

Progression of Skills and Knowledge UKS2 Computing

Ongoing skills

Year 5	Year 6
• Recognising that information on the internet might not be true or correct. • Know how to use keywords to quickly find accurate information. • Understanding permissions required by apps to access personal information. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Considering online judgements that people make and how to treat others online. • To program a device to achieve a specific goal, to 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 • 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. • Using programming language to create music, including use of loops. • Using technology purposefully to create, organise, store, manipulate and retrieve digital content. • Understanding how to use cameras to take photos.	• Understanding the importance of secure passwords and using searching and word processing skills to create a presentation. • Using programming software to understand hacking, relating this to computer cracking codes in WWII. • Editing sound recordings for specific purpose. • Learning about the history of computers and how they evolved over time. • Understanding that websites can be altered by exploring the code beneath the site. • Learning about online reputations and how to go about creating a positive one. • Being aware of the threats that face us online such as scammers and phishing emails and how to identify them. • 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. • 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.

Specific skills/knowledge:	Year 5	Year 6
Computing systems and networks	Search engines • understand what a search engine is and how to use it • aware that not everything online is true • Searches effectively • Create an informative poster • Understand how search engines work	Bletchley Park • understand that there are lots of different types of secret codes • understand the importance of having a secure password • understand the importance of Bletchley Park to the World War II war effort • understand about some of the historical figures that contributed to technological advances in computing • research and present information about historical figures in computing Spreadsheets • identify questions which can be answered using data • explain that objects can be described using data • explain that formulas can be used to produce calculated data • apply formulas to data, including duplicating • create a spreadsheet to plan an event • choose suitable ways to present data

Programming	Selection in physical computing • control a simple circuit connected to a computer • write a program that includes count-controlled loops • explain that a loop can stop when a condition is met • conclude that a loop can be used to repeatedly check whether a condition has been met • design a physical project that includes selection • create a controllable system that includes selection Programming music Scratch • tinker with Scratch music elements • create a program that plays themed music • plan a soundtrack program • program a soundtrack • to program music	Intro to Python • tinker with the programme Logo • understand nested loops • understand basic Python commands • use loops when programming Sensing • 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
Creating media	Stop motion animation • understand what animation is • understand what stop motion animation is • plan my stop motion video, thinking about the characters I want to use • create a stop motion animation • edit and assess my stop motion animation	History of computers • tinker with sound • record, edit and add sound effects to a radio play • understand how computers have changed and the impact this has had on the modern world • research one of the computers that changed the world and present information about it to the class • design a computer of the future
Data handling	Flat-file databases • use a form to record information • compare paper and computer-based databases • outline how grouping and then sorting data allows us to answer questions • explain that tools can be used to select specific data • explain that computer programs can be used to compare data visually • apply my knowledge of a database to ask and answer real-world questions	
Online safety	• understand how apps can access our personal information and how to alter the permissions • be aware of the positive and negative aspects of online communication • understand how online information can be used to form judgements • discover ways to overcome bullying • understand how technology can affect health and wellbeing	• how to create a positive online reputation • be able to describe how to capture bullying content as evidence • manage personal passwords effectively • be aware of strategies to help be protected online • describe issues online that give us negative feelings and know ways to get help • think about the impact and consequences of sharing online

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