



FRACTIONS							
COUNTING IN FRACTIONAL STEPS							
Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
		<i>Pupils should count in fractions up to 10, starting from any number and using the 1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)</i>	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, 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, find and name a quarter as one of four equal parts of an object, shape or quantity		recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.		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. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ ) (also appears in Multiplication and Division of fractions)		
			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 $> 1$	work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 and $\frac{3}{8}$ )  understand and use place value for decimals, measures and integers of any size



							<p>order positive and negative integers, decimals and fractions</p> <p>use the number line as a model for ordering integers, decimals and fractions</p> <p>use the symbols <math>=</math>, <math>\neq</math>, <math>&lt;</math>, <math>&gt;</math>, <math>\leq</math>, <math>\geq</math> to make order statements about positive and negative integers, decimals and fractions</p> <p>define percentage as 'number of parts per hundred', and know their decimal and fraction equivalents</p> <p>appreciate the infinite nature of the set of integers</p> <p>use standard units of mass, length, time, money and other measures, including with decimal quantities</p> <p>round numbers and measures to different degrees of accuracy, for example to the nearest whole number or to one decimal place</p>
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COMPARING DECIMALS							
Early Learning Goal	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	<p>work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and <math>\frac{7}{2}</math> or 0.375 and <math>\frac{3}{8}</math>)</p> <p>understand and use place value for decimals, measures and integers of any size</p> <p>order positive and negative integers, decimals and fractions</p> <p>use the number line as a model for ordering integers, decimals and fractions</p> <p>use the symbols =, <math>\neq</math>, &lt;, &gt;, <math>\leq</math>, <math>\geq</math> to make order statements about positive and negative integers, decimals and fractions</p> <p>define percentage as ‘number of parts per hundred’, and know their decimal and fraction equivalents</p> <p>appreciate the infinite nature of the set of integers</p> <p>use standard units of mass, length, time, money and other measures, including with decimal quantities</p> <p>round numbers and measures to different degrees of accuracy, for</p>



ROUNDING INCLUDING DECIMALS							
Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
				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	<p>example to the nearest whole number or to one decimal place</p> <p>round numbers and measures to different degrees of accuracy, for example to the nearest whole number or to one decimal place</p> <p>use approximation, through rounding to the nearest whole number or to one decimal place, to estimate answers</p> <p>round numbers and measures to an appropriate degree of accuracy, for example to the nearest whole number or to one decimal place</p>
EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)							
		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	work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 and $\frac{3}{8}$ )
				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. $\frac{3}{8}$ )	understand and use place value for decimals, measures and integers of any size
					recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents		order positive and negative integers, decimals and fractions



				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.	use the number line as a model for ordering integers, decimals and fractions  use the symbols =, $\neq$ , <, >, $\leq$ , $\geq$ to make order statements about positive and negative integers, decimals and fractions  define percentage as ‘number of parts per hundred’, and know their decimal and fraction equivalents  appreciate the infinite nature of the set of integers  use standard units of mass, length, time, money and other measures, including with decimal quantities  round numbers and measures to different degrees of accuracy, for example to the nearest whole number or to one decimal place
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ADDITION AND SUBTRACTION OF FRACTIONS



Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
			<p>add and subtract fractions with the same denominator within one whole (e.g. <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>)</p>	<p>add and subtract fractions with the same denominator</p>	<p>add and subtract fractions with the same denominator and multiples of the same number</p>	<p>add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p>	<p>work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and <math>\frac{7}{2}</math> or 0.375 and <math>\frac{3}{8}</math>)</p> <p>understand and use place value for decimals, measures and integers of any size</p> <p>order positive and negative integers, decimals and fractions</p> <p>use the number line as a model for ordering integers, decimals and fractions</p> <p>use the symbols =, ≠, &lt;, &gt;, ≤, ≥ to make order statements about positive and negative integers, decimals and fractions</p> <p>define percentage as ‘number of parts per hundred’, and know their decimal and fraction equivalents</p> <p>appreciate the infinite nature of the set of integers</p> <p>use standard units of mass, length, time, money and other measures, including with decimal quantities</p> <p>round numbers and measures to different degrees of accuracy, for example to the nearest whole</p>



MULTIPLICATION AND DIVISION OF FRACTIONS							
Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
		write simple fractions e.g. $\frac{1}{2}$ of $6 = 3$  (linked to multiplication skills)			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. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ )	number or to one decimal place
					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. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ ) (also appears in recognising fractions)	divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$ )	work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 and $\frac{3}{8}$ )  understand and use place value for decimals, measures and integers of any size  order positive and negative integers, decimals and fractions  use the number line as a model for ordering integers, decimals and fractions  use the symbols $=$ , $\neq$ , $<$ , $>$ , $\leq$ , $\geq$ to make order statements about positive and negative integers, decimals and fractions  define percentage as 'number of parts per hundred', and know their decimal and fraction equivalents  appreciate the infinite nature of the set of integers



							use standard units of mass, length, time, money and other measures, including with decimal quantities
							round numbers and measures to different degrees of accuracy, for example to the nearest whole number or to one decimal place
<b>MULTIPLICATION AND DIVISION OF DECIMALS</b>							
Early Learning Goal	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
						multiply one-digit numbers with up to two decimal places by whole numbers	use the four operations, including formal written methods, applied to integers and decimals; multiply proper and improper fractions, and mixed numbers, all both positive and negative
				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	use conventional notation for the priority of operations, including brackets
						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 relationships between the operations +, -, ×, ÷, including inverse operations
						use written division methods in cases where the answer has up to two decimal places	
<b>PROBLEM SOLVING</b>							
Early Learning Goal	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 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 simple measure and money problems involving fractions and decimals; estimating; comparing and calculating to two decimal places.	use all four operations to solve problems involving measure (eg money) - <i>linked to decimals knowledge</i>		