

Killigrew Computing Knowledge & Skills Progression



Computing strand	Skills	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	Problem solving	<p>Uses different technology for different purposes.</p> <p>Explores how technology is used at home and in school.</p> <p>Begins to notice the difference between technology and other non-electronic resources.</p>	<p>Selects a growing range of technology for different purposes.</p> <p>Explains how everyday technologies can be used at home and in school.</p> <p>Starts to point to familiar letters on a keyboard, saying the letter name.</p> <p>Locates letters of own name on keyboard.</p> <p>Can write simple CVC words by locating on a keyboard.</p>	<p>Understands algorithms as sequences of instructions in everyday contexts.</p> <p>Programs floor turtles/Beebots using sequences of instructions to implement an algorithm.</p>	<p>Understands more complex algorithms as sequences of instructions in everyday contexts.</p> <p>Programs on screen using sequences of instructions to implement an algorithm</p>	<p>Designs and writes a program using a block language, without user interaction.</p> <p>Explores simulations of physical systems on screen.</p> <p>Plans a project.</p>	<p>Designs and writes a program using a block language to a given brief, including simple interaction.</p> <p>Develops their own simulation of a simple physical system on screen.</p> <p>Works with others to plan a project.</p>	<p>Designs, writes and debugs a program using a block language based on their own ideas.</p> <p>Experiments with computer control applications.</p> <p>Plans a solution to a problem using decomposition.</p>	<p>Designs, writes and debugs a program using a second programming language based on their own ideas.</p> <p>Designs, writes and debugs their own computer control application.</p> <p>Solves problems using decomposition, tackling each part separately.</p>

			Explains how technology is different to other non-electronic resources.						
	Programming	Explores how a control can be used to generate movement and action from a toy. Recalls 2-step instructions	Controls a remote-control toy. Recalls more complex instructions of two or more steps.	Gives a sequence of instructions to a floor turtle.	Create a simple program on screen, correcting any errors.	Uses sequences in programs. Writes a program to produce output on screen.	Uses sequence and repetition in programs. Writes a program that accepts keyboard input and produces on-screen output.	Uses sequence, selection and repetition in programs. Writes a program that accepts keyboard and mouse input and produces output on screen and through speakers.	Uses sequence, selection, repetition and variables in programs. Writes a program that accepts inputs other than keyboard and mouse and produces outputs other than screen or speakers.
	Logical thinking	Speculates on why things happen and how things work. Uses a simple set of instructions to make things work.	Through exploration, explains why things happen and how things work. Uses some subject specific vocabulary in their explanation.	Explains what they think a program will do.	Gives logical explanations for what they think a program will do.	Explains a simple, sequence-based algorithm in their own words. Uses logical reasoning to detect errors in programs.	Explains an algorithm using sequence and repetition in their own words. Uses logical reasoning to detect and correct errors in programs.	Explains a rule-based algorithm in their own words. Uses logical reasoning to detect errors in algorithms. Understands how data	Gives clear and precise logical explanations of a number of algorithms. Uses logical reasoning to detect and correct errors in algorithms (and programs).

			Explains what might stop something working.			Understands that computer networks transmit information in a digital (binary) format. Understands that email and video conferencing are made possible through the internet.	Understands that the internet transmits information as packets of data. Understands how the internet makes the web possible.	routing works on the internet. Understands how web pages are created and transmitted.	Understands how mobile phone or other networks operate. Understands how domain names are converted into IP addresses on the internet.
		Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Digital literacy	E-safety	Knows which devices should only be used with adults present.	Explains basic E-safety rules. Explains how they would tell an adult if they saw something that made them sad or scared. Begins to understand which websites are safe.	Keeps themselves safe while using digital technology. Understands that information on the internet can be seen by others. Understands what to do if they see disturbing content online at school.	Keeps safe and shows respect to others while using digital technology. Understands that they should not share personal information online. Understands what to do if they have concerns about content or contact online.	Uses digital technology safely and shows respect for others when working online. Recognises unacceptable behaviour when using digital technology. Knows who to talk to about concerns and inappropriate behaviour in school.	Demonstrates that they can act responsibly when using computers. Understands the difference between acceptable and unacceptable behaviours when using digital technology. Knows who to talk to about concerns and inappropriate behaviour at	Demonstrates that they can act responsibly when using the internet. Discusses the consequences of particular behaviours when using digital technology. Knows how to report concerns and inappropriate behaviour in a range of contexts.	Shows that they can think through the consequences of their actions when using digital technology. Identifies principles underpinning acceptable use of digital technologies. Knows a range of ways to report concerns and inappropriate

						Decides whether a web page is relevant for a given purpose or question. Uses email and videoconferencing in class.	home or in school. Decides whether digital content is relevant for a given purpose or question. Works collaboratively with classmates on a shared wiki.	Decides whether digital content is reliable and unbiased. Works collaboratively with classmates on a class website or blog.	behaviour in a variety of contexts. Forms opinions about the effectiveness of digital content. Uses online tools to plan and carry out a collaborative project.
	Using IT beyond school	Explains what technology is used in homes and schools. Uses technology in role-play.	Explains what technology is used in homes and schools, exploring similarities and differences. Uses technology in cooking and role play (authentic use of electronic equipment for the right purpose). Through stories, understands that people can	Shows an awareness of how IT is used for communication beyond school.	Shows an awareness of how IT is used for a range of purposes beyond school.				

			be contacted via email.						
			Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Information Technology	Creating content	<p>Uses digital technology to record sounds and take pictures.</p> <p>Uses sound buttons to communicate.</p> <p>Uses video to record clips.</p> <p>With adult support, compares different images created by different media.</p>	<p>Uses digital technology to record sounds, take pictures and combine them with text.</p> <p>Uses sound buttons to communicate with a particular purpose in mind.</p> <p>Uses video to record clips (correct orientation and aspect).</p> <p>Opens and closes a programme.</p> <p>Uses a simple programme to create a pictogram.</p> <p>Uses a simple programme to create a picture.</p>	<p>Uses digital technology to store and retrieve content.</p> <p>Creates original content using digital technology.</p>	<p>Stores, organises and retrieves content on digital devices for a given purpose.</p> <p>Creates and edits original content for a given purpose using digital technology.</p>	<p>Uses a range of programs/software on a computer with some degree of independence.</p> <p>Designs and creates content on a computer.</p> <p>Collects and presents information.</p>	<p>Uses and combines a range of programs on a computer.</p> <p>Designs and creates content on a computer in response to a given goal.</p> <p>Collects and presents data.</p>	<p>Uses and combines a range of programs on multiple devices.</p> <p>Designs and creates programs on a computer in response to a given goal.</p> <p>Analyses and evaluates information.</p>	<p>Selects, uses and combines a range of programs on multiple devices.</p> <p>Designs and creates systems in response to a given goal.</p> <p>Analyses and evaluates data.</p>

			Compares pictures created with other media.						
	Searching for information	<p>Understands that information can be retrieved from computers and books.</p> <p>Starts to locate specific information with support.</p>	<p>Understands that a range of different information can be retrieved from computers and books.</p> <p>Explains what kinds of information one might look for in computers and books i.e. recipes</p> <p>Understands that websites contain different information.</p>	Explores key words that might be used to locate useful information.	<p>Chooses the right words and phrases to locate different types of information.</p> <p>Understands that the choice of words is important and can explain why.</p>	<p>Searches for information within a single site.</p> <p>Understands that search engines select pages according to keywords found in the content.</p>	<p>Uses a standard search engine to find information.</p> <p>Understands that search engines rank pages according to relevance.</p>	<p>Uses filters to make more effective use of a standard search engine.</p> <p>Understands that search engines use a cached copy of the crawled web to select and rank results.</p>	<p>Makes use of a range of search engines appropriate to finding information that is required.</p> <p>Appreciates that search engines rank pages based on the number and quality of in-bound links.</p>