? • Do they know how to respond to unpleasant communications? • Do they understand the need to keep personal information private and am responsible in their online presence? • Can they create and use a basic email service? • Do they know the difference between personal, private and public online spaces and the risks associated with these? • Do they understand that there are rules about using public spaces online? • Do they know that some videogames and online services are not appropriate for their age? 	<p>different search engines available?</p> <ul style="list-style-type: none"> • Can they use different search engines and their features, e.g. Google Image Search, video, sound etc?
	Information Technology	<ul style="list-style-type: none"> • Can they create and insert music and sounds into presentations and documents? • Can they create and manipulate digital artwork? • Can they use reasoning about the quality and composition of images? • Can they perform basic editing on images/video – crop, re-colour, resize? • Can they use numerous design features such as text boxes, borders and WordArt in different layouts and styles? 	<ul style="list-style-type: none"> • Can they use the search tool find information and search for answers to simple question? • Can they create simple bar charts and use them to answer questions?
Year 4	Computer Science	<ul style="list-style-type: none"> • Can they plan and enter a sequence of 	<ul style="list-style-type: none"> • Can they write down the steps required to

		<p>instructions on a robot/sprite to achieve specific outcomes?</p> <ul style="list-style-type: none"> • Can they test and improve/debug programmed sequences ? • Can they use broadcast/receive to link sprites and stage? • Can they use selection (if else) blocks to give different outcomes? • Can they use an algorithm to sequence and order more complex programming? • Can they explain how algorithms work, predicting outcomes and debugging? • Can they create and edit procedures using commands such as pen up, pen down and change direction? 	<p>achieve the outcome that is wanted and refer to this when programming?</p> <ul style="list-style-type: none"> • Can they predict the outputs for the steps in an algorithm?
	<p>Digital Literacy</p>	<ul style="list-style-type: none"> • Can they use an internet search to answer questions on a topic and know there are different search engines available? • Can they use different search engines and their features, e.g. Google Image Search, video, sound etc? • Do they understand copyright issues – what images / videos / sounds are legal and safe to use. • Do they know that web sites are not always accurate and that information should be checked before it is used • Do they understand some of the risk and rewards involved in publishing online and know how to keep safe? • Can they recognise the effect that their writing or images may have on others and to respect the ideas and communications of others/ they 	<ul style="list-style-type: none"> • Can they choose the most appropriate search engine for the task, refining as necessary • Can they recognise reasons that people might publish inaccurate content and check validity.

		<p>encounter online?</p> <ul style="list-style-type: none"> • Do they know that need to have appropriate permission for use of images of friends or those they have found online? 	
	Information Technology	<ul style="list-style-type: none"> • Can they add information and use the 'field' function within a database? • Can they sort record cards by using field names and use a database to find the answer to simple questions ? • Can they use the search tool find information and search for answers to simple question? • Can they create simple bar charts and use them to answer questions? • Can they use a branching database to identify objects and add additional objects to an existing branching database? • Can they select colour, cell size and text appropriately? • Can they save and retrieve documents from shared areas using sensible names? • Can they use data loggers to capture information to use over time? 	<ul style="list-style-type: none"> • Can they design questions to search a large database • Can they check for accuracy by checking data, using different views, search tools and graphing
Year 5	Computer Science	<ul style="list-style-type: none"> • Can they explore/ refine procedures using repeat to achieve solutions to problems? • Can they explore instructions to control software or hardware with an input using 'if then' commands? • Can they explore a simulation to control a physical system using inputs and different outputs? • Can they identify problems and identify a solution for a program? • Can they write down the steps required to 	<ul style="list-style-type: none"> • Can they write a program which follows an algorithm to solve a problem and achieve a planned outcome • Can they group commands as a procedure to achieve a specific outcome within a program

		<p>achieve the outcome that is wanted and refer to this when programming?</p> <ul style="list-style-type: none"> • Can they predict the outputs for the steps in an algorithm? • Can they use the process: plan, program, test and review? • Can they write a program which follows an algorithm to solve a problem for a digital device? • Can they group commands as a procedure to achieve a specific outcome within a program? • Can they understand how sensors can be used to measure input in order to activate a procedure or sequence and talk about applications in society? 	
	<p>Digital Literacy</p>	<ul style="list-style-type: none"> • Can they use the internet as a tool for research • Can they choose the most appropriate search engine for the task, refining as necessary • Can they recognise reasons that people might publish inaccurate content and check validity. • Can they identify and ignore/cancel unwanted advertising and malicious downloads in the form of, popups, video, banners, hyperlinked objects • Can they identify whether a file has copyright or can be legally downloaded and whether these can be used in their own work • Can they discuss the differences between an open blog and a forum for a closed community • Do they understand that you should not publish other peoples' material without their permission • Can they explain in simple terms the differences between a network, the internet 	<ul style="list-style-type: none"> • Can they decide which online communication tool to use to best suit the purpose ? • Do they know that computers use IP addresses to identify each other? • Can they use specific vocabulary: server, digital data, binary code, URL?

		and the world wide web?	
	Information Technology	<ul style="list-style-type: none"> • Can they use 'AND', 'OR', '=<' and '=>' to search a database • Can they design questions to search a large database • Can they check for accuracy by checking data, using different views, search tools and graphing • Can they build and use databases to support their work • Can they enter formulae into a spreadsheet and modify the data, (simple calculations + -/ x total) • Can they make predictions and changes and check results. • Can they use 'SUM' to calculate the total of a set of numbers in a range of cells • Can they create graphs and charts from data in a spreadsheet • Can they change data in a spreadsheet to answer 'what if...?' questions and check predictions • Can they investigate changes in sound / light/temperature levels using data logging, using continuous logging, snapshot functions and logging over time. 	<ul style="list-style-type: none"> • Can they use databases and branching databases to process, interpret, store, and present information for a specific audience, realising the need for accuracy and checking plausibility?
Year 6	Computer Science	<ul style="list-style-type: none"> • Can they record in some detail the steps that are required to achieve an outcome • Can they predict the outputs for the steps in an algorithm • Can they use the process: plan, program, test 	<ul style="list-style-type: none"> • Can they broadcast as part of their programming sequence?

		<p>and review a program</p> <ul style="list-style-type: none"> • Can they write a program which follows an algorithm to solve a problem and achieve a planned outcome • Can they group commands as a procedure to achieve a specific outcome within a program • Can they control on screen mimics and physical devices using one or more input and predict the outputs • Can they understand how sensors can be used to measure input in order to activate a procedure or sequence and talk about applications in society 	
	<p>Digital Literacy</p>	<ul style="list-style-type: none"> • Can they explain the differences between a network, the internet and the world wide web? • Can they decide which online communication tool to use to best suit the purpose ? • Do they know that computers use IP addresses to identify each other? • Can they use specific vocabulary: server, digital data, binary code, URL? • Can they explain how search engines work; finding and ranking pages in order? • Can they use a range of sources to check validity and recognise different viewpoints. ? • Can they describe possible impact of published content to an audience e.g. the use of advertising Know the meaning of some common website extensions –such as .org, .net, ac, .gov, .co.uk, .fr, .com ? • Do they know that https is used for secure transaction such as on-line banking and identified with a padlock? • Can they select copyright free images and 	<ul style="list-style-type: none"> • Can children decipher between factual and un factual information?

		sounds from sources such as LGFL audio network and google searches?	
	Information Technology	<ul style="list-style-type: none"> • Can they copy cells and formulae using copy & paste, and fill across and down? • Can they display and interpret data selecting bar charts, pie charts, scatter graphs and line graphs appropriately? • Can they match the information in a spreadsheet to the needs of the audience and present data, with appropriate ranges, labelling axes and title? • Can they create and amend a spreadsheet to solve a problem through a review of the rules and variables? • Can they use databases and branching databases to process, interpret, store, and present information for a specific audience, realising the need for accuracy and checking plausibility? • Can they identify opportunities to use data logging to support their work? • Can they use data logging devices to investigate changes in the environment over time? • Can they use graphical information to answer questions and solve simple problems? 	<ul style="list-style-type: none"> • Can they present data logging information into a chart and interpret it?