Computing 2023 – 2024

School Drivers	
21st Century Citizen Understanding of the wider world Sense of community rights and responsibilities	**Independent Learners** Independent Resilient Able to solve problems Creative and curious Able to think critically

NC Links - KS1

1. 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.
2. Recognise common uses of information technology beyond school
3. Use technology purposefully to create, organise, store, manipulate and retrieve digital content
4. Use logical reasoning to predict the behaviour of simple programs
5. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
6. Create and debug simple programs

NC Links – KS2

1. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
2. 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
3. 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
4. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
5. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
6. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
7. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	**Online Safety** To identify devices that can be used to access the internet. Search and Access Resources ▸ Strand ▸ Managing Online Information ▸ Early Years - 7 (projectevolve.co.uk) Vocab: devices, internet		**Online Safety** To know where to go for help and support with online issues. Follow Smartie the penguin advice song Smartie Penguin HD | Internet Safety Story for Early Years - YouTube Vocab: online, help, support		**Online Safety** To know what videos are appropriate and inappropriate to watch. Jesse & Friends Episode 1 Jessie Friends videos (thinkuknow.co.uk) Vocab: appropriate, inappropriate	
	Information Technology Core Learning: Use the central button and touch screen on an iPad Swipe the screen on a touch screen iPad Open an App. on an iPad Vocabulary: **iPad**, central button, screen, swipe, computer,	**Information Technology** Core Learning: To begin to use a computer mouse to open programmes To take a photo on an iPad To navigate back to the home screen independently Vocabulary: Mouse, home screen,	**Computer Science** Core Learning: To know the 4 basic commands to program a robot device Beebot - Forwards, backwards, left and right Vocabulary: Commands, instructions, forwards, backwards, left, right, turn, program, robot, device	**Computer Science** Core Learning: To use the four basic commands to reach an end goal/outcome Beebot – change outcome and points to pass (relet to English texts where possible) Vocabulary: **Command**/outcome	**Information Technology** Core Learning: To use the space bar, enter, delete and arrow keys on a keyboard To flip the screen and take a photo of yourself (iPad) Zoom in and out on a touch screen iPad Vocabulary: Enter, delete, space bar, arrow keys Zoom in, zoom out, flip screen	**Information Technology** Core Learning: To begin to type the letters of the alphabet using a lowercase keyboard To begin to type numbers Vocabulary: keyboard, type
Year 1	**NC Links: 1 - Online Safety** To know that images can be shared more widely than you first expect. Jesse & Friends Episode 2 Jessie Friends videos (thinkuknow.co.uk) Vocab: images		**NC Links: 1 - Online Safety** To identify some examples of personal information Search and Access Resources ▸ Theme ▸ Privacy and Security (projectevolve.co.uk) To know when playing online games, they should keep their personal information private. Jesse & Friends Episode 3 Jessie Friends videos (thinkuknow.co.uk) Vocab: personal information		**NC Links: 1 - Online Safety** To know about the dangers of in-app purchasing and pop ups. Child Net –Year 1 – Story A Smartie the Penguin | Childnet Vocab: in app purchasing, pop-ups	
	NC Links: 2 & 3 **Computing Systems and Networks – Technology around us** (Paintz.app) Core learning: To identify different technology around us To switch on and log on to a computer To use a mouse to click and drag	**NC Links:** 3 **Creating Media – Digital Painting** (Paintz.app) Core learning: To make marks on a screen and explain which tools have been used To use shape and line tools effectively To choose appropriate shapes and colours	**NC Links:** 3 **Creating Media – Digital Writing** (Word) - NOT Teach Computing Core learning: To select all of text by clicking and dragging To use 'undo' to remove changes To position the curser into text to add or remove typing	**NC Links:** 3 **Data and Information - Grouping Data** (During this unit, children will be saving their documents – additional support and time may be required to facilitate this) Core learning: To describe objects using labels To group objects	**NC Links:** 4,5 & 6 **Programming – Moving a robot** (Beebots) Core learning: To explain what a given command will do To follow instructions and give directions To compare forwards and backwards movements and predict the outcomes of a sequence	**NC Links:** 4,5 & 6 **Programming – Programming animations** (Scratch Junior) Core learning: To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value

	To use a mouse to open a program To use a mouse to create a picture Information Technology To type in capital letters using the 'caps lock' key To use backspace to remove text Vocabulary: Technology, log on, **mouse**, click and drag, **keyboard**, caps lock	To explain that different paint tools do different jobs To use a computer on my own to paint a picture To compare a digital painting with a paper painting Vocabulary: **Screen**, tools, digital	To change the font, font size and font colour Vocabulary: Select, clicking and dragging, undo, curser, font	To find objects with similar properties To count how many objects share a property To decide how to group objects to answer questions To record and share findings Vocabulary: Labels, properties, record	To experiment with and compare left and right turns To plan a simple program To find more than one solution to a problem Vocabulary: Command, instructions, outcomes, sequence, program, solution	To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program Vocabulary: **Command**, value, sprite, algorithm
Year 2	**NC Links: 1 - Online Safety** To know who to ask for help with upsetting images. Child Net –Year 2 – Story B Smartie the Penguin | Childnet Vocab: **images**		**NC Links: 1 - Online Safety** To know the importance of treating each other well and being a responsible online citizen. Lee and Kim's adventure Lee and Kim's Adventure - Safer Internet Day Animation | LEAP Vocab: online citizen		**NC Links: 1 - Online Safety** To know how to create a strong password. Twinkl - Perfect Passwords To know that a password should be changed occasionally. Watch videos on how to change passwords on popular games and social media sites that the children have heard of. Search and Access Resources ▸ Theme ▸ Privacy and Security (projectevolve.co.uk) Vocab: password	
	NC Links: 1 & 2 **Computing Systems and Networks – IT around us** Core learning: To describe some uses of computers/technology To sort school IT by what it is used for To identify uses of IT beyond school Information Technology To identify the toolbar and use bold, italic and underline functions Vocabulary: **Technology**, **computers**, **devices**, toolbar, bold,	**NC Links:** 3 **Creating Media – Digital Photography** (Camera devices, Pixlr app) Core learning: To use a digital device to take photographs To make changes when taking a photograph To describe what makes a good photograph To describe what can improve a photograph To use a tool to change a photograph To recognise that photos can be changed Vocabulary:	**NC Links:** 1, 2 & 3 **Creating Media – Making Music** Core learning: To say how music can make us feel To create a rhythm pattern To experiment with sounds using a computer To experiment with pitch To refine a musical pattern on a computer To add a sequence of notes to my rhythm To explain how I changed my work Vocabulary: **images**, rhythm, pitch, sequence	**NC Links:** 3 **Data and Information – Pictograms** (J2E pictogram, Microsoft Packages) Core learning: To tally objects using a common attribute To answer questions about an attribute To collect data, create a pictogram and draw conclusions from it To use a computer program to present information in different ways To explain that we can use a computer to represent information	**NC Links:** 4,5 & 6 **Programming – Robot Algorithms** (Beebots) Core learning: To follow instructions given by someone else To use the same instructions to create different algorithms and outcomes To use an algorithm to program a sequence on a floor robot To predict the outcome of a sequence To create my own mat for a floor robot – explain choices, identify and test different routes	**NC Links:** 1,4,5 & 6 **Programming – Programming quizzes** (Scratch Junior – programming animations) Core learning: To predict the outcome of a sequence of commands To match two sequences with the same outcome To change the outcome of a sequence of commands To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved

	italic, underline, select, font, cursor	**Digital device**, digital photograph,		Vocabulary: Data, tally, pictogram, attribute,	To create an algorithm to create a program To test and debug each part of my program Vocabulary: **Instructions**, **algorithm**, **outcome**, **program**, **robot**, route, **debug**	Vocabulary: **Sequence**, **commands**, design
Year 3	**NC Links: 1 - Online Safety** To know the age restrictions for online games and social media sites. Search and Access Resources ▸ Theme ▸ Health, Well-being and Lifestyle (projectevolve.co.uk) Vocab: age restriction, social media		**NC Links: 1 - Online Safety** To beware of what is shared online and ask permission www.Beinternetlegends.withgoogle.com Episode 2 – Beware what you share. Vocab: permission		**NC Links: 1 - Online Safety** To understand that people may not be who they say they are online. Discuss false identity and scamming www.Beinternetlegends.withgoogle.com Episode 1 – This could be a scam Vocab: **online**	
	NC Links: 2 & 3 **Computing Systems and Networks – Connecting Computers** (tuxpaint or Paintz.app) Core learning: To explain that digital devices have inputs and outputs To follow and describe a simple process To design a digital device To suggest differences between using digital devices and non-digital tools To explore how digital devices can be connected Information Technology Core learning: To use bullet points To use the shift key Vocabulary: Inputs, outputs, networks, bullet points, shift	**NC Links: 3** **Creating Media – Animation** (Tablet/iPad unit – uses iMotion & stop frame animation) Core learning: To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To evaluate the quality of a animation To improve an animation based on feedback To add other media to an animation Vocabulary: Animation, **sequence**, **images**, media	**NC Links: 3** **Creating Media – Desktop publishing** (Adobe Spark – Spark accounts are needed. This is web based) Core learning: To recognise how text and images convey information To recognise that text and layout can be edited To change font style, size and colours for a given purpose To choose appropriate page settings To add content to a desktop publishing programme Vocabulary: Text, layout, edit, **font**, content	**NC Links: 2 & 3** **Data and Information – Branching Databases** (j2data pictogram, Branch and database tools - PowerPoint) Core learning: To create questions with yes/no answers To identify the attributes needed to collect data about an object To create a branching database To explain why it is helpful for a database to be well structured To plan the structure of a branching story To independently create an identification tool Vocabulary: **Data**, branching database, identification	**NC Links: 5, 6 & 7** **Programming A – Sequencing sounds** (Scratch) Core learning: To explore a new programming environment To identify that commands, have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of a project To create a project from a task description Vocabulary: **Commands**, **sequence**, appearance, project	**NC Links: 5, 6 & 7** **Programming B – Events and actions in programs** (Scratch) Core learning: To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop a program by adding features To identify and fix bugs in a program To design and create a maze-based program Vocabulary: Sprite, **directions**, adapt, features, bugs

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<tr><td>Year 4</td><td colspan="2">NC Links: 1 - Online Safety
To know how to report abuse or inappropriate content online using NSPCC guidance
www.nspcc.org.uk
Search and Access Resources ▸ Theme ▸ Online Bullying | ProjectEVOLVE (7-11)
Vocab: inappropriate content, abuse</td><td colspan="2">NC Links: 1 - Online Safety
To know how to be internet secure and recognise hacking and scamming.
To know that hacking and scamming is illegal.
www.Beinternetlegends.withgoogle.com
Episode 3 – This could be a scam.
Vocab: hacking, scamming, illegal</td><td colspan="2">NC Links: 1 - Online Safety
To plan a healthy balance of online and offline activities.
To describe how online activities can affect health and well-being in a positive and negative way.
Search and Access Resources ▸ Strand ▸ Health, Well-being and Lifestyle ▸ 7 - 11 (projectevolve.co.uk)
Vocab: online, balance</td></tr>
<tr><td></td><td>NC Links: 2 & 3
Computing Systems and Networks – The Internet
Core learning:
To recognise how networked devices make up the internet
To know how websites can be shared via the WWW
To evaluate the consequences of unreliable content
To identify the human elements of computer systems
Information Technology
To use ctrl – alt short cuts
To insert a table
Vocabulary:
world wide web (WWW), website, web page, unreliable content, web search, search engine</td><td>NC Links: 3
Creating Media – Audio Production (Audacity and headphones required)
Core learning:
To identify that sound can be recorded
To explain that audio recordings can be edited
To recognise the different parts of creating a podcast project
To apply audio editing skills independently
To combine audio to enhance a podcast project
To evaluate the effective use of audio
Vocabulary:
Record, audio, edit, podcast, enhance, evaluate</td><td>NC Links: 3
Creating Media – Photo editing
Core learning:
To explain that the composition of digital images can be changed
To explain that colours can be changed on digital images by using effects
To explain how cloning can be used in photo editing
To explain that images can be combined
To combine images for a purpose
Vocabulary:
Composition, digital images, cloning, combined</td><td>NC Links: 3
Data and Information – Data Logging
Core learning:
To explain that data gathered over time can be used to answer questions
To use a digital device to collect data automatically
To explain that a 'data logger' collects 'data points' from sensors over time
To recognise how a computer can help us analyse data
To identify the data needed to answer questions
To use data from sensors to answer questions
Vocabulary: data, data logger, data points, sensors</td><td>NC Links: 4, 5 & 6
Programming – Repetition in shapes (fmslogo & turtle academy)
Core learning:
To identify that accuracy in programming is important
To create a program in a text-based language
To explain what 'repeat' means
To modify a count-controlled loop to produce a given outcome
To decompose a task into small steps
To create a program that uses count-controlled loops to produce a given outcome
Vocabulary:
Accuracy, repetition, count-controlled loop, outcome, decompose</td><td>NC Links: 5, 6 & 7
Programming – Repetition in games (Scratch on a laptop – Scratch.mit.edu)
Core learning:
To develop the use of count-controlled loops in a different programming environment
To explain that in programming there are infinite loops and count-controlled loops
To develop a design that includes two or more loops which run at the same time
To modify an infinite loop in a given program
To design a project that includes repetition
To create a project that includes repetition
Vocabulary:
Infinite loops, modify, repetition</td></tr>
<tr><td>Year 5</td><td colspan="2">NC Links: 1 - Online Safety
To recognise how people can experience cyberbullying through a range of media (image, video, text, chat)
Search and Access Resources ▸ Theme ▸ Online Bullying | ProjectEVOLVE (7-11)
To know how to block abusive users.
Search and Access Resources ▸ Theme ▸ Online Bullying | ProjectEVOLVE (7-11)
Vocab: cyberbullying, block, abusive users</td><td colspan="2">NC Links: 1 - Online Safety
To know that some news is 'fake news'.
Lesson 1: Real versus fake news - BBC Teach
To describe strategies for safe and fun experiences in a range of online social environments (e.g. live streaming, gaming platforms)
Search and Access Resources ▸ Strand ▸ Online Relationships ▸ 7 - 11 (projectevolve.co.uk)
Vocab: fake news, social environments</td><td colspan="2">NC Links: 1 - Online Safety
To explain how an online identity can be different to an online identity
Search and Access Resources ▸ Strand ▸ Self-Image and Identity ▸ 7 - 11 (projectevolve.co.uk)
Vocab: online identity, offline identity</td></tr>
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<td>NC Links: 2 & 4
Computing Systems and Networks – Systems and searching
Core learning:
To identify how to use a search engine
To describe how search engines select results
To explain how search results are ranked
To recognise why the order of results is important
Information Technology
To edit a table – insert rows and columns, merge and split cells
Vocabulary:
Search engine, results, ranked, internet addresses, packets, data, online, private, public</td>
<td>NC Links: 3
Creating Media – introduction to vector graphics
To identify that drawing tools can be used to produce different outcomes
To create a vector drawing by combining shapes
To use tools to achieve a desired effect
To recognise that vector drawings consist of layers
To group objects to make them easier to work with
To apply what I have learned about vector drawings

Vocabulary:
Outcomes, vector drawings</td>
<td>NC Links: 3
Creating Media – Video production
To explain what makes a video effective
To use a digital device to record a video
To capture video using a range of techniques
To create a storyboard
To identify that video can be improved through reshooting and editing
To consider the impact of the choices made when making and sharing a video
Vocabulary:
Video, digital device, storyboard, editing</td>
<td>NC Links: 3
Data and Information – Flat file databases
Core learning:
To use a form to record information
To compare paper and computer-based databases
To answer questions by grouping and sorting data
To explain that tools can be used to select specific data
To explain that computer programs can be used to compare data visually
To use real-life databases to answer questions
Vocabulary:
Database, grouping, sorting, data</td>
<td>NC Links: 5, 6 & 7
Programming – Selection in quizzes (Scratch)
Core learning:
To explain how selection is used in computer programs
To relate that a conditional statement connects a condition to an outcome
To explain how selection directs the flow of a program
To design a program that uses selection
To create a program that uses selection
To evaluate a program
Vocabulary:
Selection, conditional statement, outcome, evaluate</td>
<td>NC Links: 5, 6 & 7
Programming – Selection in physical computing (Crumbles)
Core learning:
To control a simple circuit connected to a computer
To write a program that includes count-controlled loops
To explain that a loop can stop when a condition is met
To explain that a loop can be used to repeatedly check whether a condition has been met
To design a physical project that includes selection
To create a program that controls a physical computing project
Vocabulary:
Circuit, count-controlled loops, condition, selection</td>
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<td rowspan="2">Year 6</td>
<td colspan="2">NC Links: 1 – Online Safety
To describe how to capture cyberbullying content as evidence
Search and Access Resources ▸ Strand ▸ Online Bullying ▸ 7 - 11 (projectevolve.co.uk)
Vocab: cyberbullying, content, evidence</td>
<td colspan="2">NC Links: 1 – Online Safety
To know that many free apps may read and share information with others
Search and Access Resources ▸ Strand ▸ Privacy and Security ▸ 7 - 11 (projectevolve.co.uk)
To describe ways to increase privacy on apps
Search and Access Resources ▸ Strand ▸ Privacy and Security ▸ 7 - 11 (projectevolve.co.uk)
Vocab: apps, privacy</td>
<td colspan="2">NC Links: 1 – Online Safety
To know how to validate information found through searches and check more than one source of information.
To understand plagiarism and know that some content must not be used without permission from the owner.
Search and Access Resources ▸ Strand ▸ Copyright and Ownership ▸ 7 - 11 (projectevolve.co.uk)
Vocab: validate, plagiarism, permission</td>
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<tr>
<td>NC Links: 2 & 4
Computing Systems and Networks – Communication and collaboration
Core learning:
To explain the importance of internet addresses</td>
<td>NC Links: 3
Creating Media – web page creation
Core learning:
To review an existing website and consider its structure
To plan the features of a web page</td>
<td>NC Links: 3
Creating Media – 3D modelling (Tinkercad)
Core learning:
To recognise that you can work in three dimensions on a computer
To identify that digital 3D objects can be modified</td>
<td>NC Links: 3
Data and Information – Introduction to spreadsheets (Laptops)
Core learning:
To create a data set in a spreadsheet
To apply appropriate formats for a cell</td>
<td>NC Links: 5, 6 & 7
Programming – variables in games (Scratch)
Core learning:
To define a 'variable' as something that is changeable
To explain why a variable is used in a program</td>
<td>NC Links: 5, 6 & 7
Programming – Sensing movement (Microbits)
Core learning:
To create a program to run on a controllable device
To explain that selection can control the flow of a program</td>
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	To recognise how data is transferred across the internet To explain how sharing information online can help people to work together To evaluate different ways of working together online To recognise how we communicate using technology To evaluate different methods of online communication Vocabulary: internet addresses, **data, online, technology,**	To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people Vocabulary: website, web page, ownership, copyright	To recognise that objects can be combined in a 3D model To create a 3D model for a given purpose To plan and create a 3D model Vocabulary: Three dimensions, modified, **combined,** digital 3D objects	To explain that formulas can be used to produce calculated data To apply formulas to data To create a spreadsheet To choose suitable ways to present data Vocabulary: Data set, spreadsheet, formats, cell, formula, calculated data, present	To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project Vocabulary: **variable, program, design**	To update a variable with a user input To use a conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device Vocabulary: **device, program, variable, input, conditiona**l

	Curriculum End Points (NC)
End of KS1 End Points	Pupils should be able to: • 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 • Recognise common uses of information technology beyond school • 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.
End of KS2 End Points	Pupils should be able to: • 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 • 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 • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • 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 • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.