

St. John's CE (Aided) Primary School

Computing Whole School Overview / Essential Opportunities



Aims / Essential Characteristics

To ensure all pupils:

- Develop competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects.
- Have the ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity.
- Have an understanding of the connected nature of devices.
- Develop the ability to communicate ideas well by using applications and devices throughout the curriculum.
- Have the ability to collect, organise and manipulate data effectively.

Key Stage 1	Key Stage 2
<p><u>Computer Science</u></p> <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 a sequence of instructions. • Write and test simple programs. • Use logical reasoning to predict the behaviour of simple programs. <p><u>ICT</u></p> <ul style="list-style-type: none"> • Organise, store, manipulate and retrieve data in a range of digital formats. <p><u>Digital Literacy</u></p> <ul style="list-style-type: none"> • Communicate safely and respectfully online, keeping personal information private and recognise common uses of information technology beyond school. 	<p><u>Computer Science</u></p> <ul style="list-style-type: none"> • Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selections and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs. • Use logical reasoning to explain how a simple algorithm works, detect and correct errors in algorithms and programs. <p><u>ICT</u></p> <ul style="list-style-type: none"> • 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><u>Digital Literacy</u></p> <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. • Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.

	EYFS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
	Nursery/ Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing - To code Motion, Control, Events	<ul style="list-style-type: none"> Control motion by specifying direction to travel <p>Daisy the Dinosaur (iPad) Kodable (iPad)</p>	<ul style="list-style-type: none"> Control motion by specifying the number of steps to travel, direction and turn. <p>Bee Bots/Bee Bot App Purple Mash 2Go</p> <p>Drawing with a control toy - http://www.iboard.co.uk/iwb/Drawing-with-a-Control-Toy-697 Visual Coding - http://www.i2e.com/i2code/</p> <ul style="list-style-type: none"> Specify user inputs (such as clicks) to control events and specify whether a single event or loop. <p>Purple Mash 2Code – Fun with Fish, Bubbles</p>	<ul style="list-style-type: none"> Control motion by specifying the number of steps to travel, direction and turn. Use prediction of length of steps to travel. <p>Bee Bots/Bee Bot App Purple Mash 2Go</p> <p>Spaceship route - http://www.iboard.co.uk/iwb/Controlling-Round-a-Route-693 Mouse to Cheese game - http://www.iboard.co.uk/iwb/Cheese-Sniffer-657 Mole Maze - http://www.iboard.co.uk/iwb/Mole-Maze-663</p> <ul style="list-style-type: none"> Specify user inputs (such as clicks) to control events and specify whether a single event or loop. <p>Purple Mash 2Code – Air Traffic Control, Snail Race</p>	<ul style="list-style-type: none"> Use specified directional commands to control movement. <p>Scratch – creating 2D shapes</p> <p>Rapid Router Levels 1-18</p> <ul style="list-style-type: none"> Specify conditions to trigger and control events or objects. <p>Purple Mash 2Code – Rockets, Shapes A.L.E.X (iPad)</p> <p>Spider’s Web http://www.iboard.co.uk/iwb/Spider-Web-665 Minecraft Coding – https://code.org/mc Drawing using code - https://studio.code.org/s/artist/stage/1/puzzle/1</p>	<ul style="list-style-type: none"> Use specified screen commands to control movement. <p>Logo on Purple Mash</p> <p>Rapid Router up to level 32</p> <ul style="list-style-type: none"> Specify conditions to trigger and control events or objects. <p>Purple Mash 2Code – Traffic Lights, Guard the Castle (Gibbon) Lego Fix a Factory (iPad)</p> <p>Flappy bird coding – https://studio.code.org/flappy/1</p>	<ul style="list-style-type: none"> Set conditions for movements. Specify types of rotation giving the number of degrees. <p>Simple Scratch game – Code It Lightbot (iPad) Rapid Router – up to level 91</p> <ul style="list-style-type: none"> Set events to control other events by ‘broadcasting’ information as a trigger. Use lists to create a set of variables. <p>Kodu – creating a game with a winning condition Develop an on screen game in Kodu (e.g. collecting coins) with characters that can interact with the environment. Challenge- Add criteria for winning and losing.</p> <ul style="list-style-type: none"> Use sensing tools to control events or actions. <p>Lego WeDo Kit.</p>	<ul style="list-style-type: none"> Set conditions for movements. Specify types of rotation giving the number of degrees. <p>Scratch Game Cargo-Bot (iPad) Rapid Router – 92 +</p> <ul style="list-style-type: none"> Set events to control other events by ‘broadcasting’ information as a trigger. Use lists to create a set of variables. <p>Kodu – creating a game with a winning condition Develop an on screen game in Kodu (e.g. collecting coins) with characters that can interact with the environment. Challenge- Add criteria for winning and losing.</p> <ul style="list-style-type: none"> Use sensing tools to control events or actions. <p>Lego WeDo Kit.</p>

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing - To code Pictures and Animation	<ul style="list-style-type: none"> To create a simple story with pictures and sound. <p>My Story: Book Maker for kids (iPad)</p>	<ul style="list-style-type: none"> Add text strings, show and hide objects and change the features of an object. <p>Puppet Pals animation (iPad)</p> <ul style="list-style-type: none"> Control when drawings appear and set the pen colour, size and shape. <p>Purple Mash 2Paint</p>	<ul style="list-style-type: none"> Add text strings, show and hide objects and change the features of an object. <p>Puppet Pals animation (iPad)</p> <ul style="list-style-type: none"> Control when drawings appear and set the pen colour, size and shape. <p>Purple Mash 2Paint</p>	<ul style="list-style-type: none"> Control when drawings appear and their movements. <p>Scratch – make an animated drawing.</p>	<ul style="list-style-type: none"> Set the appearance of objects and create sequences of changes. <p>Kodu 3D World – adding simple movement Create an on-screen game in Kodu that makes use of movement and includes a scoring system. eg “Shooting Fish” Challenge Add criteria for winning and losing.</p>	<ul style="list-style-type: none"> Use photo editing software to manipulate images for effect. <p>Paint.net – edit pictures by creating layers</p> <p>Adding a photo of themselves into an image (historical or otherwise) and writing in first person about experience.</p>	<ul style="list-style-type: none"> Use photo editing software to manipulate images for effect. <p>Paint.net – edit pictures by creating layers</p>
Computing - To code Sound/Video	<ul style="list-style-type: none"> To create a simple story with pictures and sound. <p>My Story: Book Maker for kids (iPad)</p>	<ul style="list-style-type: none"> Select sounds and control when they are heard, their duration and volume. <p>Isle of Tune (iPad)</p>	<ul style="list-style-type: none"> Select sounds and control when they are heard, their duration and volume. <p>Isle of Tune (iPad)</p>	<ul style="list-style-type: none"> Create and edit sounds. Control when they are heard, their volume, duration and rests. <p>Scratch Jnr (iPad)</p>	<ul style="list-style-type: none"> Create and edit sounds. Control when they are heard, their volume, duration and rests. <p>iMovie – Sequence stills and add narration</p>	<ul style="list-style-type: none"> Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. <p>iMovie – Create video trailer</p>	<ul style="list-style-type: none"> Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. <p>iMovie – Create multimedia movie</p>

<p style="text-align: center;">Digital Literacy Safety</p>	<ul style="list-style-type: none"> •Begin to understand what personal information is and who you can share it with. •Understand what safe adults are. •Log in to a variety of software using a Username and Password. <p>Smartie the Penguin</p>	<ul style="list-style-type: none"> •Understand what personal information is and who you can share it with. •Understand when they would need to tell a trusted adult if something makes them unhappy online. <p>Clicky's Online Safety Rap Hector's World</p>	<ul style="list-style-type: none"> •Keep passwords private. •Know that not everyone is who they say they are online and that some things are not true or safe and know what to do if something makes them unhappy. <p>CEOP – Lee and Kim Hector's Word NetSmartz –online safety</p>	<ul style="list-style-type: none"> •Know how to choose appropriate user names and passwords and keep them private. •Know how to tell an adult what they are doing online and how to report concerns. •Begin to understand that the personal information they share online can be seen by others. <p>Smart Crew Videos Common Sense Media – Powerful Passwords</p>	<ul style="list-style-type: none"> •Choose appropriate user names, check security of passwords and keep them private. •Know how to tell an adult what they are doing online and how and when to report concerns. •Understand that the personal information they share online can be seen by others. <p>CBBC watch – Privacy Settings Password Checker online E=safety Australia – Cyber Detectives Brain Pop – Online Safety Quiz</p>	<ul style="list-style-type: none"> •Understand appropriate and inappropriate uses of the internet. •Recognise their responsibility to report concerns to protect themselves and others <p>Jigsaw – Go to the Movies CEOP - CyberCafe</p>	<ul style="list-style-type: none"> •Recognise their own right to be protected from others using the internet inappropriately and know how to avoid inappropriate behaviours from others. •Understand that any personal information they share online can be seen and used by others. (specifically linked to social media) <p>BBC – Horrible Histories – Guy Fawkes Common Sense Media - Super-Digital Citizen</p>
<p style="text-align: center;">Digital Literacy Effective use of Technology</p>	<ul style="list-style-type: none"> •To understand the uses of technology. •Understand how the internet can be used to gather information <p>Books – Pengiunpig, Computer Trouble, Webster's Bedtime, Chicken Clicking</p>	<ul style="list-style-type: none"> •Learn to respect the work of others on shared devices and online. •Begin to know how to use a search engine. •Understand that there are a variety of sources of information. <p>Swiggle SafeSearchKids Books – Webster's Friend, Webster's Manners</p>	<ul style="list-style-type: none"> •Recognise who can see information stored in different places •Know that some content cannot be copied from the internet. •Being to understand how to use a search engine effectively. •Recognise age-appropriate apps, games and websites. <p>AVG – Magda & Mo interactive story Swiggle SafeSearchKids Book – Webster's E-mail</p>	<ul style="list-style-type: none"> •Recognise that some information on websites may not be true or reliable. •Understand the need to identify whether material can be shared before using it in their work. •Recognise different types of content – adverts, pop-ups, links. <p>Common Sense Media – Show Respect Online, Websites and Adverts, The Key to Keywords</p>	<ul style="list-style-type: none"> •Understand the need to identify whether material can be shared before using it in their work. •Begin to use technology to collaborate and communicate with others, and how to do this responsibly. •Recognise the effect their published work may have on others. <p>Common Sense Media – Plagiarism and Copyright, The Power of Words,</p>	<ul style="list-style-type: none"> •Recognise that they are responsible for making sure the content they share online is true and reliable. •Understand how to make good choices when they present themselves online. <p>Reliability of Websites – All about Explorers – Treasure Hunt BBC – Horrible Histories – Lady Jane Grey</p>	<ul style="list-style-type: none"> •Understand that all websites have an author and audience and may publish inaccurate content. •Acknowledge when they use other peoples work in their own published material. <p>Google Search Lessons Common Sense Media – Rights of the Creator</p>
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

To publish	<ul style="list-style-type: none"> To become familiar with using hardware such as keyboard and mouse. <p>Milly's Keyboard Skills Poisson Rouge</p>	<ul style="list-style-type: none"> Be able to create and manipulate pictures and text. <p>Purple Mash – 2create a Story, 2Publish</p>	<ul style="list-style-type: none"> Use a range of applications and devices in order to manipulate pictures and text. <p>Purple Mash – 2Publish, 2Publish Extra</p>	<ul style="list-style-type: none"> Begin to use some of the design elements in word processors to create their own product. <p>Microsoft Publisher Pages (iPad)</p>	<ul style="list-style-type: none"> Use the design elements in word processors to create their own product. <p>Microsoft Publisher Microsoft Word Pages (iPad)</p>	<ul style="list-style-type: none"> Choose the most suitable applications and devices for the purposes of communication. Use many of the advanced features in order to create high quality, professional or efficient communications. <p>Microsoft Word Microsoft Publisher</p>	<ul style="list-style-type: none"> Choose the most suitable applications and devices for the purposes of communication. Use many of the advanced features in order to create high quality, professional or efficient communications. <p>Microsoft Word Microsoft Publisher</p>
To present	<ul style="list-style-type: none"> Explore iPads/Talking Tins to record/play sound/video Take and explore pictures using digital cameras/iPads <p>Skitch (iPad)</p>	<ul style="list-style-type: none"> Take and explore pictures using digital, cameras/iPads <p>Skitch (iPad)</p>	<ul style="list-style-type: none"> To sequence a set of ideas including text and images to create a simple presentation <p>Microsoft PowerPoint <i>Create and sequence simple linear PowerPoint</i></p>	<ul style="list-style-type: none"> To sequence a set of ideas including text and images to create a simple presentation <p>Microsoft PowerPoint Keynote (iPad) <i>Create and sequence simple linear PowerPoint add animated effects.</i> <i>Challenge - add sound or video effects</i></p>	<ul style="list-style-type: none"> To sequence a set of ideas including text and images to create and present a simple presentation on a range of devices. <p>Microsoft PowerPoint Keynote (iPad) <i>Create an animation with several timed events on one page, Challenge - Use the Kiosk mode in PPT to create a virtual museum.</i></p>	<ul style="list-style-type: none"> To create an interactive presentation in a website format to explain a concept or idea. <p>Microsoft PowerPoint <i>Create non-linear PowerPoint with internal hyperlinks between pages</i> <i>Challenge- Create hotspots on a map or image to explore content.</i></p>	<ul style="list-style-type: none"> To collaborate online to create a multimedia presentation. <p>Prezi</p>
To collect	<ul style="list-style-type: none"> Use simple databases to record information in areas across the curriculum. <p>Purple Mash – 2Count, 2Graph</p>	<ul style="list-style-type: none"> Use simple databases to record information in areas across the curriculum. <p>Purple Mash – 2Count, 2Graph</p>	<ul style="list-style-type: none"> Use simple databases to record information in areas across the curriculum. <p>Purple Mash – 2Count, 2Graph</p>			<ul style="list-style-type: none"> Use spreadsheet to collect and manipulate data. <p>Microsoft Excel</p>	<ul style="list-style-type: none"> Use spreadsheet to collect and manipulate data. <p>Microsoft Excel</p>