



St Francis Xavier Catholic Primary School

# Computing Curriculum 2023-2024

## What do we want for our pupils?

### Intent

Our Computing curriculum aims to enhance pupil's enjoyment, resilience, understanding and attainment in Computing. Our units are sequenced and progressive, giving particular attention to fundamental concepts and are built on prior knowledge. Children work independently and collaboratively to try to achieve Mastery in Computing.

### Implementation

Computing is supported by Icompute which is a rich, broad and balanced scheme that covers the National Curriculum and all three strands: Computer Science, Information Technology and Digital Literacy (including E-safety). Icompute is taught once a week for 30 minutes which provides children time to develop their knowledge, skills and vocabulary in Computing. The Computing curriculum is supported through long term plans, knowledge organisers, unit overviews, short term planning and assessment tools to ensure children show progress.

## What is our goal?

### Impact

The curriculum offers equity for all groups and it is intended that all children access it. By following and monitoring the curriculum and its delivery, leaders are supported by Icompute in ensuring that all teachers teach the full range of lessons for each year group and that they are taught in accordance with the planning to ensure rigor, challenge and inclusion.

## Assessment in Computing

Attainment of Computing is reported on O'track; staff are also supported by the Icompute Assessment database. This assessment allows us to assess if children are WTS, EXS or GDS in Computing. The assessment tool is kept up to date on a regular basis. The Computing team check the data at the end of Autumn, Spring and Summer.

Year Groups	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	iAlgorithm	iWrite	iData	iProgram (unit 1)	iModel	iProgram (unit 2) isafe
Year 2	IProgram (unit 1)	iSearch	iAnimate	iPub	iBlog	IProgram (unit 2) Isafe
Year 3	iProgram	iSimulate	iNetwork	iData	iConnect	iSafe
Year 4	iProgram	iData	iMail	iAnimate	IProgram (unit 2)	iSafe
Year 5	IProgram (unit 1)	iDraw	iCrypto	iWeb	iModel	iSafe
Year 6	IProgram (unit 1)	iNetwork	iData	IApp (unit 2)	IProgram (unit 2)	iSafe

Year Groups	Computer Science	Information Technology	Digital Literacy
Year 1	<p>Units – iAlgorithm and iProgram</p> <ul style="list-style-type: none"> <li>• Read a set of instructions and predict the outcome</li> <li>• Produce instructions using language others can follow</li> <li>• Understand that computers follow instructions in a precise way</li> </ul>	<p>Units – iModel and iData</p> <ul style="list-style-type: none"> <li>• Enter simple sentences using a keyboard</li> <li>• Use a mouse to point, click and drag objects around a screen</li> <li>• Use a mouse to select icons and items <ul style="list-style-type: none"> <li>• Print work</li> <li>• Save work</li> </ul> </li> <li>• Navigate a website using buttons and image links</li> </ul>	<p>Units – iWrite and iSafe</p> <ul style="list-style-type: none"> <li>• Find answers to simple questions using the website</li> <li>• Use drawing and text tools to impact information <ul style="list-style-type: none"> <li>• Talk about how they have used a computer to create things</li> <li>• Understand that various information is personal</li> <li>• Identify characteristics of trustworthy people</li> <li>• Know that personal information should only be given to trustworthy people</li> </ul> </li> </ul>
Vocabulary	Algorithm, instruction, sequence, program, debug, repeat, true, false, output	Information, data, pictogram, tally, survey, graph, sort (iData) Model, algorithm, instruction, choice, real, imaginary (iModel)	(iWrite) word, text, processor, key, keyboard, save, print, backspace, return (iSafe) personal information, trusted adult, permission, cyber bullying
Year 2	<p>Units – iProgram and iSearch</p> <ul style="list-style-type: none"> <li>• To know that programming applications can be given</li> </ul>	<p>Units – iPub and iAnimate</p> <ul style="list-style-type: none"> <li>• Navigate a document using arrow keys and a mouse</li> </ul>	<p>Units – iPub, iBlog and iSafe</p> <ul style="list-style-type: none"> <li>• Choose a website based on how useful it is for a specific purpose</li> </ul>

	<p>commands to produce specific effects on screen</p> <ul style="list-style-type: none"> <li>To produce a sequence of blocks that achieves a simple effect</li> <li>Plan and give direct instructions to make things happen</li> </ul>	<ul style="list-style-type: none"> <li>Use the back and delete button to remove text</li> <li>Use tools to create simple presentations that communicate meaning <ul style="list-style-type: none"> <li>Make choices about applications and tools to use for a particular purpose</li> </ul> </li> <li>Locate, edit and save different versions of their work</li> <li>Navigate around a website using hyperlinks and the back button</li> <li>Type web addresses into the web browser</li> <li>Create Internet favourites</li> </ul>	<ul style="list-style-type: none"> <li>Demonstrate how they find specific information in a website <ul style="list-style-type: none"> <li>Be discerning about the information collected on websites</li> </ul> </li> <li>Select appropriate applications to help them achieve a specific task</li> <li>Can identify suitable information to present</li> <li>Identify some ways to keep themselves safe using ICT</li> <li>Use ICT to communicate, identify some of the risks and act to minimise them</li> </ul>
Vocabulary	<p>Algorithm, instruction, sequence, program, debug, repeat, output, test (iProgram) World Wide Web, network, internet, hyperlink, search, URL (iSearch)</p>	<p>World Wide Web, network, internet, device, eBook (iPub) (iAnimate) animation, scene, script, motion, storyboard, props</p>	<p>World Wide Web, network, internet, device, eBook (iPub) (iBlog) blog, post, comment, online, audio, video, link, respond, justify (iSafe) personal information, trustworthy, untrustworthy, trusted adult, internet, online</p>
Year 3	<p>Unit – iProgram</p> <ul style="list-style-type: none"> <li>Produce a sequence of instructions that result in planned outcomes</li> <li>Program a short sequence of commands that result in a planned effect</li> </ul>	<p>Units – iSimulate and iData</p> <ul style="list-style-type: none"> <li>Combine graphics with text</li> <li>Use appropriate effects and re-size graphics</li> <li>Copy text from an internet page to a document</li> <li>Copy images from an internet page</li> </ul>	<p>Units – iConnect and iSafe</p> <ul style="list-style-type: none"> <li>Begin to use a range of applications on computers and devices independently</li> <li>Talk about how useful particular websites/applications have been for their work</li> </ul>

	<ul style="list-style-type: none"> <li>• Program and test a simple program</li> </ul>	<ul style="list-style-type: none"> <li>• Save, print and retrieve work</li> <li>• Use software, computers and devices to make simple presentations and create things</li> <li>• Enter a URL for a website with support</li> <li>• Identify some links within website content and navigate with purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Create digital content that communicates meaning</li> <li>• Understand that a wider range of information is personal</li> <li>• Identify some of the ways to use computers safely</li> <li>• Know the need for passwords and that they should be kept safe</li> <li>• Follow e-safety guidelines</li> </ul>
Vocabulary	(iProgram) program, sequence, selection, repeat, coordinates, x-y axis, import, test, debug	(iData) field, record, database, data, search, sort (iSimulate) simulation, rules, choice, variables, pattern, predict effect,	(iConnect) World Wide Web, internet, network, hyperlink, search, URL, IP address, web browser, copyright (iSafe) like/dislike, safe/unsafe, public, private, share, block, privacy settings, online sharing, consent, strong password, manipulation, advertising, pressure
Year 4	<p>Units – iProgram</p> <ul style="list-style-type: none"> <li>• Write an algorithm to produce a given effect using repetition</li> <li>• Accurately predict the outcome of a range of algorithms and programs <ul style="list-style-type: none"> <li>• Test, debug and refine algorithms and programs</li> <li>• Use sequence and basic collection and repetition in computer programs</li> </ul> </li> <li>• Explain how a programmed effect has been achieved</li> <li>• Talk about improvements that could be made to programs</li> </ul>	<p>Units – iMail and iData</p> <ul style="list-style-type: none"> <li>• Use the more advanced features of applications <ul style="list-style-type: none"> <li>• Send an email</li> <li>• Reply to an email</li> </ul> </li> <li>• Use the search facility in a database to find the answer to questions</li> <li>• Carry out searches involving more than one condition to find answers to a variety of questions, sometimes with support</li> <li>• Confidently enter URLs into an address bar of a browser</li> </ul>	<p>Units – iAnimate and iSafe</p> <ul style="list-style-type: none"> <li>• Understand that a computer network means connected computers</li> <li>• Understand that you can use the internet for activities other than web browsing</li> <li>• Know that not all information available online is reliable and needs to be checked</li> <li>• Find information by navigating around a number of websites using hyperlinks and buttons</li> <li>• Know that internet search engines give a list of websites based on search terms</li> </ul>

			<ul style="list-style-type: none"> <li>• Cross-check information on one website against the provider on another</li> <li>• Demonstrate the use of basic safety measures when using technology and working online</li> <li>• Know the need to use secure passwords and keep them private</li> <li>• Use ICT to communicate and collaborate, identify some of the risks and act to minimise them</li> <li>• Know that not all information provided on the world wide web is correct and that it needs to be checked</li> <li>• Use appropriate search criteria to find relevant information and check its usefulness</li> <li>• Know the need to use secure passwords and keep them private</li> </ul>
Vocabulary	Program, sequence, selection, condition, repeat, test, debug, code, instruction, command, variable, execute	(iData) data, database, record, file, field, search, sort, chart, (iMail) email, email address, to, from, privacy, security, inbox, send, receive, server, attachment	(iAnimate) animation, frame, frame rate, frames per second FPS, CGI, layer, forward/backward (iSafe) privacy, privacy settings, keywords, copyright, strong password, spam, virus, cyber bullying
Year 5	<p>Units – iProgram and iCrypto</p> <ul style="list-style-type: none"> <li>• Explain how a programmed effect has been achieved</li> <li>• Write and amend computer programs</li> </ul>	<p>Units – iCrypto, iWeb, iDraw and iModel</p> <ul style="list-style-type: none"> <li>• Understand that information in the form of text, sound and pictures can be combined to make digital content and communicate with an audience</li> </ul>	<p>Units – iProgram and iSafe</p> <ul style="list-style-type: none"> <li>• Know that a computer network consists of a number of computers and devices that are connected</li> <li>• Suggest a range of activities you can do on the internet, including web browsing</li> </ul>

- Use repetition, variables and conditional statements in computer programs
  - Test, debug and refine algorithms and programs
- Identify some common internet services that use the internet
- Know that a computer takes input, processes it and produces output
- Identify a variety of computing devices and a number of inputs and outputs
- Know that computers store and manipulate data as a series of ones and zeros – binary

- Recognise the audience when creating and designing digital content
- Create digital content that incorporates text and images
  - Choose and use the appropriate advanced features of word processing or presentation software to increase their efficiency when matching their work to an audience
- Carry out multi-conditioned searches in databases to find answers to a variety of questions with support
  - Use the sort facility of a database to answer questions
- Create own questions to be answered by searching a database

- Find information by navigating around a number of websites using hyperlinks and buttons
  - Question the credibility of information given on websites
- Know that internet search engines give a list of websites based on key words
- Cross-check information based on one website against that provided on another
- Use search technology to find things out
- Suggest a number of activities that you can use the internet for
- Create digital content for specific purposes
- Demonstrate the use of basic safety measures when using technology and working online
- Use appropriate search criteria to find relevant information and check its plausibility and usefulness
- Check information on the world wide web for accuracy
- Know that personal information should only be given to trusted sources
- Know that some information on the internet can be misleading or inaccurate and that it needs to be checked
- Use technology and online services to communicate and collaborate, identify some of the risks and act to minimise them

<p>Vocabulary</p>	<p>(iCrypto) cryptography, encrypt, decrypt, cipher, key, shift, binary, frequency analysis  (iProgram) sequence, selection, condition, repeat, Boolean, variable, coordinates, x-y axis</p>	<p>(iCrypto) cryptography, encrypt, decrypt, cipher, key, shift, binary, frequency analysis  (iWeb) World Wide Web, HTML, CSS, elements, tags  (iDraw) vector, canvas, resize, rotate, stamp, fill, group, layer, zoom, send to back, send to front, bring forward, send backward  (iModel) 2D, 3D, model, resize, rotate, group, zoom in, zoom out,</p>	<p>(iProgram) sequence, selection, condition, repeat, Boolean, variable, coordinates, x-y axis  (iSafe) communication, safe, technology, risk, benefit, personal, private, smart, trust, bullying, cyber bullying</p>
<p>Year 6</p>	<p>Units – iProgram and iApp</p> <ul style="list-style-type: none"> <li>• Write and amend more complex computer programs to create a variety of outcomes</li> <li>• Decompose problems by splitting them into smaller problems and designing solutions for each part</li> <li>• Use iteration, variables and conditional statements in computer programs</li> <li>• Test computer programs and correct most errors</li> </ul>	<p>Units – iNetwork and iData</p> <ul style="list-style-type: none"> <li>• Plan, design and create digital content that incorporates text, images and sound and communicates with an audience</li> <li>• Be able to design rationale behind their designs</li> <li>• Develop and refine digital content</li> </ul>	<p>Units – iApp, iProgram and iSafe</p> <ul style="list-style-type: none"> <li>• Communicate and collaborate using technology and online services</li> <li>• Create simple web content using basic HTML</li> <li>• Know that internet search engines use algorithms <ul style="list-style-type: none"> <li>• To find web content</li> <li>• Know that search results are organised in order of popularity</li> </ul> </li> <li>• Use search technology and clear search terms to view web pages and obtain data</li> <li>• Use a number of internet services</li> <li>• Create digital content for specific purposes and audiences</li> </ul>

			<ul style="list-style-type: none"> <li>• Use feedback to improve digital content</li> <li>• Use digital tools to communicate and collaborate effectively online</li> <li>• Identify some of the risks associated with work and leisure in a digital society and act to minimise them</li> <li>• Find information online and check it for accuracy and reliability</li> </ul>
Vocabulary	<p>(iProgram) sequence, selection, condition, repeat, Boolean, variable, procedure, execute, test, debug</p> <p>(iApp) input, output, events, properties, pseudo-code, syntax, assets, parameters, argument, function, procedure, event handler, variable, test, debug</p>	<p>(iNetwork) network, router, internet, World Wide Web, URL, IP address, data, packet, search engine, rank, HTML</p> <p>(iData) data, database, record, file, field, search, sort, chart,</p>	<p>(iProgram) sequence, selection, condition, repeat, Boolean, variable, procedure, execute, test, debug</p> <p>(iApp) input, output, events, properties, pseudo-code, syntax, assets, parameters, argument, function, procedure, event handler, variable, test, debug</p> <p>(iSafe) privacy, privacy settings, security, two-factor/step verification, hack, encryption, strong password, personal information, bullying, cyber bullying, conflict, bystander, upstander, harassment, report, block, abuse</p>