

# Computing Progression of Skills Document

## Digital Literacy

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Logging in and out and saving work on their own account.</p> <p>When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable.</p> <p>Understanding how to interact safely with others online.</p> <p>Recognising how actions on the internet can affect others.</p> <p>Recognising what a digital footprint is and how to be careful about what we post</p>	<p>Learning how to create a strong password.</p> <p>Understanding how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable</p> <p>Identifying whether information is safe or unsafe to be shared online.</p> <p>Learning to be respectful of others when sharing online and ask for their permission before sharing content.</p> <p>Learning strategies for checking if something they read online is true.</p>	<p>Recognising that different information is shared online including facts, beliefs and opinions.</p> <p>Learning how to identify reliable information when searching online.</p> <p>Learning how to stay safe on social media.</p> <p>Considering the impact technology can have on mood.</p> <p>Learning about cyberbullying.</p> <p>Learning that not all emails are genuine, recognising when an email might be fake and what to do about it.</p>	<p>Recognising that information on the internet might not be true or correct and that some sources are more trustworthy than others.</p> <p>Learning to make judgements about the accuracy of online searches.</p> <p>Identifying forms of advertising online.</p> <p>Recognising what appropriate behaviour is when collaborating with others online.</p> <p>Reflecting on the positives and negatives of time spent online.</p> <p>Identifying respectful and disrespectful online behaviour</p>	<p>Identifying possible dangers online and learning how to stay safe.</p> <p>Evaluating the pros and cons of online communication.</p> <p>Recognising that information on the internet might not be true or correct and learning ways of checking validity.</p> <p>Learning what to do if they experience bullying online.</p> <p>Learning to use an online community safely</p>	<p>Learning about the positive and negative impacts of sharing online.</p> <p>Learning strategies to create a positive online reputation.</p> <p>Understanding the importance of secure passwords and how to create them.</p> <p>Learning strategies to capture evidence of online bullying in order to seek help.</p> <p>Using search engines safely and effectively.</p> <p>Recognising that updated software can help to prevent data corruption and hacking.</p> <p>Exploring ethical considerations around</p>

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					AI use and its impact on society
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## Information Technology

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using Software	<p>Using a basic range of tools within graphic editing software.</p> <p>Taking and editing photographs.</p> <p>Developing control of the mouse through dragging, clicking and resizing of images to create different effects.</p> <p>Developing understanding of different software tools.</p>	<p>Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts.</p> <p>Using word processing software to type and reformat text.</p> <p>Using software (and unplugged means) to create story animations. Creating and labelling images.</p>	<p>Taking photographs and recording video to tell a story.</p> <p>Using software to edit and enhance their video adding music, sounds and text on screen with transitions.</p>	<p>Use online software for documents, presentations, forms and spreadsheets.</p> <p>Using software to work collaboratively with others.</p>	<p>Using logical thinking to explore software more independently, making predictions based on their previous experience.</p> <p>Using software programme Sonic Pi/Scratch to create music.</p> <p>Using the video editing software to animate.</p> <p>Identify ways to improve and edit programs, videos, images etc. Independently learning how to use 3D design software</p>	<p>Using logical thinking to explore software independently, iterating ideas and testing continuously.</p> <p>Using search and word processing skills to create a presentation.</p> <p>Using text-based AI tools to generate content.</p>

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					package TinkerCAD.	
Using email and internet searched	Recognising devices that are connected to the internet. Understanding that we are connected to others when using the internet	Searching for appropriate images to use in a document		Understanding why some results come before others when searching. Understanding that information found by searching the internet is not all grounded in fact. Searching the internet for data.	Developing searching skills to help find relevant information on the internet.	Understanding how search engines work.
Using data		Collecting and inputting data into a spreadsheet. Interpreting data from a spreadsheet.		Understanding that data is used to forecast weather.  Recording data in a spreadsheet independently. Sorting data in a spreadsheet to compare using the 'sort by...' option.  Designing a device which gathers and records sensor data.	Understanding how data is collected in remote or dangerous places. Understanding how data might be used to tell us about a location.	Understanding how barcodes, QR codes and RFID work.  Gathering and analysing data in real time.  Creating formulas and sorting data within spreadsheets.
Wider use of technology	Recognising common uses of information technology,	Learning how computers are used in the wider world.	Recognising how social media platforms are used to interact	Understanding that software can be used collaboratively	Learn about different forms of communication that have	Learning how 'big data' can be used to solve a problem

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	including beyond school. Understanding some of the ways we can use the internet			online to work as a team	developed with the use of technology	or improve efficiency.
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## Computer Science

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Hardware	<p>Learning how to operate a camera or tablet to take photos and videos.</p> <p>Learning how to explore and tinker with hardware to find out how it works.</p> <p>Learning where keys are located on the keyboard.</p>	<p>Understanding what a computer is and that it's made up of different components.</p> <p>Recognising that buttons cause effects and that technology follows instructions.</p> <p>Learning how we know that technology is doing what we want it to do via its output.</p> <p>Developing confidence with the keyboard and the basics of touch typing.</p>	<p>Understanding what the different components of a computer do and how they work together.</p> <p>Drawing comparisons across different types of computers.</p> <p>Learning about the purpose of routers.</p>	<p>Using tablets or digital cameras to film a weather forecast.</p> <p>Understanding that weather stations use sensors to gather and record data which predicts the weather</p>	<p>Learning that external devices can be programmed by a separate computer.</p>	<p>Learning about the history of computers and how they have evolved over time.</p> <p>Understanding and identifying barcodes, QR codes and RFID.</p> <p>Identifying devices and applications that can scan or read barcodes, QR codes and RFID.</p> <p>Identify different types of AI and their applications in everyday life.</p>

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<p>Networks and data representation</p>			<p>Understanding the role of the key components of a network.</p> <p>Identifying the key components within a network, including whether they are wired or wireless.</p> <p>Understanding that websites and videos are files that are shared from one computer to another.</p> <p>Learning about the role of packets. Understanding how networks work and their purpose.</p> <p>Recognising links between networks and the internet. Learning how data is transferred.</p>	<p>Understanding that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration</p>	<p>Learning the vocabulary associated with data: data and transmit.</p> <p>Recognising that computers transfer data in binary and understanding simple binary addition.</p> <p>Learning that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations.</p>	
<p>Computational Thinking</p>	<p>Learning that decomposition means breaking a</p>	<p>Articulating what decomposition is.</p>	<p>Using decomposition to</p>	<p>Using decomposition to solve a problem by</p>	<p>Decomposing animations into a series of images.</p>	<p>Decomposing a program into an algorithm.</p>

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	<p>problem down into smaller parts.</p> <p>Using decomposition to solve unplugged challenges.</p> <p>Using logical reasoning to predict the behaviour of simple programs. Developing the skills associated with sequencing in unplugged activities.</p> <p>Following a basic set of instructions.</p> <p>Assembling instructions into a simple algorithm</p>	<p>Decomposing a game to predict the algorithms used to create it.</p> <p>Learning that there are different levels of abstraction. Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm.</p>	<p>explain the parts of a laptop computer.</p> <p>Using decomposition to explore the code behind an animation.</p> <p>Using repetition in programs.</p> <p>Using logical reasoning to explain how simple algorithms work.</p> <p>Explaining the purpose of an algorithm. Forming algorithms independently</p>	<p>finding out what code was used.</p> <p>Using decomposition to understand the purpose of a script of code. Identifying patterns through unplugged activities. Using past experiences to help solve new problems.</p> <p>Using abstraction to identify the important parts when completing both plugged and unplugged activities.</p> <p>Breaking down what they want to achieve into smaller, manageable parts.</p> <p>Using logic, pattern recognition and decomposition to</p>	<p>Decomposing a program without support.</p> <p>Decomposing a story to be able to plan a program to tell a story.</p> <p>Predicting how software will work based on previous experience. Writing more complex algorithms for a purpose.</p>	<p>Using past experiences to help solve new problems. Writing increasingly complex algorithms for a purpose.</p> <p>Analysing the effectiveness of prompts and refine them for improved AI outputs.</p>
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				<p>solve simple problems.</p> <p>Remixing code to alter and add to an existing program.</p> <p>Recognising repeating patterns in a program or code. Creating loops to make code more efficient in block-based programs.</p> <p>Beginning to use variables in block-based programming languages to make programs more interactive.</p> <p>Including a conditional statement in block-based programming languages.</p> <p>Recognising the relationship between what is happening in a p</p>		
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<p>Programming</p>	<p>Programming a Floor robot to follow a planned route.</p> <p>Learning to debug instructions when things go wrong.</p> <p>Learning to debug an algorithm in an unplugged scenario.</p>	<p>Using logical thinking to explore software, predicting, testing and explaining what it does.</p> <p>Using an algorithm to write a basic computer program.</p>	<p>Using logical thinking to explore more complex software; predicting, testing and explaining what it does.</p> <p>Incorporating loops to make code more efficient.</p> <p>Continuing existing code. Making reasonable suggestions for how to debug their own and others' code.</p>	<p>Creating algorithms for a specific purpose. Coding a simple game.</p> <p>Using abstraction and pattern recognition to modify code. Incorporating variables to make code more efficient.</p>	<p>Programming an animation. Iterating and developing their programming as they work.</p> <p>Confidently using loops in their programming.</p> <p>Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected.</p> <p>Writing code to create a desired effect. Using a range of programming commands.</p> <p>Using repetition within a program. Amending code within a live scenario.</p>	<p>Debugging quickly and effectively to make a program more efficient.</p> <p>Remixing existing code to explore a problem. Using and adapting nested loops.</p> <p>Programming using the language Python.</p> <p>Changing a program to personalise it.</p> <p>Evaluating code to understand its purpose.</p> <p>Predicting code and adapting it to a chosen purpose.</p> <p>Applying coding skills like decomposition and pattern recognition to interact with AI applications.</p>
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					<p>Decomposing a program independently when given a specific outcome or task to achieve.</p> <p>Altering existing code with a new, specific outcome in mind.</p> <p>Independently using loops to make code more efficient in text-based programs. Using nested loops to make code more efficient.</p> <p>Using variables in block-based programming languages and understanding the impact of changing the variables in their code.</p> <p>Explaining what a program does and how it works,</p>	
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					<p>referring to the inputs and outputs.</p> <p>Becoming more efficient and effective at debugging their programs.</p> <p>Systematically identify mistakes, problems or 'bugs' in a program</p>	
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