

Maths Knowledge Progression

This document sets out the expectation for Maths learning in each term for each year group. It is divided into sections within different parts of the maths curriculum.

Garden Class

	EYFS			Year 1			Year 2		
	Number: Fractions (Including Decimals and Percentages)								
	Autumn	Spring	Summer	Autumn	Spring	Summer	Autumn	Spring	Summer
Continuing									
Recognising Fractions						To recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity			To 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
						To recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity			
Comparing Fractions									To write simple fractions, for example $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
Comparing decimals									
Rounding									



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Equivalence									
Addition and Subtraction									
Multiplication									
Multiplication									
Problem Solving									

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Lower KS2

		Year 3			Year 4		
		Number: Fractions (Including Decimals and Percentages)					
		Autumn	Spring	Summer	Autumn	Spring	Summer
Counting in fractions	To count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10				To recognise and show, using diagrams, families of common equivalent fractions		
					To count using simple fractions and decimals, both forwards and backwards. (Non Statutory)	To count using simple fractions and decimals, both forwards and backwards. (Non Statutory)	
					To count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10		
Recognising Fractions	To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators					
	To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators				
Comparing fractions				To compare and order unit fractions, and fractions with the same denominators			



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Comparing Decimals						To compare numbers with the same number of decimal places up to 2 decimal places
Roundin g including						To round decimals with 1 decimal place to the nearest whole number
Equivalence (including fractions , decimals and		To recognise and show, using diagrams, equivalent fractions with small denominators.	To recognise and show, using diagrams, equivalent fractions with small denominators.	To recognise and write decimal equivalents of any number of tenths or hundreds	To recognise and write decimal equivalents of any number of tenths or hundreds	
				To recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$	To recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$	
Addition and Subtraction of fractions		To add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]	To add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]		To add and subtract fractions with the same denominator	To add and subtract fractions with the same denominator
Multiplication and division of fractions					To 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	
Multiplic ation and						



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Problem Solving		To solve problems that involve all of the above		To 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	To solve simple measure and money problems involving fractions and decimals to 2 decimal places	
					To 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	

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Upper KS2

		Year 5			Year 6		
		Number: Fractions (Including Decimals and Percentages)					
		Autumn	Spring	Summer	Autumn	Spring	Summer
Counting in Fractional steps			Pupils extend counting from year 4, using decimals and fractions including bridging 0, for example on a number line.(Non Statutory)	Pupils extend counting from year 4, using decimals and fractions including bridging 0, for example on a number line.(Non Statutory)			
Recognising Fractions	To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths						
Comparing Fractions	To compare and order fractions whose denominators are all multiples of the same number	To compare and order fractions whose denominators are all multiples of the same number				To compare and order fractions, including fractions >1	



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Comparing Decimals		To read, write, order and compare numbers with up to 3 decimal places	To read, write, order and compare numbers with up to 3 decimal places	To identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places	To identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places	To identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
Rounding including decimals		To round decimals with 2 decimal places to the nearest whole number and to 1 decimal place				
Equivalence (including Fractions, decimals and Percentages)	To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths		To recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction	To associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$]		
	To read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]			To use common factors to simplify fractions; use common multiples to express fractions in the same denomination	To use common factors to simplify fractions; use common multiples to express fractions in the same denomination	
	To recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents			Pupils use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity (for example, if quarter of a length is 36cm, then the whole length is $36 \times 4 = 144\text{cm}$). (Non Statutory)	To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	
Addition and subtraction of	To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]	To recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]		To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	



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	To add and subtract fractions with the same denominator, and denominators that are multiples of the same number	To add and subtract fractions with the same denominator, and denominators that are multiples of the same number	To add and subtract fractions with the same denominator, and denominators that are multiples of the same number			
Multiplication and division of decimals	To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	To multiply one-digit numbers with up to 2 decimal places by whole numbers		To multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]
						To divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$]
					To use written division methods in cases where the answer has up to 2 decimal places	To use written division methods in cases where the answer has up to 2 decimal places
Problem Solving	To solve problems involving number up to 3 decimal places		To 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 fractions with a denominator of a multiple of 10 or 25			To solve problems which require answers to be rounded to specified degrees of accuracy