

KEVICC Key Stage 3 Curriculum Subject: Mathematics		Key Vocabulary and notation.																	
Summer 2 Half-Term Reasoning with Data																			
Term: Year 8 Summer Term – Block Five	Topic: Measures of Location																		
What is the essential knowledge from this unit? What do students need to remember and understand? Students have already met the median and the mean earlier in key stage 3. This block introduces the mode and looks at when and why each average should be used. Students following the higher strand will look at the mean from grouped and ungrouped frequency tables, and these steps may well also be accessible to most students following the core strand. The previous block is built on as students can compare distributions, use these averages and the range. We also consider outliers, considering what effect these have on all the measures studied, and whether they should be included or excluded in our calculations. Again, much of the material in the block is suitable for exploring through project work. National curriculum content covered: - Describe, interpret and compare observed distributions of a single variable through appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers) We know that breaking the curriculum down into small manageable steps should help students to understand concepts better. As a result, for each block of content in the scheme of learning we have provided the following 'small step' breakdown for this unit as follows: Lesson One - Understand and use the mean, median and mode Lesson Two - Choose the most appropriate average Lesson Three - Find the mean from an ungrouped frequency table (H) Lesson Four - Find the mean from a grouped frequency table (H) Lesson Five - Identify outliers Lesson Six - Compare distributions using averages and the range Interleaving/Extension of previous work - Use algebraic substitution to form lists for averages and the range. - Find the unknown data values given the mean or changes in the mean. - Explore histograms for unequal groups. - Find the median from a table of values.		<table><tr><td>Average</td><td>Subtotal</td></tr><tr><td>Mean</td><td>Estimate</td></tr><tr><td>Median</td><td>Midpoint</td></tr><tr><td>Mode</td><td>Modal class</td></tr><tr><td>Modal value</td><td>Outlier</td></tr><tr><td>Total</td><td>Range</td></tr><tr><td>Frequency</td><td>Consistent</td></tr><tr><td>Represent</td><td></td></tr></table> Mathematical questioning should be designed to unpick the structure of the maths and deepen the student's understanding. When students talk about mathematical concepts, they should develop the vital mathematical language that helps them explain their ideas fully. Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.		Average	Subtotal	Mean	Estimate	Median	Midpoint	Mode	Modal class	Modal value	Outlier	Total	Range	Frequency	Consistent	Represent	
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Represent																			
What prior learning supports understanding of this content? - Use ordered lists to find the range and the median for a set of numbers. - Find the mean for a set of numbers.		How does this content link to future learning? - Revisit data measures, charts and graphs including bivariate data; criticise misleading graphs. - Create and interpret tables and timetables; solve problems involving speed distance and time. - Interpret graphs of any form.																	
Reading: <i>Where in the unit are students supported to read complex academic text?</i> - Reading and understanding mathematical questions and problems' – teacher input. - Decoding complex examination questions - explain what they are asking the student to do' – teacher input. - Following instructions to solve problems - break down the tasks – teacher input. - Recognising terminology, numbers, and symbols. - Recognising patterns and relationships in mathematics.		Writing: <i>Independent writing tasks and how they are structured</i> - Using the correct subject specific terminology for numbers and symbols – examination papers, class books. - Responding to questions that ask for an explanation or a reason – examination papers, class books. - Self-evaluation, reviewing, reflecting and analysis of own work –, class books, personalised learning checklists and analysis. - Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc.																	
Key assessments: How will students review the information learned? End of block assessments. End of block assessments provide a quick progress check at the end of each block of learning to make sure students have understood the content covered. A Core paper – it is envisaged that all students will take this paper, to provide a direct comparison with the performance of the rest of the cohort. All topics from each term will be covered, and the use of a calculator is expected. End of term assessments. A Foundation paper – students who are working below national expectations will have the opportunity to show their understanding of the material with more straightforward questions. Non calculator paper. A Higher paper – students who are working at or above national expectations will have the opportunity to tackle more challenging questions on the same material, plus the extra objectives indicated as "Higher" in our scheme of learning. Non calculator paper. How will feedback be seen? Marked end of block and term assessments. Personalised learning checklists for end of term assessments identifying strengths and areas of development. Written teacher feedback and marking in compliance with faculty and College Marking Policies. Student responses to marking. Students self-mark using purple pen. Verbal feedback given every lesson from teacher and peers as appropriate. Teacher and student self-assessment of presentation of class books will be completed to ensure written work is of high standard and students are achieving their potential.																			