

St Joseph's Computing and Online Safety Progression of Skills



	Computer Science	Information Technology	Digital Literacy and Online Safety	Key Vocabulary
Year 1	Pupils will develop their understanding of algorithms, instructions and sequencing by creating and following simple sets of instructions to achieve a desired outcome. They will begin to recognise that algorithms are made up of clear, ordered steps and will use simple commands to create and test programs. Pupils will develop their ability to predict what will happen when instructions are followed and identify simple errors or bugs when a program does not work as expected. They will begin to use repetition within instructions and recognise simple patterns in sequences, developing an understanding that instructions can be changed and improved to achieve a desired outcome.	Pupils will develop their ability to use digital technology to create, edit and communicate simple ideas and information for a particular purpose. They will use a range of digital tools to create content using text, images, sound and other multimedia features, making simple choices about how their work is presented. Pupils will develop confidence in using digital devices and begin to select appropriate tools and features to complete a task. They will begin to recognise that digital technology can be used to create different types of content and will make simple improvements to their work by editing and changing digital elements.	Pupils will develop their understanding of how to use digital technology safely, responsibly and respectfully. They will begin to recognise that technology can be used to communicate and build positive relationships with others and will understand the importance of being kind and respectful when using digital devices. Pupils will begin to recognise personal information and understand that some information should be kept private. They will develop an awareness of simple online safety rules, including the importance of using passwords safely and seeking help from a trusted adult if	Computer Science: algorithm, instruction, sequence, command, program, code, bug, debug, predict, pattern, repeat Information Technology: device, computer, iPad, keyboard, touchscreen, mouse, camera, microphone, file, folder, save, open, digital content, image, photograph, video, sound Digital Literacy & Online Safety: Internet, website, link, online, offline, username, login, logout, password, personal information, private, privacy, safe, trusted adult, report, kind, respectful, reliable

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			something online makes them feel worried or uncomfortable. Pupils will begin to understand that their actions online can affect themselves and others and will develop confidence in making safe and responsible choices when using technology.	
Year 2	Pupils will develop their understanding of algorithms,	Pupils will develop their ability to use digital	Pupils will develop their understanding	Computer Science:

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	sequencing and programming by creating and following clear sets of instructions to achieve a desired outcome. Through activities such as Route Explorers and Coding, pupils will plan and test sequences of commands, use repetition to simplify instructions, predict what a program will do and identify and correct simple errors through debugging. They will begin to use decomposition by breaking a larger problem or task into smaller, manageable steps and recognise patterns within instructions and programs. Pupils will increasingly explain how their instructions work and make changes to improve the accuracy and efficiency of a program.	tools to create, organise, edit and present information for a particular purpose. They will collect and organise simple data using spreadsheets, entering information into cells and using rows and columns to create simple charts and graphs. Pupils will create and edit digital content using a combination of text, images and sound, selecting appropriate tools and features to communicate their ideas clearly. They will begin to make choices about the layout and presentation of their work, considering the purpose and audience, and will develop confidence in using digital technology to create purposeful content.	of how to use digital technology safely, responsibly and respectfully. They will recognise the importance of protecting personal information and using secure passwords, and begin to understand how their online actions can contribute to their digital footprint and online reputation. Pupils will explore how to communicate and behave respectfully in online relationships, recognise cyberbullying and understand how to respond appropriately by blocking, reporting or seeking help from a trusted adult. They will use browsers and search engines with appropriate keywords and begin to recognise that	algorithm, program, command, sequence, instruction, repeat, debug, decomposition, predict, pattern Information Technology: data, information, chart, graph, spreadsheet, cell, row, column, presentation, image, text, sound, digital content, search Digital Literacy & Online Safety: Internet, browser, search engine, keyword, search, private, password, personal information, digital footprint, online reputation, cyberbullying, block, report, respect, kindness, trusted adult, online relationship Copyright & Information:
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			information found online may not always be reliable. Pupils will develop the confidence to make safe choices online and know what to do when something makes them feel uncomfortable or unsafe.	copyright, ownership, permission, source
Year 3	Pupils will develop their understanding of programming and computational thinking by designing, writing, testing and debugging programs using sequence, repetition and simple selection. Through activities such as Route Planners and Coding, pupils will use commands and instructions to create programs, predict outcomes and use logical reasoning to explain how and why a program works. They will begin to use variables, inputs and outputs within programs and apply decomposition to break problems into smaller, manageable parts. Pupils will identify and correct errors systematically, refine their programs and recognise that different instructions or	Pupils will develop their ability to select, use and combine a range of digital tools to create, organise and communicate information for a specific purpose and audience. They will develop their keyboard skills through touch typing and use digital tools to create and edit presentations and other digital content. Pupils will collect, organise and analyse data using spreadsheets and branching databases, understanding how information can be sorted and categorised.	Pupils will develop their understanding of how to use digital technology safely, responsibly and respectfully, recognising that their online actions can affect themselves and others. They will develop their understanding of online identity, privacy, personal information and consent, and begin to consider how their digital footprint can affect their online reputation. Pupils will explore positive and respectful online	Computer Science: algorithm, sequence, selection, repetition, variable, input, output, command, program, debug, decomposition, abstraction, logic Information Technology: input, output, device, network, Internet, email, attachment, email address, database, field, record, branch, spreadsheet, cell, chart, presentation, hyperlink, upload, download, edit

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	algorithms can be used to achieve the same outcome.	They will use email appropriately to communicate and share information, including understanding how to use email addresses and attachments. Pupils will increasingly make independent choices about which digital tools and features are most appropriate for a particular task and evaluate whether their digital content effectively communicates their intended message.	relationships, recognise inappropriate or unkind online behaviour and understand how to respond to cyberbullying by blocking, reporting and seeking help from a trusted adult. They will develop their ability to search for information effectively using appropriate keywords, begin to assess whether information and sources are reliable, and distinguish between simple fact and opinion. Pupils will understand the importance of respecting others' work online and begin to recognise the need to acknowledge sources when using information or digital content.	Digital Literacy & Online Safety: online identity, personal information, privacy, secure, password, consent, digital footprint, online reputation, cyberbullying, block, report, online relationship, respectful behaviour Information & Copyright: search, keyword, source, reliable, unreliable, evaluate, copyright, permission, ownership, plagiarism
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Year 4	Pupils will develop their understanding of programming, computational thinking and digital systems by designing, writing, testing and debugging programs using sequence, selection and repetition. Through activities such as Logo and Coding, pupils will use loops, variables, conditions and commands to create increasingly complex programs, predict outcomes and use logical reasoning to explain how programs work. They will apply systematic debugging strategies to identify and correct errors and use decomposition and abstraction to break problems down and focus on the important information needed to solve them. Pupils will also develop their understanding of how hardware and software work together within a computer system and recognise how instructions are processed to produce an output.	Pupils will develop their ability to create, edit and evaluate digital content using a range of multimedia tools. They will combine different forms of media, including images, animation and sound, to communicate ideas and create purposeful digital content for a particular audience. Pupils will develop their understanding of how digital content can be edited and improved, using features such as frames, timelines and audio tools to create increasingly sophisticated outcomes. They will make appropriate choices about the tools and techniques they use and begin to evaluate their digital work for effectiveness, accuracy and suitability for its intended purpose and audience.	Pupils will develop their ability to use digital technology safely, responsibly and respectfully, with a growing understanding of how their online choices can affect themselves and others. They will understand the importance of privacy and secure passwords and develop their understanding of online identity, digital footprints, online reputation and consent. Pupils will recognise different forms of inappropriate or harmful online behaviour, including cyberbullying, and know how to respond appropriately and seek support. They will use search engines effectively, refine searches using appropriate	Computer Science: algorithm, sequence, selection, repetition, loop, variable, command, input, output, condition, logic, debug, abstraction Information Technology: hardware, software, system, device, network, animation, frame, timeline, multimedia, sound, image, search engine, database, data Searching & Information: search, keyword, search result, source, reliable, unreliable, fact, opinion, misinformation, evaluate, credibility Online Safety:
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			keywords and begin to evaluate the reliability and credibility of online information, recognising that misleading or false information can appear online. Pupils will also begin to understand artificial intelligence (AI), recognising examples of AI in everyday life and that AI systems use data to generate or predict information, while understanding the importance of accuracy and human judgement.	privacy, secure password, personal information, online identity, consent, online reputation, digital footprint, online relationship, cyberbullying, block, report, respectful behaviour Artificial Intelligence: artificial intelligence (AI), AI system, machine learning, data, training data, prompt, input, output, generate, prediction, chatbot, automation, bias, accuracy, human Copyright: copyright, ownership, permission, license, plagiarism
Year 5	Pupils will develop their ability to design, write, test and debug increasingly complex programs using sequence, selection and repetition. They will use variables, conditions, events, inputs and outputs to control the behaviour	Pupils will develop their ability to select, combine and use digital tools effectively to collect, organise, analyse and communicate	Pupils will develop a more critical and responsible understanding of their digital identity, online relationships and reputation. They	Computer Science: algorithm, sequence, selection, repetition, loop, variable, condition, event, input, output, sensor, debug,

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	of programs and create interactive solutions to problems. Pupils will apply logical reasoning to predict and explain program behaviour and use systematic approaches to identify, locate and correct errors. They will use decomposition and abstraction to break complex problems into smaller parts and identify the key information needed to develop a solution. Pupils will refine and evaluate their programs, making improvements to ensure they work accurately and efficiently.	information for a specific purpose and audience. They will use spreadsheets and databases to enter, organise and analyse data, applying formulas and functions and creating appropriate charts and graphs to represent information. Pupils will create and edit increasingly sophisticated digital content, including word-processed documents, presentations, quizzes, concept maps and interactive media, making purposeful choices about layout, features and presentation. They will consider the needs of their audience and evaluate the effectiveness, accuracy and suitability of their digital work, making appropriate improvements where necessary.	will understand how personal information, privacy settings and online activity contribute to their digital footprint and consider how this may affect their online reputation. Pupils will explore the importance of consent, empathy and respectful communication in online relationships and recognise different forms of online bullying, knowing how to respond appropriately, including blocking, reporting and seeking support. They will develop their ability to evaluate online information and search results, considering the reliability and credibility of different sources and distinguishing between fact and	logic, decomposition, abstraction Information Technology: database, field, record, data, spreadsheet, cell, row, column, formula, function, chart, graph, hyperlink, multimedia, image, audio, video, presentation, word processing Digital Collaboration: collaboration, communicate, share, publish, audience, digital content, online collaboration Online Safety: online relationship, digital footprint, online reputation, privacy, privacy settings, personal information, consent, cyberbullying, block, report, respectful, empathy, trusted adult
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			opinion. Pupils will begin to recognise misinformation and understand the importance of checking information before accepting or sharing it.	Information Literacy: search, keyword, search engine, source, reliable, unreliable, credibility, misinformation, evaluate, fact, opinion Copyright & Ownership: copyright, ownership, permission, license, plagiarism, attribution
Year 6	Pupils will consolidate and extend their understanding of programming and computational thinking by designing, writing, testing and debugging programs using sequence, selection and repetition. They will use variables, conditions, events, inputs and outputs and apply logical reasoning to predict and explain how programs will behave. Pupils will use decomposition and abstraction to break complex problems into smaller, manageable parts and identify the key information needed to develop effective solutions. They will develop their ability to debug systematically and refine	Pupils will develop their ability to select, combine and use a range of digital tools effectively to collect, organise, analyse and communicate information for a specific purpose and audience. They will use spreadsheets to enter, organise and analyse data, applying formulas and functions and selecting appropriate charts and graphs to represent information clearly. Pupils will use databases and graphing	Pupils will develop a critical, responsible and increasingly independent understanding of how to use digital technology safely, respectfully and responsibly. They will understand how their online identity, digital footprint and online reputation are shaped by their actions and recognise the importance of protecting personal information, using	Computer Science: algorithm, sequence, selection, repetition, loop, variable, condition, event, input, output, logic, decomposition, abstraction, function, parameter, debug, program, Python, simulation Networks & the Internet: network, computer network, Internet, World Wide Web,

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	programs to improve their accuracy and efficiency. Through Introduction to Python, pupils will begin to apply these concepts in a text-based programming language, using code to solve simple problems and create programs or simulations.	tools to explore data, identify patterns and draw conclusions, and will create and edit digital content such as blogs, presentations and 3D models, making purposeful choices about layout, design and functionality. They will increasingly work independently to select the most appropriate digital tools and features for a particular task, considering their audience and purpose, and will evaluate and refine their digital work to improve its accuracy, effectiveness and overall quality.	strong passwords and maintaining appropriate privacy settings. Pupils will explore online relationships, consent and respectful communication, recognising different forms of online bullying and harmful behaviour and knowing how to respond appropriately, including blocking, reporting and seeking support from a trusted adult. They will develop their ability to search for, evaluate and verify online information, considering search rankings, source credibility and the difference between fact, opinion, misinformation and disinformation. Pupils will also recognise common online risks such as	website, browser, server, client, router, switch, LAN, WAN, wireless, wired, connection, data, packet Information Technology: database, spreadsheet, cell, formula, function, data, graph, chart, presentation, blog, post, comment, hyperlink, 3D model, digital content Information & Search: search engine, keyword, search result, algorithm, ranking, source, reliable, unreliable, credibility, misinformation, disinformation, evaluate, verify, fact, opinion Online Safety & Security:
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			phishing, scams and malware, and understand the importance of making informed choices about the information they access, use and share online.	online identity, digital footprint, online reputation, privacy, personal information, data protection, secure password, encryption, phishing, malware, scam, cyberbullying, block, report, consent, online relationship, responsible behaviour Copyright: copyright, ownership, permission, license, plagiarism, attribution
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