

KEVICC Key Stage 3 Curriculum Subject: Mathematics		Key Vocabulary and notation.	
<b>Summer Half-Term 2 Reasoning with Numbers</b>			
<b>Term:</b> Year 7 Summer Term – Block Three	<b>Topic:</b> Developing Number Sense	Compensation	Calculation
<p><b>What is the essential knowledge from this unit?</b>  <b>What do students need to remember and understand?</b></p> <p>Students will review and extend their mental strategies with a focus on using a known fact to find other facts. Strategies for simplifying complex calculations will also be explored. The skills gained in working with number facts will be extended to known algebraic facts.</p> <p><b>National curriculum</b> content covered:</p> <ul style="list-style-type: none"> <li>Consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots.</li> <li>Select and use appropriate calculation strategies to solve increasingly complex problems.</li> <li>Begin to reason deductively in number and algebra.</li> </ul> <p>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:</p> <p><b>Lesson One</b> - Know and use mental addition and subtraction strategies for integers.  <b>Lesson Two</b> - Known and use mental multiplication and division strategies for integers.  <b>Lesson Three</b> - Know and use mental arithmetic strategies for decimals.  <b>Lesson Four</b> - Know and use mental arithmetic strategies for fractions.  <b>Lesson Five</b> - Use factors to simplify calculations.  <b>Lesson Six</b> - Use estimation as a method for checking mental calculations.  <b>Lesson Seven</b> - Use known number facts to derive other facts.  <b>Lesson Eight</b> - Use known algebraic facts to derive other facts.  <b>Lesson Nine</b> - Know when to use a mental strategy, formal written method or a calculator.</p> <p><b>Interleaving/Extension of previous work</b></p> <ul style="list-style-type: none"> <li>Revisit FDP equivalence, and simple FDP addition and subtraction.</li> <li>Revisit factors and multiples, bot numerically and algebraically.</li> <li>Generate and describe sequences.</li> <li>Substitution into expressions.</li> <li>Order of operations.</li> </ul>		Number line	Rounding
		Addition	Significant
		Subtraction	figures
		Associative	Estimate
		Commutative	Overestimate
		Partition	Underestimate
		Multiply	Addend
		Divide	Compensate
		Associative	Product
		Factors	Quotient
		Place value	Equation
		Estimate	Expression
		Tenths	Equal
		Hundredths	Equality
		Thousandths	Mental
		Whole	Calculator
		Equal parts	Formal
Numerator	Efficient		
Denominator	Interpret		
Equivalent			
		<p>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.</p> <p>Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.</p>	
<p><b>What prior learning supports understanding of this content?</b></p> <ul style="list-style-type: none"> <li>Order directed numbers, both in contextualised and abstract situations.</li> <li>Revisit four operations to include directed number.</li> <li>Use a calculator with directed number.</li> <li>Solve two-step equations (with and without a calculator).</li> <li>Use the order of operations.</li> </ul>		<p><b>How does this content link to future learning?</b></p> <ul style="list-style-type: none"> <li>Understand and use set notation.</li> <li>Draw and interpret Venn diagrams.</li> <li>Understand and use the language of probability.</li> <li>Calculate the probability of a single event.</li> <li>Use the sum of probabilities of an event is 1.</li> </ul>	
<p><b>Reading:</b> <i>Where in the unit are students supported to read complex academic text?</i></p> <ul style="list-style-type: none"> <li>Reading and understanding mathematical questions and problems' – teacher input.</li> <li>Decoding complex examination questions - explain what they are asking the student to do' – teacher input.</li> <li>Following instructions to solve problems - break down the tasks – teacher input.</li> <li>Recognising terminology, numbers, and symbols.</li> <li>Recognising patterns and relationships in mathematics.</li> </ul>		<p><b>Writing:</b> <i>Independent writing tasks and how they are structured</i></p> <ul style="list-style-type: none"> <li>Using the correct subject specific terminology for numbers and symbols – examination papers, class books.</li> <li>Responding to questions that ask for an explanation or a reason – examination papers, class books.</li> <li>Self-evaluation, reviewing, reflecting and analysis of own work –, class books, personalised learning checklists and analysis.</li> <li>Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc.</li> </ul>	

**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.