



Year 7 Autumn/Spring Term
'An ambitious curriculum that meets the needs of all'

Medium Term Planning – Data Representation

Curriculum Intent	Pupils will be taught using the following National Curriculum guidelines:
Skills/National Curriculum Links	<p>Computing – KS3 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	Binary, integers, denary, adding
Literacy	<p>Vocabulary Tier 2: Data, logic, maths, number, Vocabulary Tier 3: Binary, denary, Boolean, bit, nibble, byte, kilobyte, megabyte, gigabyte, terabyte. Reading: Presentations, worksheets, and homework Writing: complete worksheets and skill task such as converting binary numbers to denary numbers Oracy: learn how to pronounce difficult or new keywords SMSC: Understand the devices we used every day are made of machine code PSHE: Most people – including most transgender people – are either male or female. But some people don't neatly fit into the categories of "man" or "woman," or "male" or "female." For example, some people have a gender that blends elements of being a man or a woman, or a gender that is different than either male or female. Some people don't identify with any gender. Some people's gender changes over time. People whose gender is not male or female use many different terms to describe themselves, with non-binary being one of the most common. Careers: software engineers Literacy: literacy slide will provide a definition of the keyword, antonym and synonym</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. By resource: presentations, worksheets with extension tasks By Intervention: by providing different levels of supervision/support, seating plan, use of TA By Progressive Questioning: exploring pupils' understanding through interactive dialogue. By Grouping: according to prior attainment, gender, social preference, preferred learning style. 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. By Offering Optional Activities: In class or as homework, to extend learning. 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)	Convert binary to denary values.	Understand that data needs to be converted into a binary format to be processed by a computer. Convert binary to denary values with column headings. Convert binary to denary values without column headings.
	Binary Convert denary to binary values.	Convert low denary numbers (below 31) to binary. Convert larger denary numbers into binary. Play an online game to easily convert between binary and denary. Complete a binary square to convert between denary and binary.
	Add together binary numbers.	Understand the rules of adding binary numbers Add together two binary numbers and convert them to denary to check the results. Add together three binary numbers.
Current learning to be developed in the future within:	<p>This SOW will be built upon in year 8 in understanding computers by completing retrieval lesson on binary, denary, binary addition and build on using hexadecimal. Will also feature in the year 8 assessment. In year 9 binary, denary, adding binary number, hexadecimal and will build on using logic gates will be visited during computational thinking SOW, starters and revision homework. This will also feature in the year 9 assessment.</p> <p>Also links with spreadsheet modelling in year 8, as pupils get to use, become familiar with excel software and how to navigate a workbook and cell references when completing questions based around binary, denary and adding binary numbers.</p>	
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 tested during Summative Assessment 1. 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 	