



# Computing Progression of Skills

## Key Stage 1

	Nursery	Reception	Rec/ Yr1	Yr1/ 2	Yr2	End of Key Stage Expectations
<b>Using Technology</b> Most of this strand can be linked in a cross curricular way across the curriculum.	<p>Can I name and use a keyboard and mouse with developing control?</p> <p>Can I recognise some technology that is used in places such as homes and schools?</p> <p>Can I use technology appropriately through role play?</p>	<p>Can I recognise a range of technology that is used in places such as homes and schools?</p> <p>Can I select and use technology for a particular purpose?</p> <p>Can I name and use a keyboard and mouse with developing control?</p> <p>Can I access and use simple activities using touch technology with increasing control?</p>	<p>Can I use the keyboard to write my name with a capital letter?</p> <p>Do I know that there is a wide range of technology and can they name some equipment?</p> <p>Can I use a range of different technology and talk about its use?</p> <p>Can I use keyboard skills to type a simple <u>username</u> into a given program?</p> <p>Can I safely use technology by opening and closing a piece of equipment safely?</p>	<p>Can I discuss and talk about control technology and new technologies' and understand how to use them?</p> <p>Can I select the appropriate program by finding and retrieval through the school network?</p> <p>Can I use keyboard skills to type a simple <u>username and password</u> into a given program?</p> <p>Can I save their work to a folder and retrieve it when needed?</p> <p>Can I begin to understand how to edit and copy information using a variety of media?</p>	<p>Can I use of a wide range of technology and can describe how it works in a variety of different contexts?</p> <p>Can I select the appropriate piece of technology for a particular purpose and communicate this?</p> <p>Can I save their work to a folder and retrieve it when needed?</p> <p>Can I understand how to edit and copy information using a variety of media?</p> <p>Can I film short scenes &amp; edit with others?</p>	<p>Pupils should be taught to:</p> <p>Recognise common uses of information technology beyond school.</p>
<b>Algorithms and Programs</b> This area of the curriculum is a main area of the new curriculum. Children should be taught this strand discreetly in order to fulfil the new requirements.	<p>Can I make a beebot move forwards and backwards?</p>	<p>Can I use a range of control toys and devices?</p>	<p>Can I understand that computers and technology can be used to represent and model situations?</p> <p>Can I explore outcomes when individual buttons are pressed on robots, such as floor turtles and combine these together to draw simple shapes or follow a route?</p>	<p>Can I begin to develop computational thinking by following instructions to move around a course and create a series of instructions for others to follow?</p> <p>Can I continue to explore floor turtles, combining sequences of instructions to follow a pattern or create a shape.</p> <p>Do I know that commands affect algorithms?</p> <p>Can I explore a simulation to support a given topic and talk about what happens and why?</p>	<p>Can I explore an on screen turtle and navigate it around a course or grid and/or draw shapes by inputting a sequence of instructions?</p> <p>Can I begin to understand that the on screen turtle can be directed through the use of text?</p> <p>Can I enter information into a basic computer simulation and explore the effects of changing the variables in simulations and discuss the benefits of using these simulations?</p> <p>Can I discuss my use of simulations and compare with reality?</p>	<p>Pupils should be taught to:</p> <p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs and use logical reasoning to predict the behaviour of simple programs.</p>

<p><b>Data Retrieving and Organising</b> Main teaching strands: Creating a graph using data collected in class.</p>	<p>Can I collect and discuss data as a class?</p>	<p>Can I insert data into a pictogram, as a class?</p> <p>Can I answer simple questions relating to the pictogram as a class?</p>	<p>Can I enter information into a template to make a graph and pictogram?</p> <p>Can I answer questions relating to a graph and pictogram?</p>	<p>Can I enter information into a template to make a graph?</p> <p>Can I answer questions relating to a graph?</p> <p>Can I produce simple graphs using ICT?</p>	<p>Can I present their data in different ways?</p> <p>Can I use a branching database to answer questions?</p> <p>Can I amend teacher prepared graphs?</p>	<p>Pupils should be taught to:</p> <p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>
<p><b>E Safety</b> This forms a critical part of the curriculum, which should link through all your sessions. This could be linked to your PSHCE.</p>	<p>Can I speak to an adult about what they have seen?</p>	<p>Can I talk about what they are doing on a computer?</p> <p>Can I say if something they find on the internet makes them feel bad?</p> <p>Can I speak to an adult about what they have seen?</p> <p>Can I follow the school's safer internet rules?</p>	<p>Do I know how to act if they find inappropriate content online?</p> <p>Can I understand that things sometimes happen on computers that are not their fault? E.g, pop-ups)</p> <p>Can I understand not to feel guilty if something comes on the screen that makes them feel bad?</p> <p>Can I follow the school's safer internet rules?</p>	<p>Can I begin to evaluate websites and know that everything on the internet is not true?</p> <p>Can I recognise that the majority of technology devices have access to the internet?</p> <p>Can I understand that some information is personal and should not be shared online?</p> <p>Do I know how to act if they find inappropriate content online?</p> <p>Can I follow the school's safer internet rules?</p> <p>Can I begin to understand the term web address?</p> <p>Can I email safely as a class?</p>	<p>Can I follow the school's safer internet rules?</p> <p>Can I evaluate websites and know that everything on the internet is not true?</p> <p>Can I recognise that there are other people on the internet and this affects how they should use it?</p> <p>Do I know how to act if they find inappropriate content online?</p> <p>Can I tell a trusted adult if someone they don't know tries to contact them via the internet?</p> <p>Can I understand that they should only open an email from someone they know?</p> <p>Can I send and receive emails safely?</p> <p>Do I understand why passwords shouldn't be shared?</p> <p>Can I use the internet safely for learning and communicating with others?</p> <p>Can I recognise advertising on website and learn to ignore it?</p>	<p>Pupils should be taught to:</p> <p>Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet</p>

**Communicating/ Presentations**  
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<p>Can I explore sounds?                   Can I use a digital device to take a photograph?</p>	<p>Can I write my name using a keyboard on different devices?                   Can I use the caps lock for the initial sound in their name?                   Can I use a simple paint programme with increasing mouse control?                   Can I understand the purpose of and experiment with hardware such as cameras, computers, ipads, voice recorders etc?</p>	<p>Do I recognise what an email address looks like?                   Can I join in sending a class email?                   Can I enter text using a keyboard?                   Can I record a sound and play it back?                   Can I use the use the space bar, backspace and return key?                   Can I create an image relating to a topic covered in class and add a title?</p>	<p>Can I send group email in a controlled environment and reply?                   Can I draw on screen image?                   Do I know how to use the simple functions of a tool bar?                   Can I add images and clip art images?                   Can I cut, copy and paste on to a document?                   Can I capture &amp; download images from a camera/device?                   Can they record video?                   Can they record people's voices as a voice over?                   Can they create basic presentations?</p>	<p>Am I aware that email is used beyond school?                   Can I send individual email in a controlled environment and reply?                   Can I develop speed when typing and use a simple document with increasing control?                   Can I word process work, changing the font, font size, colour?                   Can I cut, copy and paste an image, text box, word art and clipart onto a document?                   Can I format their text to refine and improve? e.g underline, italics, bold.                   Can I produce an interactive presentation using a range of media? E.g. slide transition/ sound effects etc.</p>	<p>Pupils should be taught to:                   Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p>
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	Y3	Y3/4	Y4/5	Y5/6	Yr6	End of Key stage Expectation
<b>Using Technology</b> <b>Most of this strand can be linked in a cross curricular way across the curriculum.</b>	<p>Do they understand how to navigate the internet simply?</p> <p>Can they find relevant information by browsing a menu?</p> <p>Can they search by keyword using a child friendly search engine?</p> <p>Can they bookmark a page into "your favourites"?</p>	<p>Do they know what the term browser is and can they use it to navigate a variety of programmes?</p> <p>Can they use tabbed browsing to open two or more web pages at the same time?</p> <p>Do they know how to use a wide variety of technology to suit a particular purpose?</p> <p>Can they contribute to an online class blog?</p> <p>Can they open a variety of links and use them?</p>	<p>Do they know how to open and view a PDF and can they describe how it works?</p> <p>Can they use a range of digital devices and combine a variety of software?</p> <p>Can they make accurate predictions about the outcome of a programme they have written?</p> <p>Can they decide which sections are appropriate to copy and paste from a variety of web pages?</p> <p>Do they know how to download a document and save it to a computer or given device?</p>	<p>Can they explain the meaning of different domain names and common website extensions? E.g. co.uk,;.com,;.ac; .sch; .org; .gov; .net. to support validation of information</p> <p>Do they know how a variety of information is stored and can describe why information is useful to be stored in this way, e.g remote access and collaborative working.</p> <p>Do they know what a variety of file formats are and can they save an image document as a gif or jpeg file format using the save as command?</p> <p>Can they save and retrieve information online e.g. using Cloud technology?</p>	<p>Can they conduct a video chat with more than one person at a time?</p> <p>Can they develop and use their own QR codes?</p> <p>Can they use tabs to make a comparison of a website?</p> <p>Can they use a variety of symbols such as + and – and "" to refine and scale down internet searches.</p>	
<b>Algorithms and Programs.</b> <b>This area of the curriculum is a main area of the new curriculum. Children should be taught this strand discreetly in order to fulfil the new requirements.</b>	<p>Can they begin to plan more complex sequences of instructions for on-screen turtles and floor turtles and test and amend these instructions for different purposes?</p> <p>Can they explore simulations as appropriate and discuss the benefits of using these simulations?</p> <p>Can they use simulations to make and test predictions?</p>	<p>Can they use a computer to create basic applications, investigating how different variables can be changed?</p> <p>Can they begin to use software to represent 3D objects or items?</p> <p>Can they explore some simulations and evaluate them?</p>	<p>Can they use programming software EG scratch. to plan, design and make their own game,, controllable by external inputs, changing parameters and responses?</p> <p>Can they explore different ways in which computer software can be created?</p> <p>Can they use software to create models of 3D objects, landscapes or items?</p> <p>Can they explore a range of increasingly complex simulations, exploring the effect of changing variables and recording the results?</p>	<p>Can they understand that software relies on codes to run and that a range of different coding languages exist? can they name some?</p> <p>Can they use a range of assisted programming software (e.g Scratch and/or Kodu) to plan, design and create basic software (for example a simple game), which interact with external controllers (e.g. keyboard and/or mouse).</p> <p>Using software can they control the movement and responses of different commands on screen?</p> <p>Can they control an on-screen icon using text based controls, and respond to sensors and repeating written algorithms (e.g. Robomind)?</p> <p>Do they know how to use a range of visual based Programming software (e.g Scratch and Kodu) to plan and design basic software (for example a simple game), controlling the movement and responses of different elements on screen?</p>	<p>Can they use a range of visual programming software to plan and design a game?</p> <p>Can they begin to explore text based programming languages and create basic scripts ?</p> <p>Can I Use software to create models of 3D objects, landscapes or items, including creating to scale ?</p> <p>Can they use a range of more complex simulations, exploring the link to 'real life' and the impact of changing variables?</p>	

<p><b>Data Retrieving and Organising</b> Main teaching strands: <b>Creating a graph using data collected in class.</b></p>	<p>Can they input data into a prepared database and can they search and sort a database to answer simple questions?</p> <p>Can they create a graph or chart to present classified data from a database?</p>	<p>Can they create a simple branching database, identifying objects and questions to classify data?</p> <p>Can they work as a group to collect data on a pre-prepared data collection template?</p> <p>Can they explain what a spreadsheet is?</p> <p>Can they use the terms cells, rows and columns?</p> <p>Can they create a database template?</p>	<p>Can they input data , using previously collected information, on their database template?</p> <p>Can they use a database to answer questions by constructing queries?</p> <p>Can they enter data highlighted to make bar charts?</p> <p>Can they create databases, planning the fields, rows and columns taking into consideration data collected?</p>	<p>Can they create their own data collection sheet using data validation?</p> <p>Can they search spreadsheets using symbols =&lt;&gt;?</p> <p>Can they create a formula in a spreadsheet and check for accuracy and plausibility?</p> <p>Can they interrogate their data to create graphs and tables which they can copy and paste into other documents?</p> <p>Can they collect live data using data logging equipment and present this data in different ways?</p>	<p>Can they identify data error, patterns and sequences?</p> <p>Can they use the formula bar to explore mathematical scenarios. For example, that quick and easy changes can be made to different variables once the spreadsheet is set up?</p>	
<p><b>E-Safety</b> <b>This forms a critical part of the curriculum, which should link through all your sessions. This could be linked to your PSHCE.</b></p>	<p>Can they understand that once an online message has been sent it cannot be taken back and understand that there might be consequences of this?</p> <p>Can they recognise that people on the internet are not always who they say they are?</p> <p>Can they understand that if they make personal information available online it may be seen by others?</p> <p>Can they understand the need to keep personal information and password private?</p> <p>Do they know how to respond if asked for personal information or feel unsafe about the content of a message?</p> <p>Can they understand the outcome of internet searches at home may be different at home than at school?</p> <p>Can they explain how to use email safely?</p>	<p>Can they understand and articulate that social networking sites carry risk?</p> <p>Do they understand the benefit of developing a nickname for online use?</p> <p>Can they behave appropriately online?</p> <p>Can they recognise that cyber bullying is unacceptable?</p> <p>Can they recognise the dangers of communicating via a variety of devices such as Xbox live, PSP, phones etc?</p> <p>Can they explain the difference between online communication tool used in school and those used at home?</p> <p>Can they understand the need for caution when using the internet to search for images and what to do if they find an unsuitable image?</p> <p>Can they recognise that information on the internet may not be complete, accurate or reliable?</p>	<p>Can they understand that copyright exists on most digital images, video and recorded music?</p> <p>Do they know how to report an incident of cyber bullying?</p> <p>Can they identify when emails should not be opened and when an attachment may not be safe?</p> <p>Can they understand that there are means of reporting unpleasant online data e.g. Ceop ?</p> <p>Do they understand the need for privacy settings in social networking sites?</p> <p>Can they judge when to answer a question online and when not to?</p> <p>Can they discuss the positive and negative impacts of using ICT?</p> <p>Can they understand that they should not publish other people's picture or tag them on the internet?</p>	<p>Can they recognise the specific dangers associated with online gaming?</p> <p>Can they understand that information found on the internet should be viewed critically?</p> <p>Can they use various sources to double check information found?</p> <p>Can they recognise that some material on the internet is copyright and may not be copied or downloaded?</p> <p>Do they know that content put online is extremely difficult to remove?</p> <p>Can they create a strong password and recognise the need to regularly update them?</p> <p>Can they use and amend their own privacy settings to keep themselves safe on social networking sites?</p> <p>Can they understand that some malicious adults may use varies techniques to make contact and elicit personal information?</p> <p>Can they understand the dangers of chatting or meeting up with an online friend?</p>	<p>Can they share their own knowledge of e-safety with others?</p> <p>Can they understand the term peer pressure and how powerful an emotion of feeling left out can be?</p> <p>Can they explain why people may publish content on the internet that is not accurate?</p> <p>Can they identify and recognise the potential risks of scamming and phishing?</p>	

**Communicating / Presentation.  
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Can they use the email address book and can they open and send an attachment?

Can they understand the difference between word processing and desktop publishing tools?

Can they use the publishing tools to create posters, leaflets etc?

Can they create a presentation using PowerPoint changing the layout of slides and adding images and sound?

Can they use a computer to sequence short pieces of music using a small selection of pre-record sounds?

Can they refine and improve work by using spell checker, thesaurus etc?

Can they contribute to blog & wiki/forum etc? (linked to E safety)

Can they independently record video for a range of purpose, paying attention to the quality of the video capture?

Can they use e-mail to e-mail work completed in school to their teachers and peers?

Can they insert sound recordings into a multi- media presentation?

Can they choose images and download into a file?

Can they create a stop motion animation using ICT software?

Can they capture images using a variety of technology eg webcams, screen capture, scanning, visualizer and internet

Can they transfer graphics from a range of sources and use them in a desktop publishing program?

Can they send e-mails between people within their school domain using the 'cc' and 'bcc' fields?

Can they collaborate with peers on a project to produce a finished piece to support topic work- using the cloud?

Can they contribute/edit/refine contributions to a shared document and understand that all changes are visible?

Can they edit video, applying basic effects and transitions?

Can they create an extended piece of music using pre- recorded samples for a specific audience then evaluate this?

Can they use instant messaging to communicate?

Can they conduct a video chat with someone elsewhere in school?

Can they select and download music from open sources?

Can they use a range of presentation applications, using a range of digital devices?

Can they locate and access streaming audio such as online radio?

Can they make a home page for a website that contains links to other pages?

Can they download and listen to podcast?

Can they produce and upload a podcast, selecting and importing already existing sound effects and music as well as recording their own?

Can they use a range of software to create/manipulate music and sound samples and sequence these?

Can they create a film for a given audience incorporating a range of different scenes and carefully selected effects?

Can they use technology to create images using layers e.g. Photoshop?

Can they confidently use text formatting tools, including heading and body text?

Can they compare and contrast different image creation and editing tools across a range of platforms?

Can they Save as gif or jpeg to make the file smaller for emailing or downloading?

Can they explore the menu bar and experiment with images (colour effects, options, snap to grid, grid settings etc)?

Can they create a non-linear presentation?

Can they develop a web-site which contains more than one page?

Can they create a web based application for a smart-phone or tablet for a variety of audiences

Can they create a multimedia presentation that contains sound, animation, video and buttons to navigate taking into consideration good design principles, making independent choices about the best media to use and considering the needs of the audiences and the impact the presentation will have?

Can they regularly use word processing and desktop publishing to present their work, making choices about programs and features to use and justifying these choices to others?