Leigh and Bransford Primary School

Progression Document

Computing

	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Programing	• Children can clomplete a simple program on a computer. • Children can use ICT hardware to interact with age-appropriate computer software.	• Understand that a programmable toy can be controlled by inputting a sequence of instructions • Develop and record sequences of instructions as an algorithm. • Program the toy to follow their algorithm. • Debug their programs. • Predict how their	• Have a clear understanding of algorithms as sequences of instructions. • Convert simple algorithms to programs. • Predict what a simple program will do. • Spot and fix (debug) errors in their programs.	• Create an algorithm for an animated scene in the form of a storyboard • Write a program in Scratch to create the animation. • Correct mistakes in their animation programs.	• Develop an educational computer game using selection and repetition. • Understand and use variables. • Start to debug computer programs. • Recognise the importance of user interface design, including consideration	• Create original artwork and sound for a game. • Design and create a computer program for a computer game, which uses sequence, selection, repetition and variables. • Detect and correct errors in their	• Learn some of the syntax of a text-based programming language. • Use commands to display text on screen, accept typed user input, store and retrieve data using variables and select from a list. • Plan a text - based adventure with multiple · 'rooms' and

		programs will work.			of input and output.	computer game. • Use iterative development techniques (making and testing a series of small changes) to improve their game.	user interaction. • Thoroughly debug the program.
Programing 2		• Break down a process into simple, clear steps, as in an algorithm. • Use different features of a video camera. • Use a video camera to capture moving images. • Develop collaboration of knowledge.	• Describe carefully what happens in computer games. • Use logical reasoning to make predictions of what a program will do. • Test these predictions. • Think critically about computer	• Develop a number of strategies for finding errors in programs. • Build up resilience and strategies for problem solving. • Increase their knowledge and understandi	• Design and make an on-screen prototype of a computer-controlled toy. • Understand different forms of input and output (such as sensors, switches, motors, lights and speakers).	• Be familiar with semaphore and Morse code. • Understand the need for private information to be encrypted. • Encrypt and decrypt messages in simple ciphers. • Appreciate the need to	• Develop the ability to reason logically about algorithms. • Understand how some key algorithms can be expressed as programs. • Understand that some algorithms are more efficient than others for

		• Discuss their work and think about how it could be improved.	games and their use. • Be aware of how to use games safely and in balance with other activities.	ng of Scratch. • Recognise a number of common types of bug in software.	• Design, write and debug the control and monitoring program for their toy.	use complex passwords and to keep them secure. • Have some understanding of how encryption works on the web.	the same problem. • Understand common algorithms for sorting and searching. • Appreciate algorithmic approaches to problems in mathematics.
Images and sounds	• They select and use technology for particular purposes, e.g to capture their ideas/work.	• Use the web safely to find ideas for an illustration. • Select and use appropriate painting tools to create and change images on the computer. • Understand how this use of ICT differs from using paint and paper.	• Consider the technical and artistic merits of photographs. • Use a digital camera or camera app. • Take digital photographs. • Review and reject or rate the images they take. • Edit and enhance their photographs.	• Gain understanding in shooting live video, such as framing shots, holding the camera steady, and reviewing. • Edit video, including adding narration and editing clips by setting	• Use one or more programs to edit music. • Create and develop a musical composition, refining their ideas through reflection and discussion. • Develop collaboration knowledge. • Develop an awareness of how their	• Develop an appreciation of the links between geometry and art. • Become familiar with the tools and techniques of a vector graphics package. • Develop an understanding of turtle graphics.	• Think critically about how video is used to promote a cause. • Storyboard an effective advert for a cause. • Work collaboratively to shoot suitable original footage and source additional content, acknowledging

		• Create an illustration for a particular purpose. • Know how to save, retrieve and change their work • Reflect on their work and act on feedback received.	• Select their best images to include in a shared portfolio.	in/out points. • Understand the qualities of effective video, such as the importance of narrative, consistency, perspective and scene length.	composition can enhance work in other media.	• Experiment with the tools available, refining and developing their work as they apply their own criteria to evaluate it and receive feedback from their peers. • Develop some awareness of computer-generated art, in particular fractal-based landscapes.	intellectual property rights. • Work collaboratively to edit the assembled content to make an effective advert.
Information	• Children recognise that a range of technology	• Find and use pictures on the web. • Know what to do if they	• Develop collaboration knowledge through working as	• Use a search engine to learn about a new topic.	• Understand some technical aspects of how the	• Develop their research to decide what information	• Appreciate that computer networks transmit and

	is used in places such as homes and schools.	encounter pictures that cause concern. • Group images on the basis of a binary (yes/no) question. • Organise images into more than two groups according to clear rules. • Sort (order) images according to some criteria. • Ask and answer binary (yes/no) questions about their images.	part of a group. • Develop research through searching for information on the internet. • Improve note-taking through the use of mind mapping. • Develop presentation through creating and • delivering a short multimedia presentation.	• Plan, design and deliver an interesting and engaging presentation. • Search for and evaluate online images. • Create their own original images. • Create a video slide cast of a narrated presentation. • Develop understanding of how the internet, the web and search engines work.	internet makes the web possible. • Use HTML tags for elementary mark up. • Use hyperlinks to connect ideas and sources. • Code up a simple web page with useful content. • Understand some of the risks in using the web.	is appropriate. • Understand some elements of how search engines select and rank results. • Question the plausibility and quality of information. • Develop and refine their ideas and text collaboratively. • Develop their understanding of online safety and responsible use of technology.	receive information digitally . • Understand the basic hardware needed for computer networks to work. • Understand key features of internet communication protocols. • Develop a basic understanding of how domain names are converted to numerical IP addresses.

Communication and collaboration		• Use sound recording equipment to record sounds. • Develop understanding in saving and storing sounds on the computer. • Develop collaboration knowledge as they work together in a group. • Understand how a talking book differs from a paper-based book. • Talk about and reflect on their use of ICT. • Share recordings	• Understand that email can be used to communicate • Develop understanding in opening, composing and sending emails. • Gain understanding in opening and listening to audio files on the computer. • Use appropriate language in emails. • Develop editing and formatting text in emails. • Be aware of e-safety issues when using email.	• Develop a basic understanding of how email works. • Gain understanding in using email. • Be aware of broader issues surrounding email, including 'netiquette' and online safety. • Work collaboratively with a remote partner. • Experience video conferencing.	• Understand the conventions for collaborative online work, particularly in wikis. • Be aware of their responsibilities when editing other people's work. • Become familiar with Wikipedia, including potential problems associated with its use. • Practice research. • Write for a target audience using a wiki tool.	• Become familiar with blogs as a medium and a genre of writing. • Create a sequence of blog posts on a theme. • Incorporate additional media. • Comment on the posts of others. • Develop a critical, reflective view of a range of media, including text.	• Research a location online using a range of resources appropriately. • Understand the safe use of mobile technology, including GPS. • Capture images, audio and video while on location. • Showcase shared media content through a mapping layer.

		with an audience.			• Develop collaboration of knowledge. • Develop proofreading.		
Presentation of text, information and data		• Develop basic keyboard knowledge, through typing and formatting text. • Develop basic mouse knowledge. • Use the web to find and select images. • Develop understanding in storing and retrieving files. • Develop understanding in combining text and images.	• Sort and classify a group of items by answering questions. • Collect data using tick charts or tally charts. • Use simple charting software to produce pictograms and other basic charts. • Take, edit and enhance photographs. • Record information on a digital map.	• Understand some elements of survey design. • Understand some ethical and legal aspects of online data collection. • Use the web to facilitate data collection. • Gain knowledge in using charts to analyse data. • Gain knowledge in	• Understand different measurement techniques for weather, both analogue and digital. • Use computer-based data logging to automate the recording of some weather data. • Use spreadsheets to create charts • Analyse data, explore inconsistencies in data	• Understand the work of architects, designers and engineers working in 3D. • Develop familiarity with a simple CAD (computer aided design) tool. • Develop spatial awareness by exploring and experimenting with a 3D virtual	• Manage or contribute to large collaborative projects, facilitated using online tools. • Write and review content. • Source digital media while demonstrating safe, respectful and responsible use. • Design and produce a high-quality print document.

		• Discuss their work and think about whether it could be improved.		interpretin g results.	and make predictions • Practice using presentation software and, optionally, video.	environmen t. • Develop greater aesthetic awareness.	

Inspiration	Tim Berners-Lee (Inventor of the World Wide Web in 1989)
Quote	"The future is still so much bigger than the past."