COMPUTER SCIENCE   INFORMATION TECHNOLOGY   DIGITAL LITERACY
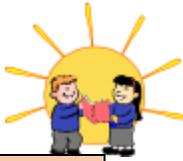
Computing Curriculum 2019-20

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Online Safety	Self-Image and Identity Online Reputation	Online Relationships	Online Bullying	Managing Online Information	Health, Well-being and Lifestyle	Privacy and Security Copyright and Ownership
Year 3	Typing Skills (Internet)	Word Processing (Word)	Programming an Animation (Scratch)	Logo and Scratch (Scratch)	Drawing and Desktop Publishing (Publisher)	Presentation Skills (Powerpoint)
Year 4	Word Processing (Word)	Programming Turtle Logo (Turtle Logo Online)	Online Safety (Unplugged)	Animation (Pivot Animator, MovieSoup)	Quizzes and Answers (Scratch)	Photo Stories *(Movie Maker or similar)*
Year 5	Scratch Maze Game (Scratch)	Cryptography (Unplugged)	Web Design (Google Sites)	Modern Art (Inkscape)	3D Modelling (SketchUp)	Radio Station (Audacity)

Year 6	Animated Stories (Scratch)	Spreadsheets (Excel)	Film-Making *(Movie Maker or similar)*	Kodu Programming (Kodu)	Creating a Yearbook (Word & Publisher)

Computing Objectives – Computer Science

National Curriculum	Pupils should be taught to: • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
Year 3	**Programming an Animation (Scratch)** • Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. • Use sequence in programs; work with variables and various forms of input and output. • Use logical reasoning to detect and correct errors in algorithms and programs. • Select, use and combine a variety of software to design and create content that accomplishes given goals, including presenting information. **Logo and Scratch (Scratch)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Year 4	**Programming Turtle Logo (Turtle Logo Online)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. **Quizzes and Answers (Scratch)** • Create content that accomplish given goals. Solve problems by decomposing them into smaller parts. • Write and debug programs that accomplish specific goals. • Use sequence and selection in programs. Use sequence and repetition in programs. Work with variables. • Design, write and debug programs that accomplish specific goals
Year 5	**Scratch Maze Game (Scratch)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. **Cryptography (Unplugged)** • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • Understand computer networks including the internet; how they can provide multiple services such as the world wide web; and the opportunities they offer for communication and collaboration. • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Web Design (Google Sites)** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

Year 6	**Animated Stories (Scratch)** • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. **Kodu Programming (Kodu)** • Select, use and combine a variety of software, including evaluating and presenting data and information. • Use logical reasoning to explain how some simple algorithms work. • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

Computing Objectives – Information Technology

National Curriculum	Pupils should be taught to: • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
Year 3	**Word Processing (Word)** • Use technology safely, respectfully and responsibly. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. **Presentation Skills (Powerpoint)** • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. • Use technology purposefully to create, organise, store, manipulate and retrieve digital content. **Drawing and Desktop Publishing (Publisher)** • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
Year 4	**Word Processing (Word)** • Select, use and combine a variety of software on a range of digital devices to design a range of programs, systems and content that accomplish specific goals. **Animation (Pivot Animator, MovieSoup)** • Analyse, evaluate and present data and information. • Use a variety of software to design and create content that accomplish given goals. • Select, use and combine a variety of software including analysing, evaluating and presenting data and information. **Photo Stories (Movie Maker or similar)** • Select, use and combine a variety of software on a range of digital devices that accomplish given goals.

Year 5	**Modern Art (Inkscape)** • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. **3D Modelling (SketchUp)** • Select, use and combine a variety of software (including Internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. **Radio Station (Audacity)** • Select, use and combine a variety of software on a range of digital devices to create content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
Year 6	**Spreadsheets (Excel)** • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. **Film-Making *(Movie Maker or similar)*** • Select, use and combine a variety of software to design and create a range of programs, systems and content that accomplish given goals. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Understand computer networks including the internet and the opportunities they offer for communication and collaboration. • Use a variety of software on a range of digital device to design and create a range of content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. • Select, use and combine a variety of software on a range of digital devices to design and create a range of content that accomplish given goals, including presenting information. **Creating a Yearbook (Publisher)** • Understand computer networks including the internet and the opportunities they offer for communication and collaboration. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. • Use technology safely, respectfully and responsibly.

National Curriculum	Pupils should be taught to: • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • use technology safely, respectfully and responsibly; recognize acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
Year 3	**Typing Skills (Internet)** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
Year 4	**Online Safety (Unplugged)** • Use technology safely, respectfully and responsibly; recognize acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

	Self-Image and Identity Online Reputation	Online Relationships	Online Bullying	Managing Online Information	Health, Well-being and Lifestyle	Privacy and Security Copyright and Ownership
Year 3-6						

ONLINE SAFETY CURRICULUM

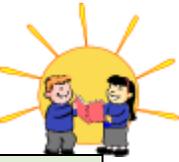| Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Self-Image and Identity**	**Online Relationships**	**Online Bullying**	**Managing Online Information**	**Health, Wellbeing and Lifestyle**	**Privacy and Security**
	Online Reputation					**Copyright and Ownership**
Year 3	- I can explain what is meant by the term 'identity'. - I can explain how I can represent myself in different ways online. - I can 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).	- I can describe ways people who have similar likes and interests can get together online. - I can give examples of technology-specific forms of communication (e.g. emojis, acronyms, text speak). - I can explain some risks of communicating online with others I don't know well. - I can explain why I should be careful who I trust online and what information I can trust them with.	- I can explain what bullying is and can describe how people may bully others. - I can describe rules about how to behave online and how I follow them.	- I can use key phrases in search engines. - 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 explain how the internet can be used to sell and buy things.	- I can 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).	- I can 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. - I understand and can give reasons why passwords are important. - I can describe simple strategies for creating and keeping passwords private. - I can describe how connected devices can collect and share my information with others.

- I can search for information about myself online. - I can 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.	- I can explain how my and other people's feelings can be hurt by what is said or written online. - I can explain why I can take back my trust in someone or something if I feel nervous, uncomfortable or worried. - I can explain what it means to 'know someone' online and why this might be different from knowing someone in real life. - I can explain what is meant by 'trusting someone online'. I can explain why this is different from 'liking someone online'.		- I can explain the difference between a 'belief', an 'opinion' and a 'fact'.	- I can think of ways to stop myself spending too much time using technology.	- I can explain why copying someone else's work from the internet without permission can cause problems. - I can give examples of what those problems might be.

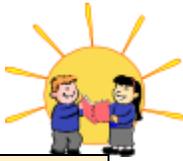| Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Self-Image and Identity** **Online Reputation**	**Online Relationships**	**Online Bullying**	**Managing Online Information**	**Health, Wellbeing and Lifestyle**	**Privacy and Security** **Copyright and Ownership**
Year 4	- I can 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. - I can describe how others can find out information about me by looking online. - I can explain ways that some of the information about me online could have been created, copied or shared by others.	- I can describe strategies for safe and fun experiences in a range of online social environments. - I can give examples of how to be respectful to others online.	- I can identify some online technologies where bullying might take place. - I can describe ways people can be bullied through a range of media (e.g. image, video, text, **chat**). - I can 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).	- I can analyse information and differentiate between 'opinions', 'beliefs' and 'facts'. I understand what criteria have to be met before something is a 'fact'. - I can describe how I can search for information within a wide group of technologies (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 that some people I 'meet online' (e.g. through social media) may be computer programmes pretending to be real people. - I can explain why lots of people sharing the same opinions or beliefs online does not make those opinions or beliefs true.	- I can explain how using technology can distract me from other things I might do or should be doing. - I can identify times or situations when I might need to limit the amount of time I use technology. - I can suggest strategies to help me limit this time.	- I can explain what a strong password is. - I can describe strategies for keeping my personal information private, depending on context. - I can explain that others online can pretend to be me or other people, including my friends. - I can suggest reasons why they might do this. - I can explain how internet use can be monitored. - When searching on the internet for content to use, I can explain who owns it and whether I have the right to reuse it.

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Self-Image and Identity** / **Online Reputation**	**Online Relationships**	**Online Bullying**	**Managing Online Information**	**Health, Wellbeing and Lifestyle**	**Privacy and Security** / **Copyright and Ownership**
Year 5	- I can explain how identity online can be copied, modified or altered. - I can demonstrate responsible choices about my online identity, depending on context. - I can search for information about an individual online and create a summary report of the information I find. - I can describe ways that information about people online can be used by	- I can 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 make positive contributions and be part of online communities. - I can describe some of the communities in which I am involved and describe how I collaborate with others positively.	- I can recognise when someone is upset, hurt or angry online. - I can 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. - I can explain how to block abusive users. - I can explain how I would report online bullying on the apps and platforms that I use. - I can describe the helpline services who can support me and what I would say and do if I needed their help (e.g. **Childline**).	- I can use different search technologies. - I can evaluate digital content and can explain how I make choices from search results. - I can explain key concepts including: data, information, fact, opinion, belief, true, false, valid, reliable and evidence. - I understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead). - 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 explain what is meant by a 'hoax'. I can explain why I need to think carefully before I forward anything online. - I can explain why some information I find online may not be honest, accurate or legal. - I can 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).	- I can describe ways technology can affect healthy sleep and can describe some of the issues. - I can describe some strategies, tips or advice to promote healthy sleep with regards to technology.	- I can create and use strong and secure passwords. - I can 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. - I can 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. - I can assess and justify when it is acceptable to use the work of others. - I can give examples of content that is permitted to be reused.

	others to make judgments about an individual.					

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Self-Image and Identity** **Online Reputation**	**Online Relationships**	**Online Bullying**	**Managing Online Information**	**Health, Wellbeing and Lifestyle**	**Privacy and Security** **Copyright and Ownership**
Year 6	- I can describe ways in which media can shape ideas about gender. - I can identify messages about gender roles and make judgements based on them. - I can challenge and explain why it is important to reject inappropriate messages about gender online. - I can 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. - I can explain why I should keep asking until I get the help I need.	- I can show I understand my responsibilities for the well-being of others in my online social group. - I can explain how impulsive and rash communications online may cause problems (e.g. flaming, content produced in live streaming). - I can demonstrate how I would support others (including those who are having difficulties) online.	- I can describe how to capture bullying content as evidence (e.g **screen-grab**, **URL**, **profile**) to share with others who can help me. - I can identify a range of ways to report concerns both in school and at home about online bullying.	- I can use search technologies effectively. - I can explain how search engines work and how results are selected and ranked. - I can demonstrate the strategies I would apply to be discerning in evaluating digital content. - I can describe how some online information can be opinion and can offer examples. - I can explain how and why some people may present 'opinions' as 'facts'. - I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how I might encounter these online	- 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 my health (e.g. **night-shift mode**, regular breaks, correct posture, sleep, diet and exercise). - I can explain the importance of self-regulating my use of technology; I can demonstrate the	- I use different passwords for a range of online services. I can describe effective strategies for managing those passwords (e.g. **password managers**, acronyms, stories). - I know what to do if my password is lost or stolen. - I can explain what app permissions are and can give some examples from the technology or services I use. - I can describe simple ways to increase privacy on apps and services that provide privacy settings. - I can 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**).

- I can explain how I am developing an online reputation which will allow other people to form an opinion of me. - I can describe some simple ways that help build a positive online reputation.	- I can demonstrate ways of reporting problems online for both myself and my friends.		(e.g. advertising and 'ad targeting'). - I can demonstrate strategies to enable me to analyse and evaluate the validity of 'facts' and I can explain why using these strategies are important. - I can identify, flag and report inappropriate content.	strategies I use to do this (e.g. monitoring my time online, avoiding accidents).	- I can demonstrate the use of search tools to find and access online content which can be reused by others. - I can demonstrate how to make references to and acknowledge sources I have used from the internet.