Progression of Computing skills

Objective	Years 1 and 2	Years 3 and 4	Years 5 and 6
Information Technology	• Design and draw characters for a game using a variety of painting tools • Combine images with text to create posters and invitations • Use photo editing tools to crop images • Create digital books combining: text, images, and sounds • Type words correctly using a keyboard • Combine images, text and voice recordings to retell a story • Create posters by adding images to frames, editing text by changing font style, colour and size. • Use digital drawing tools to recreate a scene from a story • Type words in a speech bubble using a keyboard • Collect images by capturing screenshots and editing them • Present information on a topic using images, text boxes and voice recordings • Create a simple animation with moving characters and voice recordings • Combine text and images to create video presentation • Edit video content to improve it • Use a camera to capture images which are in focus • Select options to change the appearance of digital content • Apply edits to digital content to achieve a particular effect • Combine words and images to create word art • Use images and text to convey information • Create a simple animation with moving characters and voice recordings • Create a visual plan using images and text to tell a story • Create a simple presentation using slides.	• Remove the background from images • Use photo editing tools to improve images • Create digital books/posters by combining: text, images, voice recordings, and videos • Create a video by combining text, images and music • Use a keyboard accurately with two hands to type and format a document with inserted images • Combine text (fonts, colours, backgrounds), images, voice recordings and videos to create a digital book • Edit digital content to improve it according to feedback • Create and edit a video combining text, music, and images • Design and create digital logos and graphics combining fonts and text • Create a contents page, a blurb and add page numbers • Plan a simple animation using a storyboard • Take a series of pictures and combine them to form an animation • Add text, graphics and sound effects to improve an animation using editing tools • Create an animation with moving characters/objects keeping the camera steady • Use a camera accurately to capture interesting perspectives on objects • Select options to change the appearance of digital content and explore tools to edit it • Apply edits to digital content to achieve a particular effect and save them as both mages and videos • Create galleries that include images and videos effects • Plan a movie which has a beginning, middle and end • Use the camera accurately to create short clip for editing • Plan videos content by using scripts • Combine animated characters and voice recordings for particular effects • Edit digital content to improve it, according to feedback • Organise a movie adding titles, images and effects	• Identify the pros and cons of different games • Use creative tools to create a marketing campaign for their game • Design and create 8 bit characters • Combine text and images to create posters • Plan and create a video by combining images, text, music and different layouts • Use word processing tools to format a document • Plan a digital resource to teach a specific audience something new • Make choices on the best digital software available to present my ideas • Edit videos, graphics and documents independently to create a digital book or an app/website • Work independently to combine a range of tools (text, video, graphics, images) to present my ideas clearly for an audience to follow • Plan a multi-scene animation including characters, scenes, camera angles and effects • Edit a stop-go animations to improve the quality of the animation using onion skinning features • Edit/refine a movie to add special effects, text, sound effects, graphics and backing track • Evaluate my own content against success criteria and make improvements accordingly • Design a suitable brand for a business and promote it • Create a spreadsheet with formulas for profit and loss of a business • Work independently to create a presentation that includes graphics, images and movies • Design and build a webpage and share it online • Make a presentation to an audience using digital tools
Computer Science	• Create simple programs • Debug an error in a simple algorithm	• Write programs that accomplish specific goals • Use selection in algorithms and programs, i.e. if…then…	• Use selections and procedures in programs to draw shapes, patterns and pictures • Create programs including repeat commands

Progression of Computing skills

	• Understand that instructions in an algorithm need to be precise and unambiguous • Use logical reasoning to predict the behaviour of simple programs • Use basic selections in programs and explain using the language if … then • Design and create programs for others to play • Describe uses of technology beyond school • Predict the outcomes of a program • Design and create programs for others to play • Identify, name and explain the functions of the main components of a computer • Name and compare common input and output devices of computer systems • Identify and describe uses of technology beyond school	• Use logical reasoning to write simple algorithms explaining the sequence commands should run in • Solve problems by decomposing into smaller parts • Debug programs so they run correctly • Write programs that accomplish specific goals • Use selection in algorithms and programs, i.e. if…then… • Use logical reasoning to write simple algorithms explaining the sequence commands should run in • Solve problems by decomposing into smaller parts • Debug programs so they run correctly • Create programs including repeat commands • Identify the uses of technology beyond school and discuss reasons why they are helpful (e.g. robots and simulations) • Understand how a computer stores data • Understand the main hardware components of a computer system • Understand how the internet works, including how it is structured and data travels along	• Create simple variables and understand its role in a program • Use logical reasoning to detect and correct errors in algorithms • Work independently to design and program a game for a specific audience • Program a game which tells a story over more than one level • Experiment with different codes to test each element of a game until a desired outcome is reached • Make predictions what will happen in a program when inputs are changed • Test, debug and improve programs • Use wireframes to plan the build for an app • Work collaboratively, using various tools independently for use in an app design • Recognise their audience when designing and creating an app • Create variables in spreadsheets and understand their role in a program • Describe the impact of technology on society, including on people's: spiritual, moral, social and cultural development • Understand about e-commerce - what it is and its impact • Investigate the services offered by the internet • Understand about different types of robotics and how they can impact our lives • Understand about the advancements in technology and the impact this has had on society
Digital Literacy	**Self Image and Identity** • Recognise that there may be people online who could make me feel sad, embarrassed or upset • If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust • Explain how other people's identity online can be different to their identity in real life • Describe ways in which people might make themselves look different online	**Self Image and Identity** • Explain what is meant by the term 'identity' • Explain how I can represent myself in different ways online • Explain ways in which and why I might change my identity depending on what I am doing online (e.g. gaming; using an avatar; social media) • Explain how my online identity can be different to the identity I present in 'real life' • Knowing this, I can describe the right decisions about how I interact with others and how others perceive me **Online Relationships**	**Self Image and Identity** • Explain how identity online can be copied, modified or altered • Demonstrate responsible choices about my online identity, depending on context • Describe ways in which media can shape ideas about gender. • Identify messages about gender roles and make judgements based on them • Challenge and explain why it is important to reject inappropriate messages about gender online

Progression of Computing skills

	• 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 **Online Relationships** • Use the internet with adult support to communicate with people I know • Explain why it is important to be considerate and kind to people online • Use the internet to communicate with people I don't know well (e.g. email a pen-pal in another school/country) • Give examples of how I might use technology to communicate with others I don't know well **Online Reputation** • Recognise that information can stay online and could be copied • Describe what information I should not put online without asking a trusted adult first • Explain how information put online about me can last for a long time • Who to talk to if I think someone has made a mistake about putting something online **Online Bullying** • Describe how to behave online in ways that do not upset others and can give examples • Give examples of bullying behaviour and how it could look online • Understand how bullying can make someone feel • Talk about how someone can/would get help about being bullied online or offline **Managing Information** • Use the internet to find things out • Use simple keywords in search engines • 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 • Use keywords in search engines • Demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections) • Explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri)	• Describe ways people who have similar likes and interests can get together online • Give examples of technology- specific forms of communication (e.g. emojis, acronyms, text speak) • Explain some risks of communicating online with others I don't know well • Explain why I should be careful who I trust online and what information I can trust them with • Explain how my and other people's feelings can be hurt by what is said or written online • Explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried • Explain what it means to 'know someone' online and why this might be different from knowing someone in real life • Explain what is meant by 'trusting someone online'. I can explain why this is different from 'liking someone online' • Describe strategies for safe and fun experiences in a range of online social environments • Give examples of how to be respectful to others online **Online Reputation** • Search for information about myself online • Recognise I need to be careful before I share anything about myself or others online • I know who I should ask if I am not sure if I should put something online • Describe how others can find out information about me by looking online • Explain ways that some of the information about me online could have been created, copied or shared by others **Online Bullying** • Explain what bullying is and can describe how people may bully others • Describe rules about how to behave online and how I follow them • Identify some online technologies where bullying might take place • Describe ways people can be bullied through a range of media (e.g. image, video, text, chat) • Explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation) **Managing Information**	• 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 • Explain why I should keep asking until I get the help I need **Online Relationships** • Explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my/our fault. I can give examples of technology • Make positive contributions and be part of online communities • Describe some of the communities in which I am involved and describe how I collaborate with others positively. • Show I understand my responsibilities for the well-being of others in my online social group • Explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming). • Demonstrate how I would support others (including those who are having difficulties) online. • Demonstrate ways of reporting problems online for both myself and my friends. **Online Reputation** • Search for information about an individual online and create a summary report of the information I find. • Describe ways that information about people online can be used by others to make judgments about an individual • Explain how I am developing an online reputation which will allow other people to form an opinion of me. • Describe some simple ways that help build a positive online reputation. **Online Bullying** • Recognise when someone is upset, hurt or angry online. • 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. • Explain how to block abusive users. • Explain how I would report online bullying on the apps and platforms that I use.

Progression of Computing skills

	• Explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real' • Explain why some information I find online may not be true **Health Well Being & Lifestyle** • Explain rules to keep us safe when we are using technology both in and beyond the home. • Give examples of some of these rules • Explain simple guidance for using technology in different environments and settings. • Say how those rules/guides can help me **Privacy and Settings** • 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) • Explain why I should always ask a trusted adult before I share any information about myself online • Explain how passwords can be used to protect information and devices • Describe how online information about me could be seen by others • Describe and explain some rules for keeping my information private. • Explain what passwords are and can use passwords for my accounts and devices • Explain how many devices in my home could be connected to the internet and can list some of those devices **Copyright & Ownership** • Explain why work I create using technology belongs to me • Say why it belongs to me (e.g. 'it is my idea' or 'I designed it') • Save my work so that others know it belongs to me (e.g. filename, name on content) • Describe why other people's work belongs to them • Recognise that content on the internet may belong to other people	• Use key phrases in search engines • Explain what autocomplete is and how to choose the best suggestion • Explain how the internet can be used to sell and buy things • Explain the difference between a 'belief', an 'opinion' and a 'fact' • Analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact' • Describe how I can search for information within a wide group of technologies (e.g. social media, image sites, video sites) • 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 • Explain that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people • Explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true **Health Well Being & Lifestyle** • Explain why spending too much time using technology can sometimes have a negative impact on me; I can give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos) • Explain how using technology can distract me from other things I might do or should be doing • Identify times or situations when I might need to limit the amount of time I use technology • Suggest strategies to help me limit this time **Privacy and Settings** • Give reasons why I should only share information with people I choose to and can trust. I can explain that if I am not sure or I feel pressured, I should ask a trusted adult • Understand and can give reasons why passwords are important • Describe simple strategies for creating and keeping passwords private	• Describe the helpline services who can support me and what I would say and do if I needed their help (e.g. Childline) • Describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me • Identify a range of ways to report concerns both in school and at home about online bullying. **Managing Information** • Use different search technologies. • Evaluate digital content and can explain how I make choices from search results. • Explain key concepts including: data, information, fact, opinion belief, true, false, valid, reliable and evidence. • Understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead). • Explain what is meant by 'being sceptical'. I can give examples of when and why it is important to be 'sceptical' • Explain what is meant by a 'hoax'. I can explain why I need to think carefully before I forward anything online • Explain why some information I find online may not be honest, accurate or legal • Explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen (e.g. the sharing of misinformation either by accident or on purpose). • Use search technologies effectively • Explain how search engines work and how results are selected and ranked. • Demonstrate the strategies I would apply to be discerning in evaluating digital content • Describe how some online information can be opinion and can offer examples. • Explain how and why some people may present 'opinions' as 'facts' • Define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online (e.g. advertising and 'ad targeting').

		• Describe how connected devices can collect and share my information with others • Explain what a strong password is • Describe strategies for keeping my personal information private, depending on context • Explain that others online can pretend to be me or other people, including my friends • Suggest reasons why they might do this • Explain how internet use can be monitored **Copyright & Ownership** • Explain why copying someone else's work from the internet without permission can cause problems • Give examples of what those problems might be • When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it • Give some simple examples	• Demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important • Identify, flag and report inappropriate content. **Health Well Being & Lifestyle** • Describe ways technology can affect healthy sleep and can describe some of the issues • Describe some strategies, tips or advice to promote healthy sleep with regards to technology • Describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose • Assess and action different strategies to limit the impact of technology on my health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise). • Explain the importance of self-regulating my use of technology; I can demonstrate the strategies I use to do this (e.g. monitoring my time online, avoiding accidents). **Privacy and Settings** • Create and use strong and secure passwords • Explain how many free apps or services may read and share my private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others • 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 • Use different passwords for a range of online services • Describe effective strategies for managing those passwords (e.g. password managers, acronyms, stories) • Know what to do if my password is lost or stolen. • Explain what app permissions are and can give some examples from the technology or services I use • Describe simple ways to increase privacy on apps and services that provide privacy settings • Describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing) **Copyright & Ownership** • Assess and justify when it is acceptable to use the work of others

			• Give examples of content that is permitted to be reused • Demonstrate the use of search tools to find and access online content which can be reused by others • Demonstrate how to make references to and acknowledge sources I have used from the internet.