

**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**

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| 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 |

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|  |  |  | 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 |

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|  | 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. |

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| **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. |