Computing Skills Progression

EYFS

Learning about technology starts from birth because it's the way the world works today. Technology is an integral part of all young children's environment and world. They are surrounded by technology just as they are surrounded by language, print and numbers. In the home, technology includes remote controls for television, DVDs and sound systems, toys that have buttons and buzzers, mobile phones, washing machines, microwave ovens and other machines that require programming, and of course, computers and mobile devices such as iPads. Outside the home, children are also immersed in the technological world: they see automatic doors, cash machines, bar code scanners, digital tills and weighing machines, and security cameras. Technology is something children are going to grow up with, learn about and master, and use as a tool to increase their understanding in all areas of learning. Many activities in the early years revolve around children developing an understanding of their environment. Settings encourage children to explore, observe, solve problems, predict, discuss and consider. ICT resources can provide tools for using these skills as well as being examined in their own right, with computers not the only resources. ICT equipment added to role-play reflects the real world, builds on children's experiences and allows them opportunities to understand how, why, when and where different forms of technology are used in everyday life. Early experiences form a foundation upon which KS1 and KS2 can build and the current early learning goals have specific objectives relating to ICT.

By the end of the Foundation Stage most children will:

- Show an interest in ICT
- Know how to operate simple equipment
- Complete a simple program on the computer and / or perform simple functions on ICT equipment
- Find out about and identify the uses of everyday technology and use information and communication toys to support their learning.

	Year 1	Year 2	Year 3/4	Year 4/5	Year 5/6
Text and Multimedia	• Work with others and with support to contribute to a digital class resource which includes text, graphic and sound.	• Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save and retrieve and edit their work.	• 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.	• Multimedia works shows restrained use of effects that help to convey meaning rather than impress.
Digital Images (photos, paint, animation)	• Use a range of simple tools in a paint package / image manipulation software to create / modify a picture.	• Use a range of tools in a paint package / image manipulation software to create / modify a picture to communicate an idea. • Create a simple animation to tell a story.	• 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.	• Use images that they have sourced / captured / manipulated as part of a bigger project (eg presentation or document).

Sound and music (incsound recorders)	• Chose suitable sounds from a bank to express their ideas. • Record short speech.	• Compose music fromicons. • Produce a simple presentation incorporating sounds the children have captured, or created.	• Create a simple podcast, selecting and importing already existing music and sound effects as well as recording their own.	• Create multiple track compositions that contain a variety of sounds.	• Create and share more sophisticated podcasts and consider the effect that their podcasts will have on the audience.
Electronic Communication	• Contribute ideas to a class email to another class / school etc.	• Work collaboratively by email to share and request information of another class or story character.	• Begin to understand the need to abide by school e-safety rules.	• Share ICT work they have done electronically by email, VLE, or uploading to authorised sites. • Where possible seek and respond to feedback.	• Abide by school rules for e-safety.
Research and E Safety	• 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	• Children use a search engine to find specific relevant information to use in a presentation for atopic. • They save and retrieve their work.	• 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, an index, menu, 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.	• 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.	• 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.
Control (algorithms)	• Control simple everyday devices to make them produce different outcomes.	• Control a device, on and off screen, making predictions about the effect their programming will have. • Children can plan ahead.	• Children are able to type a short sequence of instructions and to plan ahead when programming devices on and off screen.	• 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.	• 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.

	Year 1	Year 2	Year 3/4	Year 4/5	Year 5/6
Handling information (databases and graphs)	• As a class or individually with support, children use a simple pictogram or painting program to develop simple graphical awareness / one to one correspondence.	• 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.	• Children use a simple database (the structure of which has been set up for them) to enter and save and save information on a given subject. • They follow straightforward 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.	• Children work as a class or group to create a data collection sheet and use it to set up a straight forward database to answer questions. • 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.	• 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 health, police databases).
Modelling and simulations (spreadsheets, adventure games and simulations)	• Make simple choices to control a simple simulation program.	• 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.	• 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.	• Set up and use a spreadsheet model to explore patterns and relationships. Make predictions. • Know how to enter simple formulae to assist this process.	• 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.
Data logging (science and maths)			• Begin to use a data logger to sense physical data (sound, light, temperature).	• 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.
Understanding Technologies (individual technologies)	• Show an awareness of the range of devices and tools they encounter in everyday life	• Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc)	• Begin to show discernment in their use of computing devices and tools for a particular purpose and explain why their choice was made.	• Make choices about the devices and tools they use for specific purposes and explain them in relation to the context. • Begin to show an awareness of specific tools used in working life.	• Evaluate the tools available to them including any that are unfamiliar or new and use them to solve problems. • Demonstrate an awareness of the appropriateness of outcomes depending on choices regarding tools

					and devices.
Understanding 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, AppleTV)	• Begin to show an awareness that computers can be linked to share resources	• 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)	• Show an understanding of the school network and how it links computers to resources in school and beyond. • Compare this with other networks they may encounter at home or in the wider world (e.g. banks)	• 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 websites and demonstrate an awareness of how to manage their journey around them (e.g. using the back/forward button, hyperlinks)	• Show an awareness that not all the resources/tools they use are resident on the device they are using. • Begin to show an understanding of URLs.	• 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.	• Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication