



St Antony's Computing Curriculum - Overview

Curious, Loving, Independent, Creative, Knowledgeable



(Curriculum Drivers: Global Goals, Laudato Si', Catholic Social Teaching, Creativity)

Year	Autumn	Curriculum Drivers links	Spring	Curriculum Drivers links	Summer	Curriculum Drivers links
Year 1	Enquiry Question/topic Computing systems and networks: Improving mouse skills - Learning how to login and navigate around a computer, developing mouse skills, learning how to drag, drop, click and control a cursor to create works of art inspired by Kandinsky and self-portraits Programming 1: Algorithms unplugged This unplugged unit requires no computers so that algorithms, decomposition and debugging are made relatable to familiar contexts, such as dressing up and making a sandwich, while learning why instructions need to be very specific		Enquiry Question/topic Skills showcase: Rocket to the moon Developing keyboard and mouse skills through designing, building and testing individual rockets by creating a digital list of materials, using drawing software and recording data Creating media: Digital imagery Using creativity and imagination to plan a miniature adventure story and capture it using developing photography skills. Learn to enhance photos using a range of editing tools as well as searching for and adding other images to a project, resulting in a high-quality photo collage showcase.		Enquiry Question/topic Data handling: Introduction to data Learn what data is and the different ways that it can be represented and developing an understanding of why data is useful, how it can be used and ways in which it can be gathered and recorded both by humans and computers Online safety: Year 1 Learning about online safety, including using useful tips to stay safe when online; how to manage feelings and emotions when someone or something has upset us online; learning about the responsibility we have as online users; exploring the idea of a 'digital footprint'	



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			Options for both Google and Microsoft schools.			
	NC Programme of Study: -understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions -create and debug simple programs -use logical reasoning to predict the behaviour of simple programs		NC Programme of Study: - use technology purposefully to create, organise, store, manipulate and retrieve digital content - recognise common uses of information technology beyond school		NC Programme of Study: -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.	
	Vocabulary: Vocabulary Link		Vocabulary: Vocabulary Link		Vocabulary: Vocabulary Link	
	Outcomes Click		Outcomes: Click		Outcomes: Click	
Year 2	Enquiry Question/topic Computing systems and networks 1: What is a computer? When picturing a computer, thoughts are often of a screen, mouse and keyboard. This unit explores exactly what a computer is by identifying and learning how inputs and outputs work, how computers are used in		Enquiry Question/topic Computing systems and networks 2: Word processing Learn about word processing and how to stay safe online as well as developing touch typing skills. Introduce important keyboard shortcuts, as well as simple editing tools		Enquiry Question/topic Data handling: International Space Station The International Space Station (ISS) is a fascinating real-world setting for teaching how data is collected, used and displayed as well as the scientific learning of the conditions needed for	



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	the wider world and designing their own computerised invention Programming 1: Algorithms and debugging This combination of unplugged and plugged-in activities develop an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops		within a word processor including: bold, italics, underline and font colour as well as how to import images. Options for both Google and Microsoft schools. Programming 2: ScratchJr Explore what 'blocks' do, using the app 'ScratchJr,' by carrying out an informative cycle of predict > test > review, programme a familiar story and an animation of an animal, make their own musical instrument by creating buttons and recording sounds and follow an algorithm to record a joke		plants and animals, including humans, to survive. Online safety: Year 2 Learning about online safety, including: what happens to information posted online; how to keep things private online; who we should ask before sharing online; describing different ways to ask for, give, or deny permission online	
	NC Programme of Study: -understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following		NC Programme of Study: - use technology purposefully to create, organise, store, manipulate and retrieve digital content		NC Programme of Study: -use technology safely and respectfully, keeping personal information private; identify where to	



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	precise and unambiguous instructions -create and debug simple programs -use logical reasoning to predict the behaviour of simple programs		- recognise common uses of information technology beyond school		go for help and support when they have concerns about content or contact on the internet or other online technologies.	
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Year 3	Enquiry Question/topic Computing systems and networks 1: Networks and the internet Introduction to the concept of networks, learning how devices communicate. Identifying components, learning how information is shared and exploring examples of real-world networks. Options for both Google and Microsoft schools. Programming: Scratch Building on the use of the 'ScratchJr' application in Year 2, progress to using the more advanced computer-based application called 'Scratch', learning to use repetition or 'loops' and building upon skills to		Enquiry Question/topic Computing systems and networks 2: Emailing Learning how to send emails with attachments and how to be a responsible digital citizen by thinking about the contents of what is sent. Options for both Google and Microsoft schools. Computing systems and networks 3: Journey inside a computer Assuming the role of computer parts and creating paper versions of computers helps to consolidate an understanding of how a		Enquiry Question/topic Data handling: Comparison cards databases Using the theme of a 'Comparison cards game' (based on the popular game, Top Trumps), to understand what a database is by learning the meanings of records, fields and data. Further exploration will lead to the development of the ideas of sorting and filtering. Options for Google and Microsoft schools. Online safety: Year 3	



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	program; an animation, a story and a game		computer works, as well as identifying similarities and differences between various models		Learning about online safety: 'fake news', privacy settings, ways to deal with upsetting online content, protecting our personal information on social media	
	NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs -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 - use search technologies effectively, appreciate how results are selected and ranked, and be		NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs -understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they		NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs -understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities	



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	discerning in evaluating digital content - 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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		offer for communication and collaboration - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		they offer for communication and collaboration - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
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Year 4	Enquiry Question/topic Computing systems and networks: Collaborative learning Working collaboratively in a responsible and considerate way as well as looking at a range of collaborative tools. Lesson plans for both Google schools and Microsoft schools. Programming 1: Further coding with Scratch Using variables in coding. Options for both Google and Microsoft schools.		Enquiry Question/topic Creating media: Website design Children develop their research, word processing, and collaborative working skills whilst learning how web pages and web sites are created, exploring how to change layouts, embed images and videos and link between pages. This unit has options for both Google and Microsoft-based devices. Programming 2: Computational thinking Plugged and unplugged activities to develop the four areas of computational thinking		Enquiry Question/topic Data handling: Investigating weather Researching and storing data using spreadsheets; designing a weather station that gathers and records data; learning how weather forecasts are made and using green screen technology to present a weather forecast. Options for both Google and Microsoft schools. Online safety: Year 4 Learning how to navigate the internet in an informed, safe and respectful way	
	NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by		NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating		NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating	



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	decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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 - use technology safely, respectfully and responsibly; recognise		physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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		physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a	
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	acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
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Year 5	Enquiry Question/topic Computing systems and networks: Search engines Using keywords and phrases, identifying inaccurate information, learning page rank works as well. These lessons are available for both Microsoft and Google schools. Data handling: Mars Rover 1		Enquiry Question/topic Programming 2: Micro:bit The meaning and purpose of programming Creating media: Stop motion animation Storyboarding ideas, taking photographs and		Enquiry Question/topic Skills showcase: Mars Rover 2 3D design skills Online safety: Year 5 Potential online dangers and safety	



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	Data transfer and binary code		editing to create a video animation			
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	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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		results are selected and ranked, and be discerning in evaluating digital content - 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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
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Year 6	Enquiry Question/topic Computing systems and networks: Bletchley Park		Enquiry Question/topic Data handling 1: Big Data 1		Enquiry Question/topic Skills showcase: Inventing a product	



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	Code breaking and password hacking. Children will discover the history of Bletchley and learn about code breaking and password hacking. Programming: Intro to Python Using the programming language of Python. Python is used in business and industry. Children will create and design art through the use of code.		Barcodes, QR codes and RFID. This module will help children to understand how data is organised. Children will identify QR codes and how infrared waves are used to transmit data. Data handling 2: Big Data 2 Data usage and smart schools. Children will understand how networks and the internet are used to share information.		Designing a product, pupils: evaluate, adapt and debug code to make it suitable and efficient for their needs; use a software program to design their products; create their own websites and video adverts to promote their inventions. Lesson options for schools using both Google and Microsoft software. Online safety: Year 6 Learning how to navigate the internet in an informed, safe and respectful way	
	NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts - use sequence, selection, and repetition in programs; work with		NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts		NC Programme of Study: -design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	



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	variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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 - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		- use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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,		- use sequence, selection, and repetition in programs; work with variables and various forms of input and output - use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs - 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 - use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content - 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,	
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			evaluating and presenting data and information - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.		including collecting, analysing, evaluating and presenting data and information - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	
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