

## Northgate Primary School: Computing Progression Planning



*Computing is not about computers any more. It is about living. - Nicholas Negroponte*

### Intent:

- **a sense of belonging** by being responsible, respectful and competent users of technology, who consider how their actions may impact others and also take pride in their own learning. They understand their role in the wider online community; the importance of governance and legislation; and how they can help to keep everyone safe. Our computing curriculum helps to equip pupils with the skills, strategies and knowledge that will enable them to reap the benefits of the online world, today and in the future, whilst being able to minimise risk to themselves and others
- **confidence in communicating** by being reflective consumers, who think critically about what they see and hear, both on- and offline, and know how to check information is accurate and trustworthy. They have an understanding of how information is stored, created, retrieved, shared and manipulated, so that they can make informed judgements about what they see. By exposing them to a variety of hardware, software and unplugged resources, they are able to use technology imaginatively and creatively to inspire others. They can also explain the reasons for doing things differently, to spot problems and how to rectify them, and be able to talk confidently about things that they see online and talk openly about them.
- **a resilient attitude** by being exposed to an online safety education that is relevant, up-to-date, and embedded in their day-to-day lives, both in and out of school. They are able to utilise computational thinking beyond the computing curriculum: working as a team; breaking down tasks; understanding how and why things happen; how to correct errors; and where to look for support and guidance.

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Autumn Overview</b>						
	Online Safety	Online Safety	Online Safety	Online Safety	Online Safety	Online Safety
	Exploring Purple Mash	Effective Searching	Branching Databases	Hardware Investigators	Coding	Networks
	Pictograms	Coding	Spreadsheets	Coding	Databases	Coding
	Spreadsheets					
<b>Spring Overview</b>						
	Online Safety	Online Safety	Online Safety	Online Safety	Online Safety	Online Safety
	Maze Explorers	Questioning	Coding	Effective Searching	Spreadsheets	Spreadsheets
	Technology outside school	Spreadsheets	Touch Typing	Animation	Game Creator	Blogging
	Lego Builders			Logo		

	Grouping and Sorting					
<b>Summer Term</b>						
	Online Safety	Online Safety	Online Safety	Online Safety	Online Safety	Online Safety
	Coding	Making Music	Email (inc. email safety)	Writing (publications) for different audiences	3D Modelling	Quizzing
	Animated Story Books	Presenting Ideas	Simulations	Spreadsheets	Concept Maps	Text Adventures (map based)
		Creating Pictures	Graphing			

<b>Computer Science</b>						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>• Sequence/find patterns/sort – patterns, colour, size, etc (Maths)</li> <li>• Repetition - patterns (Maths)</li> <li>• Problem solving (Maths)</li> <li>• Follow/give simple instructions (e.g. to a floor robot, to each other, follow a dance routine/activity instructions) (Maths/Communication and Language)</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and list the steps of a known task in order</li> <li>• Understand that we control computers by giving them instructions</li> <li>• Create a simple program e.g. to control a floor robot</li> <li>• Understand what an algorithm is</li> <li>• Create a simple algorithm</li> <li>• Identify and explain patterns in groups of objects</li> <li>• Debug an error in a simple algorithm or program e.g. for a</li> </ul>	<ul style="list-style-type: none"> <li>• Understand that computers have no intelligence and we have to program them to do things</li> <li>• Understand that the order of instructions in an algorithm is important</li> <li>• Understand that instructions in an algorithm need to be clear and unambiguous</li> <li>• Evaluate the success of an algorithm or program</li> <li>• Identify and correct errors in a given</li> </ul>	<ul style="list-style-type: none"> <li>• Understand that we can decompose (break up) a problem into smaller steps to make it simpler</li> <li>• Identify and correct errors in a given algorithm or program (debugging)</li> <li>• Design and code a program that follows a simple sequence</li> <li>• Use repetition to make programs more efficient</li> <li>• Understand how variables can be</li> </ul>	<ul style="list-style-type: none"> <li>• Understand that we can decompose a problem into smaller steps to make it simpler</li> <li>• Use diagrams to represent an algorithm, e.g. a flowchart</li> <li>• Use repetition to make programs more efficient</li> <li>• Decompose a problem and create a solution (sub-routine) for each step</li> <li>• Use selection in algorithms and programs, i.e. if...</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise that different solutions exist for the same problem</li> <li>• Predict what will happen in a program or algorithm (e.g. change of output) when the input changes (e.g. sensor, data or event)</li> <li>• Recognise variables in a program</li> <li>• Create programs including repeat until loops</li> <li>• Create simple variables, e.g. to</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise that different solutions exist for the same problem</li> <li>• Predict what will happen in a program or algorithm (e.g. change of output) when the input changes (e.g. sensor, data or event)</li> <li>• Recognise variables in a program</li> <li>• Create programs including repeat until loops</li> <li>• Create simple variables, e.g. to</li> </ul>

	<p>floor robot</p> <ul style="list-style-type: none"> <li>• Predict the outcome of a simple algorithm or program</li> <li>• Understand that computers have no intelligence and we have to program them to do things</li> <li>• Understand that the order of instructions in an algorithm is important</li> <li>• Understand that instructions in an algorithm need to be clear and unambiguous</li> <li>• Evaluate the success of an algorithm or program</li> <li>• Identify and correct errors in a given algorithm or program (debugging)</li> <li>• Use the language if... then to describe the relationship between two actions</li> </ul>	<p>algorithm or program (debugging)</p> <ul style="list-style-type: none"> <li>• Use the language if... then to describe the relationship between two actions</li> </ul>	<p>used to store information while a program is running</p> <ul style="list-style-type: none"> <li>• Use selection in algorithms and programs, i.e. if... then...</li> <li>• Decompose a problem and create a solution (sub-routine) for each step</li> <li>• Predict the outcome of a program</li> <li>• Can list a range of ways that the internet can be used to provide different methods of communication</li> <li>• Can use some of these methods of communication (e.g. email)</li> <li>• Can describe appropriate email practice when communicating in this way</li> </ul>	<p>then...</p> <ul style="list-style-type: none"> <li>• Use forever loops in a program</li> <li>• Create a program using a range of events/inputs to control what happens</li> <li>• Predict the outcome of a program</li> </ul> <p><i>[May even: Understand how variables can be used to store information while a program is running and are able to use and manipulate the value of variables]</i></p>	<p>keep score or remove lives in a game</p> <ul style="list-style-type: none"> <li>• Understand the difference between and use if... then... and if... then... else... statements</li> <li>• Combine a variable with relational operators (&lt; = &gt;) to determine when a program changes, e.g. if score &gt; 5, say "well done"</li> <li>• Can design a physical computing system that uses sensors, e.g. using a flow chart</li> </ul>	<p>keep score or remove lives in a game</p> <ul style="list-style-type: none"> <li>• Understand the difference between and use if... then... and if... then... else... statements</li> <li>• Combine a variable with relational operators (&lt; = &gt;) to determine when a program changes, e.g. if score &gt; 5, say "well done"</li> <li>• Can design a physical computing system that uses sensors, e.g. using a flow chart</li> </ul>
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## Information Technology

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>• Role play areas – shop, bank, post office – anywhere where technology is used - (Role Play Area - inside and outside)</li> <li>• Name a range of digital devices in school and at home, inc. microwave, washing machine, etc - (Role Play Area - inside and outside, All About Me Topic)</li> <li>• Name the basic parts of a computer, e.g. screen, keyboard, mouse, etc. (Computing)</li> <li>• Learn basic skills – e.g. handling/moving a mouse, pressing keys on a keyboard, moving around a screen, double-click to open things (Computing, Role Play Area)</li> </ul>	<ul style="list-style-type: none"> <li>• Select media to present information on a topic</li> <li>• Understand that you can edit and change digital content</li> <li>• Select basic options to change the appearance of digital content</li> <li>• Combine media with support to present information, e.g. text and image</li> <li>• Apply edits to digital content to achieve a particular effect</li> <li>• Follow simple instructions of where and how to save and open work</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate an ability to organise data using a simple database</li> <li>• Can retrieve specific data for conducting simple searches</li> <li>• Create, name, save and retrieve content</li> <li>• Plan out digital content</li> <li>• Present ideas and information combining media independently including photos, text and sound</li> <li>• Talk about what makes digital content good or bad</li> <li>• Edit digital content to improve it</li> <li>• Know where and how to save and open work</li> </ul>	<ul style="list-style-type: none"> <li>• Understand that school computers are connected (if relevant)</li> <li>• Edit existing media to make new content with an awareness of copyright</li> <li>• Evaluate existing and their own digital content</li> <li>• Edit digital content to improve it according to feedback</li> <li>• Design and create digital content for a specific purpose</li> <li>• Collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365</li> <li>• Collect, organise and present information effectively using a range of media</li> <li>• Use a range of tools</li> </ul>	<ul style="list-style-type: none"> <li>• Use a search engine to find information using keyword searches</li> <li>• Understand the function, features and layout of a search engine</li> <li>• Can appraise selected webpages for credibility and information at a basic level</li> <li>• Share digital content within their community (e.g. virtual display boards) Design and create digital content for a specific purpose</li> <li>• Collaborate with peers using online tools, e.g. blogs, Google Drive, Office 365</li> <li>• Collect, organise and present information</li> </ul>	<ul style="list-style-type: none"> <li>• Use more advanced searching techniques when using a search engine</li> <li>• Able to explain in some detail how credible a webpage is and the information it contains</li> <li>• Identify and use appropriate hardware and software to fulfil a specific task</li> <li>• Recognise the audience when designing and creating digital content</li> <li>• Remix and edit a range of existing and their own media to create content</li> <li>• Understand the benefits of using technology to</li> </ul>	<ul style="list-style-type: none"> <li>• Can readily apply filters when searching for digital content</li> <li>• Able to explain in detail how credible a webpage is and the information it contains</li> <li>• Can compare a range of digital content sources and are able to rate them in terms of content quality and accuracy</li> <li>• Can use critical thinking skills in everyday use of online communication</li> <li>• Select, combine and use Internet services to fulfil a purpose (e.g. blogs, display boards and email)</li> <li>• Identify success criteria for creating digital content for a</li> </ul>

<ul style="list-style-type: none"> <li>• Use a range of digital devices in school to support learning, such as digital cameras, iPads, laptops, BeeBots, IWB, etc..</li> </ul>			<p>to edit and enhance media for a particular effect</p>	<p>effectively using a range of media</p> <ul style="list-style-type: none"> <li>• Use a range of tools to edit and enhance media for a particular effect</li> <li>• Recognise the main component parts of hardware which allows computers to join and form a network</li> </ul>	<p>collaborate with others</p> <ul style="list-style-type: none"> <li>• Select, combine and use Internet services to fulfil a purpose (e.g. blogs, display boards and email)</li> <li>• Identify success criteria for creating digital content for a given purpose and audience</li> <li>• Evaluate their own and others content against success criteria and make improvements accordingly</li> </ul>	<p>given purpose and audience</p> <ul style="list-style-type: none"> <li>• Evaluate their own and others content against success criteria and make improvements accordingly</li> <li>• Understand the value of and an awareness of the dangers computer networks</li> <li>• Understand and explain in some depth the difference between the internet and the World Wide Web</li> <li>• Know what a WAN and LAN are and can describe how they access the internet in school</li> <li>• Are aware of a range of Internet services, e.g. email, VOIP (Voice Over Internet Protocol e.g. Skype, FaceTime), World Wide Web, and what they do</li> </ul>
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## Digital Literacy including Online Safety

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none"> <li>• Role play areas – shop, bank, post office – anywhere where technology is used - (Role Play Area - inside and outside)</li> <li>• Name a range of digital devices in school and at home, inc. microwave, washing machine, etc - (Role Play Area - inside and outside, All About Me Topic)</li> <li>• Use a range of digital devices in school to support learning, such as digital cameras, iPads, laptops, BeeBots, IWB, etc..</li> <li>• Know how to keep ourselves and other safe online, and how and who to ask for help if we need it</li> </ul>	<ul style="list-style-type: none"> <li>• Understand what is meant by technology and can identify a variety of examples both in and out of school</li> <li>• Explain what the basic parts of a computer are used for, e.g. mouse, screen, keyboard</li> <li>• Recognise that a range of devices contain computers, e.g. washing machine, car, laptop</li> <li>• Recognise and use a range of output devices, e.g. printer, speakers, monitor/screen</li> <li>• Understand that you can find information from a website</li> <li>• Use a simple password when logging on, where relevant</li> </ul>	<ul style="list-style-type: none"> <li>• Use a simple password when logging on</li> <li>• Know where to save and open work</li> <li>• Understand that you can use a search engine to find information using keyword searches</li> <li>• Apply learning of effective searching beyond the classroom</li> <li>• Understand that you can share digital content, , e.g. create booklets, flyers, etc</li> <li>• Understand that all devices, programs, websites, apps and games are designed and manufactured by real people to fulfill specific tasks</li> <li>• Begin to understand how things are shared</li> </ul>	<ul style="list-style-type: none"> <li>• Open and save a file to a suitable folder</li> <li>• Use suitable file names when saving work</li> <li>• Understand that school computers are connected (if relevant)</li> <li>• Type using all fingers</li> <li>• Use right-click, left-click and double-click appropriately on a mouse</li> <li>• Use a search engine to find specific information</li> <li>• Know how to copy text and images into a another document</li> <li>• Remember an individual password and know the importance of having a secure password and not sharing this with anyone else</li> </ul>	<p>As Year 3, plus:</p> <ul style="list-style-type: none"> <li>• Understand you can organise files using folders</li> <li>• Delete, move and copy files</li> <li>• Can help others to understand the importance of online safety</li> <li>• Know a range of ways of reporting inappropriate content and contact</li> <li>• Understand the online safety implications associated with the ways the internet can be used to provide different methods of communication (e.g. phishing, cookies, etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise what personal information is and can explain how this can be kept safe</li> <li>• Use the keyboard confidently to type at a suitable pace</li> <li>• Use common keyboard shortcuts</li> <li>• Remember an individual password and know the importance of having a secure password and not sharing this with anyone else</li> <li>• Organise files effectively using folders</li> <li>• Have secure knowledge of common online safety rules</li> <li>• Can apply knowledge of common online safety rules by demonstrating the safe and respectful use of a few different</li> </ul>	<p>As Year 5, plus</p> <ul style="list-style-type: none"> <li>• Demonstrate the safe and respectful use of a range of different technologies</li> <li>• Demonstrate the safe and respectful use of a range of different technologies and online services</li> <li>• Identify more discreet inappropriate behaviours through developing critical thinking</li> <li>• Recognise the value in preserving their privacy when online for their own and other people’s safety</li> </ul>

	<ul style="list-style-type: none"> <li>• Understand the importance of keeping information, such as usernames and passwords private – actively show this in lessons</li> <li>• Develop an understanding of using email safely (within school environment, e.g. Purple Mash)</li> <li>• Know ways of reporting inappropriate behaviours and content to a trusted adult</li> </ul>	<p>electronically (e.g. posting work on a digital display board</p> <ul style="list-style-type: none"> <li>• Know the implications of inappropriate online searches</li> </ul>	<ul style="list-style-type: none"> <li>• Understand the importance of staying safe, particularly online</li> <li>• Understand the importance of their conduct when using communication tools (e.g. email, etc)</li> <li>• Know more than one way to report unacceptable content and contact</li> </ul>		<p>technologies and online services</p> <ul style="list-style-type: none"> <li>• Can relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others</li> </ul>	
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