Explore ∞ Discover ∞ Aspire

Northgate Primary School Computing Curriculum



Computing Overview

	Autumn Term		Spring Term		Summer Term	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	In addition to specific year group content, E-Safety is a common theme throughout all aspects of the computing curriculum. Computing will be taught every other term with three classes in Term 1 and three in Term 2					
Early Years Foundation stage	Continuous Provision 	Continuous Provision 	Continuous Provision 	Continuous Provision 	Continuous Provision 	Continuous Provision 
Year 1		Multimedia 		Programmimg-  BeeBot		Handling Data 
Year 2	Programming 		Technology in our lives: Internet 		Handling Data 	
Year 3	Technology in our lives: Internet  Multimedia		Scratch 		Handling Data 	
Year 4		Handling Data  Technology in our lives		Multimedia 		Scratch 
Year 5	Multimedia 		Programming 		Technology In Our Lives 	
Year 6		Technology In Our Lives 		Handling data 		Multimedia Programming: Algorithms  

Progression Document

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Early Years Foundation Stage	Continuous Provision 	Continuous Provision 	Continuous Provision 	Continuous Provision 	Continuous Provision 	Continuous Provision 
Suggested content	Children will use a selection of technology including: • Bee-Bot working out how they move by giving instructions to them. • iPads • Interactive whiteboards • Remote control cars • Wind-up toys • Talking pegs/tins/ boards	Children will use a selection of technology including: • Bee-Bot working out how they move by giving instructions to them. • iPads • Interactive whiteboards • Remote control cars • Wind-up toys • Talking pegs/tins/boards	Children will use a selection of technology including: • Bee-Bot working out how they move by giving instructions to them. • iPads • Interactive whiteboards • Remote control cars • Wind-up toys • Talking pegs/tins/board s	Children will use a selection of technology including: • Bee-Bot working out how they move by giving instructions to them. • iPads • Interactive whiteboards • Remote control cars • Wind-up toys • Talking pegs/tins/boards	Children will use a selection of technology including: • Bee-Bot working out how they move by giving instructions to them. • iPads • Interactive whiteboards • Remote control cars • Wind-up toys • Talking pegs/tins/boards	Children will use a selection of technology including: • Bee-Bot working out how they move by giving instructions to them. • iPads • Interactive whiteboards • Remote control cars • Wind-up toys • Talking pegs/tins/boards
Programs used/Related Programs	Phonics apps on iPads Photos on iPads	Bee-Bot app on iPads	Purple Mash on iPads to create alien pictures	Numbots on iPads/laptops	Purple Mash on iPads	Purple Mash app on iPads to make maps

Equipment	IPads	Bee-Bots	IPads	IPads/laptops	IPads	IPads
Use of IT in the wider curriculum	**Phonics:** learning sounds and how they work together	**Maths:** support problem solving, direction and turns, shape, counting moves	**English**: Speaking and listening, writing labels.	**Maths**: adding and taking away	**Technology** in our lives. I can recognise the ways we use technology in our classroom and at home by talking about the	**Maths:** support problem solving, direction and turns, shape. **Literacy:** Speaking and listening, instructions, story writing.
e-safety link	- I am careful with technology devices - I can talk about why it's important to be kind and polite.	- I am careful with technology devices - I can talk about why it's important to be kind and polite.	-I can talk about why it's important to be kind and polite. -I say kind things about others' work.	-I can talk about why it's important to be kind and polite (when I give feedback to my friends).	- I am careful with technology devices - I can talk about why it's important to be kind and polite.	- I am careful with technology devices - I can talk about why it's important to be kind and polite.

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 1		Multimedia/Technology in our lives 		BeeBot 		Handling Data 
Suggested content		**Describing My Toys** Children will: • Use online activity to add text to an image • Record an image; upload it to a computer / check it is on camera roll of tablet • Use software or app to label photo • Create an interactive story • Present work to peers		**Programming– Move My BeeBot-** Children will: • Meet Bee-Bot and think about what they already know. • Give instructions to each other. • Program Bee-Bot with instructions. • Troubleshoot their program Use the word 'algorithm' **My Moves on screen with 2Go** • Use 2Go/JIT program to move car around village • Link back to Bee-Bot town activity • Challenge with turning level of 2Go • Draw house with 2Go		**Present My Weather –** Children will: • Collect data about the length of shadows. • Children record data measurements from equipment. • Use appropriate software to create a pictograph. Create, save and retrieve an annotated image.

Programs used/Related Programs		2Paint/Microsoft Word		2go, 2logo, Bee-Bot app on iPads		2Simple/Purple Mash 2Count
Equipment		Camera/iPads		Bee-Bots/iPads		iPads/laptops
Use of IT in the wider curriculum				**Mathematics:** support problem solving, direction and turns, shape, counting moves		**Mathematics:** support problem solving, direction and turns, shape, counting moves
e-safety link	- I am careful with technology devices - I can talk about why it's important to be kind and polite.	- I am careful with technology devices - I can talk about why it's important to be kind and polite.	-I can talk about why it's important to be kind and polite. -I say kind things about others' work.	-I can talk about why it's important to be kind and polite (when I give feedback to my friends).	-I can tell an adult when I see something unexpected or worrying online	-I can tell an adult when I see something unexpected or worrying online

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Autumn 1**	**Autumn 2**	**Spring 1**
Year 2	Programming 		E-safety 		Handling Data 	
Suggested content	**Programming – Making my moves with Scratch Jnr** Children will: - use blue programming blocks in Scratch Jnr App to make cat move around stage. - use trigger blocks to start a sequence. - investigate speed block and create an animal race. - add pink hide, show and tell blocks to sequences. - self-assess their confidence to make something happen. - create a scene where a wizard says a magic word and disappears		**Online Safety – Do I trust my Internet searches?** Children will: - Discover facts using simple search engines. - Use an app or software to add labels or text to photograph - Use the keyboard to add words/sentences. -Safely use a laptop		**Data handling-My habitat investigation.** Children will: - Use 2Question on Purple Mash to begin making branching databases - Collect data about minibeasts found in school grounds - Use 2Count on Purple Mash to create a pictogram of data collection	
Programs used/Related Programs	Scratch Jnr		Internet search engines- Google, Bing, Safari		Purple Mash 2Question/2Count. Camera	

Equipment	IPads/laptops		IPads/laptops		IPads/Laptops	
Use of IT in the wider curriculum	**Mathematics**: support problem solving, direction and turns, shape, counting moves		**English**: Speaking and listening, writing lists, labels and captions, non-fiction texts. **Technology** I can recognise the ways we use technology in our classroom and at home by talking about them.		**Mathematics**: support problem solving, direction and turns, shape, counting moves **Science**: I can identify that most living things live in habitats to which they are suited. I can describe a simple food chain, and identify and name different sources of food	
e-safety link	I can talk about why it's important to be kind and polite. -I say kind things about others' work	- - I am careful with technology devices - I can talk about why it's important to be kind and polite.	-I can talk about why it's important to be kind and polite (when I give feedback to my friends).	-I can talk about why it's important to be kind and polite (when I give feedback to my friends).	-I can tell an adult when I see something unexpected or worrying online.	- I am careful with technology *devices* - I can talk about why it's important to be kind and polite.

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 3	Multimedia 		Scratch 		Data Handling  Branching Databases	
Suggested content	**Online safety-Using search engines safely.** Children will: - Search for information online and discuss the best ways to find answers - Learn about the World Wide Web as part of the Internet - Search for a copyright safe picture and edit it - Learn how to refine a search query through filters **Multimedia-Create an e-book using book creator app.** Children will: - Search for information online and discuss the best ways to find answers - Learn about the World Wide Web as part of the Internet		**Programming-Making My Program** Children will: • put programming commands into a sequence to achieve a specific outcome. • break an open-ended problem up into smaller parts. - describe the algorithm I will need for a simple task. • keep testing my program and can recognise when I need to debug it.		**Handling and presenting data- Showing My Device Time** Children will: • Collect and show data on time spent playing games with 2Simple 2Graph **Handling Data 2 My Top Trump Database** • Play animal top trumps • Collect and sort data and information about animals • Use branching database to sort animals (optional) • Use 2investigate to record and	

	- Search for a copyright safe picture and edit it - Learn how to refine a search query through filters				interpret graph about animals Link to Science	
Programs used/Related Programs	Book Creator		Scratch		2Graph/ 2Investigate	
Equipment	IPads/laptops		IPads/laptops		IPads/laptops	
Use of IT in the wider curriculum	**Literacy:** Select and use appropriate registers for effective communication as they use sound recording as part of multimedia thread **D and T:** Use a PowerPoint to explain a topic in D and T.		**Literacy**: ask relevant questions to extend their understanding and knowledge of technology		**Science:** Identifying and classifying; gathering and recording data to help in answering questions. Identify and name a variety of plants and animals in their habitats, including micro-habitats	
e-safety link	I can recognise websites and games appropriate for my age.	I can say positive things to encourage my friends and post positive comments online.	I can say positive things to encourage my friends and post positive comments online.	I can say positive things to encourage my friends and post positive comments online.	I ask an adult before downloading files and games from the Internet (when downloading apps or music).	I can recognise websites and games appropriate for my age.

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 4		Technology In Our Lives 		Multimedia 		Programming 
Suggested content		**Check my facts: Where is my information?** **Children will** • Investigate a 'spoof' website. • Discuss what is 'true' online and how we can check for reliable information. • Research a topic and begin to consider plagiarism • Talk about the Northgate network and the different. resources they can access, including the Internet. • Consider a search query based on topic learning and identify the key words that you would use in a search engine. • Create a learning resource for others using hyperlinks to content on the World Wide Web.		**My Roman comic book (PowerPoint)** **Children will:** • Explore the conventions of comic books • Create their own comic book about their school and add images, text and shapes • Share their comic books with classmates and provide feedback • Create a comic book to support		**My Scratch games** **Children will:** • Make the Scratch cat move and change • Use Scratch to program keys and use them to 'draw' • Create a car racing game using their knowledge of 'if…then' commands in Scratch • Create their own game using their knowledge of Scratch

Programs used/ Related Programs		Padlet and specific websites**(e.g.http://www.thedogisland.com/s**)		PowerPoint		Scratch.
Equipment		Laptops/iPads		Laptops/iPads		Laptops/iPads
Use of IT in the wider curriculum		**History**: links can be made to an existing project or area of research e.g. Romans **English**: ask relevant questions to extend their understanding and knowledge of technology		**Science:** Identifying and classifying; gathering and recording data to help in answering questions. Identify and name a variety of plants and animals in their habitats, including micro-habitats		**English**: children can write a guide to their game, including instructions, for an audience.
e-safety link	I know that anything I share online can be seen by others.	I know that anything I share online can be seen by others.	I can say positive things to encourage my friends and post positive comments online.	I can say positive things to encourage my friends and post positive comments online.	I can recognise websites and games appropriate for my age.	I can talk about why I need to ask a trusted adult before downloading files and games from the Internet.

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Autumn 1**	**Autumn 2**	**Spring 1**
Year 5	Multimedia 		Programming 		Technology in our lives 	
Suggested content	**My weather forecast.** **Children will:** • Research the weather and climate of different regions of the USA. • Word process a script for a weather forecast. • Record a video of a weather forecast. • Add sound effects to the video. • explore our world through Google Earth. • Understand how we can use digital maps to help us.		**Scratch my Roman Numerals** **Children will:** • Review their knowledge of Scratch and share what they can do • Learn about variables and how to use them in a program • Make a variable to count. • Be part of making an animation of an Ancient Roman counting in Roman Numerals. • Make an animation of a modern-day person and Ancient Roman counting together. • Record their voices to add to the counting animation they created		**Technology in the World** **Children will** • Describe different parts of the Internet. • Use a search engine to find appropriate information and check its reliability. • Recognise and evaluate different types of information found on the World Wide Web. • Consider what the Internet is used for across their local and national community. • Discover who has access and who does not have access to the Internet across the world. • Consider reliability of information	-

					• Discuss who has rights to use the Internet. • Consider action that can be taken to increase access to the Internet where it is needed.	
Programs used/Related Programs	Google, Kid click, Safe search kids Bing/Purple Mash.		Scratch 3		Google, Safe search kids, Bing	
Equipment	iPad/laptops		iPad/laptops		iPad/laptops	
Use of IT in the wider curriculum	**Literacy**: writing composition - learn from the structure, vocabulary and grammar of writing similar to that which they are planning to write.		**History:** Use a topic or understanding of number focus to sort objects **Maths:** understanding of Roman Numerals; counting in number sequence.		**Literacy**: ask relevant questions to extend their understanding and knowledge of technology	
e-safety link	I comment positively and respectfully online (if sharing videos).	I can talk about the dangers of spending too long online or playing a game.	I can say positive things to encourage my friends and post positive comments online.	I can say positive things to encourage my friends and post positive comments online.	I can explain the importance of communicating kindly and respectfully.	I can recognise websites and games appropriate for my age.

	Autumn		Spring		Summer	
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 6		**Technology In Our Lives** 		**Handling data** 		**Multimedia/ Programming** 
Suggested content	-	**Move my Information.** **Children will**: • Build a list of the different services the Internet provides and examples of things we do that are part of each service • Use ' Is that all that happen?' to build children's understanding of how the internet works • Give children the opportunity to present 'How the Internet works'		**Check my Heart Rate** **Children will** • Use data loggers and other devices to conduct an investigation into levels of fitness. • Present the findings of the investigation in different ways • Ensure the data is as accurate as possible.		**Sell my School** **Children will:** • Look at how another school has created a promotional video to attract parents, children and staff. • Discuss how they can promote their own school. • Form a production team to create a promotional video for their school. • Use a range of multimedia techniques in their video e.g. image editing, green screening and sound
Programs used/Related Programs		Data logging software		Data loggers		Promotional video from a school/iMovie/ Greenscreen app

Equipment		Data loggers/ iPad/laptops		iPad/laptops		iPad/laptops
Use of IT in the wider curriculum		**Science:** Identifying and classifying; gathering and recording data to help in answering questions. **Mathematics**: Use appropriate software and data loggers to create and interpret line graphs. Complete and interpret tables to present and understand information.		**Maths**: Use negative numbers as part of a game to move characters on the screen and as part of algorithm to reduce the score within the game after particular events. Identify the mathematical operations required for using variables. **Art**: Use the construction of 3d models of buildings or landscape to assist in designing settings for game. Photos of these could be used as backdrops in the game.		**Literacy**: prepare and perform, allowing pupils to evaluate intonation, tone and volume and clarity of meaning to an audience.
e-safety link **As part of**	**I am kind and responsible (Reporting/Supporting)** • I support my friends to protect themselves and make good choices online, including reporting concerns to an adult.	**I am kind and responsible (Kindness)** • I always communicate kindly and respectfully and work with others to help everyone enjoy their use of technology.	**I am safe and secure (Relationships)** • I can explain how to communicate safely and responsibly with people I only know online.	**I am safe and secure (Relationships)** • I can explain how to communicate safely and responsibly with people I only know online.	**I am healthy (Lifestyle choice)** • I support my friends in evaluating their use of games and devices and make good choices for myself.	**I am healthy (Lifestyle choice)** • I support my friends in evaluating their use of games and devices and make good choices for myself.

National Curriculum 2014 – Subject Content:

Key stage 1
Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions

- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key stage 2
Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.