Progression of Computing in St Pius X
2021-2022

Curriculum Intent of Computing in St Pius X

At St Pius X we want our pupils to be MASTERS of technology and not slaves to it. Technology is everywhere and will play a pivotal part in our students' lives Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators not consumers of technology and for them to understand that there is always a choice with using technology and therefore, as a school, take every opportunity to utilise technology to model positive use. We recognise that the best prevention for many issues we currently see with technology/social media is through education.

Our thematic approach to the curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively, which will in turn, help our pupils become skilful computer scientists. We encourage staff to try to embed computing across the whole curriculum to make learning creative and accessible. We want our pupils to be fluent with a range of tools to best express their understanding and hope by Upper Key Stage 2, children have the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers. In addition, we understand that effective use of technology can open accessibility opportunities for our pupils – especially for our SEND children – and is why our KS2 children all have access to one-to-one iPads.

	Year Group	Learning Intention	Knowledge	Coverage
Communication	**Nursery**	Use a variety of digital technology, such as smartphones and tablets.	Digital technology is used at home and at school for communicating with others.	Summer 2 (1 Week)
	Reception	Explain that digital technology is used in the home and at school for communication.	Digital technology is used in all parts of everyday life. Some technology is used to communicate with others.	Summer 2 (1 Week)
	Year 1	Explain simply that digital technology can be used to connect with others locally and globally.	Digital technology is used in all parts of everyday life, such as using a tablet to play a game or a microwave to heat food. Some of this digital technology can be used to connect with others locally, such as sharing digital work in the classroom, or globally, such as using Skype on a computer to speak to a friend overseas.	Summer 2 (1 Week)
	Year 2	Use digital technology appropriately to communicate and connect with others locally and globally.	Digital technology, such as email, social media platforms or blogs, can be used by individuals to communicate and connect with others but should be used appropriately, including using language that is not hurtful or disrespectful to others, having adult supervision or following the school's acceptable use policy	Summer 2 (1 Week)
	Year 3	Explain the advantages and disadvantages of communicating electronically and strategies for preventing issues.	Advantages of communicating electronically are that it is available at any time, instant and global. Disadvantages include easier misunderstandings, people pretending to be someone they are not, lack of privacy (once something is published online, it cannot be removed) and a threat to personal safety (access to personal information). Concerns should be reported to a trusted adult.	Summer 2 (1 Week)
	Year 4	Explain actions to report and prevent cyberbullying.	Cyberbullying is bullying using technology, such as social media or gaming networks and can involve teasing, name calling, harassment, deliberate exclusion, threatening or being undermined. A trusted adult or child safety organisation should be contacted if there are any concerns or worries. A trusted adult can provide help and support or contact the police if needed.	Summer 2 (1 Week)
	Year 5	Demonstrate appropriate online behaviour and apply a range of strategies to protect themselves and others from potential online dangers, inappropriate behaviour and bullying.	Working online requires a level of responsibility and strategies to stay safe, including protecting private information and accounts. This enables people to protect themselves and others from potential online dangers, inappropriate behaviour and bullying. Any concerns should be reported to a trusted adult, the police or child protection organisations.	Summer 2 (1 Week)
	Year 6	Recognise that sending intimate images and content and using offensive language online is a risk, has a permanent online trail (digital footprint) and is not appropriate behaviour.	Knowing someone online is not the same as knowing them face to face. People online are not always who they say they are and may use intimate images or content inappropriately. Once something is online, it is not under the user's control and can be made public. Using offensive language can affect others negatively and is a form of bullying called 'trolling'. Privacy and personal boundaries are important when communicating with others online.	Summer 2 (1 Week)

Staying Safe	Year Group	Learning Intention	Knowledge	Coverage
	Nursery	Begin to talk about what they would do if they saw something online that makes them sad, scared or worried.	Know that appropriate adults can help to keep them safe online.	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)
	Reception	Describe what they would do if they saw something online that made them sad, scared or worried.	Know that if they see something online that makes that sad, scared or worried, they should tell an adult straight away	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)
	Year 1	Recognise that some websites ask for private information and discuss how to handle these requests and where to go for help and support.	Private information includes names, addresses, dates of birth or schools and this information should not be shared online. Any concerns or worries should be reported to a trusted adult.	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)
	Year 2	Stay safe online by choosing websites that are appropriate to visit (based on the confidence you have in the author(s) of the website) and know where to go for help and support when they have concerns about content or contact on the internet and other online technologies.	Some websites are not age-appropriate and so it is important to tell a trusted adult about any concerns or worries.	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)
	Year 3	Describe simple rules for sharing images and data safely.	Images and data should not be shared online without the permission of the owner. Personal information, such as full name, age, school and address, should not be shared online.	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)
	Year 4	Identify the positive and negative influences of technology on health and the environment and how to protect themselves.	Technology can have positive influences on health, such as enabling people to hear using a hearing aid or helping doctors to diagnose or treat illnesses using special machines. Both mental and physical health can be negatively influenced by technology. Technology can have positive influences on the environment, such as using systems to monitor and control energy usage. Negative influences on the environment include contributing to pollution by travelling and using a lot of power.	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)
	Year 5	Discuss the impact that digital content can have and why it is important to discuss their use of technology with an adult.	Digital content can affect others and be available to anyone. Digital content is traceable, which means it can be tracked to the person who created it. To stay safe, it is important to discuss technology use with a trusted adult	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)

	Year 6	Identify the benefits and risks of devices broadcasting the user's location and of giving personal information to different organisations.	The benefits of devices broadcasting the user's location and passing on personal information include improved customer service, allowing organisations to analyse data and improving the quality of applications. Risks include identity theft, cyberstalking, victimisation and threat to privacy.	Autumn 1 (1 week) Spring 1 (1 week) Summer 1 (1 week)

Digital Citizenship	Year Group	Learning Intention	Knowledge	Coverage
	Reception	Ask to use digital devices to create work in a safe and responsible way.		Summer 1 – (1week)
	Year 1	Recognise that work they have created belongs to them.	When work is saved electronically, it needs to have a name that identifies it and is easily remembered.	Summer 1 – (1week)
	Year 2	Recognise that information put online leaves a digital footprint.	A digital footprint is the information that exists on the internet, following a user's online activity.	Summer 1 – (1week)
	Year 3	Compose clear and appropriate messages in online communities.	As with face to face communication, online communication should be done respectfully and responsibly, considering the impact on others.	Summer 1 – (1week)
	Year 4	Identify appropriate behaviour when contributing to collaborative online projects for learning.	Appropriate behaviour when contributing to collaborative online projects includes consideration towards others, awareness of copyright and keeping personal data safe.	Summer 1 – (1week)
	Year 5	Cite all sources when researching and explain why sources should be provided.	Citing sources is giving credit to the person or website that created the information. Using someone else's work without citing it is called plagiarism and is a form of cheating.	Summer 1 – (1week)
	Year 6	Recognise that digital content can be edited online.	Digital content may have been edited online by anyone, and so it is important to verify content against other independent or reputable sources.	Summer 1 – (1week)

	Year Group	Learning Intention	Knowledge	Coverage
Physical	**Nursery**	Input simple instructions, with support, into floor robots and other technological toys.	When buttons on technological toys are pushed, they will behave in different ways.	Spring 2 - (1 week)
	Reception	Input simple instructions to make technological toys operate, including floor robots and onscreen sprites.	Technological toys need instructions to operate in a particular way. Errors in instructions can be checked and fixed.	Spring 2 – (1 week)
	Year 1	Observe and explore outcomes when buttons are pressed in sequences on a robot and identify and debug a simple algorithm.	An algorithm is a sequence of steps, instructions or rules that is used to perform a specific task. Algorithms can be followed by people or digital equipment. For algorithms to achieve the end goal, instructions have to be accurate and followed sequentially. Mistakes are called bugs and finding and fixing them is called debugging.	Spring 2 – (1 week)
	Year 2	Plan and enter a sequence of instructions using a robot, specifying distance and angle of turn.	Robots can be programmed to follow a series of instructions using algorithms.	Spring 2 – (1 week)
	Year 3	Design, write and enter a sequence of instructions using a robot or other device to achieve specific outcomes, debugging if necessary.	Sequencing instructions is the step-by-step process that robots or other devices follow to achieve specific outcomes. This can be a single algorithm or series of algorithms called a program.	Spring 2 – (1 week)
	Year 4	Use sensors to 'trigger' an action, such as sound or movement.	Computers interact with the world using input and output devices. An input device may include sensors that can detect changes, such as in temperature, light level, sound level or movement. The input then sends the information to a computer, which tells the output device to trigger an action, such as making a sound or creating a movement.	Spring 2 – (1 week)
	Year 5	Use a range of sensors to control a physical system.	Sensors can be combined to control a physical system, such as using motion, light and sound sensors to control a road network of traffic lights and level crossings.	Spring 2 – (1 week)

e r a c t i o n s	**Year 6**	Design, write and debug a program to control a physical system, which may include output devices, such as motors, lights and buzzers.	Input and output devices can be combined with programming software to control a physical system, such as using sensors to create a sensory station that incorporates motors, lights and buzzers.	Spring 2 – (1 week)

	Year Group	Learning Intention	Knowledge	Coverage
C r	**Year 1**	Select appropriate software to complete given tasks using text, images, audio and video clips.	Software is the programs that are used by a computer, such as word processing software, presentation software or image editing software. It can be used to create and combine digital content for different audiences and purposes.	Autumn 1 (4 Weeks) Spring 1 (3 Weeks)

e a t i o n				Summer 1 (4 Weeks)
	Year 2	Create and edit multimedia components for a range of tasks.	Multimedia components, such as text, images, audio and video clips, can be created, edited and combined to create content for a range of tasks.	Autumn 1 (4 Weeks) Spring 1 (3 Weeks) Summer 1 (4 Weeks)
	Year 3	Combine a range of text, images, animation and audio and video clips for given purposes.	Text, images, animation, audio and video clips can be combined using tools within a piece of software or by using a range of software. For example, an image could be inserted into a word processing document or a video could be inserted into a presentation.	Autumn 1 (4 Weeks) Spring 1 (3 Weeks) Summer 1 (4 Weeks)
	Year 4	Manipulate a range of text, images, sound or video clips and animation for given purposes.	Manipulating a range of text, images, sound or video clips and animation may include changing their style, size, colour, effect, shape, location or format.	Autumn 1 (4 Weeks) Spring 1 (3 Weeks) Summer 1 (4 Weeks)
	Year 5	Create, select and combine a range of texts, images, sound clips and videos for given purposes.	Creating, selecting and combining a range of texts, images, sound clips and videos for given purposes could include creating a web page, slide show presentation, short film or an animation.	Autumn 1 (4 Weeks) Spring 1 (3 Weeks) Summer 1 (4 Weeks)
	Year 6	Select, use and combine a variety of software, including internet services, to meet a goal.	A variety of software, such as word processing software, image editing software or internet services, can be selected, used and combined to meet a goal.	Autumn 1 (4 Weeks) Spring 1 (3 Weeks) Summer 1 (4 Weeks)

	Year Group	Learning Intention	Knowledge	Coverage
D a	**Nursery**	Operate technological toys, including floor robots.	When buttons on technological toys are pushed, they will behave in different ways.	Autumn 2 – (4weeks) Spring 2 – (3 weeks)

t a a n d C o m p u t a t i o n a l T				Summer 2 – 4 weeks
	Reception	Input simple instructions to technological toys, including floor robots and onscreen sprites.	Technological toys need instructions to achieve an outcome.	Autumn 2 – (4weeks) Spring 2 – (3 weeks) Summer 2 – 4 weeks
	Year 1	Follow a sequence of steps to solve a problem and create instructions that others can follow (for floor robots or onscreen sprites).	An algorithm is a sequence of steps, instructions or rules that is used to perform a specific task. Algorithms can be followed by people or digital equipment. For algorithms to achieve the end goal, instructions have to be accurate and followed sequentially.	Autumn 2 – (4weeks) Spring 2 – (3 weeks) Summer 2 – 4 weeks
	Year 2	Create a simple solution that tests an idea, predict the outcome and test and debug the solution to ensure that it works.	Computers' behaviour can be predicted and the outcome tested by following the steps of an algorithm and recognising that the computer will follow instructions precisely.	Autumn 2 – (4weeks) Spring 2 – (3 weeks) Summer 2 – 4 weeks
	Year 3	Identify and use repetitions or loops in a program sequence, predicting outcomes and noticing and correcting any mistakes.	Repetitions or loops can be used in programming where a computer will continue to run part of a program a number of times or until a condition is met, using the term 'repeat... until'. The given feedback can be used to identify and correct any mistakes in the program.	Autumn 2 – (4weeks) Spring 2 – (3 weeks) Summer 2 – 4 weeks
	Year 4	Describe and demonstrate a simple program that contains a looping element and how part of a program may need repetition.	A loop is a sequence of instructions that repeats continually until a certain condition is met. A program that contains a looping element is useful for a wide range of scenarios, such as controlling traffic lights.	Autumn 2 – (4weeks) Spring 2 – (3 weeks) Summer 2 – 4 weeks
	Year 5	Design, write and debug simple sequences of instructions (algorithms), including IF, THEN and OTHERWISE commands, to decide if something is true or false.	Sequences of instructions (algorithms) that contain IF, THEN and OTHERWISE statements are called selections. The computer will complete operations based on whether the conditions of these selections are met or not.	Autumn 2 – (4weeks) Spring 2 – (3 weeks) Summer 2 – 4 weeks
	Year 6	Demonstrate how programs run in an exact order by following a sequence of instructions, and test and debug programs.	Decomposition is breaking down a problem down into smaller parts to make it easier to process and following a sequence of instructions. Decomposition is useful for checking programs and debugging because it saves time.	Autumn 2 – (4weeks) Spring 2 – (3 weeks) Summer 2 – 4 weeks

h i n k i n g				

	Year Group	Learning Intention	Knowledge	Coverage
N e t w o r	**Year 1**	Show awareness that work they create and save on a computer or tablet can be shown to others using another device.	When work is saved electronically, it can be stored on a hard drive, a shared drive called a server or online so that it can be opened on the same device or another device at a later time.	Autumn 2 –(1 week)
	Year 2	Recognise that computers can be linked to share resources and digital content can be stored, organised and retrieved.	Computers and devices can be linked in different ways, such as through a network, the internet and Bluetooth. This allows for the sharing of resources.	Autumn 2 –(1 week)
	Year 3	Recognise that saved work can be retrieved from another device on the same network.	When work is saved, it is stored on a storage device, such as the computer's hard drive, a USB flash drive, a shared server or online. This work can then be retrieved from another device (except if it is saved on the computer's hard drive).	Autumn 2 –(1 week)
	Year 4	Recognise that the school network links computers to allow the sharing of resources.	A school network has computers that are connected together so they can share hardware, software and data.	Autumn 2 –(1 week)

ks	**Year 5**	Compare the ways in which work can be shared on a school network with the ways work is shared at home or in the wider world.	Computer networks are made up of computers that are connected by cables, fibres or wireless links. Each network can only be accessed by computers within their network, such as in school or at home. The internet network can be accessed by anyone.	Autumn 2 –(1 week)
	Year 6	Name some of the positives and negatives of communicating with others online.	The positives of communicating online include the speed, low cost and ability to communicate globally. The negatives of communicating online include the threat to privacy, influencing of others, access to technology and anonymity.	Autumn 2 –(1 week)

	Year Group	Learning Intention	Knowledge	Coverage
Hardw	**Nursery**	Explore how to use different computing hardware.	Smartphones, tablets, laptops, computers and floor robots are all types of computing hardware.	Summer 2 – (1 Week)
	Reception	Use a range of computing hardware for different purposes.	Hardware is the parts of a computer that you can touch, such as a mouse, tablet or floor robot.	Summer 2 – (1 Week)
	Year 1	Use computing hardware in different ways to collect data.	Hardware, such as cameras, scanners and data loggers, can be used to collect data.	Summer 2 – (1 Week)
	Year 2	Use familiar computer hardware to successfully complete a task.	Several pieces of hardware can be used together to complete one task, such as using a camera to take a photograph, uploading it to a computer and then printing it using a printer.	Summer 2 – (1 Week)

a r e	**Year 3**	Use new and unfamiliar computing hardware.	Interacting regularly with hardware enables users to recognise common features and become confident in working with new or unfamiliar hardware.	Summer 2 – (1 Week)
	Year 4	Apply computing skills using unfamiliar hardware to solve a problem successfully.	Using prior knowledge and experience of computing skills can be applied to unfamiliar hardware to solve a problem successfully.	Summer 2 – (1 Week)
	Year 5	Identify how using different hardware can increase creativity and productivity.	Some hardware is more effective than others in particular contexts, such as using virtual reality or a touchscreen rather than a mouse to meet a specific need. Choosing the right hardware can increase creativity and productivity.	Summer 2 – (1 Week)
	Year 6	Explore how to use different computing hardware.	Smartphones, tablets, laptops, computers and floor robots are all types of computing hardware.	Summer 2 – (1 Week)

	Year Group	Learning Intention	Knowledge	Coverage
S o f t w	**Nursery**	Use age-appropriate software independently.	Software is the programs we use on computers and mobile devices.	Summer 1 – (1 week)
	Reception	Begin to use a range of software for different purposes.	Software is the programs that are used by a computer, such as word processing software, presentation software or image editing software.	Summer 1 – (1 week)
	Year 1	Use different types of software and identify their purposes	Each type of software, such as word processing, presentation and image editing, can be used for different purposes, including writing reports and creating slide shows or posters.	Summer 1 – (1 week)
	Year 2	Use a range of different software to successfully complete a project.	Several pieces of software can be used together to complete one task, such as adding a video to a word-processed document.	Summer 1 – (1 week)

a r e	**Year 3**	Apply computing skills to use new computing software.	New computing software commonly has features that should be familiar to users, such as icons or terminology.	Summer 1 – (1 week)
	Year 4	Apply computing skills to create content using unfamiliar programs or apps.	Using prior knowledge and experience of computing skills can be applied to create content using unfamiliar programs or apps.	Summer 1 – (1 week)
	Year 5	Identify how a new piece of software or an app can increase creativity.	Some software or apps are designed to help increase creativity by saving time or making tasks easier, such as being able to combine text, images, audio or video content into one place.	Summer 1 – (1 week)
	Year 6	Use age-appropriate software independently.		Summer 1 – (1 week)

	Year Group	Learning Intention	Knowledge	Coverage
R e a l	**Reception**	Talk about and use digital technology with confidence and independence, giving examples of how it is used in the home, at school and beyond.	Digital technology is used in all parts of everyday life. Examples include smartphones, tablets, microwaves and washing machines.	
	Year 1	Recognise the ways digital technology can be used in the classroom, home and community.	Technology is used in many ways to do different jobs, such as using an interactive whiteboard in the classroom, using a tablet to do online shopping at home or using scanners in a shop in the community	Spring 1 – (1 week)

w o r l d	**Year 2**	Recognise why digital technology is used in the classroom, home and community.	Digital technology is used in everyday life and can be used to support learning and connect with others.	Spring 1 – (1 week)
	Year 3	Use digital technology in different ways in the classroom, home and community	Digital technology can be used for a range of purposes in different settings, such as using a tablet in the classroom to access educational material, in the home to access entertainment and in the community to share local news.	Spring 1 – (1 week)
	Year 4	digital technology in different ways in the classroom, home and community to achieve a set goal.	Use Digital technology can be used in different ways and settings to achieve a specific goal, such as using data collection in the community and home to answer a classroom based question.	Spring 1 – (1 week)
	Year 5	Select, use and combine appropriate technology to create a solution that will have an impact on others.	A range of technologies can be selected, used and combined, such as using different hardware and software to create a solution that will have an impact on others.	Spring 1 – (1 week)
	Year 6	Combine a range of technology to achieve a particular outcome.	A range of technologies can be combined to achieve a particular outcome. For example, sensors (input), a computing device (hardware) and lights (hardware) can be used together to create a set of traffic lights.	Spring 1 – (1 week)

	Year Group	Learning Intention	Knowledge	Coverage
D i g i	**Reception**	Navigate to find digital content, in digital folders and online, with supervision.		Autumn 1 (1 week) Spring 1 (1 week)
	Year 1	Search for or retrieve digital content, including images and information, in digital folders and online, with supervision.	To search for digital content, the user needs to know the file name, file type and folder name or keywords and search terms to find the correct information.	Autumn 1 (1 week) Spring 1 (1 week)

t a l S e a r c h i n g	**Year 2**	Recognise and demonstrate that some information can be found online and some offline.	A device is online if it is connected to the internet or a network and can communicate with other devices. A device is offline if it is not connected to the internet or network and cannot connect to other devices.	Autumn 1 (1 week) Spring 1 (1 week)
	Year 3	Explain that the World Wide Web contains lots of web pages about different subjects that can be searched.	The World Wide Web is a collection of web pages that are run via the internet. The information requested can be displayed as text, images or videos.	Autumn 1 (1 week) Spring 1 (1 week)
	Year 4	Explain that when searching online, some web pages may contain adverts or pop-ups that encourage people to click on them.	Pop-ups or adverts are a form of online advertising that companies use to encourage users to buy something or go to another website. Some pop-ups can be malicious and lead to a virus, whereas some are helpful and give information. Pop-ups can be blocked by computer software. Concerns should be reported to a trusted adult before clicking on anything.	Autumn 1 (1 week) Spring 1 (1 week)
	Year 5	Discern where web content might originate from and recognise that this gives clues to its authenticity, reliability and security	Some websites have more reliable content than others and content should be verified with another independent source.	Autumn 1 (1 week) Spring 1 (1 week)
	Year 6	Critically evaluate search engine results and identify factors that may affect ranking, such as how long the site has existed, the number of links to the site and whether the organisation has paid to have their site promoted.	Search engines take many factors into account, such as the quality of the site, number of updates or number of matches to keywords. However, search engines do not consider whether the content is true, age-appropriate or relevant, and so users need to be aware of these things when searching.	Autumn 1 (1 week) Spring 1 (1 week)