KEVICC Key Stage 3 Curriculum Subject: Mathematics	Key Vocabulary and notation.

Autumn Half-Term 2 Place Value and Proportion

Term: Year 7 Autumn Term – Block Four	Topic: Place Value & Ordering

What is the essential knowledge from this unit?
What do students need to remember and understand?

Students will explore integers up to one billion and decimals to hundredths, adapting thee choices where appropriate e.g. standard index form could additionally be introduced to students following the higher strand. Using and understanding number lines is a key strategy explored in depth and will be useful for later work on scales for axes. When putting numbers in order, this is a suitable point to introduce both the median and the range, separating them from other measures to avoid getting mixed up. Rounding to the nearest given positive power often is developed, alongside rounding to one significant figure. Decimals places will come later, again to avoid too similar concepts being covered at the same time. Topics from last half-term such as sequences and equations, will be interleaved into this unit.

National curriculum content covered:

- Consolidate their understanding of the number system and place value to include decimals.
- Understand and use place value for decimals, measures and integers of any size.
- Order positive and negative integers, decimals, measures and integers of any size.
- Work interchangeably with terminating decimals ad the corresponding fractions.
- Round numbers to an appropriate degree of accuracy
- Describe, interpret and compare observed distributions of a single variable through the median and range.
- Interpret and compare numbers in standard form.

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 - Recognise the place value of any number in an integer up to one billion
Lesson Two - Understand and write integers up to one billion in words and figures
Lesson Three - Work out intervals on a number line
Lesson Four - Position integers on a number line
Lesson Five - Round integers to the nearest power of ten
Lesson Six - Compare two numbers using =, ≠, <, >, ≤, ≥
Lesson Seven - Order a list of integers
Lesson Eight - Find the range of a set of numbers
Lesson Nine - Find the median of a set of numbers
Lesson Ten - Understand place value for decimals
Lesson Eleven - Position decimals on a number line
Lesson Twelve - Compare and order any number up to one billion
Lesson Thirteen - Round a number to 2 significant figures
Lesson Fourteen - Write 10, 100, 1000 etc. as powers of 10 (H)
Lesson Fifteen - Write positive integers in the form Ax10n (H)
Lesson Sixteen - Investigate negative powers of ten (H)
Lesson Seventeen - Write decimals in the form Ax10n (H)

Place value	Descending
Digit	Leading digit
Billion	Range
Placeholder	Greatest
Integer	Least
Equal division	Difference
Interval	Median
Scale	Middle
Gap	Order
Spaces	Average
Approximate	Tenth
Round Nearest	Hundredth
Convention	Decimal
Halfway	Decimal point
Compare	Power
Equal	Index
Not equal	Million
Greater than	Standard form
Less than	Scientific
Order	notation
Ascending	Negative

$$= \qquad >$$
$$\neq \qquad \leq$$
$$< \qquad \geq$$

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.

What prior learning supports understanding of this content?	How does this content link to future learning?
• Read, write and order and compare numbers up to 10 000 000 and determine the value of each digit. • Round any whole number to a required degree of accuracy • Use negative numbers in context, and calculate intervals across zero. • Solve number and practical problems that involve all of the above.	• Represent tenths and hundredths on diagrams and number lines. • Interchange between fractions, decimals and percentages for multiples of one tenth and one quarter. • Interpret pie charts. • Equivalent fractions. • Convert between other fractions, decimals and percentages. • Explore and use standard index form.

Reading: *Where in the unit are students supported to read complex academic text?*	Writing: *Independent writing tasks and how they are structured*
• 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.	• 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.