



Computing Curriculum

Computing Overview

	Autum	ın Term	Spring	g Term	Summ	er Term
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year	r 1 Internet	Grouping	Pictograms	Animation	Lego builders	Spreadsheets
ı	safety	and sorting	Coding	story books	Maze explorers	Technology outside school
Year	Online Safety	Questioning	Creating Pictures	Making Music	Coding	Searching Presenting Ideas
Yea	Coding	Spreadsheets Online safety	Typing	E-mail	Branching Databases	Simulations Graphing
Year	Coding	Online Safety Spreadsheets	Writing for Different Audiences	Logo	Animation	Effective Searching Hardware Investigators
Year	Coding Online Safety	Databases	Concept Maps	Spreadsheets	Game Creator	3D Modelling
Year	Coding Online Safety	Spreadsheets Floor Floor Money Particle 12:00 Total 15:50 Total 1	Blogging	Text Adventures	Networks	Quizzing

	Autumn	Term	Spring '	Term	Summ	er Term
	Internet safety	Grouping and	Pictograms	Animation story	Lego builders	Spreadsheets
		sorting	Coding	books	Maze explorers	Technology outside school
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What is a password and why should we keep them safe? Where is my work stored?	In what ways can we sort objects?	What is coding? How can you make characters move in a program?	What is an animated story?	What is an instruction? Why do we need to debug code?	What does a spreadsheet look like? What is technology and how does it make our lives easier?
Key skills	Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Use logical reasoning to predict the behaviour of simple programs	Use technology purposefully to create, organise, store, manipulate and retrieve digital content Recognise common uses of information technology beyond school
Key learning	Log in safely. Learn how to find saved work To start to add pictures and text to work. Learn how to open, save and print. Understand the importance of logging out.	To sort items using a range of criteria. To sort items on the computer	Understand that data can be represented in picture format. Contribute to a class pictogram. Use a pictogram to record the results of an experiment. Understand what coding means. Use design mode to set up a scene. Add characters. Use code blocks to make the character perform actions. Use collision detection. Save and share work. To know the save, print, open and new icon.	To introduce e-books. Add animation to a story. Add sound to a story, including voice recording and music the children have composed. Work on a more complex story, including adding backgrounds and copying and pasting pages. Share e-books on a class display board.	Follow and create simple instructions on the computer. Consider how the order of instructions affects the result. Understand the functionality of the direction keys. Understand how to create and debug a set of instructions (algorithm). Use the additional direction keys as part of an algorithm. Understand how to change and extend the algorithm list. Create a longer algorithm for an activity.	To know what a spreadsheet program looks like. How to enter data into spreadsheet cells. Add clipart to cells. To use 2Calculate control tools: lock, move cell, speak and count. To walk around the local community and find examples of where technology is used. To record examples of technology outside school.
Key Vocabulary	Log in, username, password, my work, log out, save	Sort, criteria	Pictogram, data, collate Action, background, button, character, coding, coder, command, input, output, program,	Animation, e- book, font, file, sound effect	Instruction, algorithm, computer, program, debug Direction, challenge, arrow, undo, rewind, forward, backwards, right turn, left turn.	Arrow keys, backspace, cursor, column, cell, clipart, delete, tool, spreadsheet Technology

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	Autumn			ng Term	Summer Term		
	Spreadsheets Online Safety	Questioning ?	Creating Pictures	Making Music	Coding	Effective Searching Presenting Ideas	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
Key Questions	How could a spreadsheet help when you are planning shopping? What is an email? What is meant by digital footprint/tattoo?	How does a pictogram show information? How can a database help organise information?	What are the main features of impressionism, pointillism and surrealism?	What is meant by digital music? How can I change how my music sounds?	What is an algorithm? Why is it useful in coding?	How can I search the internet? What do we need to think about when planning a presentation?	
Key skills	Use logical reasoning to predict the behaviour of simple programs.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise instructions. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Create and debug simple programs. -Use logical reasoning to predict the behaviour of simple programs.	Use logical reasoning to predict the behaviour of simple programs. Create and debug simple programs. Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	
	Online safety key skills Recognise common uses o information private; identify other online technologies, and support when they ha	y where to go for help Use technology safely ve concerns about co	and support when the and respectfully, keen tent or contact on	ney have concerns about of eping personal information the internet or other online	content or contact of private; identify whe technologies.	personal on the internet or ere to go for help	
Key learning	Learn how to copy and paste. Use the totalling tools. Use a spreadsheet for money calculations. Use the equals tool to check calculations. Collect data and produce a graph. To know how use the search tool. Use digital technology to share work. Have some knowledge and understanding about sharing more globally on the Internet. Introduce Email as a communication tool. Understand how we should talk to others in an online situation. Open and send simple online communications. Understand that information put online leaves a digital footprint. Identify the steps that can be taken to keep personal data secure.	Learn about data handling tools that can give more information than pictograms. Use yes/no questions to separate information. Construct a binary tree to identify items. Use 2Question (a binary tree database) to answer questions. Use a database to answer more complex search questions. Use the Search tool to find information	Learn the functions of the 2Paint a Picture tool. Learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). Recreate Pointillist art and look at the work of pointillist artists such as Seurat. Learn about the work of Piet Mondrian and recreate the style using the lines template. Learn about the work of William Morris and recreate the style using the patterns template.	Make music digitally using 2Sequence. Explore, edit and combine sounds. Edit and refine composed music. Think about how music can be used to express feelings and create tunes which depict feelings. Upload a sound from a bank of sounds into the sounds section. Record and upload environmental sounds into Purple Mash. Use these sounds to create tunes in 2Sequence.	Understand what an algorithm is. Design algorithms and then code them. Compare different object types. Use the repeat command. Use the timer command. Know what debugging is and debug programs.	Understand the terminology associated with searching. Gain a better understanding of searching on the Internet. Create a leaflet to help someone search for information on the Internet. Explore how a story can be presented in different ways. Make a quiz about a story or class topic. Make a fact file on a non-fiction topic. Make a presentation to the class.	
Key Vocabulary	Backspace, copy, paste, column, cell, count tool, delete key, equals tool, lock tool, move cell, rows Search, internet, safety, sharing, email, attachment, digital footprint/tattoo	Pictogram, question, data, collate, database	Impressionism, palette, pointillism, share, surrealism, template	BPM (beats per minutes), composition, digitally, instrument, music, sound effects, soundtrack, tempo, volume	Action, algorithm, bug, design, input, command, debug, , output, object, repeat properties, , scale, time, when clicked	Internet, search, search engine Concept map, node, animated, quiz, non-fiction, presentation, narrative, audience.	

	Autum	Sprin	g Term	Sumi	mer Term	
	Coding	Spreadsheets Online safety	Typing	E-mail	Branching Databases	Simulations Graphing
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What does selection mean in coding? How can you use a variable in coding?	Why should we keep passwords safe? How would you collect data and what sort of graph would you create?	Why should I type certain keys with certain fingers?	What is email? What information can I send in an email?	What is a database? What is meant by data? What is a branching database?	What is a computer simulation? What is a graph? What are the frame lines on a graph called? What different kind of graphs are there?
Key skills	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.	Use sequence, selection and repetition in programs; work with variables and various forms of input and output. 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.	Select, use and combine a variety of software on a range of digital devices.	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.	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 Select, use and combine a variety of software 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.
Key learning	Use fechnology sarely, reconcerns about content Design algorithms using flowcharts. Design an algorithm that represents a physical system and code this representation. Use selection in coding with the 'if' command. Understand and use variables in 2Code, Deepen understanding of the different between timers and repeat commands.	spectfully and responsibly; reand contact. Use the symbols more than, less than and equal to, to compare values. Collect data and produce a variety of graphs. Learn about cell references Know what makes a safe password and how to keep them safe. Understand how the Internet can be used in effective communication. Understand how a blog can be used to communicate with a wider audience. Consider the truth of the content of websites. Learn about the meaning of age restrictions on digital media and devices.	Introduce typing terminology. Understand the correct way to sit at a keyboard. Learn how to use the home, top and bottom row keys. Practice typing with the left and right hand.	Think about different methods of communication. Open and respond to an email using an address book. Learn how to use email safely. Add an attachment to an email. Explore a simulated email scenario.	Sort objects using just 'yes' or 'no' questions. Complete a branching database. Create a branching database of the children's choice	Consider what simulations are. Explore a simulation. Analyse and evaluate a simulation. Enter data into a graph and answer questions. Solve an investigation and present the results in graphic form.
Key Vocabulary	Action, algorithm, bug, design, input, command, control, debug, event, if, output, object, repeat properties, , scale, time, when clicked, variable.	Password, internet, blog, concept map, username, website webpage, spoof website, PEGI rating copy, paste, column, cells, delete key, equals tool, rows, move cell	Posture, top row keys, home row keys, bottom row keys, space bar	Communication, email, compose, send, report, attachment, address book, save to draft, password, cc, formatting.	Branching database, data, database, question	Simulation Graph, field, data, bar chart, block graph, line graph

		mn Term		Term		ner Term		
	Coding	Online Safety Spreadsheets	Writing for Different Audiences	Logo	Animation	Effective Searching Hardware Investigators		
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2		
Key Questions	How can variables be useful when coding? What do the terms decomposition and abstraction mean?	What is meant by a digital footprint? What is SPAM? What is meant by plagiarism?	Why should I change the font when I am writing?	What is Logo?	What is an animation? What is onion skinning?	What is a search engine? What is the difference between hardware and software?		
Key skills	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	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Use sequence, selection and repetition in programs; work with variables and various forms of input and output	Select, use and combine a variety of software 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. Solve problems by decomposi ng them into smaller parts. Use sequence, selection and repetition in programs; work with variables and forms of input and output	Select, use and combine a variety of software 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. 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		
Key learning	Use selection in coding with the 'if/else' command. Understand and use variables Use flowcharts for design of algorithms including selection. Use the 'repeat until' with variables to determine the repeat. Learn about and use computational thinking terms decomposition and abstraction	Formatting cells as currency, percentage, decimal to different decimal places or fraction. Using the formula wizard to calculate averages. Combining tools to make spreadsheet activities such as timed times tables tests. Using a spreadsheet to model a real-life situation. To add a formula to a cell to automatically make a calculation in that cell	Explore how font size and style can affect the impact of a text. Use a simulated scenario to produce a news report. Use a simulated scenario to write for a community campaign.	Learn the structure of the coding language of Logo. To input simple instructions in Logo. Use 2Logo to create letter shapes. Use the repeat function in Logo to create shapes. Use and build procedures in Logo.	Discuss what makes a good animated film or cartoon. Learn how animations are created. Learn about onion skinning in animation. Add backgrounds and sounds to animations. Introduce 'stop motion' animation. Share their animations.	Locate information on the search results page. Use search effectively to find out information. Assess whether an information source is true and reliable Understand the different parts that make up a computer. Recall the different parts that make up a computer.		
Key Vocabulary	benefits of installing sof and understand the co	can protect themselves online a tware including apps. Understa onsequences of plagiarism. Identance of balancing game and staverage, advance mode, copy and paste, columns, cells, charts, equals tool, formula, wizard, move cell, random tool, rows, spin tool, spreadsheets, timer Computer virus, cookies, copyright, digital footprint, email, identity theft, malware, phishing, plagiarism, spam	nd that copying the tify the positive and	work of others and p	resenting it as their ow	n is called 'plagiarism'		

	Autumr	n Term	Sprin	g Term	Summer Term		
	Coding Online Safety	Databases	Spreadsheets	Game Creator	3D Modelling	Concept Maps	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
Key Questions	How would use variables to make a timer countdown and a score pad for a game? What does simulating a physical system mean?	In what ways can I sort information in a database? Why is the collaborative feature important?	How would you add a formula so that the cell shows the product of two other cells.	What makes a good computer game? Why is it important to continually evaluate your game?	How can objects designed be furned into 3D objects? How is CAD software used in industry?	What is a concept map? How is information presented on a concept map? How can it help share ideas?	
Key skills	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.	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.	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. Select, use and combine a variety of software 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.	Select, use and combine a variety of software 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.	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.	
	concerns about content To gain a greater underst advantages, disadvantag inappropriate text, photo	and contact. anding of the impact tho ges, permissions and purp graphs and videos and t	at sharing digital conte coses of altering an imo he impact of sharing th	nle/unacceptable behaviou nt can have. Know how to age digitally and the reason nese online. Learn about ho of sources to check validity	maintain secure pas ns for this. Be aware o ow to reference sour	swords. Understand the of appropriate and ces in their work	
Key learning	Represent a program design and algorithm. Create a program that simulates a physical system using decomposition. Explore string and text variable types so that the most appropriate can be used in programs. Use the launch command Program a playable game with timers and	Learn how to search for information in a database. Contribute to a class database. Create a database around a chosen topic.	Use the formula wizard to add a formula to a cell to automatically make a calculation. Copy and paste. Test a hypothesis. Add a formula to a cell to automatically make a calculation in that cell. Use a spreadsheet	Set the scene. Create the game environment. Create the game quest. Finish and share the game. Evaluate their and peers' games.	To be introduced to 2Design and Make and the skills of computer aided design. Explore the effect of moving points when designing. Understand designing for a purpose. Understand	Understand the need for visual representation when generating and discussing complex ideas. Use the correct vocabulary when creating a concept map. Create a concept map. Understand how a concept map can be used.	
	score pad.		to model a real-life situation and answer questions.		printing and making.	Create a collaborative concept map and present this to an audience.	
Key Vocabulary	Action, alert, algorithm, action, bug, code design, command, control, debug, design mode, event, get input, if, input, output, object, repeat, sequence, selection, simulation, timer, variable	Avatar, binary tree, charts, collaborative, data, database, find, record, sort, group, arrange, statistics, reports, table	Average, timer advance mode, copy, paste, columns, cells, charts, equals tool, formula, formula wizard, move cell tool, random tool, rows, spin tool, spreadsheets,	Animation, computer game, customise, evaluation, image, instructions, interactive, screenshot, texture, perspective, playability	Computer aided design, modelling, 3D, viewpoint, polygon, 2D, net, 3D printing, points, template	Audience, collaboratively, concept, concept map, connection, idea, node, thought, visual	

	Autumn Term		Spring	Term	Summer Term	
	Coding	Spreadsheets	Blogging	Text	Networks	Quizzing
	Online Safety			Adventures	7 7 600	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Questions	What is a function in coding? How can a program receiver user input? Why do I need to be aware of the dangers of being online?	What is a computational model and what can it be used for? How would you add a formula so the cell shows the total of column of cells?	What is a blog? What can a blog be about? How are the audience involved in a blog?	What is a text based adventure? Why is important to plan a text based adventure?	What is the difference between the internet and the world wide web? What is the difference between a LAN and a WAN?	What factors do you need to consider when creating a quiz? What are the different types of questions?
Key skills	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 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 defect and correct errors.	Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	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.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Select, use and combine a variety of software 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 logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
Key learning	Use the program design process, including flowcharts, to develop algorithms for more complex programs using and understanding of abstraction and decomposition to define the important aspects of the program. Code, test and debug from these designs. Use functions and tabs to improve the quality of the code. To code user interactivity using input functions	Use a spreadsheet to investigate the probability of the results of throwing many dice. Using the formula wizard to add a formula to a cell to automatically make a calculation in that cell. Create graphs showing the data collected. Type in a formula for a cell to automatically make a calculation. Using a spreadsheet to create computational models and answer questions.	Identify the purpose of writing a blog and its key features. Plan and write a blog. Consider the effect upon the audience of changing the visual properties of the blog. Understand the importance of regularly updating the content of a blog. Understand how to contribute to an existing blog. Understand how and why blog posts are approved by the teacher.	Find out what a text adventure is. Plan a story adventure. Make a story-based adventure. Introduce map-based text adventures. Code a map-based text adventure.	To learn about what the Internet consists of. To find out what a LAN and a WAN are. To find out how the Internet is accessed in school. To research and find out about the age of the Internet. To think about what the future might hold.	To create a picture-based quiz for young children. To learn how to use the question types within 2Quiz. To explore the grammar quizzes. To make a quiz that requires the player to search a database.
Key Vocabulary	Online safety Identify benefits and risks of mapproval. Identify the benefit appropriate online behaviour and screen time with other particles of the propriate online behaviour and screen time with other particles of the propriet of the p	nobile devices broadcast s and risks of giving perso . To begin to understand	ring the location of the anal information. To revie how information online	ew the meaning of a can persist. Understo	digital footprint. To ha	ave a clear idea of f balancing game

