Willow Brook Primary School

Fluency	Reason Mathematically	Solve Problems
To become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.	To reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language	To solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

FRACTIONS (INCLUDING DECIMALS AND PERCENTAGES)

COUNTING IN FRACTIONAL STEPS						
EYFS	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 *(Non-Statutory Guidance)*	Count up and down in tenths	Count up and down in hundredths		

RECOGNISING FRACTIONS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Find a half of objects and quantities practically	Recognise, find and name a half as one of two equal parts of an object, shape or quantity	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)*	
			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		Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			

COMPARING FRACTIONS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
			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						
EYFS	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

EYFS	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)

EYFS	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

ADDITION AND SUBTRACTION OF FRACTIONS

EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
			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	Add and subtract fractions with the same denominator and multiples of the same number	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. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)	

MULTIPLICATION AND DIVISION OF FRACTIONS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
					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
						Divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$)

MULTIPLICATION AND DIVISION OF DECIMALS						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
						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 1,000 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						
EYFS	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Solve problems, including doubling, halving and sharing			Solve problems that involve all 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 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. | |