

**Our children are receptive, inquisitive learners who, through our Gospel values, have a unique sense of the world**

**The Computing Curriculum K&S at St Teresa’s Catholic Academy – Upper Key Stage 2**

|  |  |  |
| --- | --- | --- |
| NC Objective  Pupils should be taught to:  | Year 5  | Year 6   |
| Skills  | Knowledge  | Skills  | Knowledge  |
| **Computer science**  Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts  | Make more complex real-life problems into algorithms for a program. Test and debug programs as they work.  | Know how to turn more complex real life situations into algorithms for a program by deconstructing it into manageable parts. Know how to test and debug programs using logical methods.  | Turn a complex programming task into an algorithm. Identify the important aspects of a programming task (abstraction). Decompose important aspects of a programming task in a logical way. Identify appropriate coding structures that would work. Test and debug programs as they work and use logical  | Know how to turn a more complex programming task into an algorithm by identifying the importance aspects of the task (abstraction) and then how to decompose them in a logical way using coding structure and applying skills from previous programs. Know how to test and debug programs as they go. Know how to use logical  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | methods to identify the cause of a bug. Identify a specific line of code that is causing a problem and attempt a fix.   | methods to identify the cause of bugs with a systematic approach to try and identify a particular line of code causing a problem.  |
| **Computer science**  Use sequence, selection, and repetition in programs; work with variables and various forms of input and output  | Convert algorithms that contain sequence, selection and repetition into code that works. Use sequence, selection, repetition and other coding structures within code.   | Know how to translate algorithms that include sequence, selection and repetition into code with increasing ease. Know how to accomplish the set task in code utilising such structures. Understand how to combine sequence, selection and repetition with other coding structures to achieve the algorithm design.  | Translate algorithms that include sequence, selection and repetition into code and nest these structures within each other. Use inputs and outputs within coding programs, such as sound, movement and buttons and represent the state of an object.   | Know how to translate algorithms that include sequence, selection and repetition into code. Know how to accomplish the set task in code utilising such structures, including nesting structures within each other. Improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions.  |
| **Computer science**  Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs | Organise code carefully for example naming  | Beginning to understand how to use code structure  | Interpret a program in parts and make logical attempts to put the  | Know how to interpret a program in parts and make  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | variables and using tabs for debugging. Use logical methods to identify the cause of any bugs with support to identify the specific line of code.  | in terms of the ability to debug and interpret the code later.  | separate parts together in an algorithm to explain the program as a whole.  | logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole.   |
| **Computer science**  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.  | Recognise the importance of computer networks and how they can help solve problems and enhance communication. Recognise the main dangers that can occur via computer networks. Explain what personal information is and recognise the strategies for keeping this safe. Use the most appropriate form of online communication according to the digital content.  | Understand the value of computer networks and also aware of the main dangers. Know what personal information is and how to keep it safe. Know the most appropriate form of online communications depending on audience and display content.  | Explain the difference between the internet (road) and the World Wide Web (cars). Explain what a WAN and LAN is and describe the process of how access to the internet in school is possible.  | Understand in some depth the difference between the internet and the World Wide Web. Know what a WAN and LAN are. Know how the internet is accessed in school.  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Information technology**  Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content  | Search precisely when using a search engine. For example add or remove words to help find better results. Explain in detail how accurate, safe and reliable the content is on a webpage.  | Know how to search with greater complexity for digital content when using a search engine. Understand how credible a webpage is and the information it contains.  | Use filters when searching for digital content. Explain in detail how accurate and reliable a webpage and its content is. Compare a range of digital content sources and rate them in terms of content quality and accuracy.  | Know how to readily apply filters when searching for digital content. Know how credible a webpage is and the information it contains. Know how to compare a range of digital content sources and how to rate them in terms of content quality and accuracy. Understand how to use critical thinking skills in everyday use of online communication.  |
| **Information technology**  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  | Make appropriate improvements to digital work they have created. Comment on how successful a digital solution is that they have created. Work collaboratively with other to create solutions to problems using  | Know how to make appropriate improvements to digital solutions based on feedback received and know the success of the solution. Understand how to objectively evaluate solutions from others.  | Consider the intended audience carefully when designing and making digital content. Design and create own online blogs. Use criteria to evaluate the quality of their own and others digital solutions, suggesting refinements.   | Know how to make clear connections to the audience when designing and creating digital content. Understand how to design and create blogs to become a content creator on the internet. Know how to use criteria to evaluate  |
|  | appropriate software. Use collaborative modes to work with others and share digital content.  | Know how to collaboratively create content and solutions using digital features. Know how to use several ways to share digital content.  |  | the quality of digital solutions and are able to identify improvements, making some refinements.  |
| **Digital literacy**  Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.  | Demonstrate a secure knowledge of online safety rules. Demonstrate the safe and respectful use of different online technologies and online services. Relate appropriate online behaviour to their right to have personal privacy. Not let mental wellbeing be affected by the use of online technologies and services.  | Have a secure knowledge of common online safety rules and know how to apply this by demonstrating the safe and respectful use of a few different technologies and online services. Know how to implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing.  | Demonstrate safe and respectful use of a range of different technologies and online services. Identify more discrete behaviours online, for example grooming. Use critical thinking to help stay safe online. Protect privacy online.  | Know the safe and respectful use of a range of different technologies and online services. Know how to identify more discrete inappropriate behaviours through developing critical thinking. Know how to recognise the value in preserving privacy when online.  |