Autumn 2: Place Value and Proportion

Weeks 1 to 3: Place Value and Ordering

In this unit, students will explore integers up to one billion and decimals to hundredths, adapting these choices where appropriate for your groups e.g. standard index form could additionally be introduced to student 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 them mixed up. Rounding to the nearest given positive power of ten is developed, alongside rounding to one significant figure. Decimal places will come later, again to avoid too similar concepts being covered at the same time. Topics from last 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 and fractions; use the number line as a model for ordering the real numbers; use the symbols =, ≠, <, >, ≤, ≥
- work interchangeably with terminating decimals and their corresponding fractions
- round numbers to an appropriate degree of accuracy
- describe, interpret and compare observed distributions of a single variable through: the median and the range
- interpret and compare numbers in standard form

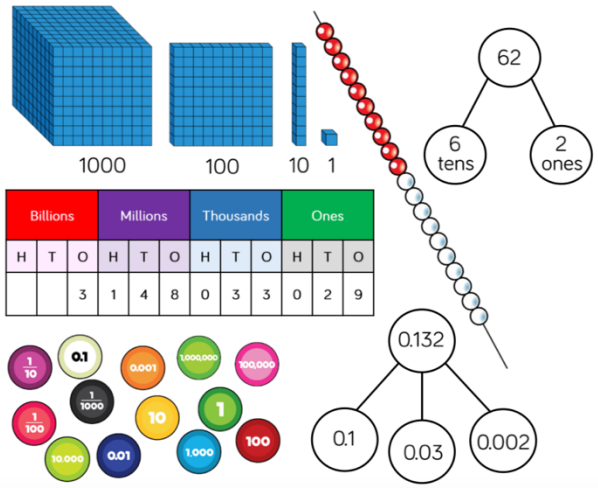
Weeks 4 to 6: Fraction, Decimal and Percentage Equivalence

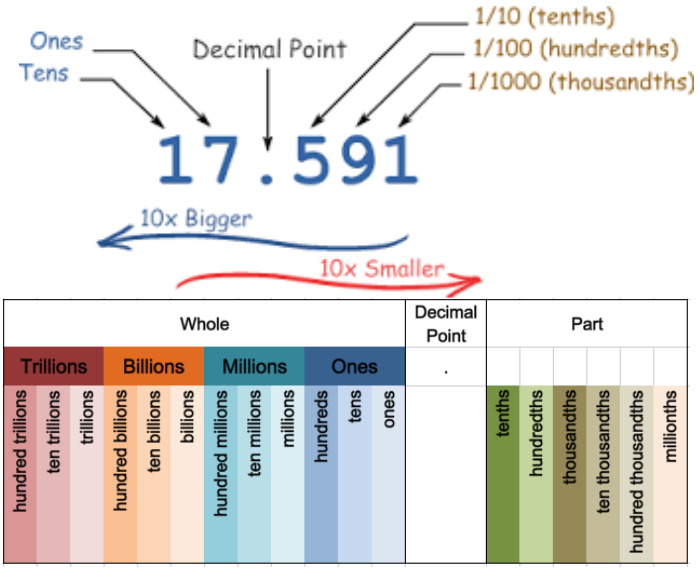
Building on the recent work on decimals, the key focus for this three weeks is for students to gain a deep understanding of the links between fractions, decimals and percentages so that they can convert fluently between those most commonly seen in real-life. The Foundation strand will focus will be on 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.

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

Key Representations





Key Vocabulary

place value	place holder	digit	integer
billion	equal division	gap	scale
interval	approximate	round	halfway
equal	not equal	compare	round
greater than	less than	ascending	descending
leading digit	greatest	least	range
difference	median	middle	order
average	tenth	hundredth	decimal
decimal point	significant figure	index	power
standard form	scientific notation	negative	million