

Computing Progression (with NCCE Teach Computing)

National Curriculum Core Strands Key:

Information Technology, Digital Literacy (including E-Safety), Computer science

	Reception	Year1	Year 2	Year 3	Year 4	Year 5	Year 6
Basic Computer Skills	- Turn on/off digital equipment. <i>Vtech tablets and iPad</i>	- Use a mouse/mouse pad - Open and close programmes. - To use a keyboard to type - To use the keyboard to edit text <i>Computer and iPad</i> <i>All NCCE topics</i>	- Log on and off a computer. - Find and open previously saved work. - Print work. <i>Microsoft Office and Google Classroom</i> <i>All NCCE topics</i>	- Create folders to store digital documents. <i>Microsoft Office and Google Classroom</i> <i>All NCCE topics</i>	- Organise folders to store digital documents. <i>Microsoft Office and Google Classroom</i> <i>All NCCE topics</i>	- Consolidate <i>Microsoft Office and Google Classroom</i> <i>All NCCE topics</i>	- Consolidate <i>Microsoft Office and Google Classroom</i> <i>All NCCE topics</i>
Touch Typing	- Use the keyboard to enter letter strings <i>BBC Dance Mat</i>	- To type upper and lower case letters <i>BBC Dance Mat</i>	- To touch type 10 words per minute <i>BBC Dance Mat</i>	<i>typingclub.com</i>	- To touch type 15 words per minute <i>typingclub.com</i>	<i>typingclub.com</i>	- To touch type 20 words per minute <i>typingclub.com</i>
Text and Multimedia		- Save work in a specific area - Drag and drop objects on a screen. - Work with others and with support to contribute to a digital class resource which includes text, graphic and sound. <i>Technology around us</i>	- Save and retrieve and edit their work. - Change font size and colour. - Use copy and paste. - Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. <i>Microsoft Office and Google Classroom</i> <i>IT around us</i>	- Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound and video for on-screen presentations which include hyperlinks. Begin to show an awareness of the intended audience and seek feed-back.	- Use advanced tools in Word processing / DTP software such as tabs, appropriate text formatting, line spacing etc appropriately to create quality presentations appropriate for a known audience. <i>Microsoft Office and Google Classroom</i>	- Multimedia work shows restrained use of effects that help to convey meaning rather than impress. <i>Microsoft Office and Google Classroom</i>	- Consolidate <i>Microsoft Office and Google Classroom</i> <i>Web Page creation</i>

				Microsoft Office and Google Classroom Desktop publishing			
Digital Images (photos, paint, animation)	- Interact and explore their environment using a range of multimedia equipment. - With help, play back captured still or moving images, becoming familiar with the control buttons. - Use programmes that allow children to select objects and animate them. <i>Tux paint</i> <i>J2e.com</i> <i>vtech tablets</i> http://boowakwala.uptoten.com/kids/boowakwala-family-disco-dressdisco.html http://www.en.touptv.com/online-drawing/online-drawing.html http://resources.hwb.wales.gov.uk/VTC/ngfl/re/b-daq/ngfl-	- Use different tools in paint/draw/image manipulation software to create/modify a picture. - Make a short film / animation from images (still and / or moving) that they have sourced, captured or created. <i>Digital painting</i> <i>Introduction to animation</i>	- Use a range of tools in a paint package / image manipulation software to create / modify a picture to communicate an idea. - Record a video/take a picture on an iPad/recording device. <i>Digital Photography</i>	- Take screen shots on iPads. - Create a simple animation to tell a story. - Make a short film / animation from images (still and / or moving) that they have sourced, captured or created. <i>Animation</i>	- Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea. <i>Photo editing</i>	- Create, layer and manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea. - Make a short film / animation from images (still and / or moving) that they have sourced, captured or created, combining text and audio. <i>Vector drawing</i> <i>Video editing</i>	- Use images that they have sourced / captured / manipulated as part of a bigger project (eg presentation or document). <i>3D modelling</i>

	container/re-unit3-en.html http://boowakwala.uptoten.com/kids/boowakwala-events-newyear-fireworks.html http://permadi.com/java/spaint/spaint.html						
Sound and Music (inc. sound recorders)	- Explore ways of listening to sounds using simple programmes and devices. - Explore ways of making and listening to sounds using simple programmes and devices. - With help, use buttons to play back sounds on a computer and a sound player. Online piano/drumkit Sound recorders http://toytheater.com/piano-puppet.php https://www.virtualdrumming.com/drums	- Record short speech. <i>iPad or Talkin</i>	- Chose suitable sounds from a bank to express their ideas. - Record sounds on an iPad/recording device. - Compose music from icons. - Produce a simple presentation incorporating sounds the children have captured, or created. <i>Making music</i>		- Record sounds on an iPad/recording device. - Create a simple podcast, selecting, importing and editing already existing music and sound effects as well as recording their own. <i>Audio editing</i>		

	/online-virtual-games/hip-hop-drum-kits.html http://dingo.care2.com/cards/new/0422/Do-a-rain-deer.swf						
Handling Information (databases and graphs)	- Collect information using digital devices. - Begin to sort, classify or group various objects progressing from practical activities to the use of ICT, e.g., practically sorting fruit into colours, types or shapes, and then on-screen. - Use ICT to sort and sequence objects on a screen or interactive whiteboard. - Produce simple pictograms with help. resources.hwb.wales.gov.uk/VTC/incy_wincy/eng/Introduction/Plenary.htm	- <i>As a class or individually with support, children use a simple pictogram or painting program to develop simple graphical awareness / one to one correspondence.</i> <i>Grouping data</i>	- Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions. - Enter information into a simple branching database, database or word processor and use it to answer questions. - They save, retrieve and edit their work. <i>Pictograms</i>	- Children use a simple database (the structure of which has been set up for them) to enter and save information on a given subject. - They follow straight forward lines of enquiry to search their data. - They talk about their experiences of using ICT to process data compared with other methods. <i>Branching Databases</i>	- Children work as a class or group to create a data collection sheet and use it to setup a straight forward database to answer questions. - They follow straight forward lines of enquiry to search their data for their own purposes. - They talk about their experiences of using ICT to process data compared with other methods. <i>Data Logging</i>	- Enter information and interrogate it (by searching, sorting, graphing etc). - Begin to reflect on how useful the collected data and their interrogation was and whether or not their questions were answered. <i>Flat-file databases</i>	- Independently solve a problem by planning and carrying out data collection, by organising and analysing data involving complex searches using a database, and by drawing conclusions and presenting findings. - The need for accuracy is demonstrated and strategies for spotting implausible data are evident. - Children should be able to talk about issues relating to data protection and the need for data security in the world at large (eg

	https://www.topmarks.co.uk/Flash.aspx?f=ThreeBears						health, police databases). <i>Microsoft Office and Google Classroom.</i>
Modelling and simulations (spreadsheets, adventure games and simulations)	- Explore simple simulations and find out what happens if. http://www.bbc.co.uk/wales/bobinogs/games/game.shtml?1 http://pbskids.org/catinthehat/games/sketch-a-mite.html http://boowakwala.uptoten.com/kids/boowakwala-world-fish-aquarium.html http://nqfl.lanqeroo.com/farm/sceneMaker.html https://www.bbc.co.uk/cbeebies/games/andys-dinosaur-adventures-game http://www.crickweb.co.uk/Early-Years.html (Lecky's Friends) https://www.bbc.co.uk/cbeebies/games/ninas-earth-explorers-game?collection=nina-games	- Make simple choices to control a simple simulation program https://www.primarvgames.com/arcade/simulation.php	- Children are able to play an adventure game and use a simple simulation, making choices and observing the results. - Their conversation shows they understand that computers are good at replicating real life events and allowing them to explore contexts that are otherwise not possible. http://www.mattrealme.me.uk/media/Colin's%20Coffee.swf http://www.media.pearthnow.com.au/multimedia/2008/08/swf/rollercoaster.html http://www.luckygamez.com/kids/play1390#.V6xfMI-cFPY http://www.airplane-game.us/parachute-	- Use models and simulations to find things out and solve problems. Recognise that simulations are useful in widening experience beyond the classroom. - Make simple use of a spreadsheet to store data and produce graphs.	- Use models and simulations to find things out and solve problems. Recognise that simulations are useful in widening experience beyond the classroom. - Create, use and manipulate a spreadsheet (editing cells) - Explore suitability of charts and graphs; making sure they are clearly labelled.	- Set up and use a spreadsheet model to explore patterns and relationships. Make predictions. - Know how to enter simple formulae to assist this process. <i>Microsoft Excel Google sheets</i>	- Set up and use their own spreadsheet, which contains formulae to investigate mathematical models. Ask "what if ..." questions and change variable in their model. - Understand the need for accuracy when creating formulae and check regularly for mistakes, by questioning results. - Relate their use of spreadsheets to model situations to the wider world. <i>Microsoft Office and Google Classroom. Spreadsheets</i>

			<u>dropping-game/?play=game</u> <i>IT around us</i>				
Data Logging (science and maths)	- Be aware that digital devices e.g., thermometers, metal detectors, and sound monitors can be used to show external changes <i>Use data loggers, thermometers and Decibel X: dB Sound Level Meter app on iPad</i>	- Data handling online games/software to explore different charts and diagrams. <u>https://www.topmarks.co.uk/maths-games/5-7-years/data-handling</u>	- Data handling online games/software to explore and create different charts and diagrams. <u>https://www.topmarks.co.uk/maths-games/5-7-years/data-handling</u>	-	- Use a data logger confidently, connected to the computer or remotely, to capture continuous or intermittent data readings. - Interpret the results and use these in their investigations. - Realise the advantages of using ICT to collect data that might otherwise be problematic. - Children are able to identify their own opportunities for data logging and carry out their own experiments. - They check and question results and are able to spot trends in data and identify when problems		

					may have occurred. <i>Data Logging</i>		
Electronic Communications		- Contribute ideas to a class email to another class / school etc. <i>Google Classroom and GMail</i>	- Work collaboratively by email to share and request information of another class or story character. <i>Google Classroom and GMail</i>	- Begin to understand how we communicate and share content online safely and respectfully. <i>Google Classroom and GMail</i> <i>Education for a Connected World</i>	- Begin to understand the need to abide by school e-safety rules. <i>Google Classroom and GMail</i> <i>Education for a Connected World</i>	- Share ICT work they have done electronically by email, VLE, or uploading to authorised sites. - Where possible seek and respond to feedback. <i>Google Classroom and GMail</i>	- Abide by school rules for e-safety. <i>Education for a Connected World</i> <i>Communication</i>

Research and E-Safety	- Use a shortcut such as an icon on the desktop to navigate to a specific website. - Explore a teacher-selected website to find a desired page, using hyperlinks and navigation buttons. <i>Folder on smartboard containing icon to link to 'Teach Your Monster to Read' website. Each child has their own individual account which they can access.</i> <i>Education for a Connected World - https://czone.eastsussex.gov.uk/safeguarding/support-for-colleges-schools-and-early-years-settings/education-for-a-connected-world-resources/</i>	- As a class exercise children explore information from a variety of sources (electronic, paper based, observations of the world around them, etc.). - They show an awareness of different forms of information. <i>Education for a Connected World - https://czone.eastsussex.gov.uk/safeguarding/support-for-colleges-schools-and-early-years-settings/education-for-a-connected-world-resources/</i>	- Children use a search engine to find specific relevant information to use in a presentation for a topic. - They save and retrieve their work. <i>Education for a Connected World - https://czone.eastsussex.gov.uk/safeguarding/support-for-colleges-schools-and-early-years-settings/education-for-a-connected-world-resources/</i>	- Using another curriculum area as a starting point, children use teacher directed questions and ICT sources to find answers, making use of different search engines and evaluating results. - Children use the information or resources they have found. - Children talk about using ICT to find information / resources noting any frustrations and showing an emerging understanding of internet safety. <i>thinkuknow.co.uk Lee and Kim (age 5-7) saferinternet.org Education for a Connected World - https://czone.eastsussex.gov.uk/safeguarding/support-for-colleges-schools-and-early-years-settings/education-for-a-connected-world-resources/</i>	- Using another curriculum area as a starting point, children ask their own questions then use ICT sources to find answers, making use of search engines, website indexes, menus, hyperlinks as appropriate. - Children use the information or resources they have found. - Children talk about using ICT to find information / resources noting any frustrations and showing an emerging understanding of internet safety. <i>thinkuknow.co.uk (age 8-10) saferinternet.org Education for a Connected World - https://czone.eastsussex.gov.uk/safeguarding/support-for-colleges-schools-and-early-years-settings/education-for-a-connected-world-resources/</i>	- Make use of copy and paste, beginning to understand the purpose of copyright regulations and the need to repurpose information for a particular audience. - They show an understanding that not all information on the internet is accurate. - Develop a growing awareness of how to stay safe when using the internet (in school and at home) and that they abide by the school's internet safety policy. <i>thinkuknow.co.uk (age 8-10) saferinternet.org Education for a Connected World - https://czone.eastsussex.gov.uk/safeguarding/support-for-colleges-schools-and-early-years-settings/education-for-a-connected-world-resources/</i>	- Independently and with due regard for safety, search the internet using a variety of techniques to find a range of information and resources on a specific topic. - Use appropriate methods to validate information and check for bias and accuracy. - Repurpose and make appropriate use of selected resources for a given audiences, acknowledging material used where appropriate. <i>thinkuknow.co.uk (age 8-10) saferinternet.org Education for a Connected World - https://czone.eastsussex.gov.uk/safeguarding/support-for-colleges-schools-and-early-years-settings/education-for-a-connected-world-resources/</i>
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Understanding Technologies (individual technologies)	- Explore toys that simulate control devices e.g., traffic lights, scanner,	- Show an awareness of the range of devices and tools they	- Show an awareness of a range of inputs to a computer (IWB, mouse touch	- Understand the benefits of computing devices and tools over others.	- Begin to show discernment in their use of computing devices and tools	- Make choices about the devices and tools they use for specific purposes and	- Evaluate the tools available to them including any that are unfamiliar or

	microwave, cash tills, with the intention of finding out how it works. <i>Role play area – microwave and cash till</i>	encounter in everyday life. https://www.bbc.co.uk/bitesize/topics/zymykqt/articles/zcmvvcw <i>Technology around us.</i>	screen, microphone, keyboard, etc). <i>IT around us</i>	https://www.bbc.co.uk/bitesize/topics/zs7s4wx/articles/zxjsfg8 <i>Connecting computers</i>	for a particular purpose and explain why their choice was made.	explain them in relation to the context. - Begin to show an awareness of specific tools used in working life. <i>Microsoft Office and Google Education.</i>	new and use them to solve problems. - Demonstrate an awareness of the appropriateness of outcomes depending on choices regarding tools and devices. <i>Microsoft Office and Google Classroom.</i>
Understand Technologies (networks)		- Show an awareness that what they create on a computer or tablet device can be shown to others via another device (e.g. printer, projector, Apple TV). <i>Microsoft Office and Google Classroom Technology around us</i>	- Begin to show an awareness that computers can be linked to share resources. <i>Google Classroom IT around us</i>	- Understand how an individual computer physically links to a network. - Show an understanding of the school network and how it links computers to resources in school and beyond. <i>Connecting computers</i>	- Show an understanding that their password is the key to accessing a personalised set of resources and files (e.g. My Documents). - Show an awareness of where passwords are critical in everyday use (e.g. parents accessing bank details). <i>The internet</i>	- Compare networks they may encounter at home or in the wider world (e.g. banks). <i>Sharing information</i>	- Show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school.
Understanding Technologies (the internet)	- Use a shortcut such as an icon on the desktop to navigate to a specific website. - Explore a teacher-selected website to find a desired	- Use text to search for a website to navigate to. <i>Internet</i>	- Begin to understand what the internet is. https://www.bbc.co.uk/bitesize/topics/zymykqt/articles/zgqfyrd	- Show an awareness that not all the resources/tools they use are resident on the device they are using.	- Understand how the internet works. - Begin to show an understanding of URLs. <i>The internet</i>	-	- Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication.

	page, using hyperlinks and navigation buttons. <i>Folder on smartboard containing icon to link to 'Teach Your Monster to Read' website. Each child has their own individual account which they can access</i>		- Use websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks). <i>Internet</i>	https://www.bbc.co.uk/bitesize/guides/zc6rcdm/revision/1			- Perform a search using different search engines and check the results against each other, explaining why they might be different. - Show an awareness of the need for accuracy in spelling and syntax to search effectively. <i>Communication</i>
Control (algorithms)	- Explore the commands needed to control a range of electronic toys. - Use a variety of electronic toys in play situations, e.g., dance mats, Bee-bots, and remote control toys, using basic directional language. <i>Bee-bot spider – get it to go to numbers 1-10 in order Using bee-bot to visit numbered dinosaurs</i>	- Understand sequence and algorithms. - Control simple everyday devices to make them produce different outcomes (sequence instructions (commands)). <i>Bee-bots Moving a robot Introduction to animation</i>	- Control a device, on and off screen, making predictions about the effect their programming will have. - Sequence code blocks with loops (repetition). - Children can plan ahead. - Find errors in a given program (debug). <i>Bee-bots Robot algorithms An introduction to quizzes</i>	- Children are able to type a short sequence of instructions and to plan ahead when programming devices on and off screen. - Find errors in a program (debug). <i>Sequence in music Events and actions</i>	- Understand how to program inputs with loops. Use conditions and sensing for interactions. - Write a program with audio inputs and outputs - Find and fix errors in a variety of programs (debug). <i>Repetition in shapes Repetition in games</i>	- Engage in Logo based problem solving activities that require children to write procedures etc. and to predict, test and modify. - Use control software to control devices (using output commands) or to simulate this on screen. Predict, test and refine their programming. <i>Selection in physical computing</i>	- Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). - Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose. <i>Variables in games Sensing</i>

	<i>Pirate treasure map – use bee-bot to explore Use bee-bot to travel over a space map</i>					<i>Selection in quizzes</i>	
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