Strand – Fractions					
Rationale					
The Fractions strand runs throughout primary school. It is split into ten sections: counting in fractional steps; recognising fractions; comparing fractions; comparing decimals; rounding including decimals; equivalence; adding and subtracting fractions; multiplication and division of fractions; multiplication and division of decimals; problem solving. More of these sections are introduced as children progress through school after having the blocks to build on. The introduction of fractions is one of a student's first experiences with a math concept beyond the basic skills of addition, subtraction, multiplication, and division. It is important that a child feels comfortable and confident in their understanding of fractions because it is a building block for other math skills. Fractions help children understand the nature of numbers and their interactions (e.g., the meaning of division).					
Learning					
Counting in fractional steps					
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					
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	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 one – digit numbers or quantities by 10.	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, 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					
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					
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					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**

	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	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 = $^{71}/_{100}$) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)
			recognise and write decimal equivalents to $^{1}/_{4}$; $^{1}/_{2}$; $^{3}/_{4}$	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					
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. $^{5}/_{7} + {}^{1}/_{7} = {}^{6}/_{7}$)	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					
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. $^{1}/_{4} \times {}^{1}/_{2} = {}^{1}/_{8}$) multiply one-digit numbers with up to two decimal places by whole numbers divide proper fractions by whole numbers (e.g. $^{1}/_{3} \div 2 = {}^{1}/_{6}$)

Multiplication and division of decimals					
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 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 (ε.γ. $^{3}/_{8}$)

					use written division methods in cases where the answer has up to two decimal places
Problem Solving					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		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 simple measure and money problems involving fractions and decimals to two decimal places.	solve problems which require knowing percentage and decimal equivalents of $^{1}/_{2}$, $^{1}/_{4}$, $^{1}/_{5}$, $^{2}/_{5}$, $^{4}/_{5}$ and those with a denominator of a multiple of 10 or 25.	
Key Vocabulary					

part, equal parts fraction, proper/improper fraction mixed number numerator, denominator equivalent, reduced to, cancel one whole half, quarter, eighth third, sixth, ninth, twelfth	fifth, tenth, twentieth hundredth, thousandth proportion, ratio in every, for every to every, as many as decimal, decimal fraction decimal point, decimal place percentage, per cent, %	