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 Five   **Topic:** Fraction, Decimal and Percentage Equivalence

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

Students gain a deep understanding of the links between fractions, decimals and percentages so that they can convert fluently between those most seen in real-life. The foundation strand will focus on multiples of one tenth and one-quarter whilst the higher strand will look at the more complex conversions. Whilst looking at percentages, pie charts will be introduced. Various forms of representation of any fraction will be studied, focusing on equivalence, in an appropriate depth to the current attainment of students, this will be revisited later in the year. The focus is very much on a secure understanding of the most common fractions under one, but fractions above one will be touched upon, particularly in the higher strand.

National curriculum content covered:

- Consolidate their understanding of the number system and place value to include decimals, fractions.
- Move freely between different numerical representations (for example, equivalent fractions, fractions and decimals).
- Extend their understanding of the number system; make connections between number relationships.
- Express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1.
- Define percentage as 'number of parts per hundred', interpret percentages as a fraction or a decimal.
- Compare two quantities using percentages.
- Work with percentages greater than 100%
- Interpret pie charts.

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 - Represent tenths and hundredths as diagrams
Lesson Two - Represent tenths and hundredths on number line
Lesson Three - Interchange between fractional and decimal number lines
Lesson Four - Convert between fractions and decimals - tenths and hundredths
Lesson Five - Convert between fractions and decimals - fifths and quarters
Lesson Six - Convert between fractions and decimals - eighths and thousandths (H)
Lesson Seven - Understand the meaning of percentage using a hundred square
Lesson Eight - Convert fluently between simple fractions, decimals and percentages
Lesson Nine - Use and interpret pie charts
Lesson Ten - Represent any fraction as a diagram
Lesson Eleven - Represent fractions on number lines
Lesson Twelve - Identify and use simple equivalent fractions
Lesson Thirteen - Understand fractions as division
Lesson Fourteen - Convert fluently between fractions, decimals and percentages
Lesson Fifteen - Explore fractions above one, decimals and percentages (H)

Key Vocabulary and notation.

Place value	Shaded
Digit	Percent
Placeholder	Out of one
Tenths	Hundred
Hundredths	Convert Half
Tenths	Three-
Interval	quarters
Hundred	Pie Chart
Fraction	Equal parts
Decimal	Sector
Number line	Denominator
Interval	Numerator
Fifth	Part
Quarter	Whole
Equivalent	Equal
Thousandths	Division
Eighths	Quotients
Percentage	Operator

$$\frac{1}{2} \qquad \frac{3}{2}$$
$$2\frac{1}{2}$$

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?
- Recognise and use integer place value up to one billion.
- Recognise and use decimal place value to at least hundredths.
- Work out intervals and use number lines.
- Compare and order numbers.
- Use ordered lists to find the range and the median of a set of numbers.
- Round numbers to positive powers of ten.
- Round numbers to one significant figure.

How does this content link to future learning?
- Use mental and formal written methods of addition with integers and decimals.
- Find simple fractions and percentages of amounts.
- Workout simple fractions and percentages and percentages of amounts with and without a calculator.
- Represent tenths and hundredths on diagrams and number lines.
- Convert between mixed numbers and improper fractions.
- Add and subtract fractions with the same denominator, one denominator a multiple of the other, different denominators.

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