

Progression of Skills and Knowledge LKS2

Computing

Ongoing skills

Year 3	Year 4
• 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. • Identifying network components and understand how they are used to connect to the internet and how data is transferred. • Understanding 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. • Learn to distinguish between facts, opinions, and beliefs on the internet. • Learn how to deal with upsetting online content. • Using logical reasoning to explain how simple algorithms work. • Designing, writing, and debugging programs that accomplish specific goals, including controlling or simulating physical systems. • Solving problems by decomposing them into smaller parts. • Using sequence, selection, and repetition in programs. • Working with variables and various forms of input and output. • Learn about cyberbullying and fake emails. • Understanding the purpose of emails. • Using technology purposefully to create, organise, store, manipulate and retrieve digital content, including searching for relevant information. • Learn about how to be discerning about what information we share and who with.	• Be discerning in evaluating content by learning about the techniques that companies use to advertise online. • Use technology safely and responsibly by considering the risks of screen-time and technology. • Using search technologies effectively, appreciating how results are selected and ranked. • Understanding why some sources are more trustworthy than others. • 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. • Understanding opportunities offered by the World Wide Web for communication and collaboration. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Using logical reasoning to explain how simple algorithms work. • Designing, writing and debugging programs that accomplish specific goals, including controlling or simulating physical systems. • Solving problems by decomposing them into smaller parts. • Understand abstraction and patterns recognition.

Specific skills/knowledge:	Year 3	Year 4
Computing systems and networks	Networks and the internet • understand what a network is and understand our school network • understand how information moves around a network and begin to recognise real world networks • understand how the Internet works and explain a website's journey • explore the role of routers • understand the role of packets Emailing • understand what email is used for and to send an email • edit email content and send an attachment • understand the importance of being kind online and what this looks like • understand that cyberbullying involves being unkind online • understand that not all emails are genuine Desktop publishing • 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	Collaborative learning • understand that software can be used collaboratively online to work as a team • understand how to contribute to someone else's work effectively • understand how to create effective presentations • understand how to create and share Google Forms • understand how to use a shared spreadsheet to explore data

Programming	Scratch • explore a programming application • use repetition (a loop) in a program • program an animation • program a story • program a game	Further coding with Scratch • recall key features of Scratch • understand how a Scratch game works by using decomposition to identify key features • understand what a variable is and how to make one • use knowledge of how variables work to create a quiz Computational thinking • understand that computational thinking is made up of four key stands • understand what decomposition is and how to apply it to solve problems • understand what pattern recognition and abstraction means • understand how to create an algorithm and what it can be used for • combine computational thinking skills to solve a problem
Creating media	Video trailers • plan a book trailer • take photos or videos to tell a story • edit a video • add text and transitions to a video • evaluate video editing	Photo editing • explain that digital images can be changed • change the composition of an image • describe how images can be changed for different uses • make good choices when selecting different tools • recognise that not all images are real • evaluate how changes can improve an image
Data handling	Comparison cards databases • understand the terminology around databases • compare paper and computerised database • sort, filter and interpret data • represent data in different ways • sort data for a purpose	Investigating weather • log data taken from online sources within a spreadsheet • design a weather station • design an automated machine to respond to sensor data • understand how weather forecasts are made • use green screen technology in a video to present a weather forecast Data logging • explain that data gathered over time can be used to answer questions • use a digital device to collect data automatically • explain that a data logger collects 'data points' from sensors over time • use data collected over a long duration to find information • identify the data needed to answer questions • use collected data to answer questions
Online safety	• understand how the internet can be used to share beliefs, opinions, and facts • understand the effects that some internet use can have on our feelings and emotional wellbeing • understand the ways personal information can be shared on the internet • understand the rules for social media platforms	• describe how to search information within a wide group of technologies and make a judgement about the probable accuracy • describe some of the methods used to encourage people to buy things online • explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true • explain that technology can be designed to act like or impersonate living things • explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology

Vocabulary

Term introduced: Term 1/ Term 2/Term 3	Computing systems and networks	Programming	Creating media	Data handling	Online safety
Year 3	As KS1 and file, internet, network, network map, network switch, router, server, Wi-Fi/wired/wireless, wireless access point, font, template, landscape, portrait, orientation, placeholder, content, Desktop publishing, layout, purpose, benefits account, password, cyberbullying, spam, attachment, BCC, CC, domain	As KS1 and sprite, application, tinker, code block, interface, predict, repetition, review	As KS1 and voice, desktop, voiceover, digital device, edit, film, film editing software, graphics, import, recording, sound effects, time code	As KS1 and database, fields, filter, graphs, spreadsheet	As KS1 and fact, opinion, belief, search engine, reliability, accuracy, content, block and report, privacy settings social media platforms, age restrictions, digital devices, search functionality, smart devices, autocomplete
Year 4	As above and software, collaborative, online, teamwork, email account, document, link, spreadsheet, presentation, share, icon	As above and conditional statement, direction, feature, icon, orientation, position, program, project, variable abstraction, design	As above and edit, arrange, select, digital, copyright, composition, pixels, rotate, flip, adjustments, effects, retouch, clone, magic wand, adjust, sharpen, brighten, fake, real, publication	As above and automated machine, calculate, device, log data, source input device, sensor, data logger, data point, interval, analyse, import, export, collection, review, conclusion	As above and search results, sponsored, influencer, snippets, accuracy distractions, screen time, bot, chatbot, risks, advantages, implications
Year 5	as LKS2 and company logo, data leak, data privacy, inaccurate information, index, keywords, network, page rank, web crawler, WWW, TASK	as LKS2 and crumble controller, LED, sparkle, connect, motor, repetition, infinite loop, output devices, condition, design basic commands, tinker, bug/debug, code, error, live loop, program language	as LKS2 and animation, duplicate, illusion, upload	as LKS2 and order, group, value, search, criteria, axis, compare, presentation	as LKS2 and strong password, applications, apps, private and personal information, in app purchases, app permissions, technology, emojis, memes, positive contributions, advice, organisations bullying, real world, judgment, summarise, opinion
Year 6	as above and acrostic code, brute force hacking, Caesar cipher, cipher, encrypt, invention, Nth letter cipher, pigpen cipher, technological advancement, trial and error data heading, data set, cells, columns, rows, format, common attribute, formula, calculation, duplicate, propose, evaluate, results, comparison, questions, tools	as above and patterns, shape, repeat, import Micro:bit, MakeCode, process, USB, selection, variable, random, sensing, compass, direction, navigation, step counter, plan, create, test	as above and background noise, byte, CPU, memory storage, OS, radio play, RAM, ROM, sound effects, touch screen, trackpad		as above and report, block, privacy settings, consent, privacy, screengrab, inappropriate reputation, online reputation, digital footprint, digital personality, anonymity, screen grab, screenshot, block and report, hacking, secure, two factor authentication, scammers, phishing, malware, antivirus