



Computing knowledge and skills progression

		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Vocabulary		Motion, commands, online safety	Control, input, text, event, online risks	Direction, turn, steps, loop, communicate	Edit, conditions, variables, blogs, copyright	Outcomes, variables, databases	Rotation, sensing, collaboration, manipulate	Illegal, effective, professional
Code	Motion	Control motion through simple commands such as steps forwards and backwards, using the Bee-Bots.	• Control motion by the number of steps to travel, direction and turn.	• Control motion by specifying the number of steps to travel, direction and turn.	• Use specified screen coordinates to control movement.	• Use specified screen coordinates to control movement. Children make more intuitive attempts to code.	• Set IF conditions for movements. Specify types of rotation giving the number of degrees.	• Set IF conditions for movements. Specify types of rotation giving the number of degrees, by testing and de-bugging their programmes.
	Looks	Add basic text and images to a blank screen	• Add text string and change the features of an object.	• Add text strings, show and hide objects and change the features of an object.	• Set the appearance of objects and create sequences of changes.	• Set the appearance of objects and create sequences of changes.	• Change the position of objects between screen layers (send to back, bring to front).	• Change the position of objects between screen layers (send to back, bring to front).
	Sound	Most children will: • with support, use sound recorders/ CD players to listen to pre-recorded sound • with support, use dictaphones/sound buttons to record and playback sounds eg own voice, others voices experiment with music software	• Select sounds when they are heard and volume.	• Select sounds and control when they are heard, their duration and volume.	• Create and edit sounds. Control when they are heard, their volume, duration and rests.	• Create and edit sounds. • Control when they are heard, their volume, duration and rests. While also creating their own unique sounds.	• Upload sounds from a file and edit them. • Add effects such as fade in and out and control their implementation.	• Upload sounds from a file and edit them. • Add effects such as fade in and out and control their implementation. • To carefully select sounds that relate to particular scenes and emotions within their videos related to the residential trip making it bespoke.
	Draw	Experiment with an art package trying different tools and effects, as one of a range of media available	• Control when drawings appear and set the pen colour and shape while using Paint and while creating an animated story book	• Control when drawings appear and set the pen colour, size and shape while creating an illustrated ebook.	• Control the shade of pens developing this via the use of publisher.	• Control the shade of pens.	• Combine the use of pens with movement to create interesting effects.	• Combine the use of pens with movement to create interesting effects.
	Events	Most children will be aware that pressing buttons will make a device respond eg remote control toy use the mouse and the keyboard to explore programs be aware that moving the mouse moves the pointer on the screen be aware of the effect of pressing the mouse buttons.	• Specify user inputs (such as clicks) to control events.	• Specify user inputs (such as clicks) to control events. • Children to create a simple programme and can then identify and correct any errors.	• Specify conditions to trigger events. • Include logical and achievable steps, as well as repetition and timers.	• Specify conditions to trigger events. • Using IF statements and begin to predict outcomes with accuracy.	• Set events to control other events by 'broadcasting' information as a trigger. • Stating to name different variables.	• Set events to control other events by 'broadcasting' information as a trigger. Interpret a programmes in parts and can begin to explain the programmes as a whole.
	Control	Be aware that many everyday devices respond to commands • learn to switch on a programmable toy to activate movement • begin to follow simple instructions eg playing at robots, country dancing (pre-Logo activities) • play with remote control toys • play with programmable robots such as Beebots be aware that pressing buttons makes the toy or robot respond	• Specify the nature of events using planning and maps (such as a single event) using physical resources such as Beebots	• Specify the nature of events (such as a single event or a loop) on-screen without the aid of physical resources	• Use IF THEN conditions to control events or objects, beginning to utilise degrees of a turn	• Use IF THEN conditions to control events or objects through the use of Scratch, using degrees of a turn accurately	• Use IF THEN ELSE conditions to control events or objects. • The use of tabs to organise codes.	• Use IF THEN ELSE conditions to control events or objects through the use of Scratch, incorporating a scoring element
	Sensing	Using the Bee-Bots to sense the direction of movement.	• Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).	• Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?).	• Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions). With the use of simulation programming	• Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions).	• Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions.	• Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. • To also know when it would be appropriate to use a sensing device e.g. in a science experiment.
	Variables and Lists				• Use variables to store a value. • Use the functions define, set, change, show and hide to control the variables.	• Use variables to store a value. • Use the functions define, set, change, show and hide to control the variables.	• Use lists to create a set of variables when analysing and inputting data.	• Use lists to create a set of variables. • Using lists to achieve a set of variables within a spreadsheet.

<p>Connect</p>	<p>Be introduced to the SMART rules for online safety.</p>	<ul style="list-style-type: none"> • Understand online risks and the age rules for sites. 	<ul style="list-style-type: none"> • Understand online risks and the age rules for sites. • Understand how to communicate by email and to use this safely 	<ul style="list-style-type: none"> • Contribute to blogs that are moderated by teachers. • Give examples of the risks posed by online communications. • Understand the term 'copyright'. • Understand that comments made online that are hurtful or offensive are the same as bullying. • Understand how online services work. 	<ul style="list-style-type: none"> • Create blogs that are moderated by teachers. • Give examples of the risks posed by online communications. • Understand the term 'copyright'. • Understand that comments made online that are hurtful or offensive are the same as bullying. • Understand how online services work. 	<ul style="list-style-type: none"> • Collaborate with others online on sites approved and moderated by teachers. • Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. • Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. • Understand the effect of online comments and show responsibility and sensitivity when online. • Understand how simple networks are set up and used. 	<ul style="list-style-type: none"> • Collaborate with others online on sites approved and moderated by teachers. • Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. • Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. • To also check the accuracy of online information. • Understand the effect of online comments and show responsibility and sensitivity when online. • Understand how simple networks are set up and used. • To be aware of privacy and other issues involving the wider use of the internet
<p>Communicate</p>	<p>Talk about what they are doing with ICT use appropriate ICT vocabulary Most children will:</p> <ul style="list-style-type: none"> • use the keyboard to enter letters strings (play writing) begin to use the space bar to break letter strings into groups of letters • use the Back Space key to delete use a wordbank or word list to enter text eg to match with pictures 	<ul style="list-style-type: none"> • Use a range of applications and devices in order to communicate ideas and work 	<ul style="list-style-type: none"> • Use a range of applications and devices in order to communicate ideas, work and messages. 	<ul style="list-style-type: none"> • Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. Also presenting completed work to the class. 	<ul style="list-style-type: none"> • Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. While also creating a blog in the topic. 	<ul style="list-style-type: none"> • Choose the most suitable applications and devices for the purposes of communication. • Use many of the advanced features in order to create high quality, professional or efficient communications. To have access to online resources to complete homework activities. 	<ul style="list-style-type: none"> • Choose the most suitable applications and devices for the purposes of communication. • Use many of the advanced features in order to create high quality, professional or efficient communications. • To be discerning in evaluating in digital concepts.
<p>Collect</p>	<p>Most children will: do practical sorting activities and discuss sorting criteria begin to develop simple classification skills.</p>	<ul style="list-style-type: none"> • Use simple databases to record information in areas across the curriculum. • Develop simple classification skills based on practical sorting activities with support, use simple dataplotting/graphing programs to produce pictograms and other simple graphs 	<ul style="list-style-type: none"> • Use simple databases to record information in areas across the curriculum. • independently plot data as a pictogram, block chart or bar graph 	<ul style="list-style-type: none"> • Devise and construct databases using applications designed for this purpose in areas across the curriculum. • Know that the library system collects data on the books within the school. 	<ul style="list-style-type: none"> • Devise and construct databases using applications designed for this purpose in areas across the curriculum. • Using the database programme on Purple mash. 	<ul style="list-style-type: none"> • Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner with the use of excel. 	<ul style="list-style-type: none"> • Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner to calculate profit and loss in a real life database for YAP.