



**St. Joseph's Catholic Academy - Computing Progression of Knowledge & Year Group End Points**



	Computer Science	Information Technology	Digital Literacy
Nursery Reception	<p>Within the new EYFS curriculum, the 'Technology' strand has been removed from 'Understanding the World' and has not been replaced with any updated guidance. However, computing and technology are still vitally important subjects to teach to children across the Foundation Stage. Computing ensures that children enter Year 1 with a strong knowledge of technology, increased listening skills, problem-solving abilities and thoughtful questioning as well as improved subject skills across the seven areas of learning. Particularly, in an ever-changing technological world, technology is integrated into the lives of young children. Just as we prepare our children for the adult world by teaching them Maths and Literacy skills, we must also make sure they are fluent in computer literacy and e-safety.</p> <p align="center"><u>Computing in EYFS</u></p> <p>Continuous provision available for both focussed and self-chosen learning, a range of technology is available in the classroom for the children to access including: iPads, computers, remote control toys, battery operated toys, beebots, CD players and interactive whiteboards.</p>		
Year 1	<ul style="list-style-type: none"> <li>Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand.</li> <li>Children can work out what is wrong with a simple algorithm when the steps are out of order. They know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code.</li> <li>When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program.</li> </ul>	<ul style="list-style-type: none"> <li>Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources.</li> </ul>	<ul style="list-style-type: none"> <li>Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.</li> <li>Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space</li> </ul>
Year 2	<ul style="list-style-type: none"> <li>Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so</li> </ul>	<ul style="list-style-type: none"> <li>Children demonstrate an ability to organise data.</li> <li>Children are confident when creating, naming, saving and retrieving content.</li> </ul>	<ul style="list-style-type: none"> <li>Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom.</li> <li>Children make links between technology they see around them,</li> </ul>



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	<p>that they can be successfully converted into code.</p> <ul style="list-style-type: none"> <li>• Children can create a simple program that achieves a specific purpose, and can also identify and correct some errors.</li> <li>• Children can identify the parts of a program that respond to specific events and initiate specific actions.</li> </ul>	<ul style="list-style-type: none"> <li>• Children use a range of media in their digital content including photos, text and sound.</li> </ul>	<p>coding and multimedia work they do in school e.g. animations, interactive code and programs.</p> <ul style="list-style-type: none"> <li>• Children know the implications of inappropriate online searches and know ways of reporting inappropriate behaviours and content to a trusted adult.</li> </ul>
Year 3	<ul style="list-style-type: none"> <li>• Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. They can identify an error within their program that prevents it following the desired algorithm and then fix it.</li> <li>• Children demonstrate the ability to design and code a program that follows a simple sequence.</li> <li>• Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures.</li> <li>• Children can list a range of ways that the Internet can be used to provide different methods of communication.</li> </ul>	<ul style="list-style-type: none"> <li>• Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine.</li> <li>• Children can collect, analyse, evaluate and present data and information using a selection of software.</li> <li>• Children can consider what software is most appropriate for a given task.</li> </ul>	<ul style="list-style-type: none"> <li>• Children demonstrate the importance of having a secure password and not sharing this with anyone else.</li> <li>• Children can explain the negative implications of failure to keep passwords safe and secure, and they understand the importance of staying safe and the importance of their conduct when using familiar communication tools.</li> <li>• They know more than one way to report unacceptable content and contact.</li> </ul>
Year 4	<ul style="list-style-type: none"> <li>• When turning a real-life situation into an algorithm, the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. Children make more</li> </ul>	<ul style="list-style-type: none"> <li>• Children understand the function, features and layout of a search engine.</li> <li>• They can appraise selected webpages for credibility and information at a basic level.</li> </ul>	<ul style="list-style-type: none"> <li>• Children can explore key concepts relating to online safety and can help others to understand the importance of online safety.</li> </ul>



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	<p>intuitive attempts to debug their own programs.</p> <ul style="list-style-type: none"><li>• Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs.</li><li>• Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures.</li><li>• They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this.</li><li>• Children recognise the main component parts of hardware which allow computers to join and form a network.</li></ul>	<ul style="list-style-type: none"><li>• Children are able to make improvements to digital solutions based on feedback.</li><li>• Children make informed software choices when presenting information and data.</li></ul>	<ul style="list-style-type: none"><li>• Children know a range of ways of reporting inappropriate content and contact.</li></ul>
Year 5	<ul style="list-style-type: none"><li>• Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts.</li><li>• Children are able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.</li><li>• Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking</li></ul>	<ul style="list-style-type: none"><li>• Children search with greater complexity for digital content when using a search engine.</li><li>• They are able to explain in some detail how credible a webpage is and the information it contains.</li><li>• Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution.</li><li>• Children are able to collaboratively create content and solutions using digital features within software.</li></ul>	<ul style="list-style-type: none"><li>• Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online services.</li><li>• Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.</li></ul>



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	<p>of how to accomplish the set task in code utilising such structures.</p> <ul style="list-style-type: none"> <li>• When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later.</li> <li>• Children understand the value of computer networks but are also aware of the main dangers.</li> <li>• They recognise what personal information is and can explain how this can be kept safe.</li> </ul>	<ul style="list-style-type: none"> <li>• They are able to use several ways of sharing digital content.</li> </ul>	
Year 6	<ul style="list-style-type: none"> <li>• Children are able to turn a more complex programming task into an algorithm by identifying the important aspects of the task and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs.</li> <li>• Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem.</li> <li>• Children translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other.</li> </ul>	<ul style="list-style-type: none"> <li>• Children readily apply filters when searching for digital content.</li> <li>• They are able to explain in detail how credible a webpage is and the information it contains.</li> <li>• They compare a range of digital content sources and are able to rate them in terms of content quality and accuracy.</li> <li>• Children use critical thinking skills in everyday use of online communication.</li> <li>• Children make clear connections to the audience when designing and creating digital content.</li> <li>• The children design and create their own blogs to become a content creator on the internet.</li> <li>• They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.</li> </ul>	<ul style="list-style-type: none"> <li>• Children demonstrate the safe and respectful use of a range of different technologies and online services.</li> <li>• They identify more discreet inappropriate behaviours through developing critical thinking.</li> <li>• They recognise the value in preserving their privacy when online for their own and other people's safety.</li> </ul>



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	<ul style="list-style-type: none"><li>• Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole.</li><li>• Children understand and can explain in some depth the difference between the internet and the World Wide Web.</li><li>• Children know what a WAN and LAN are and can describe how they access the internet in school.</li></ul>		
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