

| LONG TERM CURRICULUM OVERVIEW | | | Subject: Computing |
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| Year 7 | KS2 link | Topic(s) | Content |
| Term 1 | <ul style="list-style-type: none"> Understand what an algorithm is Use Excel to automate an algorithm Understand the basics of binary, including simple applications to computer graphics | Algorithms Excel Binary | <ul style="list-style-type: none"> 'The Square Challenge' algorithm Using Excel to model the Square Challenge, including using basic formulae Writing numbers in binary, and converting binary to base 10 Binary addition and subtraction Creating a binary sprite <p>This unit also acts as a useful overview to the school's use of Microsoft 365</p> |
| Term 2 | <ul style="list-style-type: none"> Be able to write a simple programme in Scratch Understand what Cyberbullying is, the issues it raises and how to deal with them Use Scratch to create content which educates users about Cyberbullying | Scratch Cyber-bullying | <ul style="list-style-type: none"> What is Scratch? Creating an account, sprites, blocks Creating a story using Scratch Debugging What is Cyberbullying – consider roles of all involved (bully, victim, bystander, parents, school, police) Show understanding of Cyberbullying issues by creating Scratch content to address key points |
| Term 3 | <ul style="list-style-type: none"> Select, use and combine information from a variety of online sources Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Understand why some sources may be more reliable than others Understand how to stay safe online Understand what a digital footprint is and its implications | Research Skills Online Safety Digital Footprint | <ul style="list-style-type: none"> Search engines, search results, impact of advertising, evaluating sources, using multiple sources to validate information, referencing What is online safety? What are the risks and how can you avoid them? What is a digital footprint? How can this be helpful, or a problem in the future? |
| Term 4 | <ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts Use sequence, selection, and repetition in programs; work with variables and various forms of input and output Create a range of programs, systems and content that accomplish given goals | Games in Scratch | <ul style="list-style-type: none"> Why are computer games so much fun? Introduction to programming Developing skills: pong Developing skills for customer need: maze Debugging: how do I improve my game Games showcasing: how do I present my work? |
| Term 5 | <ul style="list-style-type: none"> 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 | Spreadsheets | <ul style="list-style-type: none"> What is a spreadsheet? Fundamentals of Excel Basic and more advanced formulae Graphing Applying new skills in the context of a business |

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| | <ul style="list-style-type: none"> In particular, use spreadsheets to calculate averages and to present data graphically Be able to choose the most appropriate form of presentation | | |
| Term 6 | <ul style="list-style-type: none"> Continue to develop programming skills, with a focus in 'repeat ... until', 'for ... next' and similar loops Be able to follow a brief to write a simple program that solves a problem e.g. returns all the factors of a number Understand the basic idea of sorting and searching algorithms, including bubble sort | Scratch Logo (Python, Kodu?) | <ul style="list-style-type: none"> - Computer syntax - Drawing polygons in Logo - Using computers to solve problems, including sorting |
| Year 8 | Theme | Topic(s) | Content |
| Term 1 | <ul style="list-style-type: none"> Introduction to Python | Python | Writing simple programs in Python |
| Term 2 | <ul style="list-style-type: none"> Databases | Access | <ul style="list-style-type: none"> Understanding what a database is Creating a simple database |
| Term 3 | <ul style="list-style-type: none"> Efficiency | Scratch, Python | <ul style="list-style-type: none"> Understanding the concept of efficiency Improving programs so that they become more efficient (e.g. sorting programs) |
| Term 4 | <ul style="list-style-type: none"> Introduction to Kodu | Kodu | Writing simple routines in Kodu |
| Term 5 | <ul style="list-style-type: none"> Photo and video editing | Photoshop Online safety | <ul style="list-style-type: none"> Take, present and edit photographs and video Uploading photos and videos on line and understanding the issues associated with this |
| Term 6 | <ul style="list-style-type: none"> Review of KS3 Computing | All | Review of all content covered in during years 7 and 8 to ensure students are well prepared to use their skills to take GCSE Computing, or to support learning in other subjects |