Scheme of Learning: Year 7 Autumn Term

Topic Sequence: Place Value and Proportion

4	5
Place value and ordering integers and decimals	Fractions, decimal and percentage equivalence

Topic Overview: Fractions, decimals and percentage equivalence

Building on the recent work on decimals, the key focus for this unit is for students to gain a deep understanding of the links between fractions, decimals and percentages so that they can convert fluently between those most commonly seen in real-life. The Foundation strand will focus will be on multiples of one tenth and one quarter whilst the Higher strand will look at more complex conversions. Whilst looking at percentage is, pie charts will be introduced. In addition, 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

Learning Sequence:

Tenths and hundredths as diagrams Students will recognise tenths and hundredths when represented diagrammatically. They will be exposed to various representations and be able to make a number using different diagrams. The students will also work the opposite way round and be able to write a given representation in numerals and words.
Tenths and hundredths on number lines Students will be exposed to number lines split into different intervals and will be able to estimate the value of a number that is highlighted. Students will also work on the opposite way and to be able to write highlighted figures in both figures and words.
Fractional and decimal number lines Students will use both fractional and decimal number lines and be able to freely move between the two. They will understand the equivalence of 0.1 and one tenth etc, and use this to show both decimal and fractions on the same number line.
Convert tenths and hundredths In this step the students will understand and explore fractional and decimal representation of tenths and hundredths and be able to convert between them. They will make connections between the place value of the decimal notation and the fraction.
Convert fifths and quarters Students will focus on fifths and quarters and their relationships to tenths and hundredths.
Convert eighths and thousandths (H) Confident students will advance to converting eights and thousandths, the move freely should echo the move from tenths to hundredths. They should start to recognize one eighth as a half of a quarter, students will be able to work with multiples of one eighth
Percentage on a hundred square. In this step, familiarization with representing percentage on a hundred square enables students to quickly identify the percentage not shaded using the fact that one whole is 100%. They will recognise that to represent percentages above 100% more than one hundred square is needed.
Convert simple FDP In this step students draw together their knowledge of the previous steps to gain fluency in converting simple fractions, decimals and percentages. The focus remains of familiarity with commonly seen FDP. The students will be confident in converting multiples of 10% and 25% in any form
Use and interpret simple pie charts The focus will be on pie charts where fractions are clearly visible rather than in measuring and construction which will be covered later. It is also an opportunity to discuss estimation and assumption
Represent any fraction as a diagram Students will extend their experience to include less commonly seen fractions, with the emphasis still on the need for equal parts. Non0standard examples of representations of fractions helps to reinforce the importance of equal parts rather than same shaped parts.
Represent fractions on number lines Should will be bale to identify or where appropriate estimate fractions represented on different types of number lines. This will be used to compare fraction size. Students will think of fractions as numbers on a number lone not just a fraction of an object.
Identify and use equivalent fractions Students will understand that a fractions represents a number that can be written in an infinite number of ways. They will think of individual fractions as part of an "equivalence set". The conceptual understanding will be supported with concrete and pictorial representations. They will sit alongside the abstract notation so that the students make the necessary links.
Understand fractions as division Students will understand that a fraction also represents a division, rather than just a comparison with one whole. Therefore, contextualized problem solving questions will be interspersed throughout.
Convert fluently between FDP Students will now extend their knowledge of conversion to include any fraction, decimal and percentage. Calculators will be used where appropriate. Mental strategies will be a focus later.
Explore fractions above one (H) In the higher strand students will look at fractions above one and their decimal and percentage equivalents. Being able to convert between improper fractions and mixed numbers as well as linking these representations to percentages and decimals is the aim. Formal multiplication of fractions is introduced later

Sequence of Learning:

1	Represent tenths and hundredths as diagrams
2	Represent tenths and hundredths on number lines
3	Interchange between fractional and decimal number lines
4	Convert between fractions and decimals – tenths and hundredths
5	Convert between fractions and decimals – fifths and quarters
6	**Convert between fractions and decimals – eighths and thousandths (H)**
7	Understand the meaning of percentage using a hundred square
8	Convert fluently between simple fractions, decimals and percentages
9	Use and interpret pie charts
10	Represent any fraction as a diagram
11	Represent fractions on number lines
12	Identify and use simple equivalent fractions
13	Understand fractions as division
14	Convert fluently between fractions, decimals and percentages
15	**Explore fractions above one, decimals and percentages (H)**

Topic Resources:

Knowledge Maps:	Fractions Percentages FDP conversions Place value

Assessment:

Knowledge:	End of Topic Test
Application of Knowledge:	Termly mixed topic assessment

Supportive Reading:

Any supported reading listed here	Sparx Maths www.sparxmaths.co.uk
	Corbett Maths : www.corbettmaths.com
	AQA Revision Guide