Brentfield Primary School

Children of Today, Champions for Tomorrow

Progression in Fractions including Decimals and Percentages

All programmes of study statements are included in the progression map and some appear twice. This is indicated in the text. This occurs where:

- The statement has central relevance to more than one sub category within a topic;
- The statement has central relevance to more than one mathematics topic. This is done to reflect the aims of the curriculum that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

PROGRESSION IN FRACTIONS INCLUDING DECIMALS AND PERCENTAGES							
	EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
COUNTING IN FRACTIONAL STEPS			• Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non-Statutory Guidance)	• count up and down in tenths	• count up and down in hundredths		
RECOGNISING FRACTIONS		• recognise, find and name a half as one of two equal parts of an object, shape or quantity • recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	• recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ 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 tenths arise from dividing an object into 10 equal parts and in dividing	• 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 (also in Equivalence)	

				one – digit numbers or quantities by 10. • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
COMPARING FRACTIONS				• compare and order unit fractions, and fractions with the same denominators		• compare and order fractions whose denominators are all multiples of the same number	• compare and order fractions, including fractions >1
COMPARING DECIMALS					• 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					• 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)			• write simple fractions e.g. $^1/_2$ of 6 = 3 and recognise the equivalence of $^2/_4$ and $^1/_2$.	• recognise and show, using diagrams, equivalent fractions with small denominators	• recognise and show, using diagrams, families of common equivalent fractions • recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$	• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$) • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages	• use common factors to simplify fractions; use common multiples to express fractions in the same denomination • associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$) • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

						as a fraction with denominator 100 as a decimal fraction	
ADDITION AND SUBTRACTION OF FRACTIONS				• add and subtract fractions with the same denominator within one whole (e.g. $^5/_7 + ^1/_7 = ^6/_7$)	• add and subtract fractions with the same denominator	• add and subtract fractions with the same denominator and multiples of the same number • 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. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$)	• add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
MULTIPLICATION AND DIVISION OF FRACTIONS						• multiply proper fractions and mixed numbers by whole numbers, supported by	• multiply simple pairs of proper fractions, writing the answer in its simplest form

						materials and diagrams	(e.g. $^1/_4 \times {}^1/_2 = {}^1/_8$) • multiply one-digit numbers with up to two decimal places by whole numbers • divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$) • multiply one-digit numbers with up to two decimal places by whole numbers
MULTIPLICATION AND DIVISION OF DECIMALS					• 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. 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 up to three decimal places • solve problems which require knowing percentage and decimal equivalents of $^{1}/_{2}$, $^{1}/_{4}$, $^{1}/_{5}$, $^{2}/_{5}$, $^{4}/_{5}$ and	

					• solve simple measure and money problems involving fractions and decimals to two decimal places.	those with a denominator of a multiple of 10 or 25.	