

William Barnes Primary School - Curriculum Plan for Computing

Term	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	How to handle equipment appropriately.	Using technology iPADS and cameras	Turtle Logo	Programming Scratch – Dressing Up	Programming Scratch – Smoking car	Internet Research - Spreadsheets	Spreadsheet modelling Graphics packages
Autumn 2	Using a simple programme to create a picture. Developing mouse control.	Multimedia E-Safety 2Simple Software	Blogging/email	Using images to create Repeated Patterns	Internet Research – Multimedia Presentation	Programming – Logo commands	Kodu Programming
Spring 1	How to follow instructions and to make things happen. Understand how ever day appliances operate and respond to commands	Progression in Multimedia Text MS Word	Internet research Powerpoint E-Safety	Programming Scratch – Music Machine Garage Band E-Safety	Scratch – Conversation Internet research E-Safety	Programming Logo – repeat loops, procedures and variables Spreadsheets E-Safety	Kodu programming Scratch – Super Dodgeball E-safety
Spring 2	Moving and assembling pictures	Handling data RM Graph		Programming Scratch – Magic Carpet Collect and represent Data	Desk Top Publishing – Create an information poster	Web site design – hyperlinks, sounds and animations	Collaborative research through Teams and Powerpoint
Summer 1	Understanding instructions and making things happen	Progression programming Beebots	Animation	Internet research Presentation	Scratch - Train	Scratch – Spiral Rider Game	Film Making
Summer 2		Progression programming Beebots	Microsoft Word and Excel	Scratch – Times table game	Internet research	Scratch – Pong game	Scratch Coding – Space Opera

Year R – Curriculum for Computing

Term	National Curriculum Content	Project Name or Theme	Software used	Cross Curricular	Skills and Knowledge
Autumn 1	This is an introductory unit. The unit assumes that children can recognise some colours, numbers, letters and pictures	How to handle equipment appropriately.	My world 2Simple Simple city	CLD	Naming parts of a computer and technology. Treating technology carefully.
Autumn 2	This unit will introduce children to the control of the mouse. It will introduce simple drawing tools which will provide a foundation for work in Key Stage 1 EYFS- 30-50 months- uses ICT hardware to interact with age appropriate software.	Using a simple programme to create a picture. Developing mouse control.	2 paint a picture Colour Magic	EAD CD PD	ICT can be used to create pictures. The mouse can be moved around on screen.
Spring 1	Introductory unit EYFS- 30-50 months -Knows how to operate simple equipment.	How to follow instructions and to make things happen. Understand how everyday appliances operate and respond to commands	CD player CDs I-pad to record videos, photos	EAD CD	key idea: that machines and devices can be controlled Key idea: that songs/musical compositions express different feelings
Spring 2	This is an introductory unit. The unit assumes that children can <input type="checkbox"/> press keys on the key-board <input type="checkbox"/> Can use a mouse to select <input type="checkbox"/> Can recognise simple pictures on screen EYFS- 30-50 months- uses ICT hardware to interact with age appropriate software. 40-60 months- completes a simple program on a computer. 40-60 months- uses ICT hardware to interact with age appropriate software.	Moving and assembling pictures	Computer program e.g. My World which allows pictures to be organised on screen. Resource bank of pictures		<input type="checkbox"/> key idea: that computers have a variety of uses technique: to use the mouse to select and move items on the screen key idea: that ICT can be used to assemble pictures
Summer 1	40-60 months- responding to two part instructions. ELG- Follow instructions involving several ideas or actions.	Understanding instructions and making things happen	<input type="checkbox"/> Cones or other “route” markers	PD CLD Orienteering	<input type="checkbox"/> key idea: that instructions make things happen. key idea: that instructions can be given in a common language <input type="checkbox"/> technique: to use directional language to “control” someone Key idea: that instructions can include measurable units in a common language <input type="checkbox"/> Technique: to use unit lengths and a common
Summer 2	ELG- Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes	Selecting and using technology for a purpose	Children bring in technology they use at home. i-pads – remote control car beebots - mics controllers -CD players		Key idea to demonstrate and show the technology at home. To demonstrate how to use technology in school. To explain how to use it. To role play using technology.

Year 1 – Curriculum for Computing

Term	National Curriculum Content	Project Name or Theme	Software used	Cross Curricular Link	Skills and Knowledge
Autumn 1	<ul style="list-style-type: none"> recognise common uses of information technology beyond school or other online technologies. 	Technology in Our Lives Communicating	BBC computing clips	Learn how to use an iPad digital camera and take shots	Learn how to switch on, input user name and log off and shut down laptop. How to use a mouse and tracker pad.
Autumn 2	<ul style="list-style-type: none"> use technology purposefully to create, organise, store, manipulate and retrieve digital content 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. 	Multi-media E-Safety	2Simple 2Publish 2Simple Photo Word CEOPS materials	Link to topic to create and save drawings	Learn what different icons mean, save and print – manipulate mouse and tracker pad effectively.
Spring 1	<ul style="list-style-type: none"> use technology purposefully to create, organise, store, manipulate and retrieve digital content 	Text – Word	Microsoft Word	Link to English	Use keys to create text – use space bar and shift key for capital letters
Spring 2	<ul style="list-style-type: none"> use technology purposefully to create, organise, store, manipulate and retrieve digital content 	Data Handling	RM Starting graph	Maths link – using data graphs for problem solving	Collect information - record as tallies - input into computer - create different groups
Summer 1	<ul style="list-style-type: none"> 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 	Programming Beebots	BBC Bitesize Computing to explain algorithm Barefoot computing resources	Maths - directions	Learning to control / symbols to make things happen – cooperation and problem solving
Summer 2	<ul style="list-style-type: none"> 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 	Programming Beebots	Beebots BBC Bitesize Computing to explain algorithm Barefoot computing resources	Maths - directions	Learning to control / symbols to make things happen – cooperation and problem solving

Year 2 – Curriculum for Computing

Term	National Curriculum Content	Project Name or Theme	Software/Hardware used	Cross Curricular Link	Skills and Knowledge
Autumn 1	<ul style="list-style-type: none"> 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 	Programming Beebots	Beebots	Maths – shape and direction	<p>navigate programmable toys around a course or a familiar journey.</p> <p>program a sequence of instructions.</p> <p>‘debug’ an algorithm.</p>
Autumn 2	<ul style="list-style-type: none"> use technology purposefully to create, organise, store, manipulate and retrieve digital content 	Technology in Our Lives Communicating E-safety	Blogging 2simple email	English – writing for purpose	communicating via the internet
Spring 1	<ul style="list-style-type: none"> 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. 	Multimedia Graphics E-Safety	Powerpoint	Geog/history presentation of information	<p>use different layouts and templates for different purposes</p> <p>add graphics and sound</p> <p>select presentational features</p>
Spring 2	<ul style="list-style-type: none"> recognise common uses of information technology beyond school or other online technologies. 	Technology in Our Lives The Internet	Chrome/safari we browser web browser	History – changes over time, answering questions using the internet Science – research using the internet	recognise common uses of information technology outside school, think about how computer technology works. know what algorithms are.
Summer 1	<ul style="list-style-type: none"> use technology purposefully to create, organise, store, manipulate and retrieve digital content 	Multimedia Text	Word 2publish	English – writing for purpose, publishing work	basic editing skills, presentational features print, retrieve and amend
Summer 2	<ul style="list-style-type: none"> use technology purposefully to create, organise, store, manipulate and retrieve digital content 	Handling Data Digital media - Animation	Excel Icanimate on ipads (or similar)	Maths – data handling Science – research using the internet	using ICT to present and store data

Year 3 – Curriculum for Computing

Term	National Curriculum Content	Project Name or Theme	Software/Hardware used	Cross Curricular Link	Skills and Knowledge
Autumn 1	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	Programming Scratch – Dressing Up	Scratch		Designing, problem, solving, creating sprites, controlling movement, editing backgrounds
Autumn 2	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices etc. (see above) 	Using images to create Repeated Patterns	2Publish+	Diwali, Christmas cards and Calendars	Repeated images
Spring 1	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	Programming Scratch – Music Machine Garage Band Internet Safety	Scratch iPad – Garage Band Google Chrome	Music – creating and performing music	Coding Layering Repeated loops
Spring 2	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices etc. (see above) 	Programming Scratch – Magic Carpet Collect and represent Data	Scratch RM Starting graph	Maths Data handling	Inputing data Creating graphs
Summer 1	<ul style="list-style-type: none"> understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 	Internet research Presentation	Google Chrome Powerpoint	Topic South America	Formatting images Editing Text
Summer 2	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals etc. (See above) 	Scratch – Times table game	Scratch	Maths – x table	Variables

Year 4 – Curriculum for Computing

Term	National Curriculum Content	Project Name or Theme	Software/Hardware used	Cross Curricular Link	Skills and Knowledge
Autumn 1	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	Programming Scratch – Slug trail / Slug trail	Scratch		Move a sprite Series of command rotate Sense of sprite
Autumn 2	<ul style="list-style-type: none"> 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 understand computer networks including the internet (See below) use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 	Internet Research – Multimedia Presentation - make a poster based research into Gods	Publisher	Romans	Changing text size Text boxes Image boxes Resizing tools Linking text boxes for for overflows
Spring 1	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals etc. (See above) understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	Scratch – Conversation Internet research Internet Safety	Google Maps Scratch	UK Study	Talking between sprites – formatted text - formatted picture – linking text boxes – broadcast and review
Spring 2	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices etc. (see above) 	Desk Top Publishing – Create an information poster	Powerpoint	UK Study	Take photos on iPad, transfer to network, manipulate in various programs
Summer 1	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals etc. (See above) understand computer networks including the internet (see above) use search technologies effectively 	Scratch – Codeit Train	Scratch	Maths – Times tables	Ask answer loops variables
Summer 2	<ul style="list-style-type: none"> understand computer networks including the internet (see above) use search technologies effectively (see above) 	Internet research	Google Google maps Publisher	Vikings	Talking between sprites – formatted text - formatted picture – linking text boxes – broadcast and review

Year 5 – Curriculum for Computing

Term	National Curriculum Content	Project Name or Theme	Software used	Cross Curricular Link	Skills and Knowledge
Autumn 1	<ul style="list-style-type: none"> 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 	Comparing Graphics packages	Microsoft Paint Textease Paint To Simple suite	Orienteering Art – Mondrian and Seurat Spreadsheets	Using different tools from each package Cross curricular with Science and Geography
Autumn 2	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	Programming – Logo commands	Textease Turtle	Maths – angles, coordinates	Setpos, fd, rt, pu, pd, setfc home
Spring 1	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals etc. (See above) 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 	Programming Logo – repeat loops, procedures and variables Spreadsheets Internet Safety	Textease Turtle Microsoft Excel	Maths – angles, coordinates	Repeat loops and nested repeat loops Procedures variables
Spring 2	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices etc. (see above) 	Web site design – ‘Mountain website’	Textease Studio	Geography Mountains	Hyperlinks, animations, sounds, editing text, frames and graphics
Summer 1	<ul style="list-style-type: none"> 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 understand computer networks including the internet (see above) use search technologies effectively 	Scratch – Pong Game Internet Research	Scratch Google Chrome	Maths – angles and reasoning skills	Using variables for scoring If then else loops Sensing colours
Summer 2	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices etc. (see above) understand computer networks including the internet (see above) use search technologies effectively 	Spreadsheets Internet Research	Microsoft Excel Google Chrome	Maths – formulas, statistics Athletics History – Stone Age	Using formulas Creating graphs and charts

Year 6 – Curriculum for Computing

Term	National Curriculum Content	Project Name or Theme	Software used	Cross Curricular Link	Skills and Knowledge
Autumn 1 and 2	<ul style="list-style-type: none"> 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 understand computer networks including the internet (see above) use search technologies effectively 	Spreadsheets Adapted version of Twinkl Unit ‘Spreadsheet Modelling’ Explore population density in countries PGL survey of favourite foods and activities Number operations Ordering and presenting data Add edit and calculate data Creating and modifying a plan Creating own spreadsheet to solve a problem -	Microsoft Excel	PGL visit Mathematics 9(large numbers)	Enter formulae into cells- Change the format of a cell such as the number of decimal places order data according to given criteria Use functions such as average, min and max Sort data by numerical size Alter the attributes of a graph Design a spread sheet for a specific purpose Learning how to use Kodu tools Saving and exporting Kodu games Placing objects on a terrain Changing the characteristics of objects (height, size, colour and orientation) Rotating objects Programming using when and do instructions to make an object move and jump Add non-moving obstacles
Spring 1	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	Kodu – Coding in 3d Create landscapes Create moving objects controlled by keyboard Add scoring systems Create obstacles that move along pathways, move randomly or run away from user. Create obstacles that fire at you. Add lakes and boundaries. Create 1 player game according skills learnt	Kodu - game lab	Mathematics – sequences, angles, transformations, flow charts	Adding more terrain using the brush tool Make objects fire missiles Detecting when objects are hit and increasing scores Adjusting the settings of objects Adding further players Improving terrains using brush tools Making valleys, mountains and seas
Spring 2	<ul style="list-style-type: none"> 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 		Kodu – game lab		
Summer 1	<ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 	Scratch – advanced coding	Scratch	Maths – coordinates and geometry	collecting and presenting data

<p>Summer 2</p>	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices etc. (see above) 	<p>Making a short film</p>	<p>Windows Movie Maker Garageband</p>	<p>MUSIC Improvise and compose music for a range of purposes using the inter-related dimensions of music. ENGLISH Write a film script to act out and record. Write a news report to film. Recount an event. (PGL)</p>	<p>Making a short film, adding sound, edit and add effects evaluating and adapting Editing and merging video files and adding sound files.</p>
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Useful links

The Scratch and coding progressions are drawn from work by Phil Bagge which can be found at

<http://code-it.co.uk/scratch/scratchmodules>