KS1 - Computing

	Year 1					
Unit theme	Computing systems and networks	Creating Media	Programming A	Data and information	Creating media	Programming B
Unit title	Technology around us (1.1)	Digital paining (1.2)	Moving a robot (1.3)	Grouping Data (1.4)	Digital writing (1.5)	Programming animations (1.6)
I know that/how to...	-To identify technology -To identify a computer and its main parts -To use a mouse in different ways -To use a keyboard to type on a computer -To use the keyboard to edit text -To create rules for using technology responsibly	-To describe what different freehand tools do -To use the shape tool and the line tools -To make careful choices when painting a digital picture -To explain why I chose the tools I used -To use a computer on my own to paint a picture -To compare painting a picture on a computer and on paper	-To explain what a given command will do -To act out a given word -To combine forwards and backwards commands to make a sequence -To combine four direction commands to make sequences -To plan a simple program -To find more than one solution to a problem	-To label objects -To identify that objects can be counted -To describe objects in different ways -To count objects with the same properties -To compare groups of objects -To answer questions about groups of objects	-To use a computer to write -To add and remove text on a computer -To identify that the look of text can be changed on a computer -To make careful choices when changing text -To explain why I used the tools that I chose -To compare typing on a computer to writing on paper	-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 value -To explain that each sprite has its own instructions -To design the parts of a project -To use my algorithm to create a program
Vocabulary introduced/embedded	Technology, Computer, mouse, trackpad, keyboard, screen Computer, mouse, trackpad, double-click Computer, keyboard, mouse, typing Keyboard, computer Computer, technology	paint program, tool, paintbrush, erase, fill, undo Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool Henri Matisse, shape tool, fill tool Wassily Kandinsky, tools, feelings, colour, brush style Georges Seurat, pointillism, brush size pictures, painting, computers, like, prefer, dislike	Forwards, backwards, turn, clear, go, commands Instructions, directions Forwards, backwards, commands Left, right, turn, commands Plan, algorithm, program Route, plan, program	Object, label, group, search, image Group, object, label, image Group, object, property, label, colour, size, shape Group, object, property, value, label, colour, data set Group, object, property, value, label, colour, size, shape, more, less, most, fewest Group, object, property, value, label, colour, data set, more, less, most, least, fewest, the same	Word processor, keyboard, keys, letters, type Numbers, space, backspace, text cursor Capital letters, toolbar, bold, italic, underline Mouse, select, font Undo, redo, font, format Compare, typing, writing	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area Block, joining, command, Start block, run, program, programming area, background, delete, reset, algorithm, predict Effect, change, value, block Instructions, sprite, delete, program, algorithm Sprite, background, appropriate, algorithm Sprite, design, programming blocks, algorithm, programs

KS1 - E-Safety

Year 1

Unit title	Self-image & identity	Online Relationships	Online Reputation	Online Bullying	Managing Online Information	Health, Wellbeing and lifestyle	Privacy and security	Copyright and ownership
I know that/how to...	I can recognise, online or offline, that anyone can say 'no'/'please stop'/'I'll tell'/'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset. I can recognise that there may be people online who could make someone 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 and how they can help.	I can recognise some ways in which the internet can be used to communicate. I can give examples of how I (might) use technology to communicate with people I know. I can give examples of when I should ask permission to do something online and explain why this is important. I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). I can explain why it is important to be considerate and kind to people online and to respect their choices. 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 identify ways that I can put information on the internet. I can recognise that information can stay online and could be copied. I can describe what information I should not put online without asking a trusted adult first.	I can describe ways that some people can be unkind online. I can offer examples of how this can make others feel. I can describe how to behave online in ways that do not upset others and can give examples.	I can talk about how to use the internet as a way of finding information online. I can identify devices I could use to access information on the internet. I can give simple examples of how to find information using digital technologies (e.g. search engines, voice activated searching). I know/understand that I can encounter a range of things online, including things I like and don't like as well as things which are real or make believe/ a joke. I know how to get help from a trusted adult if I see content that makes me feel sad, uncomfortable worried or frightened.	I can identify rules that help keep us safe and healthy in and beyond the home when using technology. I can give some simple examples of these rules. I can explain rules to keep myself safe when using technology both in and beyond the home.	I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location). I can describe who would be trustworthy to share this information with; I can explain why they are trusted. I can explain that passwords are used to protect information, accounts and devices. I can recognise more detailed examples of information that is personal to someone (e.g. where someone lives and goes to school, family names). 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 know that work I create belongs to me. I can name my work so that others know it belongs to me. I can explain why work I create using technology belongs to me. I can say why it belongs to 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. file-name, name on content). I understand that work created by others does not belong to me even if I save a copy
Vocabulary introduced/ embedded	Worried, sad, frightened Sad, embarrassed, upset, mood, emotion Sad, worried, uncomfortable, frightened, advice, trusted adult	Allowed, permission, Permission, trusted adult, devices Positive, negative, cyberbullying	Profile, trusted adult, sharing Online, personal, information Online, personal, information, trusted adult, share, signup	Kind, unkind, trusted adult Upset, kind, behaviour, uncomfortable, nervous, embarrassed Positive, negative, behaviour, effect	Search engine, internet, access, information Information, internet, access Online, real, make belief, trusted adults	Rules, safety, healthy, technology Device	Personal information Personal, information, trustworthy Password, private	Create, document, type, save Belong, create Belong, copy, origional

KS1 - Computing

	Year 2					
Unit theme	Computing systems and networks	Creating Media	Programming A	Data and information	Creating media	Programming B
Unit title	IT around us (2.1)	Digital photography (2.2)	Robot algorithms (2.3)	Pictograms (2.4)	Digital music (2.5)	Programming quizzes (2.6)
I know that/how to...	-To recognise the uses and features of information technology -To identify the uses of information technology in the school -To identify information technology beyond school -To explain how information technology helps us -To explain how to use information technology safely -To recognise that choices are made when using information technology	-To use a digital device to take a photograph -To make choices when taking a photograph -To describe what makes a good photograph -To decide how photographs can be improved -To use tools to change an image -To recognise that photos can be changed	-To describe a series of instructions as a sequence -To explain what happens when we change the order of instructions -To use logical reasoning to predict the outcome of a program -To explain that programming projects can have code and artwork -To design an algorithm -To create and debug a program that I have written	-To recognise that we can count and compare objects using tally charts -To recognise that objects can be represented as pictures -To create a pictogram -To select objects by attribute and make comparisons -To recognise that people can be described by attributes -To explain that we can present information using a computer	-To say how music can make us feel -To identify that there are patterns in music -To experiment with sound using a computer -To use a computer to create a musical pattern -To create music for a purpose -To review and refine our computer work	-To explain that a sequence of commands has a start -To explain that a sequence of commands has an outcome -To create a program using a given design -To change a given design -To create a program using my own design -To decide how my project can be improved
Vocabulary introduced/ embedded	Information technology (IT), computer 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, focus, filter	Instruction, sequence, clear, unambiguous, algorithm, program Sequence, order, algorithm, instructions Sequence, prediction, program Artwork, design, route, mat Algorithm Debugging, algorithm, program, decomposition	More than, less than, most, least, organise, data, object, tally chart, votes, total Pictogram, enter, data, tally chart, compare, more than, less than, objects, count Tally chart, data, pictogram, explain, more, less, most, least, more common, least common Attribute, group, same, different, object, more than/less than, moAttribute, compare, tally chart, pictogram, more than, less than, most popular, least popular, conclusion st/least Tally chart, pictogram, block diagram, most, least, common, sharing, data	Music, planets, Mars, Venus, war, peace, quiet, loud, feelings, emotions Pattern, rhythm, pulse Neptune, pitch, tempo, rhythm, notes Pattern, notes, instrument, tempo Create, emotion, pitch, pulse/beat, tempo, instrument, rhythm, notes Open, edit	Sequence, command, program, run, start Sequence, command, outcome, predict, program, blocks Sprite, algorithm, blocks, design, sequence, predict Actions, sprite, project, blocks, design, sequence, modify, change Design, algorithm, build, sequence, blocks, match Compare, design, debug, program, features, evaluate

KS1 - E-Safety

	Year 2							
Unit title	Self-image & identity	Online Relationships	Online Reputation	Online Bullying	Managing Online Information	Health, Wellbeing and lifestyle	Privacy and security	Copyright and ownership
I know that/ how to...	I can explain how other people may look and act differently online and offline. I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.	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 who I should ask before sharing things about myself or others online. I can describe different ways to ask for, give or deny my permission online and can identify who can help me if I am not sure. I can explain why I have a right to say, 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. I can identify who can help me if something happens online without my consent. I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online.	I can explain how information put online about someone can last for a long time. I can describe how anyone's online information could be seen by others. I know who to talk to if something has been put online without consent or if it is incorrect.	I can explain what bullying is, how people may bully others and how bullying can make someone feel. I can explain why anyone who experiences bullying is not to blame. I can talk about how anyone experiencing bullying can get help.	I can use simple keywords in search engines. 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 what voice activated searching is and how it might be used, and I know it is not a real person (e.g. Alexa, Google Now, Siri). I can explain the difference between things that are imaginary, made up or make believe and things that are true or real. I can explain why some information I find online may not be real or true.	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 say how those rules/ guides can help anyone accessing online technologies.	I can explain how passwords can be used to protect information, accounts and devices. I can explain and give examples of what is meant by 'private' and 'keeping things private'. I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords). 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 describe why other people's work belongs to them.
Vocabulary introduced/ embedded	Online, offline Risk Online, emotions, avatar, identity, privacy, risk, trusted adult	Permission, online, trusted adult Online, consent, trusted adult Mood, online, options, decisions	Online, search, forever, digital, content, tab Information, profile, safer, username Trusted adult, sign up, information, online	Upset, unkind, behaviour, uncomfortable, nervous, embarrassed Bullying, self esteem, self love, fault, responsible, blame Trusted adult, support, advice, insecure	Webpage, home button, back button, forward button, links, tabs, sections, header, main body, footer, navigate, browser, scroll bars Search engine, voice activated, information, devices	Danger, risk, happy, healthy, safe, rule, trusted adult Rule, danger, risk, happy, healthy, safe	Information, private Password, safe, private, login Internet, wifi, devices	Belongs to me, belongs to you, Copy, permission, original

KS2 - Computing

	Year 3					
Unit theme	Computing systems and networks	Creating Media	Programming A	Data and information	Creating media	Programming B
Unit title	Connecting Computers (3.1)	Stop-frame animation (3.2)	Sequencing Sounds (3.3)	Branching Databases (3.4)	Desktop Publishing (3.5)	Events and actions in Programs (3.6)
I know that/how to...	-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 explore how digital devices can be connected -To recognise the physical components of a network	-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 improve an animation -To evaluate the impact of adding other media to an animation	-To explore a new programming environment -To identify that commands have an outcome -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	-To create questions with yes/no answers -To identify the attributes needed to collect data about an object -To create a branching database -To explain why it is helpful for a database to be well structured -To plan the structure of a branching database -To independently create an identification tool	-To recognise how text and images convey information -To recognise that text and layout can be edited -To choose appropriate page settings -To add content to a desktop publishing publication -To consider how different layouts can suit different purposes -To consider the benefits of desktop publishing	-To explain how a sprite moves in an existing project -To create a program to move a sprite in four directions -To adapt a program to a new context -To develop my program by adding features -To identify and fix bugs in a program -To design and create a maze-based challenge
Vocabulary introduced/embedded	Digital device, input, process, output Program, Digital, Non–Digital Connection, network, network switch Server, wireless access point Network cables, network sockets	Animation, flip book, stop frame animation, frame, image, sequence, photograph, Setting, character, events, onion skinning Consistency, Evaluation, delete, frame Media, import, transition	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop Sprites, programming blocks, motion, turn, point in direction, go to, glide Sequence, event, task, design, code, run the code Sequence, order, note, chord Sprite, stage, costume, backdrop Design, algorithm, bug, debug	Attribute, value, questions, table, objects Branching database, database, attribute, value, questions, objects, equal, even, separate Branching database, database, attribute, value, questions, objects Branching database, attribute, questions, structure, compare, order, organise Branching database, attribute, value, question, selecting Branching database, attribute, value, questions, information, decision tree	Text, images, advantages, disadvantages, communicate Font, font style, communicate, template Landscape, portrait, orientation, placeholder, template, layout, content Desktop publishing, copy, paste Layout, purpose Desktop publishing, benefits	Motion, event, sprite, algorithm, logic Move, resize, algorithm Extension block, pen up, set up Pen, design, event, action, algorithm Debugging, errors, setup Design, code, setup, test, debug, actions, events

KS2 - E-Safety

Year 3

Unit theme	Self-image & identity	Online Relationships	Online Reputation	Online Bullying	Managing Online Information	Health, Wellbeing and lifestyle	Privacy and security	Copyright and ownership
I know that/how to...	I can explain what is meant by the term 'identity'. I can explain how people can represent themselves in different ways online. 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 describe ways people who have similar likes and interests can get together online. I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. 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 why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. I can explain how someone's feelings can be hurt by what is said or written online. I can explain the importance of giving and gaining permission before sharing things online and how the principles of sharing online are the same as sharing offline (e.g. sharing images and videos).	I can explain how to search for information about others online. I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. I can explain who someone can ask if they are unsure about putting something online.	I can describe appropriate ways to behave towards other people online and why this is important. I can give examples of how bullying behaviour could appear online and how someone can get support.	I can demonstrate how to use key phrases in search engines to gather accurate information online. I can explain what auto-complete is and how to choose the best suggestion. I can explain how the internet can be used to sell and buy things. 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). 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.	I can explain why spending too much time using technology can sometimes have a negative impact on anyone (e.g. mood, sleep, body, relationships). I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged (e.g. doing homework, games, films, videos). 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 websites).	I can describe simple strategies for creating and keeping passwords private. I can give reasons why someone should only share information with people they choose and can trust. I can explain that if they are not sure or feel pressured, they should tell a trusted adult. I can describe how connected devices can collect and share anyone's information with others.	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.
Vocabulary	Identity, online, avatar, reputation, username, online reputation,	Sharing, trusted adult, online, trust, respect, consent, permission	Search, incorrect, inaccurate, official, information, information, online, share, profile, username, trusted adult, discussion, response, online	Response, power, responsibility, positive, negative, Cyberbullying, follower, add, block, report, support, safety, happy	Autocomplete, suggestion, prediction, fact, opinion, belief, source, share, opinion, fair	Happy, healthy, trusted adult, age restriction, PEGI, ability, violence,	Safe, wifi, devices, information, passwords, trustworthy, private, adverts, connected, collect, share, information, targeted	Copyright, breach, copy, save, document, digital artwork,

KS2 - Computing

Unit theme	Computing systems and networks	Creating Media	Programming A	Data and information	Creating media	Programming B
	Year 4					
Unit title	The internet (4.1)	Photo editing (4.2)	Repetition in shapes (4.3)	Data logging (4.4)	Photo editing (4.5)	Repetition in games (4.6)
I know that/how to...	-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 (WWW) -To describe how content can be added and accessed on the World Wide Web (WWW) -To recognise how the content of the WWW is created by people -To evaluate the consequences of unreliable content	-To identify that sound can be recorded -To explain that audio recordings can be edited -To recognise the different parts of creating a podcast project -To apply audio editing skills independently -To combine audio to enhance my podcast project -To evaluate the effective use of audio	-To identify that accuracy in programming is important -To create a program in a text-based language -To explain what 'repeat' means -To modify a count-controlled loop to produce a given outcome -To decompose a task into small steps -To create a program that uses count-controlled loops to produce a given outcome	-To explain that data gathered over time can be used to answer questions -To use a digital device to collect data automatically -To explain that a data logger collects 'data points' from sensors over time -To recognise how a computer can help us analyse data -To identify the data needed to answer questions -To use data from sensors to answer questions	-To explain that the composition of digital images can be changed -To explain that colours can be changed in digital images -To explain how cloning can be used in photo editing -To explain that images can be combined -To combine images for a purpose -To evaluate how changes can improve an image	-To develop the use of count-controlled loops in a different programming environment -To explain that in programming there are infinite loops and count controlled loops -To develop a design that includes two or more loops which run at the same time -To modify an infinite loop in a given program -To design a project that includes repetition -To create a project that includes repetition
Vocabulary introduced/embedded	Internet, network, router, network security Network switch, server, wireless access point (WAP), router Website, web page, web address, router, routing, web browser World Wide Web, internet, content, website, web page, links, files Website, use, content, download, sharing, ownership, permission Information, sharing, accurate, honest, content, adverts	Audio, microphone, speaker, headphones, input device, output device Audio, sound, podcast, edit, trim, align Audio, sound, layer, import Audio, sound, record, playback, edit, selection Audio, sound, load, import, save, export, MP3 Export, MP3, audio, editing, evaluate, feedback	Program, turtle, commands, code snippet Algorithm, Design, debug, logo commands Pattern, repeat, repetition, count-controlled loop, algorithm, value Repeat, repetition, count-controlled loop, trace, value Repeat, count controlled loop, decompose, procedure, Count controlled loop, procedure, debug, program	Data, table, layout Input device, sensor, data logger Data logger, logging, data point, interval Analyse, data set, import, export Data, data logger, logged, collection Analyse, review, conclusion	Image, edit, digital, crop, rotate, undo, save Image, adjustments, effects, colours, hue, saturation, sepia, vignette Image, edit, retouch, clone Image, edit, select, copy, paste, combine Image, made up, real, composite, cut, copy, paste, alter, background, foreground Rotate, crop, zoom, clone, select, copy, paste, undo, font	Scratch, programming, sprite, blocks, code, loop, repeat, value Block, repeat, forever, infinite loop, count-controlled loop, costume Repetition, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate Block, repeat, forever, infinite loop, modify, design Infinite loop, count-controlled loop, repetition, design, sprite, algorithm Repetition, design, algorithm, duplicate, debug, refine, evaluate

KS2 - E-Safety

Year 4

Unit theme	Self-image & identity	Online Relationships	Online Reputation	Online Bullying	Managing Online Information	Health, Wellbeing and lifestyle	Privacy and security	Copyright and ownership
I know that/how to...	I can explain how my online identity can be different from my offline identity. I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. I can explain that others online can pretend to be someone else, including my friends, and I can suggest reasons why they might do this.	I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms). 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 explain ways that some of the information about anyone online could have been created, copied or shared by others.	I can recognise when someone is upset, hurt or angry 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 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 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 (e.g. bots) and describe what the benefits and the risks might be. I can explain what is meant by fake news; for example, why some people will create stories or alter photographs and put them online to pretend something is true when it isn't.	I can explain how using technology can be a distraction from other things in a positive and negative way. I can identify times or situations when someone may need to limit the amount of time they use technology. For example, I can suggest strategies to help with limiting this time.	I can describe strategies for keeping personal information private, depending on context. I can explain that internet use is never fully private and is monitored. 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 know what the digital age of consent is and the impact this has on online services asking for consent.	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. I can give some simple examples of content which I must not use without permission from the owner (e.g. videos, music, images).
Vocabulary	Identity; trusted adult, positive, reputation, perception, identity, identity theft, profile,	Online community, online social environment, healthy, unhealthy, motive, respect, privacy, permission, consent	Websites, information, search, search engine, trustworthy ,source, online profile	Screengrab, screenshot, intimidate, trusted grown up, Upset, Hurt, Angry, Online, Tone, Body language, responsibility, impact, online environment, content, self image, self esteem, misunderstand, misinterpret	Worksheet, powerpoint, advert, advertising, purchase, pop up, fake-news, URL, accurate, online, sync	Healthy, moderation, lifestyle, self regulation,	Passwords, private, personal, convince, personal, information, private, monitored, cookies, digital age of consent, Data, consent,	Copy, permission, original, images, information, creative commons licence, commercial licence, search, usage rights, research, copyright, licences