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Killigrew Computing Skills Progression

Computing strand	Skills	Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	Problem solving	Selects and uses technology for different purposes. Investigates everyday technologies at home and in school. Locates letters of own name on keyboard. Applies the same steps to various programmes. Compares technology to other non-electronic resources.	Understands algorithms as sequences of instructions in everyday contexts. Programs floor turtles/Beebots using sequences of instructions to implement an algorithm.	Understands more complex algorithms as sequences of instructions in everyday contexts. Programs on screen using sequences of instructions to implement an algorithm	Designs and writes a program using a block language, without user interaction. Explores simulations of physical systems on screen. Plans a project.	Designs and writes a program using a block language to a given brief, including simple interaction. Develops their own simulation of a simple physical system on screen. Works with others to plan a project.	Designs, writes and debugs a program using a block language based on their own ideas. Experiments with computer control applications. Plans a solution to a problem using decomposition.	Designs, writes and debugs a program using a second programming language based on their own ideas. Designs, writes and debugs their own computer control application. Solves problems using decomposition, tackling each part separately.

	Programming	Controls a remote control toy. Recalls simple instructions.	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. Follows a range of simple sets of instructions.	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. Understands that computer networks transmit information in a digital (binary) format. Understands that email and video conferencing are	Explains an algorithm using sequence and repetition in their own words. Uses logical reasoning to detect and correct errors in programs. Understands that the internet transmits information as packets of data. Understands how the internet	Explains a rule-based algorithm in their own words. Uses logical reasoning to detect errors in algorithms. Understands how data routing works on the internet. Understands how web pages are created and transmitted.	Gives clear and precise logical explanations of a number of algorithms. Uses logical reasoning to detect and correct errors in algorithms (and programs). Understands how mobile phone or other networks operate. Understands how domain names are

					made possible through the internet.	makes the web possible.		converted into IP addresses on the internet.
		Early Years	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Digital literacy	**E-safety**	Begins to understand how to keep themselves safe online: Knows to only use devices with adults present. Tells an adult if they see something that makes 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. (e.g. the child should know to close the laptop lid or turn the tablet over).	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. Decides whether a web page is relevant for a given purpose or question.	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 home or in school. Decides whether digital content is relevant for a	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. Decides whether digital content is reliable and unbiased.	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 behaviour in a variety of contexts. Forms opinions about the effectiveness of digital content.

		Early Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					Uses email and videoconferencing in class.	given purpose or question. Works collaboratively with classmates on a shared wiki.	Works collaboratively with classmates on a class website or blog.	Uses online tools to plan and carry out a collaborative project.
	Using IT beyond school	Recognises that a range of technology is used in homes and schools (ELG) Uses technology in cooking. Uses technology in role-play. Through stories, understands that people can be contacted via email.	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.				
		Early Years	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Information Technology	**Creating content**	Uses digital technology to record sounds, take pictures and combine	Uses digital technology to store and retrieve content.	Stores, organises and retrieves content on digital devices	Uses a range of programs/software on a computer with some degree of independence.	Uses and combines a range of programs on a computer.	Uses and combines a range of programs on multiple devices.	Selects, uses and combines a range of programs on multiple devices.

		them with text. Uses technology to communicate (sound buttons). Uses video cameras to record clips. Opens and closes a programme. Uses a simple programme to create a pictogram. Uses a simple programme to create a picture. Compares pictures created with other media.	Creates original content using digital technology.	for a given purpose. Creates and edits original content for a given purpose using digital technology.	Designs and creates content on a computer. Collects and presents information.	Designs and creates content on a computer in response to a given goal. Collects and presents data.	Designs and creates programs on a computer in response to a given goal. Analyses and evaluates information.	Designs and creates systems in response to a given goal. Analyses and evaluates data.
	Searching for information	Understands that information			Searches for information within a single site.	Uses a standard search engine to find information.	Uses filters to make more effective use of a	Makes use of a range of search engines

		can be retrieved from computers and books. Understands that websites contain different information.			Understands that search engines select pages according to keywords found in the content.	Understands that search engines rank pages according to relevance.	standard search engine. Understands that search engines use a cached copy of the crawled web to select and rank results.	appropriate to finding information that is required. Appreciates that search engines rank pages based on the number and quality of in-bound links.