


Fractions

Knowledge Organiser



Key Vocabulary	Equivalent Fractions	Compare and Order Fractions		
numerator	<p>To find equivalent fractions, we multiply or divide the numerator and denominator by the same number.</p> $\frac{1}{2} \xrightarrow{\times 5} \frac{5}{10} \xrightarrow{\times 10} \frac{10}{20}$	<p>We can compare and order fractions by using common denominators.</p>		
denominator		<p>Mixed Numbers</p> <p>Mixed numbers contain a whole number and a fraction.</p>		
unit fraction			<p>Improper Fractions</p> <p>An improper fraction has a numerator which is greater than or equal to the denominator.</p> $\frac{5}{3}$	
non-unit fraction			<p>Convert an Improper Fraction to a Mixed Number</p> <p>$\frac{9}{4}$</p> <p>$9 \div 4 = 2r1$</p> <p>$2\frac{1}{4}$</p> <p>Divide the numerator by the denominator.</p> <p>This shows you the whole number and the fraction.</p>	<p>Convert a Mixed Number to an Improper Fraction</p> <p>Multiply the whole by the denominator to make an improper fraction.</p> <p>$2\frac{5}{6} = \frac{12}{6} + \frac{5}{6} = \frac{17}{6}$</p> <p>Add the fractions together.</p>
whole			<p>Fractions of Quantities</p> <p>To find a fraction of a number, divide by the denominator and multiply by numerator.</p> <p>To find quarters of 20:</p> <p>$\frac{1}{4}$ of 20 = 5 $\frac{2}{4}$ of 20 = 10 $\frac{3}{4}$ of 20 = 15 $\frac{4}{4}$ of 20 = 20</p>	<p>To find eighths of 56:</p> <p>$\frac{1}{8}$ of 56 = 7 $\frac{2}{8}$ of 56 = 14 $\frac{3}{8}$ of 56 = 21 $\frac{4}{8}$ of 56 = 28 $\frac{5}{8}$ of 56 = 35 $\frac{6}{8}$ of 56 = 42 $\frac{7}{8}$ of 56 = 49 $\frac{8}{8}$ of 56 = 56</p>
equivalent				
mixed number				
improper fraction				
simplest form				
multiple				
common denominator				
common numerator				

Adding and Subtracting Fractions

$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

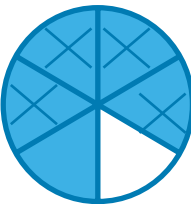


$\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$

$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

$\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$

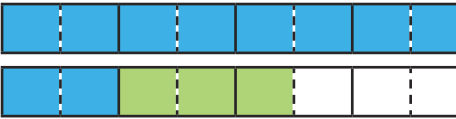


To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.

Add Fractions When the Total is Greater Than 1

$$\frac{1}{2} + \frac{3}{4} + \frac{5}{8} = \frac{4}{8} + \frac{6}{8} + \frac{5}{8} = \frac{15}{8} = 1\frac{7}{8}$$








Add Mixed Numbers

$$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$$


$$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$$

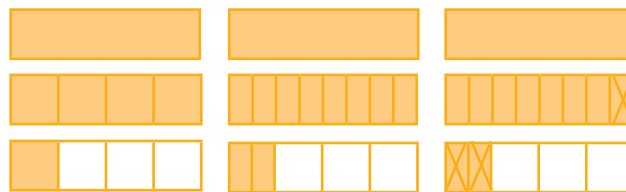
Subtract From a Mixed Number

$$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$$

starting number	find the equivalent fraction	subtract
		
		

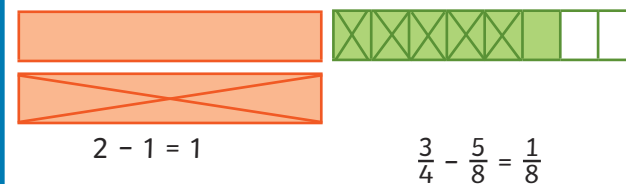
Subtract from a Mixed Number - Breaking the Whole

$$2\frac{1}{4} - \frac{3}{8} = 2\frac{2}{8} - \frac{3}{8} = 1\frac{10}{8} - \frac{3}{8} = 1\frac{7}{8}$$



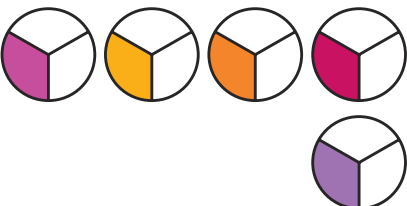
Subtract Two Mixed Numbers

$$2\frac{3}{4} - 1\frac{5}{8} = 1\frac{1}{8}$$

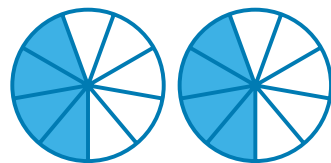


$2 - 1 = 1$ $\frac{3}{4} - \frac{5}{8} = \frac{1}{8}$

Multiply Unit Fractions by an Integer

$$\frac{1}{3} \times 5 = \frac{5}{3}$$


Multiply Non-Unit Fractions by an Integer

$$2 \times \frac{4}{9} = \frac{8}{9}$$


Multiply Mixed Numbers by Integers

Convert to an improper fraction and multiply the numerator by the integer.

$$2\frac{1}{4} \times 2 = \frac{9}{4} \times 2 = \frac{18}{4} = 4\frac{2}{4} = 4\frac{1}{2}$$

Use repeated addition.

$$2\frac{1}{4} \times 2 = 2\frac{1}{4} + 2\frac{1}{4} = 4\frac{2}{4} = 4\frac{1}{2}$$