



Year 8 Spring Term
'An ambitious curriculum that meets the needs of all'

Medium Term Planning – Modelling Data Spreadsheets

| Curriculum Intent | Pupils will be taught using the following National Curriculum guidelines: |
|----------------------------------|--|
| Skills/National Curriculum Links | <p>Computing – KS3</p> <p>Key stage 3 Pupils should be taught to:</p> <ul style="list-style-type: none">• design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems• understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem• use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions• understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]• understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems• understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits• undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users• create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability• understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognize inappropriate content, contact and conduct and know how to report concerns. |
| Numeracy | Formulas, functions, numbers, decimals, integers, charts, sell reference |
| Literacy | <p>Vocabulary Tier 2: Formatting data, bold, colour, size, border</p> <p>Vocabulary Tier 3: Spreadsheet, model, simulation, cell, row, column, format, decimal, integer, currency, formula, relative reference, absolute reference, validation, macro, pie chart.</p> <p>Reading: Presentations, worksheets, and homework</p> <p>Writing: complete worksheets and skill task</p> <p>Oracy: Learn how to pronounce difficult or new keywords</p> <p>SMSC: Ensuring data is entered correctly without error or the impact this could have</p> <p>PSHE: Financial education, how to monitor your expenses using a spreadsheet, especially at university or once you live independently.</p> <p>Careers: Accountant, data analyst, project managers, retail store managers, administrative assistants</p> <p>Literacy: literacy slide will provide a definition of the keyword, antonym and synonym</p> <p>Numeracy: Understand how to use formulas and what if's</p> |
| Adaptation | Throughout this topic, quality first teaching will provide differentiation: |
| QFT/SEND Provision | <p>By product: Learning will produce work on a variety of different levels, a mix of individual, think pair share, designing original maters, Q&A with teacher, teacher marking and self-marking.</p> <p>By resource: presentations, worksheets with extension tasks</p> <p>By Intervention: by providing different levels of supervision/support, seating plan, use of TA</p> <p>By Progressive Questioning: exploring pupils' understanding through interactive dialogue.</p> <p>By Grouping: according to prior attainment, gender, social preference, preferred learning style.</p> <p>By Task: Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range.</p> <p>By Offering Optional Activities: In class or as homework, to extend learning.</p> <p>This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.</p> |



| | | | |
|--|--|--|--|
| | | | |
| Implementation Curriculum Delivery | To be able to: | | |
| Learning Outcomes (Knowledge) | Spreadsheet Modelling | Formatting cells, adding basic formula | Understand what is meant by the term computer model, and compare different types of model Understand that spreadsheets can be used to build financial models Revise spreadsheet basics: entering text, numbers and formulae Use relative and absolute referencing Format cells, insert a graphic |
| | | Adding and formatting own data and formulas | Create a financial model to predict the profit on the sale of merchandise Make the model as realistic as possible based on known sales figures and prices Consider ways of increasing profit to meet a given target |
| | | Using functions MAX MIN IF, sorting, what if | Use a spreadsheet to model outcomes Use functions including Max, Min and If Name a cell Sort data into different sequences Try out different 'What if' scenarios to achieve a goal Display the formulae in a spreadsheet |
| | | Validation, formatting, Countif | Create a seat booking system for a live show Use a validation rule to ensure that only valid data can be entered Use conditional formatting to show which seats have been booked Use a Countif function in calculations of seat sales |
| | | Creating and assigning macros | Create a macro to reset all seats to unbooked Assign the macro to a button Create and customise a pie chart to show the number of seats remaining |
| Current learning to be developed in the future within: | Links to the arithmetic use in Python programming, building on use of spreadsheet in year 7 for binary, denary and adding binary numbers. Will be developed further at GCSE and A Level when exploring modelling. | | |
| Assessment | <ul style="list-style-type: none">Refer to assessment maps for formative and summative assessment opportunities. | | |
| Impact | <ul style="list-style-type: none">Learning will be assessed during instant verbal feedback to ensure students' formulae are working as expected and students have formatted the spreadsheet.Assessment results will indicate pupils emerging, developing, securing or mastering.Data review documentation will indicate if pupils are underachieving, meeting or exceeding MEG grade.In line with the departmental marking policy, quality written feedback will be provided for the specified marked piece | | |