Computing – Long Term Plan – 2022/2023

	Computing	Term 1	<u>Term 2</u>	Term 3	Term 4	Term 5	<u>Term 6</u>	<u>NC Aims</u>	
EYFS	Personal, Social and Emotional Development Physical Development Expressive Arts and Design Understanding the World	Mini Mash: Opportunities to engage with computing in these areas: Expressive arts, Literacy, Mathematics, Physical development, PSED, Understanding the world, Communication and language. Example: Communication and language: SimpleCity (e.g. farm, vets etc), Slideshows, Topic Stories, 2Create a story, Mashcams (role play), 2Go (directional language), 2Beat (rhythms) and 2Explore (instruments) *All nits downloaded in Curriculum / Computing / Reception schemes of learning							
Y1	Computer Science (How computers and computer systems work and how they are designed and programmed)	Unit 1.1 Online safety (4) - Log in / log out - Save and retrieve work - Using Purple Mash / tools NC: 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.	Unit 1.2 Grouping and sorting (2) - sorting against criteria both offline and online NC: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Unit 1.3 Pictograms (3) - data in pictures - pictograms - recording results NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Unit 1.5 Maze explorers (3) - Direction keys - Debug set of instructions - Creating and extending algorithms NC: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. NC: Create and debug simple programs NC: Use logical reasoning to predict the behaviour of simple programs. Unit 1.9 Technology outside school (2) - Technology in the community NC: Recognise common uses of information technology beyond school	Unit 1.7 Coding (6) - Instructions - Objects and actions - Events - How code executes - Backgrounds / scale - Plan and make computer program NC: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. NC: Create and debug simple programs NC: Use logical reasoning to predict the behaviour of simple programs. NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Unit 1.8 Spreadsheets (3) - Navigate spreadsheets - Images / move / lock - 'Speak' and 'count' tools NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content Unit 1.4 Lego builders (3) - Following instructions - Creating instructions - Ordering instructions NC: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Unit 1.6 Animated story books (5) - Draw and create - Animation - Sounds - Making a story - Copy / paste NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content	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	
Y2	Information Technology (the purposeful use of existing programs to develop products and solutions) Digital Literacy (the skills, knowledge and understanding needed in order to participate fully and safely in an increasingly digital world)	Unit 2.4 Questioning (5) - creating pictograms - Y/N questions to separate information - Binary trees - Databases NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Unit 2.8 Presenting ideas (4) - Presenting stories in different ways - Quizzes - Fact files: clipart, tables etc. - Present digital content NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Unit 2.2 Online Safety (3) - Searching and sharing - Email - Digital footprint NC: 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. Unit 2.7 Making music (3) - Digital sounds: explore, edit, combine - Adding sounds to express feelings - Upload and record sounds NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Unit 2.1 Coding (6) - Algorithms - Collision detection event - Timed sequences - Coding events - Buttons in a program - Debugging NC: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. NC: Create and debug simple programs NC: Use logical reasoning to predict the behaviour of simple programs.	Unit 2.6 Creating pictures (5) - Paint package to recreate art: Impressionist Pointillist Mondrian William Morris Surrealist NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Unit 2.3 Spreadsheets (4) - Reviewing spreadsheets (from Y1) - Copying/pasting - Adding amount - Tables/block graphs NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content Unit 2.5 Effective searching (3) - Internet searching and key terminology - Search engine and web pages - Effective searching NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content NC: Recognise common uses of information technology beyond school	 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. 	
Y3	Computer Science	Unit 3.4 Touch typing (4) - Home, top, bottom rows of keys	Unit 3.2 Online Safety (3) - Passwords, communication online, blogs	Unit 3.5 Email (including email safety) (6) - Types of communication - Composing emails	Unit 3.1 Coding (6) - Flow charts - Timers - Repeat command	Unit 3.9 Presenting (5/6) Microsoft PowerPoint - Creating a page - Media	Unit 3.6 Branching databases (4) - Sorting objects Yes/No - Branching databases	The national curriculum for computing aims to ensure that all pupils:	

Computing – Long Term Plan – 2022/2023

Computing	<u>Term 1</u>	<u>Term 2</u>	<u>Term 3</u>	<u>Term 4</u>	<u>Term 5</u>	<u>Term 6</u>	<u>NC Aims</u>
(How computers and computer systems work and how they are designed and programmed) Information Technology	- Two hands to improve typing - Left/right hands NC: 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,	 Information on websites: are they always true? Restrictions, PEGI, symbols, inappropriate content, reporting NC: Use technology safely, respectfully 	- Safety - Attachments - Email simulations NC: Understand computer networks, including the Internet; how they can provide multiple services, such as the World Wide Web; and the opportunities	- Code, test and debug - Design/create interactive scene NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing	- Animation - Timings NC: 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,	NC: 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	can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data
(the purposeful use of existing programs to develop products and solutions)	including collecting, analysing, evaluating and presenting data and information <u>Unit 3.8 Graphing (3)</u> - Entering data to produce graphs	and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Unit 3.3 Spreadsheets (3) - Pie charts / bar graphs from	they offer for communication and collaboration. NC: 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	them into smaller parts. NC: Use sequence, selection and repetition in programs; work with variables and various forms of input and output	including collecting, analysing, evaluating and presenting data and information NC: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Unit 3.7 Simulations (3) - Real and imaginary simulations; pros and cons - Explore: choices and effects - Patterns, predictions,	 representation can analyse problems in computational terms, and have
Digital Literacy (the skills, knowledge and understanding needed in order to participate fully and safely in an increasingly digital world)	- Sorting and analysis NC: 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	date set - more than, less than, equal to tools NC: 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	content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information NC: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	NC: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs		evaluation NC: 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	 repeated practical experience of writing computer programs in order to solve such problems can evaluate and apply information technology, including new or unfamiliar
Υ4	Unit 4.1 Coding (6) - Design, code, test, debug - IF statements - Co-ordinates - REPEAT, IF, ELSE - Variables NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC: Use sequence, selection and repetition in programs; work with variables and various forms of input and output NC: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs NC: 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	and presenting data and information Unit 4.3 Spreadsheets (6) - Cell formatting - Timer / Spin buttons - Line graphs - Budgeting - Exploring place value NC: 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	Unit 4.4 Writing for different audiences (5) - Font styles - News reports - Community campaign NC: 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	Unit 4.2 Online Safety (4) - Phishing - Malware - Plagiarism - Healthy screen time NC: 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. NC: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Unit 4.9 Making music (4) - Elements of music - Experiment with rhythm and tempo - Create melodic phrases - Compose electronic music NC: 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	 Unit 4.5 Logo (4) Inputting instructions Creating instructions REPEAT command Build procedures NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC: Use sequence, selection and repetition in programs; work with variables and various forms of input and output NC: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Unit 4.8 Hardware Envestigators (2) Hardware Parts of a computer NC: 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. 	Unit 4.7 Effective searching (3) - Using a search engine - Locating information - Reliable sources NC: 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. NC: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Unit 4.6 Animation (3) - Animation frames - Onion skinning, sounds backgrounds - Stop-motion animation NC: 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	 technologies, analytically to solve problems are responsible, competent, confident and creative users of information and communication technology.
Computer Science(How computers and computer systems work and how they are designed and programmed)	Unit 5.8 Word processing (8) Microsoft Word - Creating from a blank page - Inserting images (Copyright) - Editing images - Text	Unit 5.1 Coding (6) - Simplifying code - Program a simulation e.g. traffic lights - Decomposition and abstraction	Unit 5.5 Game creator (5) - Planning a game - Game environment - Quest (to make game playable) - Instructions	Unit 5.3 Spreadsheets (6) - Formulae in a spreadsheet - Count tool - Formulas for perimeter and area of shape - Text variables	Unit 5.4 Databases (4) - Searching in a database - Enter information - Create database NC: Select, use and combine a variety of software (including internet services) on	Unit 5.6 3D modelling (4) - Moving points when designing - Designing for a purpose - Printing and making NC: Select, use and combine a variety of software (including internet services) on	The national curriculum for computing aims to ensure that all pupils: can understand and apply

Computing – Long Term Plan – 2022/2023

	Computing	<u>Term 1</u>	<u>Term 2</u>	<u>Term 3</u>	<u>Term 4</u>	<u>Term 5</u>	<u>Term 6</u>	<u>NC Aims</u>
	Information Technology (the purposeful use of existing programs to develop products and solutions) Digital Literacy (the skills, knowledge and understanding	- Using templates NC: 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	- Text variable and concatenation NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC: Use sequence, selection and repetition in programs; work with variables and various forms of input and	NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. NC: 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	NC: 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	content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Unit 5.2 Online Safety (4) - Responsibilities, support and SMART rules - Protecting privacy - Citing sources - Reliability	content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Unit 5.7 Concept maps - Intro to concept mapping - Create basic concept map - Informative text - Collaborative concept mapping	 concepts of computer science, including abstraction, logic, algorithms and data representation can analyse problems in computational terms, and hav
	needed in order to participate fully and safely in an increasingly digital world)		output NC: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs NC: 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		NC: 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. NC: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	NC: Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. NC: 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	 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
		Unit 6.1 Coding (6)	and presenting data and information Unit 6.2 Online Safety (2)	Unit 6.3 Spreadsheets (5)	Unit 6.4 Blogging (4)	Unit 6.7 Quizzing (6)	Unit 6.9 Spreadsheets (8)	
		 Designing and making more complex programs Functions Flowcharts User input Using text-based adventures 	 Mobile device broadcasting, secure sites, personal information Online behaviour Screen time 	 Exploring probability Formula for creating discounts / sales Spreadsheets for planning Model a real-life situation 	 Features of a blog Collaborative planning Writing a blog Sharing posts and commenting 	 Picture-based quizzes Question types Grammar Database 	Microsoft Excel - Navigating - Basic calculations - Modelling - Organising data - Formulae for percentages,	 are responsible, competent, confident and creative users of information and communication technology.
		NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	NC: 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. NC: Use search technologies effectively.	NC: 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	NC: 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. NC: Select, use and combine a variety of	binary (4) - What is binary? - Counting in binary - Decimal to binary - Game states	averages, max, min - Charts and graphs - Planning and solving problems NC: Select, use and combine a variety of software (including internet services) on	
		NC: Use sequence, selection and repetition in programs; work with variables and various forms of input and output NC: Use logical reasoning to explain how some simple algorithms work and to	appreciate how results are selected and ranked, and be discerning in evaluating digital content. NC: Use technology safely, respectfully and responsibly; recognise		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	NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	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	
Y6		detect and correct errors in algorithms and programs NC: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and	acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. Unit 6.5 Text adventures (5) - Planning, making text		NC: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	NC: Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs NC: Select, use and combine a variety of software (including internet services) on		
		create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information	adventure - Map-based - Coding a map-based text adventure		Unit 6.6 Networks (3) - WWW and Internet - School network (LAN WAN)	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		
			NC: Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.		- History if Internet, future, Tim Berners-Lee NC: Understand computer networks, including the Internet; how they can provide multiple services such as the			
			NC: Use sequence, selection and repetition in programs; work with variables and various forms of input and output		provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration. NC: Select, use and combine a variety of			
			NC: Use logical reasoning to explain how some simple algorithms work and to		software (including internet services) on a range of digital devices to design and create a range of programs, systems and			

Computing – Long Term Plan – 2022/2023

	Computing	Term 1	Term 2	<u>Term 3</u>	Term 4	<u>Term 5</u>	<u>Term 6</u>	<u>NC Aims</u>	
			detect and correct errors in algorithms and programs NC: 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		content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information				
KS3	Aims: The national curriculum for computing aims to ensure that all pupils: Aims to ensure that a								