



## Hillcross Primary Computing Curriculum

	<u>Year 1</u>					
Topic	Autumn 1: A change over time	Autumn 2: Carnival of the animals	Spring 1: End of the line	Spring 2: Very Victorian Values	Summer 1: Fe Fi Fo Fum	Summer 2: Whole school topic
Computing concepts	Communication Technology	Computer Science	Computer Science	Digital literacy	Communication Technology	Communication Technology & Computer Science
Sub-strand	Digital Art	Algorithms	Online safety	Media	Data	Algorithms
Outcome	To use a mouse to select features within a paint program and create a piece of digital art.	To use simple algorithms to program a BeeBot to move around.	To open, save, retrieve and edit a J2E presentation including adding images and adding text.	Sign into Google and learn to navigate Google for education. (This will support children using Google classroom for home learning)	To input data onto a table using Google sheets and answer simple questions about the data.	To use simple algorithms to program a Sprite to move around.
NC knowledge and understanding	<ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</li> </ul>	<ul style="list-style-type: none"> <li>Understand what algorithms are, how they are implemented as programs on digital devices, and programs execute by following precise and unambiguous instructions.</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Using technology purposefully to create, organise, store, manipulate and retrieve digital data</li> <li>Recognise common uses of information technology beyond school.</li> <li>Use technology safely and respectfully, keeping personal information private</li> </ul>	<ul style="list-style-type: none"> <li>Using technology purposefully to create, organise, store, manipulate and retrieve digital data.</li> <li>Recognise common uses of information technology beyond school.</li> </ul>	<ul style="list-style-type: none"> <li>Understand what algorithms are, how they are implemented as programs on digital devices, and programs execute by following precise and unambiguous instructions.</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> <li>Recognise common uses of information technology beyond school.</li> </ul>
Hillcross progression of skills	<ul style="list-style-type: none"> <li>Log on to the computer.</li> <li>Move the cursor using a computer mouse.</li> <li>Use 'left click' on the mouse</li> <li>Select and set brushes and colours</li> <li>Use the mouse to create</li> </ul>	<ul style="list-style-type: none"> <li>Know an algorithm is a series of precise instructions.<sup>11</sup></li> <li>To break down a process into simple, clear steps (an algorithm)</li> <li>Program a BeeBot to move forwards and backwards</li> </ul>	<ul style="list-style-type: none"> <li>To use technology safely and respectfully, knowing where to go for help and support if they have concern.</li> <li>Add and format titles and other text</li> <li>Choose and import images.</li> </ul>	<ul style="list-style-type: none"> <li>Signing into Google</li> <li>Opening a Google document, sending a message and turing it in.</li> <li>Opening Google Slides, adding text and images and turing it in.</li> </ul>	<ul style="list-style-type: none"> <li>Use Google sheets</li> <li>Explore a dataset and organise into groups and subgroups</li> <li>To input a dataset and then filter to search for particular questions</li> <li>How data can be structured as</li> </ul>	<ul style="list-style-type: none"> <li>Know an algorithm is a series of instructions.</li> <li>To break down a process into simple, clear steps (an algorithm)</li> <li>Create and debug simple programs.</li> </ul>
	artwork. <ul style="list-style-type: none"> <li>Use the undo function.</li> </ul>	<ul style="list-style-type: none"> <li>Create and debug simple programs.</li> </ul>	<ul style="list-style-type: none"> <li>Understand how to protect their privacy</li> </ul> Links to <a href="#">PSHE curriculum</a> .		a tree <ul style="list-style-type: none"> <li>How data can be organised into a table and can then be filtered and searched.</li> </ul>	<ul style="list-style-type: none"> <li>Program a sprite to move forwards and backwards.</li> <li>Use repetition tool to move the sprite</li> </ul>



## Hillcross Primary Computing Curriculum

	<u>Year 2</u>					
Topic	Autumn 1: London Landmarks	Autumn 2: Hearts and lanterns	Spring 1: Under the sea	Spring 2: Disaster strikes	Summer 1: A journey to discovery	Summer 2: Whole school topic
Computing Concepts	Computer Science	Communication technology	Digital literacy	Communication technology	Communication Technology	Computer Science
Sub strand	Algorithms	Computational Thinking	Online safety	Media	Data	Algorithms
Outcome	To program a sprite in Scratch to move to a specific location and interact with the user through the 'Say' function.	To view games and work backwards to see the algorithms. The main focus is not to create a game but to see the impact of different algorithms.	To know how to search safely on the internet. To understand the basics of the Google apps.	To take, edit and enhance photos with an iPad.	To create data in Google Sheets using titles, axis and charts.	To program a sprite in Scratch using repeat, forever loops and speech.
NC knowledge and understanding	<ul style="list-style-type: none"> <li>Understand what algorithms are, how they are implemented as programs on digital devices, and programs execute by following precise and unambiguous instructions.</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> </ul>	<ul style="list-style-type: none"> <li>Understand what algorithms are, how they are implemented as programs on digital devices, and programs execute by following precise and unambiguous instructions.</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> <li>Recognise common uses of information technology beyond school.</li> </ul>	<ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital data</li> <li>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.</li> </ul>	Use technology purposefully to create, organise, store, manipulate and retrieve digital data  Recognise common uses of information technology beyond school	Use technology purposefully to create, organise, store, manipulate and retrieve digital data  Recognise common uses of information technology beyond school	<ul style="list-style-type: none"> <li>Understand what algorithms are, how they are implemented as programs on digital devices, and programs execute by following precise and unambiguous instructions.</li> <li>Create and debug simple programs</li> <li>Use logical reasoning to predict the behaviour of simple programs</li> </ul>
Hillcross progression of skills	<ul style="list-style-type: none"> <li>Know an algorithm is a series of instructions.</li> <li>To break down a process into simple, clear steps (an algorithm)</li> <li>Create and debug simple programs.</li> <li>Program a sprite to move forwards, backwards and turn.</li> <li>Use repetition tool to move the sprite (not repeat loops)</li> <li>Add messages in scratch.</li> </ul>	<ul style="list-style-type: none"> <li>Observe and describe carefully what happens in computer games.</li> <li>Use logical reasoning to decide the algorithm used in simple computer games.</li> <li>Use logical reasoning to make predictions of what a program will do and test these.</li> <li>Think critically about computer games</li> </ul>	<ul style="list-style-type: none"> <li>Use Google slides</li> <li>Develop research skills through searching safely for appropriate information on the internet.</li> <li>Know what to do if you come across images or information which concerns you.</li> </ul>	<ul style="list-style-type: none"> <li>Be able to consider the technical and artistic merits of photographs.</li> <li>Use a camera app on an iPad.</li> <li>To review and reject or pick the images they take.</li> <li>Edit and enhance photos by cropping and changing the brightness and colour palette.</li> </ul>	<ul style="list-style-type: none"> <li>Sort and classify a group of items by answering questions</li> <li>Collect data using tick or tally charts.</li> <li>Use google sheets to produce basic charts to display the data.</li> </ul>	<ul style="list-style-type: none"> <li>Plan a sequence of instructions to move sprites in scratch</li> <li>Create, test and debug programs for sprites in scratch</li> <li>Work with input and output in scratch</li> <li>Use repeat loops conditional loops</li> </ul>



## Hillcross Primary Computing Curriculum

	<b>Year 3</b>					
Topic	Autumn 1: Supermarket sweep	Autumn 2: Rotten Romans	Spring 1: Settle down	Spring 2: Secret garden	Summer 1: Dig deep	Summer 2: Whole school topic
Computing Concepts	Computer Science	Computer Science	Digital Literacy	Communication Technology	Communication Technology	Digital Literacy
Sub strand	Algorithms	Computational thinking	Networks	Media	Data	Media
Outcome	Create a simple animation using Scratch, using the paint tool to create characters and backgrounds. Create an animation by translating ideas into instructions (a program) and then correcting any mistakes (debugging).	Working with example Scratch projects explain how the scripts work, <b>find and correct bugs</b> in them and explore ways of improving them. Learn to recognise <b>common types of programming error</b> , and practice solving problems through logical thinking.	To understand how simple <b>networks work</b> .	Create a mini 'Wikipedia' using google slides.  Possible links to Science curriculum (rocks & fossils) or history curriculum (Stonehenge)	Create an <b>opinion poll</b> in Google forms, seek responses and then analyse the data in Google sheets.	To use a <b>green screen</b> as a background, record a video and edit the background.
NC knowledge and understanding	<ul style="list-style-type: none"> <li>Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Detect and correct errors in algorithms and programs.</li> </ul>	<ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and detect and correct errors in algorithms and programs.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Select, use and combine a variety of software (including internet services) on a range of programs, system and content that accomplish given goals, including collecting, analysing and evaluating and presenting data and personal information.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>



## Hillcross Primary Computing Curriculum

	<b>Year 4</b>					
Topic	Autumn 1: Walk like an Egyptian	Autumn 2: Eurovision precision	Spring 1: Battle stations	Spring 2: Natural disasters	Summer 1: Playing cat and mouse	Summer 2: Whole school topic
Computing Concepts	Computer Science	Computer Science	Communication Technology	Communication Technology	Digital Literacy	Computer Science
Sub strand	Algorithms	Algorithms	Media	Data	Online safety and computational thinking	Algorithms
Outcome	Design and program an educational times table game in scratch with a particular target audience in mind. Develop the game further to improve the user interface and functionality. Test the game and make any necessary changes.	To develop a micro:bit to turn a set of lights on and off.	Create a piece of digital music using a variety of programs. Use an editing program to make alterations to their final piece.	Create a quiz in Google Forms using factual questions	Create an internet safety app. Become aware of 'digital footprints' as well as what constitutes acceptable online behaviour	Use quadrants and turtle graphics to explore geometric art.
NC knowledge and understanding	<ul style="list-style-type: none"> <li>Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Detect and correct errors in algorithms and programs.</li> </ul>	<ul style="list-style-type: none"> <li>Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Detect and correct errors in algorithms and programs.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> </ul>



## Hillcross Primary Computing Curriculum

	<u>Year 5</u>					
Topic	Autumn 1: We're the kids in America	Autumn 2: Third rock from the sun	Spring 1: It's all Greek to me	Spring 2: Oh I do Like to beside the seaside.	Summer 1: Marvellous Mayas	Summer 2: Whole school topic
Computing Concepts	Computer Science	Computer Science	Digital Literacy	Communication Technology	Communication Technology	Communication Technology
Sub strand	Algorithms	Computational thinking	Online safety	Media	Media	Media
Outcome	Create a chase game with a score and a timer using Scratch, using the paint tool to create characters and backgrounds.	Learn about communicating information securely through an introduction to cryptography. Investigate early methods of communicating over distances, learn about early ciphers and consider what makes a secure password.	Work collaboratively to create a website explaining e-safety and responsible online behaviour. Use search technologies to become expert in researching effectively.	Using a CAD tool (SketchUp) to create virtual 3D models and spaces. Refine skills in using a search engine in selecting content from the 3D warehouse in SketchUp. Link to DT application.	To create an interactive, multimedia adventure	To create an interactive, multimedia adventure
NC knowledge and understanding	<ul style="list-style-type: none"> <li>Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output</li> <li>Detect and correct errors in algorithms and programs.</li> </ul>	<ul style="list-style-type: none"> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> <li>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.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>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</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul>	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





## Hillcross Primary Computing Curriculum

	Year 6					
Topic	Autumn 1: Everybody wants to rule the world	Autumn 2: A class act	Spring 1: War of the worlds	Spring 2: Peace at last	Summer 1: Game, set, match	Summer 2: Whole school topic
Computing Concepts	Computer Science	Computer Science	Communication Technology	Digital Literacy	Communication Technology	Communication Technology
Sub strand	Algorithms	Algorithms	Media	Online Safety	Media	Media
Outcome	To design and develop a program in Scratch to make a prototype of an interactive toy.	To develop an understanding of some important algorithms for searching, sorting and maths.	To be able to use word processing skills.	To develop appropriate skills to navigate social media.	To work collaboratively to help produce digital content (yearbook or magazine) using desktop publishing tools.	To collaboratively create, film and edit my own short movie using a green screen.
NC knowledge and understanding	<ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.</li> <li>Use sequence, selection and repetition in programs; work with various forms of input and output.</li> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in their programs.</li> </ul>	<ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</li> <li>Use sequence, selection and repetition in programs; work with variables and various forms of input and output.</li> <li>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> </ul>	<ul style="list-style-type: none"> <li>Understand the opportunities computer networks offer for communication and collaboration.</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content.</li> </ul>	<ul style="list-style-type: none"> <li>Understand computer networks including the Internet and the opportunities they offer for communication and collaboration.</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>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.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content.</li> </ul>	<ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content.</li> <li>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.</li> <li>Use sequence, selection and repetition in programs; work with variables and various forms of input and output.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable and unacceptable behaviour; identify a range of ways to report concerns about content.</li> </ul>