COUNTING IN FRACTIONAL STEPS

EYFS – NUMBER - FRACTIONS

Understand that sharing is splitting an amount into equal parts		*Understand that halving is sharing into two equal parts*		*Understand that doubling is adding the same number to itself*		*Automatically recall double facts to double 5*

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (in steps of ½ and ¼.	*count up and down in tenths*	*count up and down in hundredths*	*Count on and back in mixed steps such as 1 1/2 .*	
			Count on and back in steps of unit fractions.		

RECOGNISING FRACTIONS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
recognise, find and name a half as one of two equal parts of an object, shape or quantity *(including measure)*	**recognise, find, name and write fractions** $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ **and** $\frac{3}{4}$ **of a length, shape, set of objects or quantity**	**recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators**	**recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten**	**recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents** *(appears also in Equivalence)*	
	Understand and use the term numerator and denominator.	**recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.**			
recognise, find and name a quarter as one of four equal parts of an object, shape or quantity *(including measure)*	*Understand that fraction can describe part of a set.*	**recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators**			
Understand that a fraction can describe part of a whole.	*Understand that the larger the denominator is, the more pieces it is split into and therefore the smaller each part will be.*		*Recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators.*		
Understand that a unit fraction represents one equal part of a whole.					

COMPARING FRACTIONS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		compare and order unit fractions, and fractions with the same denominators *including on a number line.*	*Compare and order unit fractions and fractions with the same denominators (including on a number line)*	**compare and order fractions whose denominators are all multiples of the same number** *(including on a number line)*	**compare and order fractions, including fractions >1** *(including on a number line)*

COMPARING DECIMALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			compare numbers with the same number of decimal places up to two decimal places	**read, write, order and compare numbers with up to three decimal places**	**identify the value of each digit in numbers given to three decimal places**

ROUNDING INCLUDING DECIMALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			round decimals with one decimal place to the nearest whole number	**round decimals with two decimal places to the nearest whole number and to one decimal place**	**solve problems which require answers to be rounded to specified degrees of accuracy**

EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	write simple fractions e.g. $\frac{1}{2}$ **of 6 = 3 and recognise the equivalence of** $\frac{2}{4}$ **and** $\frac{1}{2}$**.**	**recognise and show, using diagrams, equivalent fractions with small denominators**	**recognise and show, using diagrams, families of common equivalent fractions**	**identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths**	**use common factors to simplify fractions; use common multiples to express fractions in the same denomination**
			recognise and write decimal equivalents of any number of tenths or hundredths	**read and write decimal numbers as fractions (e.g. 0.71 =** $\frac{71}{100}$**)**	**associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g.** $\frac{3}{8}$**)**
				recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
			recognise and write decimal equivalents to $\frac{1}{4}$**;** $\frac{1}{2}$**;** $\frac{3}{4}$	**recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100 as a decimal fraction**	**recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.**

					Find simple percentages of amounts.

ADDITION AND SUBTRACTION OF FRACTIONS

		add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)	add and subtract fractions with the same denominator *(using diagrams)*	add and subtract fractions with the same denominator and multiples of the same number *(using diagrams)*	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
				recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$) *Write statements >1 as a mixed number (eg 2/5 + 4/5 = 6/5 = 1 1/5)*	

MULTIPLICATION AND DIVISION OF FRACTIONS

		Show practically or pictorially that a fraction is one whole number divided by another (3/4 can be interpreted as 3 divided by 4)	*Understand that a fraction is one whole number divided by another (3/4 can be interpreted as 3 divided by 4)*	multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$) multiply one-digit numbers with up to two decimal places by whole numbers
		Understand that finding a fraction of an amount relates to division.			divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$)

MULTIPLICATION AND DIVISION OF DECIMALS

					multiply one-digit numbers with up to two decimal places by whole numbers
			find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths		multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
					identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
					associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$)
					use written division methods in cases where the answer has up to two decimal places

PROBLEM SOLVING

		solve problems that involve all of the above	solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	solve problems involving numbers *and also involving fractions and decimals*, up to three decimal places	Solve problems involving the calculation of percentages (eg a measures and such as 15% of 260) and the use of percentages for comparison.
			solve simple measure and money problems involving fractions and decimals to two decimal places.	solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those with a denominator of a multiple of 10 or 25.	*Solve problems involving fractions.*

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					solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
					solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
					solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
					solve problems involving similar shapes where the scale factor is known or can be found

VOCABULARY					
fraction, part, equal parts, one whole, one half, two halves, one quarter, two… three… four quarters, (numerator, denominator)	fraction, numerator, denominator, part, equal parts, one whole, one half, two halves, one quarter, two…, three…, four quarters, equivalence, unit fraction, non-unit fraction,	part, equal parts, fraction, one whole, one half, two halves, one quarter, two quarters, three quarters, four quarters, one third, two thirds, three thirds, one tenth, numerator, denominator, unit fraction, non-unit fraction, multiplication, division, inverse, lots of, groups of, array, row, column, share equally, group in …, equal groups of, divide, divided by, divided into, left (over), remainder, estimate, efficient, partition, multiple, equivalent, compare, order	part, equal parts, fraction, one whole, half, quarter, eighth, third, sixth, fifth, tenth, twentieth, proportion, in every, for every, decimal, decimal fraction, decimal point, decimal place, units, ones, tenths, hundredths, numerator, denominator, equivalent, divided by, divided into, remainder, factor, quotient, divisible by, inverse, estimate	fraction, proper/improper fraction, mixed number, unit fraction, non-unit fraction, numerator, denominator, equivalent, reduced to, cancel, one whole, half, quarter, eighth, third, sixth, ninth, twelfth, fifth, tenth, twentieth, hundredth, proportion, in every, for every, to every, decimal, decimal fraction, decimal point, decimal place, part, equal parts,	fraction, proper fraction, improper fraction, unit fraction, non-unit fraction, mixed number, numerator, denominator, equivalent, reduced to, cancel, one whole, half, quarter, eighth, hundredth, thousandth, proportion, ratio, decimal, vulgar fraction, decimal fraction, decimal point, percentage, percent, %