

FRACTIONS INCLUDING DECIMALS AND PERCENTAGES: PROGRESSION MAP FOR FLUENCY, REASONING AND PROBLEM SOLVING

Fractions including Decimals and Percentages: Statutory Requirements and Reasoning (from NCETM)

COUNTING IN FRACTIONAL STEPS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<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		
	<p>Spot the mistake 7, $7\frac{1}{2}$, 8, 9, 10 $8\frac{1}{2}$, 8, 7, $6\frac{1}{2}$, ... and correct it</p> <p>What comes next? $5\frac{1}{2}$, $6\frac{1}{2}$, $7\frac{1}{2}$,,</p>	<p>Spot the mistake six tenths, seven tenths, eight tenths, nine tenths, eleven tenths ... and correct it.</p> <p>What comes next? 6/10, 7/10, 8/10,,</p>	<p>Spot the mistake sixty tenths, seventy tenths, eighty tenths, ninety tenths, twenty tenths ... and corrects it.</p> <p>What comes next? 83/100, 82/100, 81/100,,</p> <p>31/100, 41/100, 51/100,,</p>	<p>Spot the mistake 0.088, 0.089, 1.0</p> <p>What comes next? 1.173, 1.183, 1.193</p>	<p>Spot the mistake Identify and explain mistakes when counting in more complex fractional steps</p>

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 $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ 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 and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
<p>What do you notice?</p> <p>Choose a number of counters. Place them onto 2 plates so that there is the same number on each half. When can you do this and when can't you? What do you notice?</p>	<p>What do you notice?</p> <p>$\frac{1}{4}$ of 4 = 1 $\frac{1}{4}$ of 8 = 2 $\frac{1}{4}$ of 12 = 3 Continue the pattern What do you notice?</p>	<p>What do you notice?</p> <p>1/10 of 10 = 1 2/10 of 10 = 2 3/10 of 10 = 3 Continue the pattern. What do you notice?</p> <p>What about 1/10 of 20? Use this to work out 2/10 of 20, etc.</p>	<p>What do you notice?</p> <p>1/10 of 100 = 10 1/100 of 100 = 1 2/10 of 100 = 20 2/100 of 100 = 2</p> <p>How can you use this to work out 6/10 of 200? 6/100 of 200?</p>	<p>What do you notice?</p> <p>One tenth of £41 One hundredth of £41 One thousandth of £41</p> <p>Continue the pattern What do you notice?</p> <p>0.085 + 0.015 = 0.1 0.075 + 0.025 = 0.1 0.065 + 0.035 = 0.1 Continue the pattern for the next five number sentences.</p>	<p>What do you notice?</p> <p>One thousandth of my money is 31p. How much do I have?</p>
<p>True or false?</p> <p>Sharing 8 apples between 4 children means each child has 1 apple.</p>	<p>True or false?</p> <p>Half of 20cm = 5cm $\frac{3}{4}$ of 12cm = 9cm</p>	<p>True or false?</p> <p>2/10 of 20cm = 2cm 4/10 of 40cm = 4cm 3/5 of 20cm = 12cm</p>	<p>True or false?</p> <p>1/20 of a metre = 20cm 4/100 of 2 metres = 40cm</p>	<p>True or false?</p> <p>0.1 of a kilometre is 1m. 0.2 of 2 kilometres is 2m. 0.3 of 3 Kilometres is 3m 0.25 of 3m is 500cm.</p>	<p>True or false?</p> <p>25% of 23km is longer than 0.2 of 20km. Convince me.</p>

				2/5 of £2 is 20p	
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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
		<p>Give an example of a fraction that is less than a half. Now another example that no one else will think of. Explain how you know the fraction is less than a half. (draw an image)</p> <p>Ben put these fractions in order starting with the smallest. Are they in the correct order? One fifth, one seventh, one sixth</p>	<p>Give an example of a fraction that is more than a half but less than a whole. Now another example that no one else will think of.</p> <p>Explain how you know the fraction is more than a half but less than a whole. (draw an image)</p>	<p>Give an example of a fraction that is more than three quarters. Now another example that no one else will think of. Explain how you know the fraction is more than three quarters.</p> <p>Imran put these fractions in order starting with the smallest. Are they in the correct order? Two fifths, three tenths, four twentieths How do you know?</p>	<p>Give an example of a fraction that is greater than 1.1 and less than 1.5. Now another example that no one will think of. Explain how you know.</p> <p>Sam put these fractions in order starting with the smallest. Are they in the correct order? Thirty three fifths Twenty three thirds Forty five sevenths How do you know?</p>

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
			<p>Missing symbol Put the correct symbol < or > in each box</p> <p>3.03 <input type="text"/> 3.33</p> <p>0.37 <input type="text"/> 0.32</p> <p>What needs to be added to 3.23 to give 3.53? What needs to be added to 3.16 to give 3.2?</p>	<p>Missing symbol Put the correct symbol < or > in each box</p> <p>4.627 <input type="text"/> 4.06</p> <p>12.317 <input type="text"/> 12.31</p> <p>What needs to be added to 3.63 to give 3.13? What needs to be added to 4.652 to give 4.1?</p>	<p>True or false? In all of the numbers below, the digit 6 is worth <u>more than</u> 6 hundredths.</p> <p>3.6 3.063 3.006 6.23 7.761 3.076</p> <p>Is this true or false? Change some numbers so that it is true.</p> <p>What needs to be added to 6.543 to give 7? What needs to be added to 3.582 to give 5?</p> <p>Circle the two decimals which are closest in value to each other. 0.9 0.09 0.99 0.1 0.01</p>

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
		<p>Do, then explain Circle each decimal which when rounded to the nearest whole number is 5. 5.3 5.7 5.2 5.8 Explain your reasoning</p> <p>Top tips Explain how to round numbers to one decimal place? <i>Also see rounding in place value</i></p>	<p>Do, then explain Circle each decimal which when rounded to one decimal place is 6.2. 6.32 6.23 6.27 6.17 Explain your reasoning</p> <p>Top tips Explain how to round decimal numbers to one decimal place? <i>Also see rounding in place value</i></p>		<p>Do, then explain Write the answer of each calculation rounded to the nearest whole number 75.7 × 59 7734 ÷ 60 772.4 × 9.7 20.34 × (7.9 - 5.4)</p> <p>What's the same, what's different? ... when you round numbers to one decimal place and two decimal places? <i>Also see rounding in place value</i></p>

EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)																															
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																							
<p>Odd one out. Which is the odd one out in this trio: $\frac{1}{2}$ $\frac{2}{4}$ $\frac{1}{4}$ Why?</p> <p>What do you notice? Find $\frac{1}{2}$ of 8. Find $\frac{2}{4}$ of 8 What do you notice?</p>		<p>Odd one out. Which is the odd one out in each of these trios $\frac{1}{2}$ $\frac{3}{6}$ $\frac{5}{8}$ $\frac{3}{9}$ $\frac{2}{6}$ $\frac{4}{9}$ Why?</p> <p>What do you notice? Find $\frac{2}{5}$ of 10 Find $\frac{4}{10}$ of 10. What do you notice? Can you write any other similar statements?</p>		<p>Odd one out. Which is the odd one out in each of these trios $\frac{3}{4}$ $\frac{9}{12}$ $\frac{4}{6}$ $\frac{9}{12}$ $\frac{10}{15}$ $\frac{2}{3}$ Why?</p> <p>What do you notice? Find $\frac{4}{6}$ of 24 Find $\frac{2}{3}$ of 24 What do you notice? Can you write any other similar statements?</p>		<p>Odd one out. Which is the odd one out in each of these collections of 4 fractions $\frac{6}{10}$ $\frac{3}{5}$ $\frac{18}{20}$ $\frac{9}{15}$ $\frac{30}{100}$ $\frac{3}{10}$ $\frac{6}{20}$ $\frac{3}{9}$ Why?</p> <p>What do you notice? Find $\frac{30}{100}$ of 200 Find $\frac{3}{10}$ of 200 What do you notice? Can you write any other similar statements?</p>		<p>Odd one out. Which is the odd one out in each of these collections of 4 fractions $\frac{8}{5}$ $\frac{9}{12}$ $\frac{26}{36}$ $\frac{18}{24}$ $\frac{4}{20}$ $\frac{1}{5}$ $\frac{6}{25}$ $\frac{6}{30}$ Why?</p> <p>What do you notice? $\frac{8}{5}$ of 25 = 40 $\frac{5}{4}$ of 16 = 20 $\frac{7}{6}$ of 36 = 42 Can you write similar statements?</p>																							
				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																									
				<p>Complete the pattern by filling in the blank cells in this table:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>$\frac{1}{10}$</td> <td>$\frac{2}{10}$</td> <td>$\frac{3}{10}$</td> <td></td> </tr> </table>		$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$		<p>Complete the pattern</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>$\frac{71}{100}$</td> <td>$\frac{??}{100}$</td> <td>$\frac{??}{100}$</td> <td>$\frac{??}{100}$</td> </tr> <tr> <td>0.71</td> <td>0.81</td> <td>???</td> <td>???</td> </tr> </table>		$\frac{71}{100}$	$\frac{??}{100}$	$\frac{??}{100}$	$\frac{??}{100}$	0.71	0.81	???	???	<p>Complete the pattern</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>$\frac{1}{8}$</td> <td>$\frac{2}{8}$</td> <td>$\frac{3}{8}$</td> <td>$\frac{4}{8}$</td> </tr> <tr> <td>0.375</td> <td>???</td> <td>???</td> <td>???</td> </tr> </table>		$\frac{1}{8}$	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	0.375	???	???	???		
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			<table border="1"> <tr> <td>$\frac{10}{100}$</td> <td>$\frac{20}{100}$</td> <td></td> <td>$\frac{40}{100}$</td> </tr> <tr> <td>0.1</td> <td></td> <td>0.3</td> <td></td> </tr> </table> <p>Another and another Write a decimal numbers (to one decimal place) which lies between a half and three quarters? ... and another, ... and another, ...</p>	$\frac{10}{100}$	$\frac{20}{100}$		$\frac{40}{100}$	0.1		0.3		<table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Complete the table.</p> <p>Another and another Write a fraction with a denominator of one hundred which has a value of more than 0.75? ... and another, ... and another, ...</p>					<table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Complete the table.</p> <p>Another and another Write a unit fraction which has a value of less than 0.5? ... and another, ... and another, ...</p>				
$\frac{10}{100}$	$\frac{20}{100}$		$\frac{40}{100}$																		
0.1		0.3																			
			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.																
	<p>Ordering</p> <p>Put these fractions in the correct order, starting with the smallest. $\frac{1}{2}$ $\frac{1}{4}$ $1/3$</p>	<p>Ordering</p> <p>Put these fractions in the correct order, starting with the smallest. $4/8$ $\frac{3}{4}$ $1/4$</p>	<p>Ordering</p> <p>Put these numbers in the correct order, starting with the smallest. $\frac{1}{4}$ 0.75 5/10 Explain your thinking</p>	<p>Ordering</p> <p>Put these numbers in the correct order, starting with the largest. 7/10, 0.73, 7/100, 0.073 71% Explain your thinking</p> <p>Which is more: 20% of 200 or 25% of 180? Explain your reasoning.</p>	<p>Ordering</p> <p>Which is larger, $\frac{1}{3}$ or $\frac{2}{5}$? Explain how you know.</p> <p>Put the following amounts in order, starting with the largest. 23%, 5/8, 3/5, 0.8</p>																

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. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number 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. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
		<p>What do you notice?</p> <p>$\frac{1}{10} + \frac{9}{10} = 1$ $\frac{2}{10} + \frac{8}{10} = 1$ $\frac{3}{10} + \frac{7}{10} = 1$</p> <p>Continue the pattern</p> <p>Can you make up a similar pattern for eighths?</p> <p>The answer is $\frac{5}{10}$, what is the question? (involving fractions / operations)</p>	<p>What do you notice?</p> <p>$\frac{5}{5} - \frac{1}{5} = \frac{4}{5}$ $\frac{4}{5} - \frac{1}{5} = \frac{3}{5}$</p> <p>Continue the pattern</p> <p>Can you make up a similar pattern for addition?</p> <p>The answer is $\frac{3}{5}$, what is the question?</p> <p>What do you notice?</p> <p>$\frac{11}{100} + \frac{89}{100} = 1$ $\frac{12}{100} + \frac{88}{100} = 1$ $\frac{13}{100} + \frac{87}{100} = 1$</p> <p>Continue the pattern for the next five number sentences</p>	<p>What do you notice?</p> <p>$\frac{3}{4} \text{ and } \frac{1}{4} = \frac{4}{4} = 1$ $\frac{4}{4} \text{ and } \frac{1}{4} = \frac{5}{4} = 1\frac{1}{4}$ $\frac{5}{4} \text{ and } \frac{1}{4} = \frac{6}{4} = 1\frac{1}{2}$</p> <p>Continue the pattern up to the total of 2.</p> <p>Can you make up a similar pattern for subtraction?</p> <p>The answer is $1\frac{2}{5}$, what is the question?</p>	<p>Another and another</p> <p>Write down two fractions which have a difference of $1\frac{2}{5}$ and another, ... and another, ...</p> <p>Another and another</p> <p>Write down 2 fractions with a total of $3\frac{4}{5}$. ... and another, ... and another, ...</p>

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. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)
					multiply one-digit numbers with up to two decimal places by whole numbers
					divide proper fractions by whole numbers (e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$)
				<p>Continue the pattern</p> <p>$\frac{1}{4} \times 3 =$ $\frac{1}{4} \times 4 =$ $\frac{1}{4} \times 5 =$</p> <p>Continue the pattern for five more number sentences. How many steps will it take to get to 3?</p> <p>$5/3$ of 24 = 40 Write a similar sentence where the answer is 56.</p> <p>The answer is $2 \frac{1}{4}$, what is the question</p> <p>Give your top tips for multiplying fractions.</p>	<p>Continue the pattern</p> <p>$1/3 \div 2 = 1/6$ $1/6 \div 2 = 1/12$ $1/12 \div 2 = 1/24$</p> <p>What do you notice? $\frac{1}{2} \times \frac{1}{4} =$</p> <p>The answer is $1/8$, what is the question (involving fractions / operations)</p> <p>Give your top tips for dividing fractions.</p>

					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 (e.g. $\frac{3}{8}$)
					use written division methods in cases where the answer has up to two decimal places
			<p>Undoing</p> <p>I divide a number by 100 and the answer is 0.3. What number did I start with?</p>	<p>Undoing</p> <p>I divide a number by 100 and the answer is 0.33 What number did I start with?</p> <p>Another and another Write down a number with two</p>	<p>Undoing</p> <p>I multiply a number with three decimal places by a multiple of 10. The answer is approximately 3.21 What was my number and what did I multiply buy?</p>

			<p>Another and another</p> <p>Write down a number with one decimal place which when multiplied by 10 gives an answer between 120 and 130. ... and another, ... and another, ...</p>	<p>decimal places which when multiplied by 100 gives an answer between 33 and 38. ... and another, ... and another, ...</p>	<p>When I divide a number by 1000 the resulting number has the digit 6 in the units and tenths and the other digits are 3 and 2 in the tens and hundreds columns. What could my number have been?</p>
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PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		<p>solve problems that involve all of the above</p>	<p>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</p>	<p>solve problems involving numbers up to three decimal places</p>	
			<p>solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>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.</p>	

Fractions including Decimals and Percentages: Key Performance Indicators

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</p>	<p>Recognise, find, name and write $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of size, shape or quantity</p> <p>Write simple fraction facts, e.g. $\frac{1}{2}$ of 6 = 3</p>	<p>Count up and down in tenths</p> <p>Understand that tenths are objectives or quantities divided into ten equal parts</p> <p>Compare and order simple fractions</p> <p>Recognise and show equivalent fractions</p> <p>Find and write fractions of a set of objects</p> <p>Add and subtract fractions with common denominators (less than one)</p>	<p>Recognise and use hundredths</p> <p>Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$</p> <p>Divide one- or two-digit numbers by 10 and 100, using tenths and hundredths</p> <p>Round decimals with one decimal place to the nearest whole number</p> <p>Compare numbers up to two decimal places</p>	<p>Convert between mixed numbers and improper fractions</p> <p>Compare and order fractions whose denominators are multiples of the same number</p> <p>Identify, name and write equivalent fractions including tenths and hundredths</p> <p>Add and subtract fractions with denominators that are multiples of the same number</p> <p>Multiply proper fractions and mixed numbers by whole numbers with support</p> <p>Read and write decimal numbers as fractions</p> <p>Round decimals with 2 decimals places to whole number or to one decimal place</p> <p>Read, write, order and</p>	<p>Use common factors to simplify fractions</p> <p>Compare and order fractions of any size</p> <p>Add and subtract fractions with different denominators and mixed numbers</p> <p>Multiply simple pairs of proper fractions</p> <p>Divide proper fractions by whole numbers</p> <p>Calculate decimal fraction equivalents for simple fractions</p> <p>Multiply a number with up to two decimal places by whole numbers</p> <p>Use written division with answers of up to two decimal places</p> <p>Solve problems involving the calculation of percentages</p> <p>Recall and use equivalences</p>

				<p>compare numbers with up to 3 decimal places</p> <p>Recognise % symbol and explain as a fraction with denominator 100 (parts out of 100)</p>	<p>between fractions, decimals and percentages</p>
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Fractions including Decimals and Percentages: Cross-curricular links

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p>DT - Cutting fruit in food technology to make a fruit kebab</p> <p>Art - Making fruit collages</p>	<p>DT - making cakes using half ingredient</p>			<p>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths (Vikings and Anglo Saxons - designing a shield).</p>	

Fractions including Decimals and Percentages: Vocabulary

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fraction Equal part Equal grouping Equal sharing One of two equal parts One of four equal parts	Fraction Equivalent fraction Numerator Denominator Equal part Equal grouping Equal sharing Parts of a whole Half, two halves One of two equal parts Quarter, two .. three One of four equal parts One third Two third One of three equal parts	Fractions Equivalent fraction Numerator Denominator Half Quarter One third Two third Sixths/sevenths/eighths/tenths	fraction equivalent fraction mixed number numerator denominator equal part half quarter third sixths sevenths eighths tenths hundredths decimal decimal fraction decimal point decimal place decimal equivalent	Fractions Proper fraction Improper fractions Equivalent fractions Mixed numbers Numerator Denominator Equivalent Reduced to Cancel Parts of a whole Thousandths Decimal/decimal fractions Decimal point Decimal place Decimal equivalent Proportion In every For every Percentage Per cent %	fraction proper/improper fraction equivalent fraction mixed number numerator denominator equivalent reduced to proportion in every for every ratio percentage per cent %