

KEVICC Key Stage 3 Curriculum Subject: Mathematics		Key Vocabulary and notation.	
Summer Half-Term 2 Reasoning with Numbers			
Term: Year 7 Summer Term – Block Five	Topic: Prime Numbers and Proof	Multiples	Factorise
<p>What is the essential knowledge from this unit? What do students need to remember and understand?</p> <p>Factors and multiples will be revisited to introduce the concepts of prime numbers, and the higher strand will include using Venn diagrams from the previous block to solve more complex HCF and LCM problems. Odd, even, prime, square and triangular numbers will be used as the basis of forming and testing conjectures. The use of counterexamples will also be addressed.</p> <p>National curriculum content covered:</p> <ul style="list-style-type: none"> Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property. Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 Make and test conjectures about patterns and relationships; look for proofs or counterexamples. Begin to reason deductively in number and algebra. <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>Lesson One - Find and use multiples. Lesson Two - Recognise and identify prime numbers. Lesson Three - Recognise square and triangular numbers. Lesson Four - Find common factors of a set of numbers including the HCF. Lesson Five - Find common multiples of a set of numbers including the LCM. Lesson Six - Write a number as a product of its prime factors. Lesson Seven - Use a Venn diagram to calculate the HCF and LCM (H). Lesson Eight - Make and test conjectures. Lesson Nine - Use counter examples to disprove a conjecture.</p> <p>Interleaving/Extension of previous work</p> <ul style="list-style-type: none"> Generate and describing sequences. Revisit factors and multiples, both numerically and algebraically. Understand and use complement of a set. Use prime factors to find HCFs and LCMs. 		Integer	Highest
		Positive	Common Factor
		Zero	Common
		Factor	Multiple
		Divisible	Product
		Remainder	Lowest Common
		Term	Multiple
		Factorise	Prime Factor
		Divisor	Express
		Multiple	Union
		Prime	Intersection
		number	Conjecture
		Odd	Explain
		Even	Relationship
		Digit	True
		Triangular	False
		Number	Proof
		Relationship	Demonstration
		Investigate	Always
		Square	Systematic
Number	Never		
Expression	Sometimes		
Common	Assumption		
Factor	Counterexample		
Factorising			
		<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>What prior learning supports understanding of this content?</p> <ul style="list-style-type: none"> Understand and use set notation. Draw and interpret Venn diagrams. Understand and use the language of probability. Calculate the probability of a single event. Use the sum of probabilities of an event is 1. 		<p>How does this content link to future learning?</p> <ul style="list-style-type: none"> Developing mental strategies. Convert between metric measures and units. Estimation, including rounding to a given number of decimal places. Use of order of operations. 	
<p>Reading: <i>Where in the unit are students supported to read complex academic text?</i></p> <ul style="list-style-type: none"> 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. 		<p>Writing: <i>Independent writing tasks and how they are structured</i></p> <ul style="list-style-type: none"> 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.