

St Gabriel's Catholic Primary School – Computing Progression of Skills



	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science Computing Contexts Systems and Networks			To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type To use the keyboard to edit text To create rules for using technology responsibly	To recognise the uses and features of information technology To identify information technology in the home To identify information technology beyond school To explain how information technology benefits us To show how	To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information	To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web To describe how content can be added	To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing	To identify how to use a search engine To describe how search engines select results To describe how search engines select results To explain how search results are ranked To recognise why the order of results is important,

				<p>to use information technology safely</p> <p>To recognise that choices are made when using information technology</p>	<p>To explore how digital devices can be connected</p> <p>To recognise the physical components of a network</p>	<p>and accessed on the World Wide Web</p> <p>To recognise how the content of the WWW is created by people</p> <p>To evaluate the consequences of unreliable content</p>	<p>information online lets people in different places work together</p> <p>To contribute to a shared project online</p> <p>To evaluate different ways of working together online</p>	<p>and to whom</p> <p>To recognise how we communicate using technology</p> <p>To evaluate different methods of online communication</p>
	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Information Technology</p> <p>Digital Artefacts</p> <p>Handling Data</p>			<p>To label objects</p> <p>To identify that objects can be counted</p> <p>To describe objects in different ways</p> <p>To count objects with</p>	<p>To recognise that we can count and compare objects using tally charts</p> <p>To recognise that objects can be represented as pictures</p>	<p>To create questions with yes/no answers</p> <p>To identify the object attributes needed to collect relevant data</p> <p>To create a</p>	<p>To explain that data gathered over time can be used to answer questions</p> <p>To use a digital device to collect data automatically</p>	<p>To use a form to record information</p> <p>To compare paper and computer-based databases</p> <p>To outline how grouping and then</p>	<p>To identify questions which can be answered using data</p> <p>To explain that objects can be described using data</p> <p>To explain</p>

			<p>the same properties</p> <p>To compare groups of objects</p> <p>To answer questions about groups of objects</p>	<p>To create a pictogram</p> <p>To select objects by attribute and make comparisons</p> <p>To recognise that people can be described by attributes</p> <p>To explain that we can present information using a computer</p>	<p>branching database</p> <p>To identify objects using a branching database</p> <p>To explain why it is helpful for a database to be well structured</p> <p>To compare the information shown in a pictogram with a branching database</p>	<p>To explain that a data logger collects 'data points' from sensors over time</p> <p>To use data collected over a long duration to find information</p> <p>To identify the data needed to answer questions</p> <p>To use collected data to answer questions</p>	<p>sorting data allows us to answer questions</p> <p>To explain that tools can be used to select specific data</p> <p>To explain that computer programs can be used to compare data visually</p> <p>To apply my knowledge of a database to ask and answer real-world questions</p>	<p>that formula can be used to produce calculated data</p> <p>To apply formulas to data, including duplicating</p> <p>To create a spreadsheet to plan an event</p> <p>To choose suitable ways to present data</p>
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	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Information Technology		To use an iPad to record videos and take photos by pressing the correct icon on the iPad.	To describe what different freehand tools do	To know what devices can be used to take photographs		To explain that digital images can be changed	To recognise video as moving pictures, which can include audio	
Digital Artefacts			To use the shape tool and the line tools	To use a digital device to take a photograph		To change the composition of an image	To identify digital devices that can record video	
Audio/Visual			To make careful choices when painting a digital picture	To describe what makes a good photograph		To describe how images can be changed for different uses	To capture video using a digital device	
			To explain why I chose the tools I used	To decide how photographs can be improved		To make good choices when selecting different tools	To recognise the features of an effective video	
			To use a computer on my own to paint a picture	To use tools to change an image		To recognise that not all images are real	To identify that video can be improved through reshooting and editing	
			To compare painting a picture on a	To recognise that images can be changed		To evaluate how changes		

			<p>computer and on paper</p>	<p>To say how music can make us feel</p> <p>To identify that there are patterns in music</p> <p>To describe how music can be used in different ways</p> <p>To show how music is made from a series of notes</p> <p>To create music for a purpose To review and refine our computer work</p>		<p>can improve an image</p> <p>To identify that sound can be digitally recorded</p> <p>To use a digital device to record sound</p> <p>To explain that a digital recording is stored as a file</p> <p>To explain that audio can be changed through editing</p> <p>To show that different types of</p>	<p>To consider the impact of the choices made when making and sharing a video</p>	
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						audio can be combined and played together To evaluate editing choices made		
Information Technology Digital Artefacts Drawing	To use a simple painting program to create lines and shapes (Mark making) To use tools to change colour	To use a simple painting program to create a simple picture To use tools to change the colour and brush size			To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and		To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognize that vector drawings consist of layers	To use a computer to create and manipulate three-dimensional (3D) digital objects To compare working digitally with 2D and 3D graphics To construct a digital 3D model of a physical object To identify that physical objects can be

					<p>improve an animation</p> <p>To evaluate the impact of adding other media to an animation</p>		<p>To group objects to make them easier to work with</p> <p>To evaluate my vector drawing</p>	<p>broken down into a collection of 3D shapes</p> <p>To design a digital model by combining 3D objects</p> <p>To develop and improve a digital 3D model</p>
<p>Information Technology</p> <p>Digital Artefacts</p> <p>Publishing</p>			<p>To use a computer to write</p> <p>To add and remove text on a computer</p> <p>To identify that the look of text can be changed on a computer</p>		<p>To recognise how text and images convey information</p> <p>To recognise that text and layout can be edited</p> <p>To choose appropriate page settings</p>			<p>To review an existing website and consider its structure</p> <p>To plan the features of a web page</p> <p>To consider the ownership and use of images (copyright)</p>

			<p>To make careful choices when changing text</p> <p>To explain why I used the tools that I chose</p> <p>To compare writing on a computer with writing on paper</p>		<p>To add content to a desktop publishing publication</p> <p>To consider how different layouts can suit different purposes</p> <p>To consider the benefits of desktop publishing</p>			<p>To recognise the need to preview pages</p> <p>To outline the need for a navigation path</p> <p>To recognise the implications of linking to content owned by other people</p>
	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science Programming	<p>To use a floor robot with support (Beebots)</p> <p>To use real technology appropriately (hairdryers, kettle, camera, iron etc in role play.)</p>	<p>To be able to make a floor robot move (Beebots)</p> <p>To use simple software to make something happen.</p>	<p>To explain what a given command will do</p> <p>To act out a given word</p> <p>To combine forwards and backwards commands to make a</p>	<p>To describe a series of instructions as a sequence</p> <p>To explain what happens when we change the order of instructions</p>	<p>To explore a new programming environment</p> <p>I can identify that each sprite is controlled by the commands I choose</p>	<p>To develop the use of count-controlled loops in a different programming environment</p> <p>To explain that in programming</p>	<p>To explain how selection is used in computer programs</p> <p>To relate that a conditional statement connects a condition to an outcome</p>	<p>To define a 'variable' as something that is changeable</p> <p>To explain why a variable is used in a program</p>

	To use toys with knobs and touch screens and real objects like cameras or mobile phones.	To make choices about the buttons and icons to press, touch or click on (remote control cars, Beebots etc)	sequence To combine four direction commands to make sequences To plan a simple program	To use logical reasoning to predict the outcome of a program (series of commands) To explain that programming projects can have code and artwork To design an algorithm	To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description	there are infinite loops and count controlled loops To develop a design which includes two or more loops which run at the same time To modify an infinite loop in a given program	To explain how selection directs the flow of a program To design a program which uses selection To create a program which uses selection To evaluate my program	To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project
	To push and press toys to turn on or off.	To move objects on a screen (Smartboard and iPads)	To find more than one solution to a problem To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a	To create and debug a program that I have written To explain that a sequence of commands has a start	To explain how a sprite moves in an existing project To create a program to	To design a project that includes repetition To create a project that includes repetition To identify that accuracy in	To control a simple circuit connected to a computer To write a program that includes count-controlled loops	To create a program to run on a controllable device To explain that selection can control the flow of a

			<p>value</p> <p>To explain that each sprite has its own instructions</p> <p>To design the parts of a project</p> <p>To use my algorithm to create a program</p>	<p>To explain that a sequence of commands has an outcome</p> <p>To create a program using a given design</p> <p>To change a given design</p> <p>To create a program using my own design</p> <p>To decide how my project can be improved</p>	<p>move a sprite in four directions</p> <p>To adapt a program to a new context</p> <p>To develop my program by adding features</p> <p>To identify and fix bugs in a program</p> <p>To design and create a maze-based challenge</p>	<p>programming is important</p> <p>To create a program in a text-based language</p> <p>To explain what 'repeat' means</p> <p>To modify a count-controlled loop to produce a given outcome</p> <p>To decompose a program into parts</p> <p>To create a program that uses count-controlled loops to</p>	<p>To explain that a loop can stop when a condition is met</p> <p>To explain that a loop can be used to repeatedly check whether a condition has been met</p> <p>To design a physical project that includes selection</p> <p>To create a program that controls a physical computing project</p>	<p>program</p> <p>To update a variable with a user input</p> <p>To use an conditional statement to compare a variable to a value</p> <p>To design a project that uses inputs and outputs on a controllable device</p> <p>To develop a program to use inputs and outputs on a controllable device</p>
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						produce a given outcome		
	Pre-School	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Digital Literacy eSafety Self-Image & Identity	<p>To be able to ask for help</p> <p>To know who to ask when they need help</p> <p>To understand what to do when something worries them</p> <p>To know what to do if I see something I don't like</p>	<p>To know which adults to speak to if they feel unsafe</p> <p>To know what to do so if they see something they do not like.</p>	<p>To recognise that there may be people online who could make me feel sad, embarrassed or upset.</p> <p>If something happens that makes me feel sad, worried, uncomfortable or frightened To give examples of when and how to speak to an adult To trust.</p>	<p>To explain how other people's identity online can be different to their identity in real life.</p> <p>To describe ways in which people might make themselves look different online. To give examples of online issue that might make me feel sad, worried, uncomfortable or frightened. To give</p>	<p>To explain what is meant by the term 'identity'</p> <p>To explain how To represent myself in different ways online</p> <p>To explain ways in which and why I might change my identity online depending on what I am doing online.</p>	<p>To explain how my online identity can be different to the identity I present in real life and can describe the right decisions about how I interact with others and how others perceive me.</p>	<p>To explain how identify online can be copied, modified or altered.</p> <p>To demonstrate responsible choices about my online identity; depending on context.</p>	<p>To describe ways in which media can shape ideas about gender. To identify messages about gender roles and make judgements based on them.</p> <p>To challenge and explain why it is important to reject inappropriate messages about gender online.</p>

				examples of how I might get help.				To describe issues online that might make me or others feel sad, worried, uncomfortable or frightened. I know and can give examples of how I might get help, both on and offline. To explain why I should keep asking until I get the help I need.
Digital Literacy eSafety Online Relationships	To understand supervision is needed when using devices.		To use the internet with adult support to communicate with people I know. To explain why it is	To use the internet to communicate with people I don't know well (e.g. email a penpal in another school/country)	To describe ways people who have similar likes and interests can get together online.	To give examples of how to be respectful to others online.	To explain that there are some people who I communicate with online who may want to do me or my friends harm.	To explain how sharing something online may have an impact either positively or negatively

			<p>important to be considerate and kind to people online.</p>	<p>To give examples of how I might use technology to communicate with others I don't know well.</p>	<p>To explain some risks of communicating online with others I don't know well.</p> <p>To explain what it means to 'know someone' online and why this may be different from knowing them in real life.</p> <p>To explain why I should be careful who I trust online and what information I trust them with.</p> <p>To explain what is meant by 'trusting</p>		<p>To recognise that this is not my/our fault.</p> <p>To make positive contributions and be part of online communities.</p> <p>To describe some of the communities in which I am involved and describe how I collaborate with others positively.</p>	<p>To explain how sharing something online may have an impact either positively or negatively</p> <p>To describe how things shared privately online can have unintended consequences for others e.g. screen grab.</p> <p>To explain that taking/sharing inappropriate images of someone may have an impact for the sharer and others; and</p>
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					<p>someone online' and To explain why this is different to 'liking someone online'</p> <p>To explain why To take back my trust in someone or something if I feel nervous, uncomfortable or worried.</p>			<p>who can help if someone is worried about this.</p>
<p>Digital Literacy</p> <p>eSafety</p> <p>Online Reputation</p>		<p>To talk about ideas and activities that are safe online</p>	<p>To recognise that information can stay online and could be copied.</p> <p>To describe what information I should not put</p>	<p>To explain how information put online about me can last for a long time.</p> <p>I know who to talk to if I think someone has made a</p>	<p>To search for information about myself online.</p> <p>To recognise I need to be careful before I share anything about myself</p>	<p>To describe how others can find out information about me by looking online.</p> <p>To explain ways that some of the information about me</p>	<p>To search for information about an individual online and create a summary report of the information I find.</p>	<p>To explain how I am developing an online reputation which will allow other people to form an opinion of me.</p>

			online without asking a trusted adult first.	mistake about putting something online.	or others online. I know who I should ask if I am not sure if I should put something online.	online could have been created, copied or shared by others.	To describe ways that information about people online can be used by others to make judgements about an individual.	To describe some simple ways that help build a positive online reputation.
Digital Literacy eSafety Online Bullying			To describe how to behave online in ways that do not upset others and can give examples.	To give examples of bullying behaviour and how it could look online. I understand how bullying can make someone feel. To talk about how someone can/would get help about being bullied	To explain what bullying is and can describe how people may bully others To describe rules about how to behave online and how I follow them.	To identify some online technologies where bullying might take place. To describe ways people can be bullied through a range of media (e.g. image, video, text, chat). To explain why I need to	To recognise when someone is upset, hurt or angry online. To describe how to get help for someone that is being bullied online and assess when I need to do or say something or tell someone.	To describe how to capture bullying content as evidence (e.g. screen grab, URL, profile) to share with others who can help me. To explain how someone could report online bullying in different contexts.

				online or offline.		think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation).	To explain how I would report online bullying on the apps and platforms that I use. To describe the helpline services who can support me and what I would say and do if I needed their help e.g. Childline. To explain how to block abusive users.	
Digital Literacy eSafety			To use the internet to find things out. To use simple keywords in	To use keywords in search engines. To demonstrate	To use key phrases in search engines. To explain the difference	To describe how To search for information within a wide group of technologies	To explain what is meant by 'being sceptical'. To give some examples of when and	To use search technologies effectively. To explain how search engines work

<p>Managing Online Information</p>			<p>search engines.</p> <p>To describe and demonstrate how to get help from a trusted adult or helpline if I find content that makes me feel sad, uncomfortable, worried or frightened.</p>	<p>how to navigate a simple webpage to get information I need (e.g. home, forward, back buttons; links, tabs and sections)</p> <p>To explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri)</p> <p>To explain the difference between things that are imaginary, 'made up', or 'make believe'</p>	<p>between a belief, an opinion and a fact.</p>	<p>(e.g. social media, image sites, video sites).</p> <p>To describe some of the methods used to encourage people to buy things online (e.g. advertising offers; in-app purchases; pop-ups) and can recognise some of these when they appear.</p> <p>To explain that some people I 'meet online' may be computer programmes pretending to be real people.</p>	<p>why it is important to be sceptical. To explain what is meant by a hoax. To explain why I need to think carefully before I forward anything online.</p> <p>To explain why some information I find online may not be honest, accurate or legal.</p> <p>To explain why information that is on a large number of sites may still be</p>	<p>and how results are selected and ranked.</p> <p>To demonstrate the strategies I would apply to be discerning in evaluating digital content.</p> <p>To describe how some online information can be opinion and can offer examples.</p> <p>To explain how and why some people may present opinions as facts.</p>
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				<p>and things that are 'true' or 'real'.</p> <p>To explain why some information I find online may not be true.</p>			<p>inaccurate or untrue. To assess how this might happen (accident or on purpose)</p>	<p>To demonstrate strategies to enable me to analyse and evaluate the validity of facts and To explain why using these strategies are important.</p> <p>To identify and flag inappropriate content.</p> <p>To define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online e.g. advertising</p>
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								and ad-targeting.
<p>Digital Literacy</p> <p>eSafety</p> <p>Health, Well-Being & Lifestyle</p>		<p>To know they need to have a sensible amount of screen time</p> <p>To use a safe part of the internet to play and learn (e.g. Education City etc)</p>	<p>To explain rules to keep us safe when we are using technology both in and beyond home.</p> <p>To give examples of some of these rules.</p>	<p>To explain simple guidance for using technology in different environments and settings.</p> <p>To say how those rules/guides can help me.</p>	<p>To explain why spending too much time using technology can sometimes have a negative impact on me;</p> <p>To give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos).</p>	<p>To explain how using technology can distract me from other things I might do or should be doing.</p> <p>To identify times or situations when I might need to limit the amount of time I use technology and suggest strategies to help me with this.</p>	<p>To describe ways technology can affect healthy sleep and can describe some of the issues.</p> <p>To describe some strategies, tips or advice to promote healthy sleep with regards to technology.</p>	<p>I recognise and can discuss the pressures that technology can place on someone and how/when they could manage this.</p> <p>To recognise features of persuasive design and how they are used to keep users engaged (current and future use)</p> <p>To assess and action different strategies to limit the</p>

								impact of technology on my health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).
<p>Digital Literacy</p> <p>eSafety</p> <p>Privacy & Security</p>			<p>To recognise more detailed examples of information that is personal to me (e.g. where I live, my family's names, where I go to school).</p> <p>To explain why I should always ask a trusted adult before I share any</p>	<p>To describe and explain some rules for keeping my information private.</p> <p>To explain what passwords are and can use passwords for my accounts and devices.</p> <p>To explain how many devices in my home could be</p>	<p>To give reasons why I should only share information with people I choose to and can trust. To explain what if I am not sure of feel pressured I should ask a trusted adult.</p> <p>To understand and can give reasons why</p>	<p>To explain what a strong password is and describe strategies for keeping my personal information private, depending on context.</p> <p>To explain that internet use is never fully private and is monitored e.g.</p>	<p>To create and use strong and secure passwords.</p> <p>To explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice messages,</p>	<p>I use different passwords for a range of online services.</p> <p>To describe effective strategies for managing those passwords.</p> <p>I know what to do if my password is lost or stolen.</p>

			<p>information about myself online.</p> <p>To explain why passwords can be used to protect information and devices.</p>	<p>connected to the internet and can list some of those devices.</p>	<p>passwords are important.</p> <p>To describe simple strategies for creating and keeping passwords private.</p> <p>To describe how connected devices can collect and share my information with others.</p>	<p>adult supervision.</p>	<p>geolocation) with others.</p> <p>To explain how and why some apps may request or take payment for additional content (e.g. in-app purchases) and explain why I should seek permission from a trusted adult before purchasing.</p>	<p>To describe ways in which some online content targets people to gain money or information illegally; To describe strategies to help me identify such content (e.g. scams, phishing).</p>
<p>Digital Literacy</p> <p>eSafety</p> <p>Copyright & Ownership</p>			<p>To explain why work I create using technology belongs to me.</p> <p>To say why it belongs to me (e.g. "It is my idea" / "I designed it")</p>	<p>To describe why other people's work belongs to them.</p> <p>To recognise that content on the internet</p>	<p>To explain why copying someone else's work from the internet without permission can cause problems.</p>	<p>When searching on the internet for content to use, To explain why I need to consider who owns it and whether I</p>	<p>To assess and justify when it is acceptable to use the work of others.</p> <p>To give examples of content that is</p>	<p>To demonstrate the use of search tools to find and access online content which can be reused by others.</p>

			To save my work so that others know who it belongs to (e.g. filename, name on content)	may belong to other people.	To give examples of what these problems might be.	have the right to reuse it. To give some simple examples.	permitted to be reused.	To demonstrate how to make references to and acknowledge sources that have used from the internet.
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