

**St. John's C.E. Primary  
Friern Barnet**

## **COMPUTING GUIDELINES**

### **Statement of Intent**

The intent of our Computing Curriculum is to prepare our children for their future by giving them the opportunities to gain knowledge and develop skills that will equip them for an ever-changing digital world. Knowledge and understanding of ICT is of increasing importance for children's future both at home and for employment. Our Computing curriculum focuses on a progression of skills in digital literacy, computer science, information technology and online safety to ensure that children become competent in safely using, as well as understanding, technology. These strands are revisited repeatedly through a range of themes during children's time in school to ensure the learning is embedded and skills are successfully developed. Our intention is that Computing also supports children's creativity and cross curricular learning to engage children and enrich their experiences in school.

### **Implementation**

- Bi-weekly computing lesson to be taught in class
- Planning – medium term format
- Identifying opportunities to Integrate computing into other subjects whenever possible to offset the need for standalone lessons (but computing MUST take place bi-weekly at least in accordance with the computing syllabus)
- Chrome books
- Saving work to Google Drive
- Homework
- Managing hardware
- Assessment
- Monitoring progress – work scrutiny (subject leader)
- Subject support
- E-safety & safeguarding
- Displays or portfolios

- Google drive – showcasing children’s work on your class page

Key Stage 1 National Curriculum Expectations	Key Stage 2 National Curriculum Expectations
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions;</li> <li>• create and debug simple programs;</li> <li>• use logical reasoning to predict the behaviour of simple programs;</li> <li>• use technology purposefully to create, organise, store, manipulate and retrieve digital content;</li> <li>• recognise common uses of information technology beyond school;</li> <li>• use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</li> </ul>	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts;</li> <li>• use sequence, selection, and repetition in programs; work with variables and various forms of input and output;</li> <li>• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs;</li> <li>• understand computer networks including the internet; how they can provide multiple services, such as the world wide web, and the opportunities they offer for communication and collaboration;</li> <li>• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content;</li> <li>• select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information;</li> <li>• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>

**Progression Map KS1 & KS2**

	Aut 1	Aut 2	Spring 1	Spring 2	Summer 1	Summer 2
Y1	<p><b>Technology around us.</b> To identify technology To identify a computer and its main parts To use a keyboard to type on a chromebook</p>	<p><b>Word Processing</b> • Type with two hands • Use shift, space and enter correctly. • Use undo and redo. • Make text bold, italic or underline.</p>	<p><b>Painting</b> Paint with different colours. • Paint with different brushes. • Create shapes.</p>	<p><b>Online Safety</b> type their name on a piece of work they have created; • open a web browser; • recall some of the SMART rules for Internet safety; • know who to tell if someone online asks for personal information; understand why email is a good way to communicate.</p>	<p><b>Programming</b> • open Scratch and start a new project; • add new characters and backgrounds; • use blocks for movement in different directions; • create short sets of sequenced instructions.</p>	<p><b>Programming Toys</b> • create step-by-step instructions using pictures; • write and follow detailed step-by-step instructions; • direct a Bee-Bot to a toy; • program a Bee-Bot, one instruction at a time, using the arrow buttons</p>
	<p><b>Vocabulary</b> Touchpad Keyboard Screen</p>	<p><b>Vocabulary</b> Open Save Type Text</p>	<p><b>Vocabulary</b> Colours Brushes Shapes Insert</p>	<p><b>Vocabulary</b> Rules Online Private information Email</p>	<p><b>Vocabulary</b> Background Direction Blocks instructions</p>	<p><b>Vocabulary</b> Instructions Buttons Robots Patterns Program</p>
Y2	<p><b>Using the internet</b> search using the words "for kids"; • follow a weblink; • locate their own blog;</p>	<p><b>Computer Art</b> access an appropriate program for achieving a specific task;</p>	<p><b>Coding</b> Draw lines of different lengths using the fd command.</p>	<p><b>Online Safety</b> know what 'digital footprint' means; • know that people can use the information they put online;</p>	<p><b>Presentation Skills</b> • Insert slides, add and type in a text box</p>	<p><b>Using and Applying</b> find and open software for creating computer art; • add text and images to a presentation;</p>

	<ul style="list-style-type: none"> <li>• understand how to blog safely and responsibly.</li> </ul>	<ul style="list-style-type: none"> <li>• switch between program tools to produce different techniques;</li> <li>• alter the formatting of a tool to adjust the colour or size.</li> </ul>	<ul style="list-style-type: none"> <li>• Move blocks into the Scripts Area.</li> <li>• Snap blocks together to combine commands</li> </ul>	<ul style="list-style-type: none"> <li>• know that a digital footprint contains information about a person;</li> <li>• identify keywords that will give good search results;</li> <li>• use a website to search for information;</li> <li>• begin to identify possible dangers online;</li> <li>• identify websites suitable for their age;</li> <li>• know when to ask an adult for advice about accessing a website;</li> <li>• know what to do if a website makes them uncomfortable;</li> <li>• talk about what people might want to know about a website;</li> <li>• identify unkind online behaviour;</li> <li>• know how to safely search for information online;</li> </ul>		<ul style="list-style-type: none"> <li>• retrieve/open a file from a saved location;</li> <li>• select a relevant backdrop and character within Scratch;</li> <li>• add a second character and position on the backdrop within Scratch.</li> </ul>
	<p><b>Vocabulary</b> Safe Meet Accept Reliable Tell</p>	<p><b>Vocabulary</b> Colour Masterpiece Picasso Brushes</p>	<p><b>Vocabulary</b> Programming Scripts commands</p>	<p><b>Vocabulary</b> Appropriate/inappropriate sites Cyber-bullying Digital footprint Keyword searching</p>	<p><b>Vocabulary</b> Google slides Presentation transition</p>	<p><b>Vocabulary</b> Paint effects Templates Animation Documents Index finger typing Enter/return</p>

						Caps lock
Y3	<b>Drawing Desktop Publishing</b> Draw objects. • Insert text boxes and images. • Manipulate objects. • Create a layout of objects with no unnecessary space using colour and font effectively	<b>Coding</b> Create and debug algorithms to draw regular polygons using the repeat command/block using Scratch	<b>Presentation Skills</b> Create powerpoint Add text and images Insert hyperlinks	<b>Online safety</b> recognise cyberbullying • identify a safe person to tell if they encounter cyberbullying; • know that cyberbullying can happen via a range of devices; • identify adverts online; explain what privacy settings are; • discuss email as a form of communication;• identify online communities they are a part of; • identify different forms of online communication; • discuss the positive and negative aspects of online communities	<b>Word Processing</b> Use undo and redo. • Make text bold, italic or underline. • Select text in different ways. • Change case. • Align text.	<b>Communication</b> To know and understand how word order affects the results returned. • They will know how to bookmark or favourite a page and name different types of online communication. • Children will know what to do if they feel uncomfortable when communicating online. • They will be able to identify how they should behave online
	<b>Vocabulary</b> Insert textbox Images layout	<b>Vocabulary</b> Polygon Command Block	<b>Vocabulary</b> Hyperlink Slides transition	<b>Vocabulary</b> Cyberbullying Devices Communication Online gaming	<b>Vocabulary</b> Italic Underline Align	<b>Vocabulary</b> Bookmark Favourites Online communication

Y4	<b>Presentation Skills</b>  Use presentation software. Insert slide Insert images and text.	<b>Coding</b>  Write a program which accomplishes a specific goal. • Create a program that includes a logical sequence. • Debug a program they have written.	<b>Animation</b>  • Explain what is meant by animation. • Create a series of linked frames that can be played as a short animation. • Control and adjust a time slider to locate a different point in a film clip. • Insert images to create a simple stop-motion animation short film clip. • Evaluate the good and bad points about some animation software.	<b>Online safety</b>  define cyberbullying; • know how to respond to a hurtful message or comment online; • access a trusted search engine; • understand that different search terms give different results; • know what plagiarism is; • identify which information to keep private online; • explain what digital citizenship is; • tell someone else at least one way to stay safe online.	<b>Word Processing</b>  • select, edit and manipulate text in different ways; • insert an image into a document; • format an image; • use formatting tools to improve the layout; • use the spellcheck tool; • insert a simple table; • change the size of the page	<b>Using and Applying</b>  I can design and create an original character using appropriate software. I can use appropriate software to tell a story involving my new cartoon character. I can use other software to create an additional description or other materials linked to my character. I can combine software to present information about my character
	<b>Vocabulary</b> Animation Design template Hyperlink Effects	<b>Vocabulary</b> Sequencing commands Sensors Open-ended problems	<b>Vocabulary</b> Animation Frames Stop motion	<b>Vocabulary</b> Search engine Plagiarism Digital citizenship Apps	<b>Vocabulary</b> Spellcheck Table Images Format	<b>Vocabulary</b> Type + edit logo commands Sensors Open-ended problems Bugs in programs

		Bugs in programs Complex programming		Appropriate/inappropriate sites		Complex programming
Y5	<b>Coding</b> move and edit blocks as part of an algorithm. • add additional effects and features, such as sound or point scoring, to enhance the appeal of a game. • program an algorithm as a sequence of game instructions with actions and consequences.	<b>Internet research</b> Comment on the features and layout of a webpage • Create a new webpage with a chosen layout and format text in the webpage • Independently search for images that can be used in documents.	<b>Radio Station</b> Record and play their own sounds in recording software • Import an existing sound file into recording software to play • Choose appropriate software for sound recording • Plan and record a radio advert	<b>Online Safety</b> identify a spam email • explain what to do with spam email • understand why they should cite a source • explain the rules for creating a strong password • create a strong password using a set of rules • know that not everything they see online is true • explain how to stay safe online; • identify unsafe online behaviour.	<b>3D Modelling</b> • Draw 2D shapes or lines. • Draw simple 3D models • Manipulate 2D shapes into 3D shapes • Import 3D models from the 3D warehouse • Use a range of SketchUp tools including: shape, push, pull, orbit, pan, zoom, erase and fill.	<b>Recapping of the year</b>  Key skills, knowledge and vocabulary learnt
	<b>Vocabulary</b> Sequence Consequences Variables Game appeal	<b>Vocabulary</b> Webpage Format Text Search engines Hyperlinks	<b>Vocabulary</b> Podcasts Jingles Recording download	<b>Vocabulary</b> Spam email Source Identify Fake news Blogs	<b>Vocabulary</b> Manipulate Orbit Pan Zoom Erase Fill	<b>Vocabulary</b> Recap of vocabulary over the year

Y6	<p><b>Spreadsheets</b></p> <p>Enter text and numbers into a spreadsheet</p> <ul style="list-style-type: none"> <li>• Identify and refer to cells by row and column</li> <li>• Begin to enter formulae with the SUM function.</li> <li>• Enter and edit text</li> <li>• Numbers and formulae purposefully and independently</li> <li>• Understand the advantages of</li> </ul>	<p><b>Online safety</b></p> <p>say what bullying and cyberbullying are</p> <p>say how people should deal with cyberbullying</p> <ul style="list-style-type: none"> <li>• understand why I should ask an adult if I am unsure</li> <li>• identify warning signs that a website might not be secure</li> <li>• identify personal information</li> <li>• explain what</li> </ul>	<p><b>Animation</b></p> <p>Explain how computer software has improved animation techniques.</p> <ul style="list-style-type: none"> <li>• Edit and refine still images with multiple layers of onion skins.</li> <li>• Make extensive use of a time slider to animate multiple objects simultaneously.</li> <li>• Use webcam or digital camera to create their own images for a stop-motion animation short film clip.</li> <li>• Recognise</li> </ul>	<p><b>Film Making</b></p> <p>Plan and write a script using appropriate software; • search for relevant information using appropriate websites; • use a digital video camera (or similar device) to record; • plan suitable questions to ask an interviewee; • import video</p>	<p><b>Coding</b></p> <p>Select appropriate characters to match a scene</p> <ul style="list-style-type: none"> <li>• Animate characters with movement and speech in a story scene</li> <li>• Use broadcast and receive blocks correctly in code</li> <li>• Use show and hide blocks correctly in code</li> </ul>	<p><b>Recapping of the year</b></p> <p>Key skills, knowledge and vocabulary learnt</p>



	<p>spreadsheets over comparative manual methods</p> <ul style="list-style-type: none"> <li>• Explore further functions</li> <li>• Select data and create graphs with appropriate formatting</li> <li>• Design their own spreadsheet for a specific purpose and present it appropriately. • Be able to enter formulae into cells</li> <li>• Edit data and discuss the effect on</li> </ul>	<p>to do if I am asked or told something online which makes me uncomfortable;</p> <ul style="list-style-type: none"> <li>• explain some of the dangers of revealing personal information to an online friend;</li> </ul> <p>choose an appropriate action online to stay safe; • identify a situation I should be careful in online; • understand how a stereotype can be harmful</p>	<p>limitations of animation software and suggest improvements</p>			
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	<p>results</p> <ul style="list-style-type: none"> <li>• Use further functions including AVERAGE, MIN and MAX</li> </ul>					
	<p><b>Vocabulary</b></p> <p>SUM Data Functions Formulae Spreadsheet Complex Problem solving Present answers Analyse information Question data Interpret</p>	<p><b>Vocabulary</b></p> <p>Stereotype Warning signs Personal information Responsible online communication Informed choices Virus threats Blogs Messaging</p>	<p><b>Vocabulary</b></p> <p>Time slider Stop motion Film clips</p>	<p><b>Vocabulary</b></p> <p>Script Import Digital video</p>	<p><b>Vocabulary</b></p> <p>Broadcast Structure Sequence Repeat command</p>	<p><b>Vocabulary</b></p> <p>Recap of vocabulary over the year</p>

## **National curriculum programme of study**

### **Purpose of study**

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

### **Aims**

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology