

unit 6 fraction study guide

Fraction * less than one whole • It is a part of a whole



* Part of a set/group  1 out of 3 beans is shaded $\frac{1}{3}$

unit fraction - has a numerator of 1 $\frac{1}{6}, \frac{1}{4}, \frac{1}{3}, \frac{1}{2}, \frac{1}{12}, \frac{1}{16}$

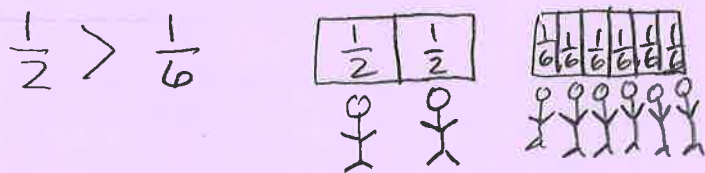
$\frac{\text{numerator}}{\text{denominator}} = \frac{n}{d} = \frac{\text{number of unit fractions}}{\text{number of equal parts in the whole}}$

fraction - A sum of unit fractions $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{3}{6}$

Compare fractions - To compare fractions with like denominators you just look at the numerators. The bigger numerator is the greater fraction.

$$\frac{5}{8} > \frac{3}{8}$$

Compare unit fractions - the smaller denominator is the greater amount (you are sharing with fewer people). The bigger the denominator is the smaller the amount or the share (it is sharing with more people - you get less)



Equivalent Fractions - represent the same part of a whole • have a different numerator and denominator, but show the same amount

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

Add and Subtract Fractions with Like Denominators

Rule: only add the numerators

$$\frac{3}{7} + \frac{2}{7} = \frac{3+2}{7} = \frac{5}{7}$$

$$\frac{3}{9} + \frac{4}{9} = \frac{3+4}{9} = \frac{7}{9}$$

Rule: only subtract numerators

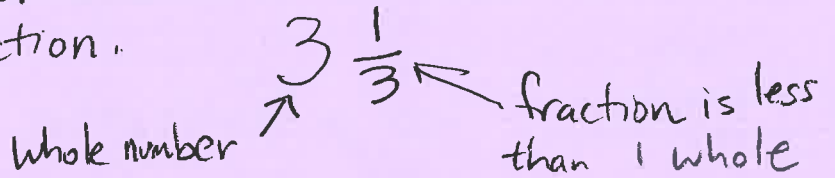
$$\frac{9}{8} - \frac{1}{8} = \frac{9-1}{8} = \frac{8}{8} = 1$$

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

Improper Fraction - the numerator is bigger than the denominator. It is more than a whole.

$\frac{3}{6} + \frac{4}{6} = \frac{7}{6}$ ← improper fraction $\left(\frac{6}{6} = 1 \quad \frac{7}{6} > \frac{6}{6} = 1 \right)$

Mixed Number - A number that has both a whole number and a fraction.



Convert a Mixed Number to an Improper Fraction

$3 \frac{5}{8} = \frac{24+5}{8} = \frac{29}{8}$

$3 \times 8 = 24$ ← Step 1. Multiply the whole number times the denominator.

$24 + 5 = 29$ step 2. Add the numerator to the product

$\frac{29}{8}$ step 3. The denominator stays the same

Convert an Improper Fraction to a Mixed Number

$\frac{29}{8} = 3 \frac{5}{8}$

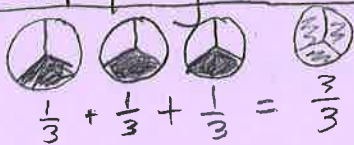
Step 1. Divide the numerator by denominator

Step 2. The quotient is the whole

Step 3. The remainder is the numerator

Step 4. The divisor is the denominator

Multiplying a whole Number by a Fraction



$3 \cdot \frac{1}{3} = \frac{3}{3} = 1$

1. multiply the whole number times the numerator
2. Denominator stays the same

$3 \cdot \frac{3}{4} = \frac{3 \cdot 3}{4} = \frac{9}{4}$

Adding Fractions Greater than 1

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

Adding Mixed Numbers Greater than 1

You must convert an improper fraction!

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

Subtracting Mixed Numbers

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

1. More on the floor, go next more and get 1 whole
2. Borrow one whole
3. convert to equivalent fraction
4. Combine
5. Subtract as usual

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

$4 \frac{5}{5} + \frac{1}{5} = \frac{6}{5}$

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

Another Method!

You can convert the mixed numbers to improper fractions and then add or subtract. Then, convert the answer back to a mixed number.

$1 \frac{3}{4} \rightarrow \frac{7}{4}$

$\frac{17}{4} = 4 \frac{1}{4}$

$+ 2 \frac{2}{4} + \frac{10}{4} = 4 \frac{1}{4}$