Computing Progression of Skills

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	Programming A	- Explain what a given command will do. - Act out a given word. - Combine forwards and backwards commands to make a sequence. - Combine four direction commands to make sequences. - Plan a simple program. - Find more than one solution to a problem.	- Describe a series of instructions as a sequence. - Explain what happens when we change the order of instructions. - Use logical reasoning to predict the outcome of a program. - Explain that programming projects can have code and artwork. - Design an algorithm. - Create and debug a program I've written.	- Explore a new programming environment. - Identify that commands have an outcome. - Explain that a program has a start. - Recognise that a sequence of commands can have an order. - Change the appearance of my project. - Create a project from a task description.	- Identify that accuracy in programming is important. - Create a program in a text-based language. - Explain what 'repeat' means. - Modify a count-controlled loop to produce a given outcome. - Decompose a task into small steps. - Create a program that uses count-controlled loops to produce a given outcome.	- Create a program to run on a controllable device. - Explain that selection can control the flow of a program. - Update a variable with a user input. - Use a conditional statement to compare a variable to a value. - Design a project that uses inputs and outputs on a controllable device. - Develop a program to use inputs and outputs on a controllable device.	- Define a 'variable' as something that is changeable. - Explain why a variable is used in a program. - Choose how to improve a game by using variables. - Design a project that builds on given examples. - Use my design to create a project. - Evaluate my project.

Information Technology	Computing systems & networks						
		• Identify technology. • Identify a computer and its main parts. • Use a keyboard to type. • Use a keyboard to edit text. • Create rules for using technology responsibly.	• Recognise the uses and features of IT. • Identify uses of IT in school. • Identify IT beyond school. • Explain how IT helps us. • Explain how to use IT safely. • Recognise that choices are made when using IT.	• Explain how digital devices function. • Identify input and output devices. • Recognise how digital devices can change the way we work. • Explain how a computer network can be used to share information. • Explore how digital devices can be connected. • Recognise the physical components of a network.	• Describe how networks physically connect to other networks. • Recognise how networked devices make up the internet. • Outline how websites can be shared via the World Wide Web. • Describe how content can be added and accessed on the World Wide Web. • Recognise how the content of the World Wide Web is created by people. • Evaluate the consequences of unreliable content.	• Explain that computers can be connected together to form systems. • Recognise the role of computer systems in our lives. • Experiment with search engines. • Describe how search engines select results. • Explain how search results are ranked. • Recognise why the order of results is important, and to whom.	• Explain the importance of internet addresses. • Recognise how data is transferred across the internet. • Explain how sharing information online can help people work together. • Evaluate different ways of working together online. • Recognise how we communicate using technology. • Evaluate different methods of online communication.

Creating media					
• Describe what different freehand tools do. • Use the shape tool and line tools. • Make careful choices when painting a digital picture. • Explain why I chose the tools I used. • Use a computer on my own to paint a picture. • Compare painting a picture on a computer and on paper.	• Use a digital device to take a photo. • Make choices when taking a photo. • Describe what makes a good photo. • Decide how photos can be improved. • Use tools to change an image. • Recognise that photos can be changed.	• Recognise how text and images convey information. • Recognise that text and layout can be edited. • Choose appropriate page settings. • Add content to a desktop publishing publication. • Consider how different layouts can suit different purposes. • Consider the benefits of desktop publishing.	• Identify that sound can be recorded. • Explain that audio recordings can be edited. • Recognise the different parts of creating a podcast project. • Apply audio editing skills independently. • Combine audio to enhance my podcast project. • Evaluate the effective use of audio.	• Identify that drawing tools can be used to produce different outcomes. • Create a vector drawing by combining shapes. • Use tools to achieve a desired effect. • Recognise that vector drawings consist of layers. • Group objects to make them easier to work with. • Apply what I have learned about vector drawings.	• Review an existing website and consider its structure. • Plan the features of a web page. • Consider the ownership and use of images (copyright). • Recognise the need to preview pages. • Outline the need for a navigation path. • Recognise the implications of linking to content owned by others.

Digital Literacy					
Self-image & identity • Recognise people online could make someone feel sad, embarrassed or upset. • Give examples of when & how to speak to an adult I trust. **Online relationships** • Give examples of when I should ask permission to do something online. • Use the internet with adult support to communicate with people I know. • Explain why it's important to be considerate and kind online. • Explain why people find	**Online relationships** • Give examples of how someone might use technology to communicate with people they don't know. • Explain who I should ask before sharing things online. • Identify who can help if something happens without consent. • Describe different ways to ask for, give or deny my permission online. • Explain why I have a right to say no or to ask someone. • Explain how it makes others feel if I don't ask permission or ignore them before sharing something about them online. • Explain why I should ask a trusted adult	**Self-image and identity** • Explain what is meant by the term identity. • Explain how people can represent themselves in different ways online. • Explain ways in which someone might change their identity online and why. **Online relationships** • Describe ways people who have similar likes can get together online. • Explain what it means to know someone online and why this might be different from knowing someone offline. • Explain what is meant by trusting	**Online relationships** • Describe strategies for safe and fun experiences in a range of online social environments. • Give examples of how to be respectful to others online. • Describe how to recognise healthy and unhealthy relationships. • Explain how content shared online may feel unimportant to one person but important to others. **Online reputation** • Describe how to find out information about others by searching online. • Explain ways that some information about anyone online	**Online bullying** • Recognise online bullying can be different to bullying in the physical world. • Describe how what one perceives as playful joking might be experienced by others as bullying. • Explain how anyone can get help if they're being bullied online. • Identify a range of ways to report concerns and access support in school and at home. • Describe the helpline services which can help people experiencing bullying. • Explain how to block abusive users. **Health, wellbeing & lifestyle** • Describe ways technology can affect health and wellbeing both positively and negatively.	**Self-image & identity** • Identify and critically evaluate online content relating to different groups and explain why it's important to challenge and reject inappropriate representations online. • Describe issues online that could make people feel sad and give examples of how to get help online and offline. • Explain the importance of asking until I get the help needed. **Privacy & security** • Describe effective ways people can manage passwords. • Explain what to do if a password is shared, lost or stolen. • Describe how and why people should keep their software and apps up to date.

some things funny or sad online that others don't.	before clicking yes, agree or accept online.	someone online, why it's different from liking someone online and why it's important to be careful about who to trust online.	could have been created, copied or shared by others.	Describe some strategies, tips or advice to promote health and wellbeing with regards to technology.	Describe simple ways to increase privacy on apps and services that provide privacy settings.

Online reputation
- Recognise information can stay online and could be copied.
- Describe what information shouldn't be put online without asking a trusted adult.

Managing online information
- Give simple examples of how to find information using digital technologies.
- Know/understand that you encounter things you like/don't like online.
- Know to get help from a trusted adult if online

Online reputation
- Explain how information put online can last a long time.
- Describe how anyone's online information can be seen by others.
- Know who to talk to if something has been put online without consent or if it's incorrect.

Managing online information
- Use simple keywords in search engines.
- Demonstrate how to navigate a simple webpage to get information.
- Explain what voice activated searching is and how it might be used, and know it's not a real person.

someone online, why it's different from liking someone online and why it's important to be careful about who to trust online.
- Explain why someone may change their mind about trusting anyone.
- Explain how someone's feelings can be hurt by what is said or written online.
- Explain the importance of giving and gaining permission before sharing things online.

Online reputation
- Explain how to search for information about others online.
- Give examples of what anyone may

Managing online information
- Analyse information to make a judgement about probable accuracy.
- Understand why it's important to make own decisions regarding content.
- Describe how to search for information within a wide group of technologies.
- Describe some methods used to encourage people to buy things online.
- Explain why lots of people sharing opinions online does not make them true.
- Explain that technology can be designed to act

- Describe some strategies, tips or advice to promote health and wellbeing with regards to technology.
- Recognise the benefits and risks of accessing information about health and wellbeing online and to balance this with talking to trusted adults.
- Explain how and why some apps may request or take payment for additional content.

Privacy & security
- Explain what a strong password is and demonstrate how to create one.
- Explain how many free apps may read and share private information with others
- Explain what app permissions are and

- Describe ways in which some online content targets people to gain money or information illegally.
- Know that online services have terms and conditions that govern their use.

Health, wellbeing & lifestyle
- Describe common systems that regulate age-related content and describe their purpose.
- Recognise and discuss the pressures that technology can place on someone and how/when they could manage this,
- Recognise features of persuasive design and how they're used to keep users engaged.

	content makes us feel sad, uncomfortable, worried or frightened.	• Explain the difference between things that are imaginary and things that are real. • Explain why some information I find online may not be true. <u>Copyright & ownership</u> • Recognise that content on the internet may belong to other people. • Describe why other people's work belongs to them.	or may not be willing to share about themselves online. • Explain the need to be careful before sharing anything personal. • Explain who someone can ask if they are unsure about putting something online. <u>Health, wellbeing & lifestyle</u> • Explain why spending too much time using technology can sometimes have a negative impact on anyone. • Give some examples of positive and negative activities where it's easy to spend a lot of time engaged.	like/impersonate living things. • Explain what is meant by fake news. <u>Health, wellbeing & lifestyle</u> • Explain how using technology can be a distraction from other things, in both a positive and negative way. • Identify or situations when someone may need to limit the amount of time they use technology.	can give some examples.	• Assess and action different strategies to limit the impact of technology on health.

			• Explain why some activities have age restrictions.			

Vocabulary					
• technology, computer, trackpad, keyboard, screen, double-click, typing • paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers • Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan,	• Information technology (IT), computer, barcode, scanner/scan • device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting • instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition	• digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets • text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste,	• internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts • audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim,	• system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking • vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection • Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection,	• communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, one-way, two-way, one-to-one, one-to-many • website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication,

	algorithm, program		purpose, benefits • Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motions, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug	align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback • Logo, program, turtle, commands, code, snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure	condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug	external link, embed • variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, test, debug, improve, evaluate, share, assign, declare