Gladstone Road Primary School - Computing

Curriculum Planning

Intent

The National Curriculum provides a structure and skill development for the Computing curriculum being taught. This is linked to our Learning Missions to provide a creative approach tailored to our children's needs, which reflects a balanced programme of study.

- Pupils' computing education begins in the early years and builds year on year, developing pupils' expertise.
- Curriculum plans have been sequenced effectively to ensure that pupils know more, remember more and are able to do more. We do so via Launch, re Launch and Landing
- Golden Threads, based on the three key strands: Computer Science, Information Technology and Digital Literacy have been identified for each year group and underpin the key knowledge and concepts taught through our curriculum.
- The organisation of the curriculum builds knowledge so that pupils can draw on it in future learning.
- Vocabulary has been identified and outlined clearly so that this can be taught explicitly within lessons.
- Clearly defined end points have been identified to ensure that pupils build upon prior learning and develop their knowledge of key concepts.
- Pupils commit knowledge to their long-term memory through recalling and repeated practice outlined in plans.
- Curriculum plans ensure that pupils use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour and identify a range of ways to report concerns about content and contact.

Implementation

We provide a range of opportunities and implement a range of teaching methods to ensure that over the course of study, teaching is designed to help learners to remember in the long term the content they have been taught and to integrate new knowledge into larger concepts.

- In EYFS, we implement technology through a wide range of technological toys. We use iPads to support reading, phonics and maths as well as teach children about the importance of keeping themselves safe when using electronic equipment and the internet.
- A well sequenced cycle of lessons carefully plans for progression and depth concentrating on the computing knowledge and skills suited to the age group.
- Lessons follow a consistent structure of: retrieval, explanation, application and assessment which may include such features as questioning, modelling, individual, partner, group or whole class activities.
- Learning Mission journeys reflect what is being taught, vocabulary, relevant diagrams, photos and knowledge organisers
- Learning mission books show a range of evidence and evidence high expectations.
- Our inclusive approach is demonstrated through the way in which tasks and activities are adapted to ensure that all pupils are able to access the curriculum.
- Through retrieval, teachers make sure that pupils can draw on what they already know so that they can remember more.
- Key vocabulary is explicitly taught to enable pupils to develop their range of geographical vocabulary and understanding.
- Assessment for learning strategies are used at the start, during and at the end of lessons to assess pupils' learning and identify any gaps or misconceptions.

Impact

Our Computing Curriculum is high quality, well thought out and is planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

- Pre and post unit assessments
- Assessment against 'End of Year Expectations' with clearly identified end points. These are then passed to the receiving teacher to ensure any gaps can be addressed when a key concept is revisited.
- Staff and volunteers are confident in online safety, identifying and responding to concerns.

Gladstone Road Primary School - Computing

Curriculum Planning

GOLDEN THREADS	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science	**Technology has been removed from the Early Learning Goals.** Uses ICT hardware to interact with age-appropriate computer software.	• Understand algorithms are a set of precise instructions. • Create and debug simple programs.	• 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.	• Can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. • Designs show that they are thinking of the desired task and how this translates into code. • Identify errors within their program that prevents it following the desired algorithm and then fix it. • The designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables.	• Demonstrate the ability to design and code a program that follows a simple sequence. • Experiment with timers to achieve repetition effects in their programs. • Begin to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. • Understand how variables can be used to store information while a program is executing.	• Translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. • Combine sequence, selection and repetition with other coding structures to achieve their algorithm design.	• Turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. • Test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem.
Information Technology	**Technology has been removed from the Early Learning Goals.** Completes a simple program on electronic devices. Can create content such as a video recording, stories, and/or draw a picture on screen.	• Use technology purposefully to create, store digital content. e.g. children can name, save and follow simple instructions to access online resources, design mode (manipulating backgrounds) or using pictogram software.	• Use technology purposefully to create, store and retrieve digital content. • Organise data using, for example, a database and can retrieve specific data for conducting simple searches. • Are able to edit more complex digital data such as music compositions.	• Carry out simple searches to retrieve digital content. • Understand that to do this, they are connecting to the internet and using a search engine. • Collect, analyse, evaluate and present data and information using a selection of software, • Consider what software is most	• Understand the function, features and layout of a search engine. • Appraise selected webpages for credibility and information at a basic level. • Make improvements to digital solutions based on feedback. • Make informed software choices when presenting information and data.	• Search with greater complexity for digital content when using a search engine. • Explain in some detail how credible a webpage is and the information it contains. • Make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. e.g. creating	• Can readily apply filters when searching for digital content. • Are able to explain in detail how credible a webpage is and the information it contains. • They compare a range of digital content sources and are able to rate them in terms of content quality and accuracy. • Use critical thinking skills in everyday use

			• Are confident when creating, naming, saving and retrieving content. • Can use a range of media in their digital content including photos, text and sound.	appropriate for a given task.	• Share digital content within their community.	their own program to meet a design brief. • Review solutions from others. • Collaboratively create content and solutions using digital features within software such as collaborative mode. • Use several ways of sharing digital content.	of online communication
Digital Literacy	**Technology has been removed from the Early Learning Goals.** Develops digital literacy skills by being able to access, understand and interact with a range of technologies. Can use the internet with adult supervision to find and retrieve information of interest to them.	• Recognise common uses of information technology beyond school. • Use technology safely, keeping personal information private; identify where to go for help.	• 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 safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify how to report concern about content and contact.	• Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.	• Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. • Know appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.	• Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. • To recognise the value in preserving privacy when online for their own and other people's safety.

Gladstone Road Primary School - Computing

Curriculum Planning

KS1 Medium Term Plans	Autumn Term	Spring Term	Summer Term
Prior Knowledge (Retrieval)	**EYFS** • Know a range of familiar technological devices (including television, laptops, tablets, telephones, interactive whiteboard) • Know what technological devices might be used for. • Can use the internet with adult supervision to retrieve information of interest to them. • Know that adults can help us keep safe with technology. • Know how to input instructions to make a BeeBot move. • Can use devices with cameras to take pictures.	**EYFS** • Know a range of familiar technological devices (including television, laptops, tablets, telephones, interactive whiteboard) • Know what technological devices might be used for. • Know how to input instructions to make a BeeBot move.	**EYFS** • Know a range of familiar technological devices (including television, laptops, tablets, telephones, interactive whiteboard) • Know what technological devices might be used for. • Have started to use tablets to access e-books independently. • Know how to input instructions to make a BeeBot move. • Can use the interactive whiteboard to create their own content (i.e. a drawing) using a simple program.
Y1	**Knowledge and Skills to be developed:** **Autumn 1 – Online Safety** • To log in safely and understand why that is important. • To create an avatar and to understand what this is and how it is used. • To save their work. • To understand the importance of logging out when they have finished. **Autumn 2 – Lego Builders** • To understand the importance of following instructions. • To follow and create simple instructions on the computer. • To consider how the order of instructions affects the result.	**Knowledge and Skills to be developed:** **Spring 1 – Maze Explorers** • To be able to use the direction keys. • To understand how to create and debug a set of instructions (algorithm). • To understand how to change and extend the algorithm list. **Spring 2 – Spreadsheets** • To understand what a spreadsheet looks like. • To add clipart images to a spreadsheet. • To use the 'move cell' and 'lock' tools. • To use the 'count' tools in 2Calculate to count items.	**Knowledge and Skills to be developed:** **Summer 1 – Animated Stories** • To save the page they have created. • To add animation to a picture. • To add a sound effect to a picture. • To continue and complete an animated story. • To play the pages created. **Summer 2 – Coding** • To predict what will happen when instructions are followed. • To understand that computer programs work by following instructions called code. • To understand what an event is. • To understand what backgrounds and objects are.
Future Learning	**Year 2** Learn how to create a program. Use their knowledge to debug simple programs. Use different coding blocks for events/sequences. Learn how to use the totalling tools in a spreadsheet.	**Year 2** Learn how to use binary trees to sort and answer questions. Learn how to create their own binary tree. Learn about the internet, world wide web and search engines. Learn how to use a search engine.	**Year 2** To learn about different artists and different styles of art. To create their own pieces of art, using a painting program. To learn how to present different ideas using different tools/programs, including a quiz and a fact file.

Gladstone Road Primary School - Computing

Curriculum Planning

		To use data to create a block graph.		
Vocabulary	**All**	button, login, logout, password, instructions, online	keys, spreadsheet, cell	picture, sound, page, code
	Most	avatar, save	algorithm, direction, lock, move	animation, algorithm, event, background, objects
	Some	file, menu, icon	debug, clipart	effects, predict
Quality Texts		Digi Duck – online eBook		Staying Safe Online - Steffi Cavell-Clarke
National Curriculum		Use technology safely and respectfully, keeping personal information private; identify where to go for help.	Understand what algorithms are; how they are implemented as programs on digital devices.	Use technology purposefully to create, store and retrieve digital content.

Gladstone Road Primary School - Computing

Curriculum Planning

KS1 Medium Term Plans		Autumn Term	Spring Term	Summer Term
Prior Knowledge (Retrieval)		**Year 1** • Know why it is important to logoff. • Know what an avatar is. • Know what to do if something upsets them online. • Explain what an algorithm is.	**Year 1** • Explain what a spreadsheet is. • Know the name for a set of instructions given to a computer. • Know the buttons – lock and move cell.	**Year 1** • Use vocabulary for the tools used in animated stories. • Know what a code/algorithm is. • Identify what a background/event is in coding.
Y2		**Knowledge and Skills to be developed:** **Autumn 1 – Coding** • To create a program using a given design. • To understand the collision detection event. • To design an algorithm that follows a timed sequence. • To understand what different events, do in code. • To debug simple programs. **Autumn 2 – Spreadsheets** • To use 2Calcuate totalling tools. • To use 2Calculate to solve a simple puzzle. • To explore the capabilities of a spreadsheet in adding up coins to match the prices of objects. • To add and edit data in a table layout. • To use the data to manually create a block graph.	**Knowledge and Skills to be developed:** **Spring 1 – Questioning** • To use yes/no questions to separate information. • To construct a binary tree to separate different items. • Use a binary tree) to answer questions. • To use a database to answer more complex search questions. • To use the Search tool to find information. **Spring 2 – Effective Searching** • To gain a better understanding of searching the Internet. • To understand the terminology associated with the Internet and searching. • To use a search engine.	**Knowledge and Skills to be developed:** **Summer 1 – Creating Pictures** • To look at the work of Impressionist artists and recreate them using the Impressionism template. • To look at the work of pointillist artists such as Seurat. To recreate pointillist art using the Pointillism template. • To look at the work of Piet Mondrian and recreate it using the Lines template. • To look at the work of William Morris and recreate it using the Patterns template. **Summer 2 – Presenting Ideas** • To make a quiz about a story or class topic. • To make a fact file on a non-fiction topic
Future Learning		**Year 3** Build on teaching of coding from KS1. To use different timers. To use the repeat command. To understand nesting.	**Year 3** Build on teaching of binary trees from KS1. To create a branching database. Refer to teaching of spreadsheets. To use the spin tool. To create graphs from data.	**Year 3** Build on teaching about presenting ideas in different ways from KS1. To explore simulations. To use data to create graphs.
Vocabulary	**All**	algorithm, cell, spreadsheet, count tool	information, search, database, internet, search engine,	style, line, pattern, presentation, quiz
	Most	collision detection, command, debug, run, row, column, data	binary tree, digital footprint, web page	palette, pointillism, William Morris, fact file
	Some	execute, interaction, test, image value	record, sort, network, device	dilute, fill, Piet Mondrian, non-fiction

Gladstone Road Primary School - Computing

Curriculum Planning

Quality Texts	Troll Stinks! Jeanne Willis and Tony Ross	Ada Lovelace: Poet of Science - Diane Stanley and Jessie Hartland	
National Curriculum	Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	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. Recognise common uses of information technology beyond school.

Gladstone Road Primary School - Computing

Curriculum Planning

KS1 Medium Term Plans	Autumn Term	Spring Term	Summer Term
Prior Knowledge (Retrieval)	**KS1** • To explain what an algorithm is. • Know the coding blocks timer and collision detection and explain their function. • Explain what debugging is. • To give examples of a digital footprint. • To know what to do if they have concerns online.	**KS1** • To explain what a spreadsheet is and give an example of how it can be used. • To recognise the tools from 2calculate, e.g. count tool, lock cell, move cell. • To give examples of yes/no questions to sort information. • To explain what a binary tree is and what is it used for.	**KS1** • To know what a block graph is. • Name and describe examples of how to present information. • Name and describe different styles of art you could create in 2Paint.
Y3	**Knowledge and Skills to be developed:** **Coding** • To understand what a flowchart is and how flowcharts are used in computer programming. • To understand that there are different types of timers. • To be able to select the right type of timer for a purpose. • To understand how to use the repeat command. • To understand the importance of nesting. • To design and create an interactive scene. **Online Safety** • To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away. • To understand how the Internet can be used to help us to communicate effectively. • To understand how a blog can be used to help us communicate with a wider audience. • To consider if what can be read on websites is always true. • To look at a 'spoof' website. • To learn about the meaning of age restrictions symbols on digital media and devices. • To discuss why PEGI restrictions exist.	**Knowledge and Skills to be developed:** **Email** • To think about the different methods of communication. • To open and respond to an email. • To learn how to use email safely. • To add an attachment to an email. **Spreadsheets** • To add and edit data in a table layout. • To find out how spreadsheet programs can automatically create graphs from data. • To introduce the 'more than', 'less than' and 'equals' tools. • To introduce the 'spin' tool and show how it can be used to count through times tables. • To introduce the Advanced mode of 2Calculate. **Branching Databases** • To complete a branching database using 2Question. • To create a branching database of the children's choice.	**Knowledge and Skills to be developed:** **Simulations** • To find out what a simulation is and understand the purpose of simulations. • To explore a simulation, making choices and discussing their effects. • To work through and evaluate a more complex simulation. **Graphing** • To enter data into a graph and answer questions. • To solve an investigation and present the results in graphic form.

Gladstone Road Primary School - Computing

Curriculum Planning

		Touch Typing • To introduce typing terminology. • To understand the correct way to sit at the keyboard. • To practice the keys typed with the left hand. • To practice the keys typed with the right hand.		
Future Learning		**Year 4** To create a playable game. To understand how the IF/ELSE command works. To find out how to add formulae to a cell. To use the line graphing tool.	**Year 4** To use Logo. To search effectively. To assess if information is true and reliable.	**Year 4** To understand and name the different parts of a computer. To learn about animation by hand and how it can be done using technology. To learn about 'stop motion' animation.
Vocabulary	**All**	nest, predict, repeat, test, appropriate, personal information, keys, spacebar	email, inbox, more than, less than, equals, binary tree,	simulation, solution, row, column, chart, graph
	Most	timer, sequence, bug, verify, spoof, typing	attachment, compose, bar graph, data, branching database	decision, advantages, disadvantages, data, sorting
	Some	alert, action, reliable source, verify, posture	communication, CC, BCC, advanced mode,	point of view, investigation, survey, tally chart
Quality Texts		Level Up! Tom Nicoll		The History of the Computer - Rachel Ignotofsky
National Curriculum		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.	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.

Gladstone Road Primary School - Computing

Curriculum Planning

KS1 Medium Term Plans	Autumn Term	Spring Term	Summer Term
Prior Knowledge (Retrieval)	**KS1/Year 3** • Name and describe the use of different coding blocks e.g. timer, collision detection, repeat. • To identify what is classed as personal information and explain why it is important to keep it private. • Recall the vocabulary used with spreadsheets.	**KS1/Year 3** • To give examples of a digital footprint. • To explain what a search engine is. • To give examples of how the internet could be used for searching for information. • Explain what is meant be unreliable/spoof websites.	**KS1/Year 3** • To name uses of technology outside of school. • To use vocabulary learnt for animation used in an e-book. (Year 1) • Give advice for different scenarios about keeping safe online.
Y4	**Knowledge and Skills to be developed:** **Autumn 1 – Coding** • To create a simple computer program. • To begin to understand selection in computer programming. • To understand how an IF statement works. • To understand how to use coordinates in computer programming. • To understand the Repeat until command. • To understand how an IF/ELSE statement works. • To understand what a variable is in programming. • To use a number variable. • To create a playable game. **Autumn 2 – Spreadsheets** • To explore how the numbers entered into cells can be set to either currency or decimal. • To find out how to add formulae to a cell. • To explore the use of the timer, random number and spin button tools. • To use the line graphing tool in 2Calculate with appropriate data. • To interpret a line graph to estimate values between data readings. • To use the currency formatting tool in 2Calculate. • To use 2Calculate to create a model of a real-life situation.	**Knowledge and Skills to be developed:** **Spring 1 – Logo** • To learn the structure of the language of 2Logo. • To input simple instructions in 2Logo. • To use 2Logo to create letter shapes. • To use the Repeat command in 2Logo to create shapes. • To use and build procedures in 2Logo. **Spring 2 – Effective Searching** • To locate information on the search results page. • To use search effectively to find out information. • To assess whether an information source is true and reliable.	**Knowledge and Skills to be developed:** **Summer 1 – Hardware Investigators** • To understand the different parts that make up a desktop computer. • To recall the different parts that make up a computer. **Summer 2 – Animation** • To decide what makes a good, animated film or cartoon and discuss favourite animations. • To learn how animations are created by hand. • To find out how 2Animate animations can be created in a similar way using technology. • To learn about onion skinning in animation. • To add backgrounds and sounds to animations. • Introducing ‘stop motion’ animation.

Gladstone Road Primary School - Computing

Curriculum Planning

		• To use the functions of allocating value to images in 2Calculate to make a resource to teach place value.		
Future Learning		**Year 5** To identify appropriate and inappropriate images, text, video being shared online. To program a simulation. To use formulas in spreadsheets to calculate different amounts.	**Year 5** To plan, design and create a game quest. To design, refine and print a 3D model given a specific design criteria.	**Year 5** To create a database around a given topic. To create a concept map and use this to present to an audience.
Vocabulary	**All**	design, input, nest, calculations, formula, line graph, timer	debugging, search engine, internet, key words	hard drive, input, output animation
	Most	execute, if statement, if/else statement, variable, decimal place, format cell, spinner tool	grid, pen down, pen up, balanced view, reliability	components, motherboard, software, onion skinning, frame, stop motion
	Some	co-ordinates, prompt, implement, budget, totals	procedure, run speed, Easter eggs,	CPU, FPS, RAM
Quality Texts		100 Things to Know About Numbers, Computers & Coding.	Emmy Levels Up. Helen Harvey	
National Curriculum		Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 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 devices to design and create a range of programs.

Gladstone Road Primary School - Computing

Curriculum Planning

KS1 Medium Term Plans	Autumn Term	Spring Term	Summer Term
Prior Knowledge (Retrieval)	**Lower KS2** • To give advice for different scenarios around online safety. • To recall knowledge of simulations. • To recall the vocabulary associated with spreadsheets.	**Lower KS2** • To recall knowledge of coding vocabulary. • To recall knowledge about keeping ourselves safe online. • To use prior learning about shapes (Maths) to explain the difference between 2D and 3D.	**Lower KS2** • To recall vocabulary associated with databases. • To give examples of why a database can be used. • To recall prior knowledge associated with presenting ideas. (Year 2)
Y5	**Knowledge and Skills to be developed:** **Autumn 1 - Online Safety** • To understand the advantages, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this. • To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. • Ensuring reliability through using different methods of communication. **Autumn 1 - Coding** • To begin to be able to simplify code. • To create a playable game. • To program a simulation using 2Code. • To know what decomposition and abstraction are in Computer Science. • To take a real-life situation, decompose it and think about the level of abstraction. • To use decomposition to make a plan of a real-life situation. • To understand how to use friction in code. • To begin to understand what a function is and how functions work in code. • To understand how to create a string. **Autumn 2 - Spreadsheets** • To use formulae within a spreadsheet to convert measurements of length and distance. • To use the count tool to answer hypotheses about common letters in use.	**Knowledge and Skills to be developed:** **Spring 1 - Game Creator** • To begin planning a game. • To design the game environment. • To design the game quest to make it a playable game. • To finish and share the game. • To self- and peer evaluate. **Spring 2 - 3D Modelling** • To be introduced to the 2Design and Make tool. • To explore the effect of moving points when designing. • To design a 3D model to fit certain criteria. • To refine and print a model.	**Knowledge and Skills to be developed:** **Summer 1 - Databases** • To learn how to search for information in a database. • To contribute to a class database. • To create a database around a chosen topic. **Summer 2 - Concept Maps** • To understand the need for visual representation when generating and discussing complex ideas. • To understand the uses of a 'concept map'. • To understand and use the correct vocabulary when creating a concept map. • To create a concept map. • To understand how a concept map can be used to retell stories and information. • To create a collaborative concept map and present this to an audience.

Gladstone Road Primary School - Computing

Curriculum Planning

		• To create formulae that use text variables. • To use formulae to calculate area and perimeter of shapes.		
Future Learning		**Year 6** To design and make a game. To identify positive and negative influences of technology. To use spreadsheets to calculate different amounts of money.	**Year 6** To understand the features of a success blog. To code a map-based adventure. To learn about LAN and WAN.	**Year 6** To create a picture quiz. To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digit).
Vocabulary	**All**	appropriate, communication, function, sequence, repeat, string, simulation, formula, totalling tool	theme, quest, scene, 2D, 3D, net	database, record, search, sort, concept map, concept
	Most	encrypt, image manipulation, PEGI ratings, decomposition, formula wizard, perimeter, variable	evaluation, design brief, points, template	chart, field, group, connection
	Some	critical thinking, phishing, concatenation, computational model	texture, CAD	database report, statistics, collaborate, node,
Quality Texts		The Person Controller. David Baddiel	The Dog Who Saved the World. Ross Welford	
National Curriculum		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 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 (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.

Gladstone Road Primary School - Computing

Curriculum Planning

KS1 Medium Term Plans	Autumn Term	Spring Term	Summer Term
Prior Knowledge (Retrieval)	**Lower KS2/Y5** • To give advice for different scenarios around online safety. • To recall taught vocabulary for Coding. • To give examples of how coding can be used.	**Lower KS2/Y5** • To name some of the ways information and ideas can be presented. • To give examples of how spreadsheets can be used.	**Lower KS2/Y5** • To recall the vocabulary associated with databases. • To give some examples of what databases could be used for. • To recall the vocabulary associated with the internet and hardware. (Year 4)
Y6	**Knowledge and Skills to be developed:** **Autumn 1 - Online Safety** • To identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location. • To identify secure sites by looking for privacy seals of approval, e.g., https, padlock icon. • To identify the benefits and risks of giving personal information and device access to different software. • To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour. • To begin to understand how information online can persist and give away details of those who share or modify it. • To understand the importance of balancing game and screen time with other parts of their lives, e.g., explore the reasons why they may be tempted to spend more time playing games or find it difficult to stop playing and the effect this has on their health. • To identify the positive and negative influences of technology on health and the environment. **Autumn 2** **Text Adventures** • To find out what a text-based adventure game is and to explore an example made in 2Create a Story.	**Knowledge and Skills to be developed:** **Spring 1 - Networks** • To discover what the children know about the Internet. • To find out what a LAN and WAN are. • To find out how we access the internet in school. • To research and find out about the age of the internet. • To think about what the future might hold **Spring 2- Spreadsheets** • To use a spreadsheet to investigate the probability of the results of throwing many dice. • To use a spreadsheet to calculate the discount and final prices in a sale. Create a formula to help work out the prices of items in the sale.	**Knowledge and Skills to be developed:** **Summer 1 - Binary** • To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems). • To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics. • To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To recognise that the numbers 0, 1, 2 and 3 could be represented by the patterns of two binary digits of 00, 01, 10 and 11 • To represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary. • To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To represent whole numbers in binary, for example counting in binary from zero to 15, or writing a friend's age in binary. • To explore how division by two can be used as a technique to determine the binary representation of any whole number by collecting remainder terms. • To examine how whole numbers are used as the basis for representing all types of data in digital systems.

Gladstone Road Primary School - Computing

Curriculum Planning

		• To use 2Connect to plan a 'Choose your own Adventure' type story. • To use 2Connect plans for a story adventure to make the adventure using 2Create a Story. • To introduce an alternative model for a text adventure which has a less sequential narrative. • To use written plans to code a map-based adventure in 2Code.		• To represent the state of an object in a game as active or inactive using the respective binary values of 1 or 0. • **Summer 2 -** . **Coding -** • To design a playable game with a timer and a score. • To plan and use selection and variables. • To understand how the launch command works. • To use functions and understand why they are useful. • To understand how functions are created and called. • To use flowcharts to test and debug a program. • To create a simulation of a room in which devices can be controlled. • To understand the different options of generating user input in 2Code. • To understand how user input can be used in a program. • To understand how 2Code can be used to make a text-based adventure game
Vocabulary	**All**	action, command, algorithm, debug, event, screen time, inappropriate, formula	debugging, variables, sprite, web page, network, Wi-Fi	undo, redo, copy, paste, image, binary, value,
	Most	decomposition, launch command, function, phishing, expense, probability	selection, LAN, WAN, router	preview, bit, variable
	Some	concatenation, procedure,	data analysis, x and y properties,	integer, nibble, byte, kilobyte, megabyte, gigabyte, terabyte, nanotechnology, collaborative, hosting, ISP, hub/switch, WLAN
Quality Texts		Ant Clancy, Games Detective. Ruth Morgan	Why are there Different Computing Languages? Kirsty Holmes	
National Curriculum		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 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	Select, use and combine a variety of software (including internet services) to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.