



Wellington Primary

Computing Curriculum

Computing Overview

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Years 1 - 6	E-Safety	Computing	E-Safety	Data / Digital Literacy	Programming	Information Technology
KS1 National Curriculum Objectives	Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet	Understand what algorithms are; how they are implemented as programs on digital devices Programs execute by following precise and unambiguous instructions	Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Understand what algorithms are; how they are implemented as programs on digital devices Programs execute by following precise and unambiguous instructions Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs.	Recognise common uses of information technology beyond school.
KS2 National Curriculum Objectives	Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Use sequence, selection, and repetition in	Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour	Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Design, write and debug programs that accomplish	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 presenting data and information.	specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	Use search technologies effectively, appreciate how results are selected and ranked.
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<u>Year 1</u>	NC objectives	Skills	Resources
<u>Autumn term 1</u> <u>E-safety</u>	Key stage 1 NC Objective: Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet	<ul style="list-style-type: none"> ● Make decisions about whether or not statements or images found on the internet are likely to be true. ● Identify different devices that can go on the internet, and separate those that do not. ● Identify what things count as personal information. ● Identify when inappropriate content is accessed and act appropriately 	<ul style="list-style-type: none"> - Puppet pals - Toontastic - DB primary
<u>Autumn term 2</u> <u>Computing</u>	understand what algorithms are; how they are implemented as programs on digital devices	<ul style="list-style-type: none"> ● Know that an algorithm is a set of instructions. ● Give and follow instructions, which include straight and turning commands, one at a time. ● Explore outcomes when instructions are given in sequence. ● Give a simple sequence of instructions. 	<ul style="list-style-type: none"> - Daisy the Dinosaur - Bee-Bots - Bee-bots iPad app
<u>Spring Term 1</u> (first half) <u>E-safety</u>	Key stage 1 NC Objective: Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet	<ul style="list-style-type: none"> ● Make decisions about whether or not statements or images found on the internet are likely to be true. ● Identify different devices that can go on the internet, and separate those that do not. ● Identify what things count as personal information. ● Identify when inappropriate content is accessed and act appropriately 	<ul style="list-style-type: none"> - Puppet pals - Toontastic - DB primary
<u>Spring term</u> <u>1&2</u> <u>Data</u>	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	<ul style="list-style-type: none"> ● Know that images give information. ● Say what a pictogram is showing them. ● Put data into a program (pictogram). ● Sort objects and pictures in lists or simple tables. 	2simple – infant toolkit: <ul style="list-style-type: none"> - 2graph - 2count

<p><u>Spring term</u> <u>1&2</u></p> <p>Digital literacy</p>	<p>Use technology purposefully to create, retrieve and store digital content</p>	<ul style="list-style-type: none"> ● Use ICT to generate ideas for their work. ● Use various tools including brushes, pens, lines, fill, spray and stamps. ● Use save, retrieve, amend and print. ● Use the spacebar, back space, enter, shift and arrow keys. ● Start to use two hands when typing. ● Word process short texts, rather than copying up written work. 	<ul style="list-style-type: none"> - Paint - 2paint - Microsoft word
<p><u>Summer term</u> <u>1</u></p> <p>Computing (Programming)</p>	<p>understand what algorithms are; how they are implemented as programs on digital devices programs execute by following precise and unambiguous instructions</p>	<ul style="list-style-type: none"> ● Know that an algorithm is a set of instructions. ● Give and follow instructions, which include straight and turning commands, one at a time. ● Explore outcomes when instructions are given in sequence. ● Give a simple sequence of instructions. <p>Daisy Dino/Bee Bots (app)</p> <ul style="list-style-type: none"> ● Discuss/explore what will happen when instructions are given in a sequence. ● Give a sequence of instructions to complete a simple task (everyday activities – not just computer based). ● Instructions use both movement commands and additional commands. 	<ul style="list-style-type: none"> - Daisy the Dinosaur - Bee-Bot Pyramid
<p><u>Summer term</u> <u>2</u></p> <p>Information technology</p>	<p>recognise common uses of information technology beyond school.</p>	<ul style="list-style-type: none"> ● Understand that messages can be sent electronically over distances and that people can reply to them. ● Understand that ICT gives rapid access to a wide variety of information and resources ● Talk about their use of ICT and other ways of finding information 	

		<ul style="list-style-type: none"> • Understand that different forms of information (text, images, sound, multimedia) exist and that some are more useful for specific purposes • Understand and talk about how the information can be used to answer specific questions • Begin to develop key questions and find information to answer them 	
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<u>Year 2</u>	NC objectives	Skills	Resources
<u>Autumn term 1</u> <u>E-safety</u>	Key stage 1 NC Objective: Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet	<ul style="list-style-type: none"> • Identify obviously false information in a variety of contexts. • Recognise that a variety of devices (XBox, PSP etc as well as computers and phones) connect users with other people. • Identify personal information that should be kept private. • Consider other people's feelings on the internet. • Remember and use <i>Sid's Top Tips - SIDs Top Tips.pdf</i> (saved in E-safety folder) 	<ul style="list-style-type: none"> - Puppet pals - Toontastic - DB primary
<u>Autumn term 2</u> Computing (Programming)	programs execute by following precise and unambiguous instructions	Daisy Dino <ul style="list-style-type: none"> • Use the 'repeat' (loop) and 'when' (conditional statement) command within a series of instructions. • Plan a short 'story' for a sprite and write the commands for this. • Edit/refine a sequence of commands. 	<ul style="list-style-type: none"> - Daisy the Dinosaur - Bee-Bots - Bee-bots iPad app

<p><u>Spring Term 1</u> (first half)</p> <p>E-safety</p>	<p>Key stage 1 NC Objective: Use technology safely and respectfully, keeping personal information private; know where to go for help and support when they have concerns about material on the internet</p>	<ul style="list-style-type: none"> ● Identify obviously false information in a variety of contexts. ● Recognise that a variety of devices (XBox, PSP etc as well as computers and phones) connect users with other people. ● Identify personal information that should be kept private. ● Consider other people's feelings on the internet. ● Remember and use <i>Sid's Top Tips</i> - SIDs Top Tips.pdf(saved in E-safety folder) 	<ul style="list-style-type: none"> - Puppet pals - Toontastic - DB primary
<p><u>Spring term 1&2</u></p> <p>Data</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>	<ul style="list-style-type: none"> ● Place objects and pictures in a list or a simple table. ● Make a simple Y/N tree diagram to sort information. ● Create and search a branching database. 	<p>2simple – infant toolkit:</p> <ul style="list-style-type: none"> - 2graph - 2count
<p><u>Spring term 1&2</u></p> <p>Digital literacy</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>	<ul style="list-style-type: none"> ● Use sound recorders, at and away from, a computer to capture and playback sound. ● Use software to record music and sounds. ● Change sounds they have recorded. ● Save, retrieve and edit sounds. ● Capture videos. ● Discuss which videos to keep and why. ● Arrange clips to make a short film that conveys meaning. ● Add simple titles and credits. 	<ul style="list-style-type: none"> - I pads, ipods (recording sound) - Toontastic/puppetpals
<p><u>Summer term 1</u></p> <p>Computing (Programming)</p>	<p>programs execute by following precise and unambiguous instructions create and debug simple programs. use logical reasoning to predict the behaviour of simple programs.</p>	<p>Daisy Dino</p> <ul style="list-style-type: none"> ● Use the 'repeat' (loop) and 'when' (conditional statement) command within a series of instructions. ● Plan a short 'story' for a sprite and write the commands for this. 	<ul style="list-style-type: none"> - Daisy the Dinosaur - Bee-Bot Pyramid

		<ul style="list-style-type: none"> ● Edit/refine a sequence of commands. <p>Move the turtle (logo or beebots)</p> <ul style="list-style-type: none"> ● Generate a sequence of instructions including 'right angle' turns. ● Create a sequence of instructions to generate simple geometric shapes (oblong /square). ● Discuss how to improve/change their sequence of commands. <p>Knowledge objectives:</p> <ul style="list-style-type: none"> ● Steps can be repeated within algorithms ● Algorithms can be represented in simple formats [storyboards and narrative text] ● Particular tasks can be accomplished by creating a program for a computer. Some computers allow their users to create their own programs. 	
<p><u>Summer term 2</u></p> <p>Information technology</p>	<p>recognise common uses of information technology beyond school.</p>	<ul style="list-style-type: none"> ● Understand that messages can be sent electronically over distances and that people can reply to them. ● Begin to talk about the advantages of using electronic communications ● Understand that ICT gives rapid access to a wide variety of information and resources ● Talk about their use of ICT and other ways of finding information ● Understand that different forms of information (text, images, sound, multimedia) exist and that some are more useful for specific purposes ● Understand and talk about how the information can be used to answer specific questions 	-

		<ul style="list-style-type: none"> ● Begin to develop key questions and find information to answer them ● Be a responsible internet user and follow the school's acceptable use agreement for KS1. Know what to do and who to turn to if anything on screen upsets them ● Understand that information on the Internet can be misleading, biased or wrong 	
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Year 3	NC objectives	Skills	Resources
<u>Autumn term 1</u> <u>E-safety</u>	Key stage 2 NC Objective: Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour	<ul style="list-style-type: none"> ● Question the "validity" of what they see on the internet. ● Use a browser address bar not just search box and shortcuts. ● Think before sending and suggest consequences of sending/posting. ● Recognise online behaviours that would be unfair. 	<ul style="list-style-type: none"> - Puppet pals - Toontastic - DB primary
<u>Autumn term 2</u> Computing (Programming)	use logical reasoning to explain how some simple algorithms work	Knowledge objectives: <ul style="list-style-type: none"> ● Algorithms can be represented symbolically [flowcharts] or using instructions in a clearly defined language [turtle graphics]. ● Algorithms can include selection (if) and repetition (loops). ● Algorithms should be stated without ambiguity and care and precision are necessary to avoid errors. ● Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. 	<ul style="list-style-type: none"> - NXT Robots - Scratch - 2Code

		<ul style="list-style-type: none"> ● A computer program is a sequence of instructions written to perform a specified task with a computer. ● Programs can be created using visual tools. 	
<p><u>Spring Term 1</u> (first half)</p> <p>E-safety</p>	<p>Key stage 2 NC Objective: Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour</p>	<ul style="list-style-type: none"> ● Question the “validity” of what they see on the internet. ● Use a browser address bar not just search box and shortcuts. ● Think before sending and suggest consequences of sending/posting. ● Recognise online behaviours that would be unfair. 	<ul style="list-style-type: none"> - Puppet pals - Toontastic - DB primary
<p><u>Spring term 1&2</u></p> <p>Data</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting and presenting data and information.</p>	<ul style="list-style-type: none"> ● Choose information to put into a data table. ● Recognise which information is suitable for their topic. ● Design a questionnaire to collect information. ● Sort and organise information to use in other ways. 	<p>2simple - Junior video toolkit:</p> <ul style="list-style-type: none"> - 2graph - 2question (branching database) - 2investigate
<p><u>Spring term 1&2</u></p> <p>Digital literacy</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting and presenting data and information.</p>	<ul style="list-style-type: none"> ● Acquire, store and combine images from cameras or the internet for a purpose. ● Use the print screen function to capture an image. ● Select certain areas of an image and resize, rotate an image. ● Edit pictures using various tools in paint or photo-manipulation software. ● Create a new eBook with a front cover and add or remove pages. ● Combine text and images within each page and embed sound clips. ● Add information about the author and title for publishing. 	<ul style="list-style-type: none"> - Ipods, Ipads - Photoshop/paint (editing pictures) - Storybird – create books/book creator on Ipads - Windows moviemaker - Microsoft word

		<ul style="list-style-type: none"> ● Get quicker at typing using both hands. ● Use different font sizes, colours and effects to communicate meaning. ● Align text left, right and centre. 	
<p><u>Summer term 1</u></p> <p>Computing (Programming)</p>	<p>use logical reasoning to explain how some simple algorithms work</p> <p>Design and write programs that accomplish specific goals, including controlling or simulating physical systems</p>	<ul style="list-style-type: none"> ● Use a variety of inputs ● Use the 'repeat' (loop) command within a series of instructions. ● Use the 'if... then' (conditional statement) command within a series of instructions. ● Write a simple program in Logo to produce a line drawing. ● Use more advanced Logo programming, including pen up, pen down etc. ● Write a program to reproduce a defined problem, e.g. geometric shape/pattern. <p>Knowledge objectives:</p> <ul style="list-style-type: none"> ● Algorithms can be represented symbolically [flowcharts] or using instructions in a clearly defined language [turtle graphics]. ● Algorithms can include selection (if) and repetition (loops). ● Algorithms should be stated without ambiguity and care and precision are necessary to avoid errors. ● Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. ● A computer program is a sequence of instructions written to perform a specified task with a computer. ● Programs can be created using visual tools. 	<ul style="list-style-type: none"> - NXT Robots - Scratch - 2Code

<p><u>Summer term 2</u></p> <p>Information technology</p>	<p>understand computer networks including the internet.</p> <p>use search technologies effectively.</p>	<ul style="list-style-type: none"> ● Understand a website has a unique address and the need for precision when typing it ● Evaluate different search engines and explain their choices in using these for different purposes ● Understand that some information found through searching is more relevant than others ● Talk about and describe the process of finding specific information noting frustrations and how they overcame them ● Begin to recognise that anyone can author on the internet and sometimes web content is inaccurate and even offensive ● Develop their knowledge of internet safety and the need for rules. Understand what they should do if they discover offensive material 	<p>-</p>
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<u>Year 4</u>	NC Objectives	Skills	Resources
<p><u>Autumn term 1</u> <u>E-safety</u></p>	<p>Key stage 2 NC Objective: Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour</p>	<ul style="list-style-type: none"> ● Recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles). ● Make judgments in order to stay safe, whilst communicating with others online. ● Tell an adult if anything worries them online. ● Identify dangers when presented with scenarios, social networking profiles, etc. ● Articulate examples of good and bad behaviour online. 	<ul style="list-style-type: none"> - DB primary - Podcasts - You-tube channel - Movie maker
<p><u>Autumn term 2</u> Computing (Programming)</p>	<p>use logical reasoning to explain how some simple algorithms work</p>	<p>Knowledge objectives:</p> <ul style="list-style-type: none"> ● Algorithms can be represented symbolically [flowcharts] or using instructions in a clearly defined language [turtle graphics]. ● Algorithms can include selection (if) and repetition (loops). ● Algorithms should be stated without ambiguity and care and precision are necessary to avoid errors. ● Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. 	<ul style="list-style-type: none"> - NXT Robots - Probots - Scratch - Scratch Maze - Scratch Games - 2Code (purple mash)

		<ul style="list-style-type: none"> ● A computer program is a sequence of instructions written to perform a specified task with a computer. ● Programs can be created using visual tools. 	
<p><u>Spring Term 1</u> (first half)</p> <p>E-safety</p>	<p>Key stage 2 NC Objective: Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour</p>	<ul style="list-style-type: none"> ● Recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles). ● Make judgments in order to stay safe, whilst communicating with others online. ● Tell an adult if anything worries them online. ● Identify dangers when presented with scenarios, social networking profiles, etc. ● Articulate examples of good and bad behaviour online. 	<ul style="list-style-type: none"> - DB primary - Podcasts - You-tube channel - Movie maker
<p><u>Spring term 1&2</u></p> <p>Data</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing and presenting data and information.</p>	<ul style="list-style-type: none"> ● Create and search a branching database. ● Sort and organise information to use in other ways. ● Create a database from information I have selected. 	<p>2simple - Junior video toolkit:</p> <ul style="list-style-type: none"> - 2graph - 2question (branching database) - 2investigate (databases) - Excel
<p><u>Spring term 1&2</u></p> <p>Digital literacy</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing and presenting data and information.</p>	<p>I can animate app</p> <ul style="list-style-type: none"> ● Plan what they would like to happen in an animation. ● Take a series of pictures to form an animation. ● Move items within their animation to create movement on playback. ● Edit/improve their animation. <p>Video (iMovie trailer)</p> <ul style="list-style-type: none"> ● Capture video for a purpose. 	<ul style="list-style-type: none"> - Macbooks – imovie - Windows movie maker - I can animate app (ipads) - Puppet pals - Toontastic app

		<ul style="list-style-type: none"> ● Discuss the quality of videos and chose which to keep and which to re-shoot. ● Trim and arrange clips to convey meaning. ● Add titles, credits, slide transitions, special effects and talk about the effect these have on the audience. 	
<p><u>Summer term 1</u></p> <p>Computing (Programming)</p>	<p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>Design and write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p>	<p>Using Scratch</p> <ul style="list-style-type: none"> ● Navigate the Scratch programming environment. ● Create a background and sprite for a game. ● Add inputs to control their sprite. ● Use conditional statements (if... then) within their game. ● Create a 3D digital world for a game with land, water and scenery. ● Add a sprite to their world. ● Program their sprite to navigate their 3D world with an input. ● Use conditional statements ('if...then') to create dangerous items in their world. <p>Knowledge objectives:</p> <ul style="list-style-type: none"> ● Algorithms can include selection (if) and repetition (loops). ● Algorithms may be decomposed into component parts (procedures), each of which itself contains an algorithm. ● It can be easier to plan, test and correct parts of an algorithm separately. ● The idea of a program as a sequence of <i>statements</i> written in a programming language [Scratch] ● One or more mechanisms for <i>selecting</i> which statement sequence will be executed, based upon the value of some data item 	<ul style="list-style-type: none"> - I Can Animate - Scratch Maze - Scratch Games - NXT Robots - Scratch - 2Code (purple mash)

		<ul style="list-style-type: none"> • Programs can be created using visual tools. They can use a variety of control structures [selections and procedures]. 	
<p><u>Summer term 2</u></p> <p>Information technology</p>	<p>understand computer networks including the internet; how they can provide multiple services, such as the world-wide web.</p> <p>use search technologies effectively.</p>	<ul style="list-style-type: none"> • Understand a website has a unique address and the need for precision when typing it • Evaluate different search engines and explain their choices in using these for different purposes • Understand that some information found through searching is more relevant than others • Talk about and describe the process of finding specific information noting frustrations and how they overcame them • Begin to recognise that anyone can author on the internet and sometimes web content is inaccurate and even offensive • Develop their knowledge of internet safety and the need for rules. Understand what they should do if they discover offensive material 	

<u>Year 5</u>	NC objectives	Skills	Resources
<p><u>Autumn term 1</u></p> <p><u>E-safety</u></p>	<p>Key stage 2</p> <p>NC Objective:</p> <p>Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour</p>	<ul style="list-style-type: none"> • Judge what sort of privacy settings might be relevant to reducing different risks. • Judge when to answer a question online and when not to. • Be a good online citizen and friend, not a digital bystander. • Articulate what constitutes good behaviour online. 	<ul style="list-style-type: none"> - DB primary - Podcasts - You-tube channel - Movie maker

		<ul style="list-style-type: none"> Find and cite the web address for any information or resource found online. Use different sources to double check information found. 	
<u>Autumn term 2</u> Computing (Programming)	use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs use sequence, selection, and repetition in	Knowledge objectives: <ul style="list-style-type: none"> Algorithms can be represented symbolically [flowcharts] or using instructions in a clearly defined language [turtle graphics]. Algorithms can include selection (if) and repetition (loops). Algorithms should be stated without ambiguity and care and precision are necessary to avoid errors. Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. A computer program is a sequence of instructions written to perform a specified task with a computer. Programs can be created using visual tools. 	<ul style="list-style-type: none"> NXT Robots Probots Scratch Scratch Maze Scratch Games 2Code (purple mash)
<u>Spring Term 1</u> (first half) E-safety	Key stage 2 NC Objective: Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour	<ul style="list-style-type: none"> Recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles). Make judgments in order to stay safe, whilst communicating with others online. Tell an adult if anything worries them online. Identify dangers when presented with scenarios, social networking profiles, etc. Articulate examples of good and bad behaviour online. 	<ul style="list-style-type: none"> DB primary Podcasts You-tube channel Movie maker
<u>Spring term 1&2</u>	Select, use and combine a variety of software (including internet services) on a range of	<ul style="list-style-type: none"> Create data collection forms and enter data from these accurately. 	Excel: <ul style="list-style-type: none"> Using formulas

<p style="text-align: center;">Data</p>	<p>digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p>	<ul style="list-style-type: none"> ● Know how to check for and spot inaccurate data. ● Know which formulas to use when I want to change my spreadsheet model. ● Make graphs from the calculations on my spreadsheet. 	<ul style="list-style-type: none"> - Making graphs - Checking and entering data
<p style="text-align: center;"><u>Spring term 1&2</u></p> <p style="text-align: center;">Digital literacy</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p>	<ul style="list-style-type: none"> ● Produce a multimedia presentation combining video, pictures, text and audio, subpages etc.. ● Attach author data for publishing and publish book (storybird-ebooks-book creator on apps) <p>Sound Recording (Audacity)</p> <ul style="list-style-type: none"> ● Collect audio from a variety of sources including own recordings and internet clips. ● Create a multi-track recording using effects. ● Edit and refine their work to improve outcomes. 	<ul style="list-style-type: none"> - Powerpoint - Storybird - Bookcreator app - Garage band (macbooks or ipads) - Audacity
<p style="text-align: center;"><u>Summer term 1</u></p> <p style="text-align: center;">Computing (Programming)</p>	<p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</p> <p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p>	<p>Using Scratch</p> <ul style="list-style-type: none"> ● Use external triggers and infinite loops to control sprites. ● Create and edit variables ● Use conditional statements ● Use loops and conditions to refine algorithms ● Use variables to configure external outputs within Scratch ● Use external inputs to control external outputs ● Use conditional statements and infinite loops <p>Knowledge objectives:</p> <ul style="list-style-type: none"> ● Algorithms may be decomposed into component parts (procedures), each of which itself contains an algorithm. 	<ul style="list-style-type: none"> - NXT Robots - Probots - Scratch - Scratch Maze - Scratch Games - 2Code (purple mash)

		<ul style="list-style-type: none"> ● Algorithms can include selection (if) and repetition (loops). ● The behaviour of a program should be planned. ● One or more mechanisms for <i>selecting</i> which statement sequence will be executed, based upon the value of some data item 	
<p><u>Summer term 2</u></p> <p>Information technology</p>	<p>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.</p> <p>use search technologies effectively, appreciate how results are selected and ranked.</p>	<ul style="list-style-type: none"> ● Understand that search technologies include but are not limited to internet search engines ● Understand the importance of phrasing searches appropriately to get the most accurate results ● Know that search engines will produce differently ranked results for the same searches ● Understand that the Internet is a global computer network and a provider of multiple services ● Understand that the Internet is not the same as the world Wide Web ● Know that there are various ways in which computers can be linked and that networking allows different users to access different parts of the network and beyond ● Understand that electronic communications may be misinterpreted as a result of the lack of personal interaction ● Know that there are ways of collaborating with others on projects via Web2.0 tools ● Understand the importance of password security ● Know that there are a number of different ways to input data/information to or control a computer/tablet device ● Know that there are a range of output devices from a computer/tablet device 	-

<u>Year 6</u>	NC objectives	Skills	Resources
<p><u>Autumn term 1</u> <u>E-safety</u></p>	<p>Key stage 2 NC Objective: Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour</p>	<ul style="list-style-type: none"> ● Find <i>report</i> and <i>flag</i> buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc) ● click-CEOP button and explain to parents what it is for. ● Discuss scenarios involving online risk - Act as a role model for younger pupils, including promoting <i>Sid's Top Tips</i> - SIDs Top Tips.pdf (saved in E-safety folder) ● State the source of information found on the internet. 	<ul style="list-style-type: none"> - DB primary - Podcasts - You-tube channel - Movie maker

<p><u>Autumn term 2</u></p> <p>Computing (Programming)</p>	<p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p>	<p>Knowledge objectives:</p> <ul style="list-style-type: none"> Algorithms can be represented symbolically [flowcharts] or using instructions in a clearly defined language [turtle graphics]. Algorithms can include selection (if) and repetition (loops). Algorithms should be stated without ambiguity and care and precision are necessary to avoid errors. Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. A computer program is a sequence of instructions written to perform a specified task with a computer. Programs can be created using visual tools. 	<ul style="list-style-type: none"> NXT Robots Probots Scratch Scratch Maze Scratch Games 2Code (purple mash)
<p><u>Spring Term 1</u> (first half)</p> <p>E-safety</p>	<p>Key stage 2 NC Objective: Use technology safely, respectfully and responsibly; know a range of ways to report concerns and inappropriate behaviour</p>	<ul style="list-style-type: none"> Find <i>report</i> and <i>flag</i> buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc) click-CEOP button and explain to parents what it is for. Discuss scenarios involving online risk - Act as a role model for younger pupils, including promoting <i>Sid's Top Tips</i> - SIDs Top Tips.pdf (saved in E-safety folder) State the source of information found on the internet. 	<ul style="list-style-type: none"> DB primary Podcasts You-tube channel Movie maker
<p><u>Spring term 1&2</u></p>	<p>Select, use and combine a variety of software (including internet services) on a range of</p>	<ul style="list-style-type: none"> Create data collection forms and enter data from these accurately. Know how to check for and spot inaccurate data. 	<p>Excel:</p> <ul style="list-style-type: none"> Creating, entering and checking data

<p style="text-align: center;">Data</p>	<p>digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p>	<ul style="list-style-type: none"> ● Know which formulas to use when I want to change my spreadsheet model. ● Make graphs from the calculations on my spreadsheet. ● Sort and filter information. ● Understand that changing the numerical data effects a calculation. 	<ul style="list-style-type: none"> - Using formulas - Making graphs - Sorting and filtering information - How changing data effect calculations
<p style="text-align: center;"><u>Spring term 1&2</u></p> <p style="text-align: center;">Digital literacy</p>	<p>Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p>	<p>Animation</p> <ul style="list-style-type: none"> ● Plan a multi-scene animation including characters, scenes, camera angles and special effects. ● Use stop-go animation software with an external camera to shoot the animation frames. ● Adjust the number of photographs taken and the playback rate to improve the quality of the animation. ● Publish their animation and use a movie editing package to edit/refine and add titles. <p>Video</p> <ul style="list-style-type: none"> ● Storyboard and capture videos for a purpose. ● Plan for the use of special effects/transitions to enhance their video. ● Transfer footage to iMacs for more advanced editing. ● Trim, arrange and edit audio levels of video to improve the quality of their outcome. ● Add titles, credits, transitions, special effects. ● Export their video in different formats for different purposes 	<ul style="list-style-type: none"> - Imovie on macbooks - Windows moviemaker

<p><u>Summer term 1</u></p> <p>Computing (Programming)</p>	<p>use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p>	<ul style="list-style-type: none"> ● Declare variables ● Use a range of statements ● Use a selection algorithms ● Use comparison and numerical operators <p>Scratch</p> <ul style="list-style-type: none"> ● Design their own game including sprites, backgrounds, scoring and/or timers. ● Their game uses conditional statements, loops, variables and broadcast messages. ● Their game finishes if the player wins or loses and the player knows if they have won or lost. ● Evaluate the effectiveness of their game and debug if required. <p>Knowledge objectives:</p> <ul style="list-style-type: none"> ● Algorithms can be represented symbolically [flowcharts] or using instructions in a clearly defined language [turtle graphics] ● Algorithms are developed according to a plan and then tested. Algorithms are corrected if they fail these tests. ● Algorithms can include selection (if) and repetition (loops). ● A well-written program tells a reader the story of how it works, both in the code and in human-readable comments ● Computers can be programmed so they appear to respond 'intelligently' to certain inputs. 	<ul style="list-style-type: none"> - NXT Robots - Probots - Scratch - Scratch Maze - Scratch Games - 2Code - Alice - Pivot
<p><u>Summer term 2</u></p>	<p>understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the</p>	<ul style="list-style-type: none"> ● Understand that search technologies include but are not limited to internet search engines 	<ul style="list-style-type: none"> -

<p>Information technology</p>	<p>opportunities they offer for communication and collaboration</p> <p>use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content</p>	<ul style="list-style-type: none"> ● Understand the importance of phrasing searches appropriately to get the most accurate results ● Know that search engines will produce differently ranked results for the same searches ● Understand that the Internet is a global computer network and a provider of multiple services ● Understand that the Internet is not the same as the world Wide Web ● Know that there are various ways in which computers can be linked and that networking allows different users to access different parts of the network and beyond ● Understand that electronic communications may be misinterpreted as a result of the lack of personal interaction ● Know that there are ways of collaborating with others on projects via Web2.0 tools ● Understand the importance of password security ● Know that there are a number of different ways to input data/information to or control a computer/tablet device ● Know that there are a range of output devices from a computer/tablet device 	
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<u>Vocabulary</u>			
<u>E-safety</u>			
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3 and 4</u>	<u>Year 5 and 6</u>
rules online private information email	appropriate and inappropriate sites cyber bullying digital footprint keyword searching	e-safety rules secure passwords report abuse button gaming blogs	responsible online communication informed choices virus threats blogs messaging

<u>Vocabulary</u>					
<u>Programming</u>					
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
equipment buttons movement instructions buttons	forward backward right angle turn algorithm sequence	sequence instructions sequence and debugging test and improve	type and edit logo commands sensors open ended problems	explore procedures refind procedures variable hardware and software control	precinct output plan, program, test and review program writing control mimics and

robots patterns program	debug predict	sequence programming	bugs in problems complex programming	change inputs different inputs articulate solutions commands	devices sensors measure input create variables link errors
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<u>Vocabulary</u>					
<u>Multimedia</u>					
<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
videos camera stills sounds image bank word bank	paint effects templates animation documents index finger typing	multimedia prestations alignment brush size repeats	creating and modifying specific purpose photo modifying keyboard shortcuts bullet points	online sharing multimedia effects multimedia modification transitions	appropriate online tools audience atmosphere structure

<u>Vocabulary</u>

Data Handling

<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
photographs video sound data pictogram digitally	capturing moments magnified images questions data collection graphs charts save retrieve	questioning database construct contribute recording data data logger present data	database creation database searches inaccurate data	spreadsheets complex searches (and/ or: > /<) problem solving present answers question analysis interpret	generate process interpret store preston plausibility tool integrate investigate