

STEM Progression Computing			
	Online safety	Digital Literacy	Computational Thinking
2 year old provision	<ul style="list-style-type: none"> Know what to do if they see something on a digital monitor that they do not like. To learn that some things they should not be looking at on a screen or should not be talking about. 	<ul style="list-style-type: none"> Have toys which children have to turn on or are electric and encourage children to explore these freely. Children to freely explore different materials and equipment such as those with switches- to gain an understanding that flicking a switch turns on a light or a computer. Look at computer through IWB- have activities on IWB, where they can move things around freely. Show an interest and enthusiasm in how different technological items work. Be able to use a range of simple pieces of equipment. 	<ul style="list-style-type: none"> Repeat actions/Explore materials with different properties – Beebots, chn will explore how to get them to move around. Use simple computing vocabulary such as computer, on/off. Begin to explore different technical devices and begin to understand that pressing a button can turn it on/off or effect the sound etc.
Nursery	<ul style="list-style-type: none"> Begin to understand that on a computer they have their own logins and information. Know what to do if they see something on a digital monitor that they do not like. Understand that usernames and passwords are not to be shared, even with their friends. To know that there are different age limits on things that they shouldn't be accessing. 	<ul style="list-style-type: none"> Explore collections of materials with sim or diff properties – Have computer equipment out – perhaps in play area – encourage chn to use them freely. Show interest in diff occupations- have in computing guys. Explore how things work – Have children turn on PC. Click with mouse. Simple computing movements. Introduce vocabulary (computer, monitor, mouse) Use a variety of tools for effect, such as brushes, pens, rubbers, stamps and shapes. Use the backspace (delete) button and space bar. Make observations about colour and sizes using font changes. 	<ul style="list-style-type: none"> Explore how things work – Have children turn on PC. Click with mouse. Simple computing movements. Introduce vocabulary (computer, monitor, mouse) Understand cause and effect and that clicking buttons on a computer has results. Explore cause and effect of direction using different buttons on a machine
Reception	<ul style="list-style-type: none"> Understand that usernames and passwords are not to be shared, even with their friends. Have children able to recognise they need to log on and be able to begin to put in their login details. To understand that there are things they should not be looking at online and certain areas where they should be careful (do not click pop-ups, do not speak to anyone unknown – stranger danger etc.) 	<ul style="list-style-type: none"> Have children able to recognise they need to log on and be able to begin to put in their login details. Have children familiar with key hardware vocab: Monitor, keyboard, mouse, speaker. Children to start to recognise different parts of a computer: Monitor, mouse, keyboard Record sounds at and away from a computer and listen back to them. Operate a computer or tablet using both hands. Capture video and discuss whether they are suitable to keep or delete (blurring etc.) Be able to talk about their favourite font style and explore options independently. 	<ul style="list-style-type: none"> Have children able to recognise they need to log on and be able to begin to put in their login details. Have children familiar with key hardware vocab. Talk about how computers/robots need instructions (algorithms) to functions and relate to our everyday life. Talk about Input (what you press) and output (what appears on the screen). Be able to understand how buttons can be used to program objects. Start to be able to predict what might happen using logical reasoning.
Y1	<ul style="list-style-type: none"> Understand that a username and password are not to be shared Remember their username and some of their password (adult support) Know what to do if they see something on a digital monitor that they do not like (on iPads and on Computers) Explore internet safety using the app, Digiduck. 	<ul style="list-style-type: none"> Be able to log on with minimal support Be able to type name with correct capitals and lowercase Identify the main parts of a computer with some support (mouse, keyboard, monitor and hard drive) Understand how we use computers and technology in the real world and explore through use of iPads, computers and digital cameras with support. Understand ABC searching and be able to use it with support. Use 2Create to make a digital eBook with support. 	<ul style="list-style-type: none"> Share a sequence of actions with the children and break down (decompose) into smaller parts to explain what is meant by the term, algorithm. Be able to follow an algorithm and be able to create an algorithm with support using Beebots. Be able to debug an algorithm, using Barefoot with support. Use a digital device to take pictures and transfer these onto the computer with support. Be able to find and retrieve an image from clipart and save in a Word document. Use a series of commands and repeat commands to draw shapes with support. Tinker, design and create simple shapes using Lego. Understand coding to program i2e and be able to explain what a code is with support. Sort animals based on their properties using i2branch. Create a simple animation with support.
Y2	<ul style="list-style-type: none"> Understand that a username and password are not to be shared and begin to understand why. Remember their username and password independently. Know what to do if they see something on a digital monitor that they do not like (on iPads and on Computers) and understand what is appropriate/inappropriate To be able to understand search history, in terms to them doing the same activity more than once with support. 	<ul style="list-style-type: none"> Be able to log on independently. Identify the main parts of a computer independently (mouse, keyboard, monitor and hard drive) Understand how we use computers and technology in the real world and explore through use of iPads, computers and digital cameras. Understand ABC searching and be able to use it independently. Use 2Create to make a digital eBook with support. 	<ul style="list-style-type: none"> Be able to follow an algorithm and be able to create an algorithm by decomposing a pre-existing one. Be able to recognise patterns within algorithms. Be able to use abstraction to filter out unnecessary details when writing algorithms. Be able to debug an algorithm and suggest some ideas about how to fix it, using Barefoot with support. Create a simple program using a series of algorithms and be able to reason logically why something is/ is not working, using Beebots. Use a series of commands and repeat commands to draw shapes using Beebots. Use a digital device to take pictures and transfer these onto the computer to make a PPT program that organises the images with appropriate captions. Be able to edit a picture taken from a digital device with support. Be able to find and retrieve an image from an internet search browser and save into a PPT. Be able to rearrange the order of images used within a PPT. Understand coding to program i2e and be able to explain what a code is with support. Use two sprites to move. Be able to create a bar chart using i2e. Create a simple animation with some support.
Y3	<ul style="list-style-type: none"> Understand that a username and password are not to be shared and start being able to explain the reason why. Remember their username and password independently. Understand how they might make their own password and remember it without using obvious information. Know what to do if they see something on a digital monitor that they do not like (on iPads and on Computers) and why this is important. To be able to understand search history, in terms to them doing the same activity more than once with support. Be aware of legal, environmental and ethical responsibilities when using digital devices with support. 	<ul style="list-style-type: none"> Be able to log on independently. Identify the main parts of a computer independently (left and right side of mouse, keyboard and main buttons- shift, CL, enter, delete - monitor and hard drive) Understand how we use computers and technology in the real world and explore through use of iPads, computers and digital cameras. Be able to take a picture using the computer and visualiser with i2camera with support. Understand the difference between hardware and software with some support. Understand what inputs and outputs are with support. 	<ul style="list-style-type: none"> Share a sequence of actions with the children and decompose into algorithms, with support. Be able to create an algorithm using Turtle Academy Program (Controlling the Turtle and Pen , Turtle World). Be able to debug an algorithm and explain where it had mistakes/errors. Understand the difference between coding and algorithms. Be able to write simple code, using Studio Code (1-18). Be able to write repeat codes using Turtle Academy Program (Loops). Be able to code using Scratch (understand how to move the sprite, understand what each separate part of a code enables a sprite to do, use two sprites, include dialogue, movement and sound) Create an animation and save as a gif with support.

	<ul style="list-style-type: none"> Be aware that identities can be hidden on the internet and understand the repercussions of this with support. 		
Y4	<ul style="list-style-type: none"> Understand that a username and password are not to be shared and give a clear reason why. Understand how they might make their own password and remember it without using obvious information. Remember their username and password independently. Know what to do if they see something on a digital monitor that they do not like (on iPads and on Computers) and why this is important. Links to social media and user agreements. To be able to understand search history and understand how to access this. Be aware of legal, environmental and ethical responsibilities when using digital devices with support. Be aware that identities can be hidden on the internet and understand the repercussions of this with support. 	<ul style="list-style-type: none"> Be able to log on independently. Identify the main parts of a computer independently (left and right side of mouse, keyboard and main buttons- shift, CL, enter, delete - monitor and hard drive) Start to use keyboard shortcuts to save, undo and redo with support Understand how we use computers and technology in the real world and explore through use of iPads, computers and digital cameras. Be able to take a picture using the computer and visualiser with i2camera with support and be able to add some different effects. Understand the difference between hardware and software. Understand what inputs and outputs are with support. 	<ul style="list-style-type: none"> Share a sequence of actions with the children and decompose into algorithms. Be able to code using Scratch (use two sprites, include dialogue, movement and sound) Be able to create a suitable background related to topic theme for the Sprites on Scratch. Be able to decompose a game on Scratch (example) Understand and be able to use variables on Scratch and make specific turns based on angles to draw shapes. Understand and be able use a range of different apps. Be able to make an app with support. Create an animation and save as a gif. Be able to create a comic book.
Y5	<ul style="list-style-type: none"> Understand that a username and password are not to be shared and understand what might happen if they were shared. Be able to give a detailed and concise explanation. Remember their username and password independently. Understand how they might make their own password (using a range of upper/lower case letters and symbols) and remember it without using obvious information. Know what to do if they see something on a digital monitor that they do not like (on iPads and on Computers) and why this is important. Links to social media and user agreements. To be able to understand search history and understand how to access this. Be able to understand their digital footprint (caches) and how things that are published on the internet cannot be removed with support. Be aware of legal, environmental and ethical responsibilities when using digital devices with support. Be aware that identities can be hidden on the internet and understand the repercussions of this. 	<ul style="list-style-type: none"> Be able to log on independently. Identify the main parts of a computer independently (left and right side of mouse, keyboard and main buttons- shift, CL, enter, delete - monitor and hard drive) Be able to use keyboard shortcuts to save, undo and redo with some support Understand how we use computers and technology in the real world and explore through use of iPads, iMacs, computers and digital cameras. Be able to take a picture using the computer and visualiser with i2camera independently. Be able to add and explain purpose for choosing certain effects (i2camera) with support. Understand the difference between hardware and software and be able to explain independently. Be able to explain what inputs and outputs are with examples. Be able to spot errors (debug) in Excel spread sheets and correct with support. 	<ul style="list-style-type: none"> Be able to create a code using Turtle Academy Program (The Turtle Answer). Be able to alter the costume of a Sprite for a specific purpose on Scratch. Be able to use variables on Scratch to make objects/sprites change colour when pressed. Introduce movement to create a simple animation (eg the sprite will raise his hat, eyebrow or stick out tongue) Understand what script is. Understand what a loop is and use it within a Scratch program. Be able to make an app. Use i2measure to make a repeated pattern. Be able to make a stop motion animation with support. Use Tinker CAD for designing.
Y6	<ul style="list-style-type: none"> Understand that a username and password are not to be shared and understand what might happen if they were shared. Be able to give a detailed and concise explanation and identify scenarios in the real world where this has happened with negative outcomes. Remember their username and password independently. Understand how they might make their own password (using a range of upper/lower case letters and symbols) and remember it without using obvious information. Know what to do if they see something on a digital monitor that they do not like (on iPads and on Computers) and why this is important. Links to social media and user agreements. Be able to understand their digital footprint (caches) and how things that are published on the internet cannot be removed. Be aware of legal, environmental and ethical responsibilities when using digital devices. Be aware that identities can be hidden on the internet and understand the repercussions of this. 	<ul style="list-style-type: none"> Be able to log on independently. Identify the main parts of a computer independently (left and right side of mouse, keyboard and main buttons- shift, CL, enter, delete - monitor and hard drive) Be able to use keyboard shortcuts to save, undo and redo Understand how we use computers and technology in the real world and explore through use of iPads, iMacs, computers and digital cameras. Be able to take a picture using the computer and visualiser with i2camera independently. Be able to add and explain purpose for choosing certain effects (i2camera) with support. Be able to share these images safely. Understand the difference between hardware and software and be able to explain independently. Be able to explain what inputs and outputs are with examples. Be able to spot errors (debug) in Excel spread sheets and correct. 	<ul style="list-style-type: none"> Be able to program using Python Be able to sort algorithms using Python code. Be able to code a quiz using Python. Be able to make an app. Be able to make a stop motion animation with limited support. Use Minecraft to build code for specific purposes. Use Barefoot to create, tinker and debug algorithms. Use Scratch to create detailed codes (incorporating multiple sprites, costumes, movements, speech and sounds). Design an app for a specific audience. Use Tinker CAD for designing.