Sherborne St John C of E Primary School

Computing Overview

Year Group: Year 1	Autumn		Spring		Summer	
Theme	**Computing systems and networks – technology around us**	**Creating media – digital painting**	**Programming – moving a robot**	**Data and information – grouping data**	**Creating media – digital writing**	**Programming – programming animations**
Key Learning	Children will be able to: • identify technology • identify a computer and its main parts • use a mouse in different ways • use a keyboard to type on a computer • use the keyboard to edit text • create rules for using technology responsibly	Children will be able to: • describe what different freehand tools do • use the shape tool and the line tools • make careful choices when painting a digital picture • explain why I chose the tools I used • use a computer on my own to paint a picture • compare painting a picture on a computer and on paper	Children will be able to: • explain what a given command will do • act out a given word • combine 'forwards' and 'backwards' commands to make a sequence • combine four direction commands to make sequences • plan a simple program • find more than one solution to a problem	Children will be able to: • label objects • identify that objects can be counted • describe objects in different ways • count objects with the same properties • compare groups of objects • answer questions about groups of objects	Children will be able to: • use a computer to write • add and remove text on a computer • identify that the look of text can be changed on a computer • make careful choices when changing text • explain why I used the tools that I chose • compare typing on a computer to writing on paper	Children will be able to: • choose a command for a given purpose • show that a series of commands can be joined together • identify the effect of changing a value • explain that each sprite has its own instructions • design the parts of a project • use my algorithm to create a program
Vocabulary	technology, computer, mouse, trackpad, keyboard, screen, double-click, typing	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.	object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing,	ScratchJr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design

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					writing.	

Year Group: Year 2	Autumn		Spring		Summer	
Theme	**Computing systems and networks – IT around us**	**Creating media – digital photography**	**Programming – robot algorithms**	**Data and information – pictograms**	**Creating media – digital music**	**Programming - quizzes**
Key Learning	Children will be able to: • recognise the uses and features of information technology • identify the uses of information technology in the school • identify information technology beyond school • explain how information technology helps us • explain how to use information technology safely • recognise that choices are made when using information technology	Children will be able to: • use a digital device to take a photograph • make choices when taking a photograph • describe what makes a good photograph • decide how photographs can be improved • use tools to change an image • recognise that photos can be changed	Children will be able to: • describe a series of instructions as a sequence • explain what happens when we change the order of instructions • use logical reasoning to predict the outcome of a program • explain that programming projects can have code and artwork • design an algorithm • create and debug a program that I have written	Children will be able to: • recognise that we can count and compare objects using tally charts • recognise that objects can be represented as pictures • create a pictogram • select objects by attribute and make comparisons • recognise that people can be described by attributes • explain that we can present information using a computer	Children will be able to: • say how music can make us feel • identify that there are patterns in music • experiment with sound using a computer • use a computer to create a musical pattern • create music for a purpose • review and refine our computer work	Children will be able to: • explain that a sequence of commands has a start • explain that a sequence of commands has an outcome • create a program using a given design • change a given design • create a program using my own design • decide how my project can be improved
Vocabulary	Information technology (IT), computer, barcode, scanner/scan	device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject,	instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route,	more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter,	music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion,	sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify,

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		compose, light sources, flash, focus, background, editing, filter, format, framing, lighting,	mat, debugging, decomposition	data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing	beat, instrument, open, edit.	change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.

Year Group: Year 3 and 4 (Two Year Cycle)	**Autumn**		**Spring**		**Summer**	
Theme	**Computing systems and networks Microsoft Word**	**Creating media – desktop publishing**	**Programming – sequencing sounds**	**Data and information – branching databases**	**Creating media – stop frame animation**	**Programming – events and actions in programs**
Cycle A						
Key Learning	Children will be able to: • explain how digital devices function • identify input and output devices • recognise how digital devices can change the way that we work • explain how a computer network can be used to share information • explore how digital devices can be connected	Children will be able to: • 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	Children will be able to: • explore a new programming environment • identify that commands have an outcome • explain that a program has a start • recognise that a sequence of commands can have an order • change the appearance of my project	Children will be able to: • create questions with yes/no answers • identify the attributes needed to collect data about an object • create a branching database • explain why it is helpful for a database to be well structured • plan the structure of a branching	Children will be able to: • explain that animation is a sequence of drawings or photographs • relate animated movement with a sequence of images • plan an animation • identify the need to work consistently and carefully • review and improve an animation evaluate the impact	Children will be able to: • explain how a sprite moves in an existing project • create a program to move a sprite in four directions • adapt a program to a new context • develop my program by adding features • identify and fix bugs in a program • design and create a maze-based

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	• recognise the physical components of a network	• consider the benefits of desktop publishing	• create a project from a task description	database • independently create an identification tool	of adding other media to an animation	challenge
Vocabulary	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets	text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits.	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code	attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree.	animation, flip book, stopframe, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.	motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions.
Theme	**Computing systems and networks Microsoft powerpoint**	**Creating media – audio production**	**Programming – repetition in shapes**	**Data and information – data logging**	**Creating media – photo editing**	**Programming – repetition in games**
Cycle B						
Key Learning	Children will be able to: • describe how networks physically connect to other networks • outline how websites can be shared via the World Wide Web (WWW) • describe how content can be added and accessed on the World Wide Web (WWW • recognise how the	Children will be able to: • identify that sound can be recorded • explain that audio recordings can be edited • recognise the different parts of creating a podcast project • apply audio editing skills independently • combine audio to enhance my podcast project • evaluate the	Children will be able to: • identify that accuracy in programming is important • create a program in a text-based language • explain what 'repeat' means • modify a count-controlled loop to produce a given outcome • decompose a task into small steps	Children will be able to: • 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 • recognise how a computer can help us analyse data • identify the data	Children will be able to: • explain that the composition of digital images can be changed • explain that colours can be changed in digital images • explain how cloning can be used in photo editing • explain that images can be combined • combine images for a purpose • evaluate how	Children will be able to; • develop the use of count-controlled loops in a different programming environment • explain that in programming there are infinite loops and count-controlled loops • develop a design that includes two or more loops which run at the same time

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	content of the WWW is created by people • evaluate the consequences of unreliable content	effective use of audio	• create a program that uses count-controlled loops to produce a given outcome	needed to answer questions • use data from sensors to answer questions	changes can improve an image	• modify an infinite loop in a given program • design a project that includes repetition • create a project that includes repetition
Vocabulary	internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts	audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.	Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure.	data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.	image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font.	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate.

Year Group: Year 5 and 6 (Two Year Cycle)	**Autumn**		**Spring**		**Summer**	
Theme	**Computing systems and networks – systems and searching**	**Creating media – video production**	**Programming – selection in physical computing**	**Data and information – flat-file databases**	**Creating media – introduction to vector graphics**	**Programming – selection in quizzes**
Cycle A						
Key Learning	Children will be able to: • explain that computers can be connected together to form systems	Children will be able to: • explain what makes a video effective • use a digital device to record video	Children will be able to: • control a simple circuit connected to a computer • write a program	Children will be able to: • use a form to record information • compare paper and computer-based	Children will be able to: • identify that drawing tools can be used to produce different outcomes	Children will be able to: • explain how selection is used in computer programs • relate that a

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	• recognise the role of computer systems in our lives • identify how to use a search engine • describe how search engines select results • explain how search results are ranked • recognise why the order of results is important, and to whom	• capture video using a range of techniques • create a storyboard • identify that video can be improved through reshooting and editing • consider the impact of the choices made when making and sharing a video	that includes count-controlled loops • explain that a loop can stop when a condition is met • design a physical project that includes selection • create a program that controls a physical computing project	databases • outline how you can answer questions by grouping and then sorting data • explain that tools can be used to select specific data • explain that computer programs can be used to compare data visually use a real-world database to answer questions	• create a vector drawing by combining shapes • use tools to achieve a desired effect • recognise that vector drawings consist of layers • group objects to make them easier to work with • apply what I have learned about vector drawings	conditional statement connects a condition to an outcome • explain how selection directs the flow of a program • design a program that uses selection • create a program that uses selection evaluate my program
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	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.	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, buzzer	database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.	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	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator
Theme	**Computing systems and networks – communication and collaboration**	**Creating media – web page creation**	**Programming – variables in games**	**Data and information – introduction to spreadsheets**	**Creating media – 3D modelling**	**Programming – sensing movement**
Cycle B						
Key Learning	Children will be able to: • explain the	Children will be able to: • review an existing	Children will be able to: • define a 'variable'	Children will be able to: • create a data set in	Children will be able to: • recognise that you	Children will be able to: • create a program to

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	importance of internet addresses • recognise how data is transferred across the internet • explain how sharing information online can help people to work together • evaluate different ways of working together online • recognise how we communicate using technology • evaluate different methods of online communication	website and consider its structure • plan the features of a web page • consider the ownership and use of images (copyright) • outline the need for a navigation path • recognise the implications of linking to content owned by other people	as something that is changeable • explain why a variable is used in a program • choose how to improve a game by using variables • design a project that builds on a given example • use my design to create a project • evaluate my project	a spreadsheet • build a data set in a spreadsheet • explain that formulas can be used to produce calculated data • apply formulas to data • create a spreadsheet to plan an event • choose suitable ways to present data	can work in three dimensions on a computer • identify that digital 3D objects can be modified recognise that objects can be combined in a 3D model • create a 3D model for a given purpose • plan my own 3D model • create my own digital 3D model	run on a controllable device • explain that selection can control the flow of a program • update a variable with a user input • use an 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
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.	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.	variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare	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	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	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.