Cudham Primary School Computing Overview

Forget Me Not Class

National Curriculum Aims KS1 and 2	The national curriculum for Computing aims to ensure that all pupils: • can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation • can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems • can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems • are responsible, competent, confident and creative users of information and communication technology.	
National Curriculum Objectives	**Cycle A & B** Pupils should be taught to: 1. design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 2. use sequence, selection, and repetition in programs; work with variables and various forms of input and output 3. use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 4. 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 5. use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 6. 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 7. use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	
Curriculum links	**Cycle A** Art & Design (Creating Media – Introduction to Vector Graphics) Maths – Statistics (Data and information – Flat File Databases) Art & Design (Creating Media – 3D Modelling) DT (Creating Media – 3D Modelling) Maths – 3D Shapes (Creating Media – 3D Modelling)	**Cycle B** Science – Electricity (Programming – Selection in Physical Computing) DT (Programming – Selection in Physical Computing) Maths – Number, Statistics (Data and information – Spreadsheets) English – Composition (Creating Media – Web Page Creation)
Context	**Where they have been:**	**Where they will go next:**
	• Developed an understanding of computer systems, networks, the internet, and how digital devices connect, communicate, and stay secure. • Created and edited digital media, including stop-frame animations and photo editing, while evaluating the impact and effectiveness of design choices. • Built programming skills through sequencing, repetition (loops), events, actions, and game design using visual and text-based programming environments.	• Develop a secure understanding of computer systems, networks, and the internet, including how digital technologies communicate and the importance of online safety, privacy, and responsible use. • Design, write, test, and debug increasingly complex programs using a range of programming concepts such as sequence, selection, iteration, variables, and data structures. • Analyse problems computationally and apply computational thinking skills, including decomposition, pattern recognition, abstraction, and algorithm design, to create effective digital solutions.

	• Learnt how data is collected, stored, organised, and used through branching databases, data logging, sensors, and data analysis. • Applied computational thinking and programming design processes to plan, create, test, and improve digital projects and solve real-world problems.	• Collect, analyse, and represent data using a variety of digital tools, understanding how data is stored, processed, and used in real-world contexts. • Create, evaluate, and refine digital content for different audiences and purposes, while considering creativity, accuracy, ethics, and the impact of technology on individuals and society.

Cycle A

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit: Computing and System Networks Y6 (Year 5)	**Unit:** Creating media – Introduction to Vector Graphics (Year 5)	**Unit:** Programming – Selection in quizzes (Year 5)	**Unit:** Data and Information – Flat File Database (Year 5)	**Unit:** Programming – Sensing Movement (Year 6)	**Unit:** Creating Media – 3D Modelling (Year 6)
NC Objective/s: 1, 2, 4, 6	**NC Objective/s:** 6	**NC Objective/s:** 1, 2, 3, 6	**NC Objective/s:** 5, 6	**NC Objective/s:** 1, 2, 3, 6	**NC Objective/s:** 6, 7
Vocabulary: system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking.	**Vocabulary:** vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection	**Vocabulary:** Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator	**Vocabulary:** database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.	**Vocabulary:** Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug.	**Vocabulary:** TinkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify.

Cycle B

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit: Computing systems and networks - Communication and collaboration (Year 6)	**Unit:** Creating Media – Video production (Year 5)	**Unit:** Programming – Selection in Physical Computing (Year 5)	**Unit:** Data and information – Spreadsheets (Year 6)	**Unit:** Programming – Variables in Games (Year 6)	**Unit:** Creating Media – Web Page Creation (Year 6)
NC Objective/s: 4, 6, 7	**NC Objective/s:** 5, 6, 7	**NC Objective/s:** 1, 2, 3, 6	**NC Objective/s:** 6	**NC Objective/s:** 1, 2, 3, 6	**NC Objective/s:** 5, 6, 7

Vocabulary: communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, oneway, two-way, one-to-one, one-to-many.	**Vocabulary:** video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.	**Vocabulary:** microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, Input, output, selection, action, debug, circuit, power, cell, buzze	**Vocabulary:** data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools	**Vocabulary:** variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare	**Vocabulary:** website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.