'Being a Computer Scientist' Progression Model – Computing

	End of EYFS	End of Year 1	End of Year 2	End of Year 3	End of Year 4	End of Year 5	End of Year 6
Digital Citizenship	**Computing is no longer on the EYFS curriculum, at Gaskell we are getting them year 1 ready** From bridging the gap document to get Year 1 ready: I can have an awareness of different technologies in and out of school I can have an awareness of the cause and effect of technology I can have an awareness of input and output devices I can use technology to express creatively and constructively I can have an awareness of digital storage of information – photography In provision areas over the year – Beebots, remote control cars, camera, iPads, torches, calculators, phones, remotes and walkie talkies.	I can talk about my digital footprint I can recognise that there may be people online who could make me feel sad, embarrassed or upset I can give examples of when and how to speak to an adult I can trust. (Butterfly feeling) I can describe what information I should not put online without asking a trusted adult first I can give examples of when I should ask permission to do something online and explain why this is important. I can recognise that information can stay online and could be copied I can describe how to behave online in ways that do not upset others and can give examples I can explain rules to keep us safe when we are using technology both in and beyond the home I can use the internet with adult support to communicate with people I know I can explain why things one person finds funny or sad online may not always be seen in the same way by others.	I can talk about my digital footprint and explain how other people may look and act differently online and offline I can explain how information put online about me can last for a long time I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help. (Butterfly feeling) I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country) I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online I can explain what bullying is, how people may bully others and how bullying can make someone feel and I can give examples of bullying behaviour and how it could look online I can explain simple guidance for using technology in different environments and settings, e.g., accessing online technologies in public places and the home environment.	I can use technology safely, respectfully, responsibly and be able to talk about my digital footprint I can explain what is meant by the term 'identity' I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why I can explain what it means to 'know someone' online and why this might be different from knowing someone offline I can explain how people can represent themselves in different ways online I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with I can explain how someone's feelings can be hurt by what is said or written online and I can describe ways that some people can be unkind online I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites) I can give examples of what anyone may or may not be willing to share about themselves online I can explain why spending too much time using technology can sometimes have a negative impact on anyone, e.g., mood, sleep, body, relationships and I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged	I can explain how my online identity can be different to my offline identity and be able to talk about my digital footprint I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs I can describe how to find out information about others by searching online I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat) I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation) I can explain how using technology can be a distraction from other things, in both a positive and negative way and I can identify times or situations when someone may need to limit the amount of time, they use technology e.g. I can suggest strategies to help with limiting this time	I can talk about my digital footprint and demonstrate responsible choices about my online identity, depending on context I can explain how someone can get help if they are having problems and identify when to tell a trusted adult I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect I can explain that there are some people I communicate with online who may want to do me or my friend's harm. I can recognise that this is not my / our fault and I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline / CEOP / The Mix) and I can explain how to block abusive users I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively. I can describe some strategies, tips or advice to promote health and well-being with regards to technology I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals I can give examples of technology-specific forms of communication (e.g. Emojis, memes and GIFs). I can explain how and why some apps and games may request or take payment for additional content (e.g., in-app purchases, loot boxes) and explain the importance of seeking permission from a trusted adult before purchasing	I can talk about my digital footprint and the importance of asking until I get the help needed I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online I can explain how sharing something online may have an impact either positively or negatively I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity I can describe how to capture bullying content as evidence (e.g. screen-grab, URL, profile) to share with others who can help me and how to report bullying I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise) I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. I can recognise features of persuasive design and how they are used to keep users engaged (current and future use)

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Digital Literacy	**Computing is no longer on the EYFS curriculum, at Gaskell we are getting them year 1 ready** From bridging the gap document to get Year 1 ready: I can have an awareness of different technologies in and out of school I can have an awareness of the cause and effect of technology I can have an awareness of input and output devices I can use technology to express creatively and constructively I can have an awareness of digital storage of information – photography In provision areas over the year – Beebots, remote control cars, camera, iPads, torches, calculators, phones, remotes and walkie talkies.	I can input text and images using a simple publishing program I can type a simple sentence on the screen, making use of a word bank I can format my typing in a number of ways (size, colour, font) I can use the main keys for typing e.g. shift, space bar, full stop I can type simple sentences using the correct format (Capital letters, space and full stop) I can make text bold/ italics / text alignment etc. I can move to different places in the text using the arrow keys or mouse I can use the 'undo' icon to fix a mistake	I can use spell checker to check my work I can use the return/enter key to insert relevant line breaks I can save an image from the internet rather than using copy & paste I can add a page border I can insert a basic table I can decide which page orientation would best suit my work. e.g. portrait to landscape I can transfer these skills into PowerPoint	I can type a number of sentences using the keyboard I can use tab to indent paragraphs I can use cut, copy and paste to re-order text I can use keyboard shortcuts e.g. Ctrl + V, X, C to re-order text I can use bullet points, speech bubbles, auto shapes and text boxes I can format wrapping/layout of text boxes and images in word I can format images - move, rotate and re-size shapes I can use the format tab to alter word art to enhance my work I can use a variety of table tools (merge cells, fill, columns etc.) I can explain the difference between save and save as. I can create a folder to save my work in. I can give a file a name to identify it I can transfer these skills into PowerPoint	I can transfer my word processing skills into other multimedia packages e.g. PowerPoint I can import images, hyperlinks and the use of sounds recorded I can enter a basic mathematical formula into Excel and can add basic mathematical formulas I can use SUM to calculate the total of a set of numbers in a range of cells I can change the look of a spreadsheet by using different formats e.g. text styles, colour, number format I can insert and delete columns and rows in a spreadsheet I can use spreadsheets to create a graph I can decide on the most appropriate form of graph for a data set and give reasons for my choice I can interpret graphs of data collected from sensors	I can select appropriate tools to add emphasis and effect to my work I can suggest why I have chosen my layout and formatting I can review and edit my work and talk about the changes I made I can suggest whether my work is suitable for the audience I can create a database structure of my own and enter the data I can prepare a data collection form and collect quality information I can use databases to create a graph I can choose the most appropriate form of graph for a data set giving reasons for my choice I can interpret graphs of data collected from a variety of sources	I can choose, select and use a combination of software to present my work I can select appropriate tools to add emphasis and effect to my work I can suggest why I have chosen my layout and formatting I can review and edit my work and talk about the changes I made I can consider whether my work is suitable for the audience I can draft and redraft my work by deleting, inserting and replacing text I can interpret graphs of data collected from a variety of sources
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Computer Science	**Computing is no longer on the EYFS curriculum, at Gaskell we are getting them year 1 ready** From bridging the gap document to get Year 1 ready:	I can plan a simple algorithm I can command a Beebot to go straight forwards or backwards I can command a Beebot to turn I can debug a simple algorithm that is causing an unexpected outcome	I can give and follow instructions, which include direction and turning command – several in order I can plan use logical reasoning to predict outcomes I can create a program that contains several commands for a device or software programme	I can design and write (sequence) a simple program on Logo to produce a line drawing of a 2D shape I can design and write (sequence) a simple program to control / simulate a physical system I can solve problems by decomposing them into smaller part	I can use repeats in programs confidently I can independently sequence code to make my own program I can independently select repeat to make my own program	I can plan algorithms and then write a program using the following: commands, sequence, repetition and conditional selection (if, then…) I can detect and debug errors in more complex algorithms and programs I can use selection to create games in which the user must make a choice	I can confidently use events, repeats, selection and variables in a program I can use a variable in a variety of programming software I can confidently decompose a problem and methodically create a program to solve it, testing and adapting as I go

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	I can have an awareness of different technologies in and out of school I can have an awareness of the cause and effect of technology I can have an awareness of input and output devices I can use technology to express creatively and constructively I can have an awareness of digital storage of information – photography In provision areas over the year – Beebots, remote control cars, camera, iPads, torches, calculators, phones, remotes and walkie talkies.	I can break an algorithm down into smaller parts (decomposing / chunking) I can predict if a simple algorithm will work	I can debug a program independently that has caused an unexpected outcome I can use different events to start my programs – timing / on click / on button press	I can detect and debug errors in my sequence I can use and edit a pre-written program to achieve a specific outcome I can use logical reasoning to explain what will happen next I can predict how a change in a sequence may impact on the outcome of a program	I can detect and debug errors in algorithms and programs. I can transfer my coding skills between software I can explain why it is important to use the repeat function in a particular place in my sequence	I can use my skills and understanding of conditional selection in more than 2 programs	I can evaluate the effectiveness of my programming and suggest improvements I can confidently code using the Microbit programming language

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Information Technology	**Computing is no longer on the EYFS curriculum, at Gaskell we are getting them year 1 ready** From bridging the gap document to get Year 1 ready: I can have an awareness of different technologies in and out of school I can have an awareness of the cause and effect of technology I can have an awareness of input and output devices I can use technology to express creatively and constructively I can have an awareness of digital storage of information – photography In provision areas over the year – Beebots, remote control cars, camera, iPads, torches,	I can log on and off the school network using my individual username and password I can give simple examples of how to find information (e.g. search engine, browsers, voice activated searching) I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others I can explain why work I create using technology belongs to me I can save my work (Purplemash) so that others know it belongs to me (e.g. filename, name on content) I can explain how passwords can be used to protect information and devices	I can use simple keywords in search engine. I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections) I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real' and explain why some information I find online may not be real or true I can explain how passwords can be used to protect information, accounts and devices and I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords) I can explain and give examples of what is meant by 'private' and 'keeping things private I can describe why other people's work belongs to them I can log on and off the school network using my individual username and password and	I can demonstrate how to use key phrases in search engines to gather accurate information online I can explain the difference between a 'belief', an 'opinion' and a 'fact'. and can give examples of how and where they might be shared online, e.g. in videos, memes, posts, news stories etc I can describe simple strategies for creating and keeping passwords private and I can give reasons why someone should only share information with people they choose to and can trust I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause I can explain what autocomplete is and how to choose the best suggestion I can explain how the internet can be used to sell and buy things	I can analyse information to make a judgement about probable accuracy and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others I can describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy (e.g. social media, image sites, video sites) I can explain what is meant by fake news e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't I can describe strategies for keeping personal information private, depending on context and I can explain that internet use is never fully private and is monitored, e.g. adult supervision I can explain why work I create using technology belongs to me and I can say why it belongs to	I can identify the key internal parts of a computer – RAM, memory, processor and motherboard and describe what each part does I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical' I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results and I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence I can explain what a strong password is and demonstrate how to create one I can explain what app permissions are and can give some examples I can assess and justify when it is acceptable to use the work of others and I can give examples of content that is permitted to be reused and know how this content can be found online	I can suggest what technology might look like in twenty years' time. I can explain how search engines work and how results are selected and ranked, I can explain how to use search technologies effectively I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. I can also describe how some online information can be opinion and can offer examples I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online (e.g. advertising and 'ad targeting' and targeting for fake news) I understand the concept of persuasive design and how it can be used to influences peoples' choices I can describe how and why people should keep their software and apps up to date, e.g. auto updates

calculators, phones, remotes and walkie talkies.	I can say why it belongs to me (e.g. 'it is my idea' or 'I designed it') I can identify the icons for applications on the desktop and launch accordingly	save my work to the school network I can explain the difference between my school network and my home computer set up I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions) I can recognise that content on the internet may belong to other people I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri)	I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed) I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened and I can explain that if I are not sure or feel pressured then I should tell a trusted adult I can describe how connected devices can collect and share anyone's information with others I understand file extensions and which ones attribute to different ICT products - .doc .xls .ppt .pub .pdf .mp3 .mp4	me (e.g. 'I designed it' or 'I filmed it") I can save my work under a suitable title / name so that others know it belongs to me (e.g. filename, name on content) I can explain a range of internet standards (eg; HTTP, URL) I can describe what an ISP is and I can describe what a URL (web address) is I can 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 online I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true I can explain that technology can be designed to act like or impersonate living things and describe what the benefits and the risks might be I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure	I can discuss what it means to save work locally, to a network or to a 'Cloud' I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. I can explain how some technology can limit the information I aim presented with e.g. voice-activated searching giving one result I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads and I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others	I can describe simple ways to increase privacy on apps and services that provide privacy settings I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser) I can explain what to do if a password is shared, lost or stolen I can describe strategies to help me identify such content (e.g. scams, phishing) I can demonstrate how to make references to and acknowledge sources I have used from the internet I can demonstrate the use of search tools to find and access online content which can be reused by others I can describe ways in which some online content targets people to gain money or information illegally. I can independently save and retrieve work from different places