

KEVICC Key Stage 3 Curriculum Subject: Mathematics		Key Vocabulary and notation.	
Spring Half-Term 1 Application of Number		Product	Litre
Term: Year 7 Spring Term – Block Two	Topic: Multiplication & Division	Multiply	Gram
<p>What is the essential knowledge from this unit? What do students need to remember and understand?</p> <p>The focus for this block is studying multiplication and division, allowing for the study of forming and solving two-step equations both with and without a calculator. Unit conversions will be the main context as multiplication by 10, 100 and 1000 are explored. As well as distinguishing between multiples and factors, substitution and simplification can also be revised and extended. The emphasis will be on solving problems, particularly involving area of common shapes and the mean. Choosing the correct operation and exploration of the order of operations to solve a problem will also be a focus and will be reinforced alongside much of the content in the third term (direct number).</p> <p>National curriculum content covered:</p> <ul style="list-style-type: none"> • Use formal written methods, applied to positive integers and decimals. • Select and use appropriate calculation strategies to solve increasingly complex problems. • Recognise and use relationships between operations including inverse operations. • Use the concepts and vocabulary, factors, multiples, common factors, common multiples, highest common factor, lowest common multiple. • Change freely between related standard units (time, length, area volume/capacity, mass) • Derive and apply formulae to calculate and solve problems involving perimeter and area of triangles, parallelograms, and trapezia (H) • Substitute numerical values into formulae and expressions, including scientific formulae. • Use algebraic methods to solve linear equations in one variable. • Describe, interpret and compare observed distributions of a single variable through: the mean. <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 - Properties of multiplication & division Lesson Two - Understand and use factors Lesson Three - Understand and use multiples Lesson Four - Multiply and divide integers and decimals by powers of 10 Lesson Five - Multiply by 0.1 and 0.01 (H) Lesson Six - Convert metric units Lesson Seven - Use formal methods to multiply integers Lesson Eight - Use formal methods to multiply decimals Lesson Nine - Use formal methods to divide integers Lesson Ten - Use formal methods to divide decimals Lesson Eleven - Understand and use order of operations Lesson Twelve - Solve problems using the area of rectangles and parallelograms Lesson Thirteen - Solve problems using the area of triangles Lesson Fourteen - Solve problems using the area of trapezia (H) Lesson Fifteen - Solve problems using the mean Lesson Sixteen - Explore multiplication and division in algebraic expressions (H)</p> <p>Additional Higher Content</p> <ul style="list-style-type: none"> • Evaluate the area of trapezium. • Find the HCF and LCM of algebraic expressions. • Find the areas involving algebraic expressions. 		Divide	Metre
		Inverse	Efficient
		Quotient	Estimate
		Commutative	Adjust
		Factor	Divisor
		Array	Dividend
		Venn	Remainder
		Diagram	Decimal
		Odd	Order
		Even	Operation
		Integer	Priority
		Multiple	Base
		Common	Perpendicular
		Lowest	height
		Common	Parallelogram
		Multiple	Parallel
		Place value	Trapezium
		Ones	Mean
		Tenths	Average
		Hundredths	Median
		Metric	Range
		Milli-	Coefficient
		Centi-	Expression
		Kilo-	Simplify
		Convert	Term
		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.	
<p>What prior learning supports understanding of this content?</p> <ul style="list-style-type: none"> • Use mental and formal written methods of addition with integers and decimals, including choosing the most appropriate method. • Solve problems in the context of perimeter, money and frequency trees and tables. • Construct, interpret and solve problems using tables, charts, and diagrams, including frequency tables, bar charts and pictograms for categorical data, and vertical line (or bar) charts for ungrouped data. 		<p>How does this content link to future learning?</p> <ul style="list-style-type: none"> • Order directed numbers, both in contextualised and abstract situations. • Revisit four operations to include direct number. • Use a calculator with directed number. • Solve two-step equations (with and without a calculator). • Use the 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.