

**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 – Lower Key Stage 2**

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| NC Objective  Pupils should be taught to:   | Year 3   | Year 4   |
| 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.  | Turn a simple real life situation into an algorithm. Design an algorithm and turn it into code. Identify errors in programs they have created and fix it.      | Know how to deconstruct a program into manageable parts. Know how to correct an error in an algorithm.  | Turn a real life situation into an algorithm using a design that shows how it can be accomplished in code. Identify errors in code using different methods.   | Know how to turn real-life situations into an algorithm using coding structures for selection and repetition. Know how to debug their own programs.  |
| **Computer science**  Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.  | Design and code a program that follows a simple sequence. Experiment with timers and repeat commands. Use variables to store information.  | Know how to use timers in programs and understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Know how variables can be used to store information while a program is executing.  | Use repetition in code, for example using a loop that continues until a condition is met such as the correct answer being answered. Use timers accurately to create repetition effects. Use selection in programming, for example using an ‘if statement’ for a question and the program takes one of two paths. Use variables and change the values of the variables. Use input and output features such as ‘print to screen’.  | Know how to use timers to achieve repetition. Understand ‘if statements’ and how they can be used to achieve the effects in program design. Understand how variables can be used to store information while a program is executing. Know how to make use of user inputs and outputs. |

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| **Computer science**  Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs  | Design programs using logical achievable steps. Identify ‘if’ statements, repetition and variables. Read programs with several steps and make predictions.  | Know how to structure programs logically. Know how to make attempts to ‘step through’ more complex code in order to identify errors in algorithms and know how to correct this. Know how to read programs with several steps and predict the outcome accurately. | Identify errors in code using different methods, such as stepping through lines of code and fixing them. Read programs containing several steps and predict the outcomes with increasing accuracy.  | Understanding how to show they are thinking of the structure of a program in logical achievable steps and developing an awareness of ‘if statements’, repetition and variables. Know how to trace code using step- through methods to identify errors in codes and how to correct this logically. Know how to read programs with several steps and how to predict the outcome accurately |

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| **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.  | Identify different ways in which the internet can be used for communication. Open an email, respond appropriately and attach files.   | Know the ways that the internet can be used to provide different methods of communication. Know how to open, respond and attach files to emails.  | Recognise the main component parts of hardware that allows computers to join and form a network. Identify that network and communication components can be found in many different devices which allows them to join the internet.  | Know the main component parts of hardware which allows computers to join and form a network. Understand the online safety implications associated with the ways the internet can be used to provide different methods of communication.  |
| **Information technology**  Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.  | Carry out searches to find digital content on a range of online systems, such as within Purple Mash or an internet search engine.  | Understand how to carry out searches to retrieve digital content using the internet.  | Explain the purpose of a search engine and the main features within it. Look at information on a webpage and make predictions about the accuracy of the information contained within it.  | Understand the function, features and layout of a search engine. Know how to appraise selected webpages for credibility and information at a basic level.  |

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| **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  | Collect data and put it into software. Analyse data using features within software, such as formula in spreadsheets (2Calculate). Present data and information using different software. Consider the most appropriate software to use to complete a task. Create content and attach this to emails.  | Know how to collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database (2Question).  | Create and improve solutions to a problem based on feedback. Review solutions that others have created using a checklist or criteria. Work collaboratively to create content and solutions. Share digital content using a variety of applications.  | Know how to make improvements to digital solutions based on feedback. Know how to make informed software choices when presenting information and data. Understand how to create linked content using a range of software. Know how to share digital content with others.  |
| **Digital Literacy**  Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.  | Create a secure and private password. Explain the consequences of not keeping passwords secure. Behave respectfully and safely online, reporting unacceptable content.  | Know the importance of having a secure passwords and why this should not be shared with anyone else. Understand the importance of staying safe and the importance of their own conduct. Know more than one way to report unacceptable content and contact.  | Demonstrate a good understanding of online safety rules. Explain the right to privacy both on and offline. Recognise that wellbeing can be affected by technology use. Understand how to report any concerns with content and contact online and use immediate strategies to keep safe. | Explore key concepts relating to online safety using concept mapping, such as 2Connect. Know how to help others to understand the importance of online safety. Know a range of ways of reporting inappropriate content and contact.  |