

## Year 7 Fractions, Decimals and Percentages

Topic/Skill	Definition/Tips	Example
Fraction	A mathematical expression representing the <b>division</b> of one integer by another.  Fractions are written as <b>two numbers separated by a horizontal line</b> .	$\frac{2}{7}$ is a 'proper' fraction.  $\frac{9}{4}$ is an 'improper' or 'top-heavy' fraction.
Numerator	The <b>top</b> number of a fraction.	In the fraction $\frac{3}{5}$ , 3 is the numerator.
Denominator	The <b>bottom</b> number of a fraction.	In the fraction $\frac{3}{5}$ , 5 is the denominator.
Mixed Number	A number formed of both an <b>integer part</b> and a <b>fraction part</b> .	$3\frac{2}{5}$ is an example of a mixed number.
Simplifying Fractions	<b>Divide the numerator and denominator by the highest common factor.</b>	$\frac{20}{45} = \frac{4}{9}$
Equivalent Fractions	Fractions which represent the <b>same value</b> .	$\frac{2}{5} = \frac{4}{10} = \frac{20}{50} = \frac{60}{150}$ etc.
Comparing Fractions	To compare fractions, they each need to be rewritten so that they have a <b>common denominator</b> .  <b>Ascending</b> means <b>smallest to biggest</b> .  <b>Descending</b> means <b>biggest to smallest</b> .	Put in to ascending order : $\frac{3}{4}, \frac{2}{3}, \frac{5}{6}, \frac{1}{2}$ .  Equivalent: $\frac{9}{12}, \frac{8}{12}, \frac{10}{12}, \frac{6}{12}$  Correct order: $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$
Adding or Subtracting Fractions	Find the <b>LCM of the denominators</b> to find a common denominator. Use equivalent fractions to change each fraction to the <b>common denominator</b> . Then just <b>add or subtract the numerators</b> and keep the <b>denominator the same</b> .	$\frac{2}{3} + \frac{4}{5}$ Multiples of 3: 3, 6, 9, 12, <b>15</b> .. Multiples of 5: 5, 10, <b>15</b> .. LCM of 3 and 5 = 15 $\frac{2}{3} = \frac{10}{15}$ $\frac{4}{5} = \frac{12}{15}$  $\frac{10}{15} + \frac{12}{15} = \frac{22}{15} = 1\frac{7}{15}$
Multiplying Fractions	<b>Multiply the numerators</b> together and <b>multiply the denominators</b> together.	$\frac{3}{8} \times \frac{2}{9} = \frac{6}{72} = \frac{1}{12}$
Dividing Fractions	<b>'Keep it, Flip it, Change it – KFC'</b> Keep the first fraction the same Flip the second fraction upside down Change the divide to a multiply  Multiply by the reciprocal of the second fraction.	$\frac{3}{4} \div \frac{5}{6} = \frac{3}{4} \times \frac{6}{5} = \frac{18}{20} = \frac{9}{10}$
Finding 10%	To find <b>10%</b> , <b>divide by 10</b>	10% of £36 = $36 \div 10 = \text{£}3.60$
Finding 1%	To find <b>1%</b> , <b>divide by 100</b>	1% of £8 = $8 \div 100 = \text{£}0.08$

