



MAGHULL HIGH SCHOOL – CURRICULUM MAP

Unit:	Lesson Sequence		
	<p>Place value, ordering and rounding</p> <ol style="list-style-type: none"> 1. Write integers in numerals and words 2. Intervals on a number line 3. Compare and order integers 4. Place value for decimals 5. Decimals on a number line 6. Compare and order decimals 7. Round to powers of 10 8. Round to the nearest integer 9. Round to decimal places 10. Powers of 10 (E) 11. Numbers greater than 1 in standard form (E) 12. Negative powers of 10 (E) 13. Numbers between 0 and 1 in standard form (E) 	<p>Four Operations</p> <ol style="list-style-type: none"> 1. Add and subtract integers 2. Add and subtract decimals 3. Multiply and divide by 10, 100 and 1000 4. Multiply by 0.1 and 0.01 (E) 5. Multiply integers 6. Divide integers 7. Multiply decimals 8. Divide decimals by integers 9. Divide by a decimal (E) 10. Order of operations 	<p>Averages and Range</p> <ol style="list-style-type: none"> 1. Mode 2. Mean 3. Median 4. Range 5. Solve problems with averages and range
<p>Knowledge & Skills development</p>	<p>Fluency:</p> <ul style="list-style-type: none"> • Convert between numeral and word form accurately • Identify place value of digits in integers and decimal numbers • Identify, label and plot equal intervals, integers and decimal values on a number line • Use inequality symbols correctly • Order positive and negative integers with and without number lines • Line up decimal numbers by place number 	<p>Fluency:</p> <ul style="list-style-type: none"> • Add and subtract positive and negative numbers efficiently • Recognise and apply rules for adding and subtracting negatives • Lining up decimal point for column methods correctly • Identify patterns with place value for multiplication and division • Recall and use multiplication facts up to 12x12 • Multiply and divide multi-digit and decimal numbers using written methods 	<p>Fluency:</p> <ul style="list-style-type: none"> • Identify mode from a list of numbers and different data formats whether that be none, one or multiple modes • Recognise that the mode is the most frequently occurring value • Calculate mean by adding values and dividing by total number of values • Able to order a data set from least to greatest to find the median (middle) • Find the average of the two middle values in an even numbered data set

	<ul style="list-style-type: none"> Identify which digit determines rounding direction (up or down) in both integer and decimal numbers Understand exponential notation and its meaning (E) Understand notation of standard form and how to convert to and from (E) Identify place value relationships in negative powers and standard form (E) <p>Reasoning:</p> <ul style="list-style-type: none"> Describing place value clearly in words and symbolic form Explain the size of intervals and how, why they help to identify unknown values on a number line Justify and explain why integers/decimals are greater or less than another including negatives due to place value alignment Justify rounding decisions based on place value rules Explain why rounding affects the accuracy of an answer Explain patterns when multiplying or dividing by powers of 10 (E) Justify converting large numbers into standard form and why (E) <p>Problem-solving:</p> <ul style="list-style-type: none"> Solve word problems that require interpreting or recording numbers in both numerical and word format Construct number lines to model problems and represent data 	<ul style="list-style-type: none"> Use place value understanding to set up equivalent calculations when multiplying and dividing decimals (E) Apply BIDMAS/BODMAS rules accurately <p>Reasoning:</p> <ul style="list-style-type: none"> Explain why subtracting a negative number increases the value Explain why place value must be maintained when adding or subtracting decimals Explain the link between shifting digits when multiplying/dividing by powers of 10 Use place value reasoning to justify the direction and amount of digit shifts (E) Compare multiplication by 0.1 to division by 10 to find equivalences (E) Justify sign rules for multiplication Explain how multiplication is repeated addition Explain how division is the inverse of multiplication Use place value reasoning to rewrite division by decimal as divide by whole numbers (E) Explore why and how BIDMAS/BODMAS affects expressions <p>Problem-solving:</p> <ul style="list-style-type: none"> Apply four operations to real-life problems (temperature changes, bank balances etc.) Solve scaling problems using multiplication/division by powers of 10 Check answers using inverse operations 	<ul style="list-style-type: none"> Accurately identify maximum and minimum values in data sets to subtract outliers value from largest value Extract and organise data from word problems, tables or charts Calculate and compare different types of averages and range across data sets <p>Reasoning:</p> <ul style="list-style-type: none"> Explain why data set has no or multiple modes Compare to data sets by using the mode, mean, median and range in given contexts Recognise and explain that the mean is affected by extreme values Explain how adding or removing values affects the mode, mean, median and range Justify steps for mode, mean, median and range Understand that the range shows the spread of a data set Justify reasoning when solving multi-step problems involving average or range Critique the use of the averages or range in problems <p>Problem-solving:</p> <ul style="list-style-type: none"> Identify averages and range in real-world contexts Solve problems including grouped data Find missing values in data set when the mean and other values are given Choose the appropriate average depending on context and justify choice in solving problem
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	<ul style="list-style-type: none"> Solve problems involving integers and decimal numbers in real-life contexts Explore the impact of rounding in estimation and real-life applications Convert between standard form and decimal form as needed in multi-step problem-solving (E) 	<ul style="list-style-type: none"> Solve multi-step problems involving division with reasoning (distribute items evenly) Solve problems involving conversation rates where division by decimal is required (E) Solve multi-step problems that require correct application of order of operations 	<ul style="list-style-type: none"> Interpret and compare multiple measure of central tendency to make informed conclusions
Assessment / Feedback Opportunities	Formative Assessment Assessment for learning is integrated throughout each small step with suggested questions, activities and checks for understanding that are adapted for the setting.		Summative assessment Summative assessment includes end of block assessments and mark schemes as well as interleaved end of term assessments and mark schemes.
Key Vocabulary	Place value, digit, billion, placeholder, integer, equal division, interval, scale, gap, spaces, interval, approximate, compare, greater than, less than	Total, sum, difference, number line, commutative, associate, number line, place holder, exchange, carry, placeholder, carry, product, quotient, commutative, inverse, factor, array, integer	Mean, average, median, range, mode, consistent, greatest, least, difference, middle, order, ascending, descending
Reading opportunities	Murderous Maths: Series of books by Kjartan Poskitt		
Personal Development (Including British Values, RSE, Citizenship)	<ul style="list-style-type: none"> PSHE NC H12 (the benefits of having a balanced approach to spending time online): Place value & ordering integers & decimals can be used for time-based data and estimations that relate to evaluating online time usage, averages can be used to compare these times between different groups. 		
Career Opportunities	Three career opportunities linked to place value include accountant, software developer, and banker, as these roles require precise understanding and management of large numbers. For ordering and rounding, careers such as inventory manager, financial analyst, and retail manager rely on these skills to prioritize, summarize, and make practical decisions with numerical data. When it comes to the four operations—addition, subtraction, multiplication, and division—cashiers, engineers, and chefs frequently apply these basic calculations in their daily tasks to handle transactions, design projects, and adjust recipes. Finally, averages and range are essential for statisticians, sports analysts, and market researchers who analyse data trends, evaluate performance, and summarize consumer information effectively.		

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