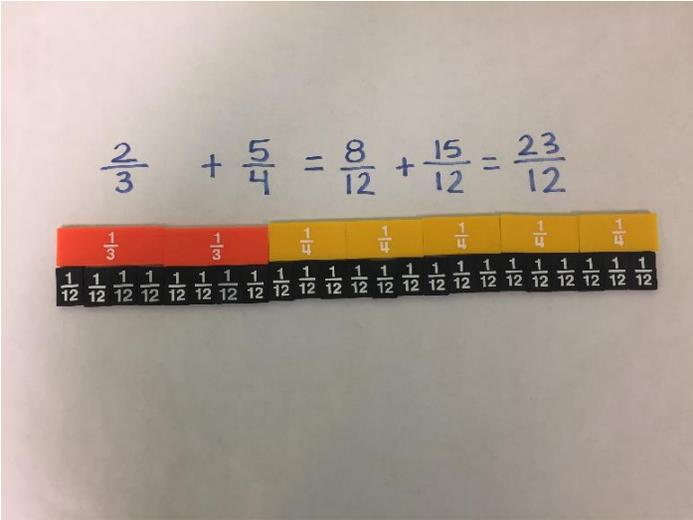


Adding and Subtracting Fractions with Unlike Denominators

<p style="text-align: center;">Overarching Student Learning Goals</p> <p style="text-align: center;">In this unit, your child will work to build an understanding of the following:</p>	<p style="text-align: center;">Resources/Tasks to support your child at home.</p>
<p>Students can explain why a common denominator can be used to express a sum or difference.</p> <p>Students learn to identify a common denominator by finding a multiple that the denominators have in common. See below for an example (12 is a common multiple of both 3 and 4).</p> 	<ul style="list-style-type: none"> Renaming fractions- http://www.visualfractions.com/MixedCircles/imixedcircles.html Using area models to rename fractions- https://learnzillion.com/lesson_plans/6861-add-fractions-with-unlike-denominators-by-creating-area-models/

Students can create equivalent fractions (with common denominators) to add and subtract.

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

$\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$ $\frac{5}{4} \times \frac{3}{3} = \frac{15}{12}$

Multiples
 3: 3, 6, 9, 12, 15, 18, 21
 4: 4, 8, 12, 16, 20

$\frac{8}{12} + \frac{15}{12} = \frac{23}{12}$

- Adding and subtracting with unlike denominators-
<https://www.khanacademy.org/math/arithmetic/fraction-arithmetic/arithmetic-review-add-sub-fractions/v/visually-adding-fractions-with-unlike-denominators>
- Creating equivalent fractions through area models
<https://www.louisianabelieves.com/docs/default-source/louisiana-teacher-leaders/fi16-presentation-3-5-visual-models-and-equivalent-fractions.pdf>

Students can add and subtract fractions, with unlike denominators, including mixed numbers.

Handwritten work showing the addition of $\frac{3}{10} + \frac{1}{2}$. The student converts $\frac{1}{2}$ to $\frac{5}{10}$ and adds it to $\frac{3}{10}$ to get $\frac{8}{10}$, which is simplified to $\frac{4}{5}$. There are some corrections and annotations in the work.

Students will also need to recognize that when the numerator is greater than the denominator, an equivalent mixed number can be created. **See example to the left.**

Example:

Tim added $\frac{3}{6}$ and $\frac{1}{2}$ and wrote an answer of $\frac{4}{12}$.

Is Tim's solution correct? Explain why or why not using picture, numbers or words.

What is the value of the expression?

$$\frac{5}{6} + \frac{8}{12}$$

A. $\frac{9}{12}$

B. $\frac{13}{18}$

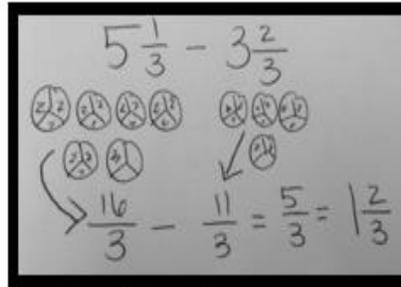
C. $\frac{18}{12}$

D. $\frac{13}{24}$

What is the value of the expression $6\frac{1}{3} - 4\frac{3}{4}$?

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- Adding and subtracting fractions-
<https://www.khanacademy.org/math/arithmetic/fraction-arithmetic/arith-review-add-sub-fractions/v/adding-small-fractions-with-unlike-denominators>
- Adding and subtracting mixed numbers-
<https://www.khanacademy.org/math/arithmetic/fraction-arithmetic/arith-review-add-sub-mix-num-w-unlike-den/v/adding-subtracting-mixed-numbers-1-ex-1>

Students rename fractions as wholes when adding or regroup wholes as fractions when subtracting.



Renaming as a
Fraction Greater
Than One

Subtract. $2\frac{1}{2} - 1\frac{5}{6}$

STEP 1 Estimate the difference. _____

STEP 2 Find a common denominator. Use the common denominator to write equivalent fractions with like denominators.

STEP 3 Rename $2\frac{6}{12}$ as a mixed number with a fraction greater than 1.

Think: $2\frac{6}{12} = 1 + 1 + \frac{6}{12} = 1 + \frac{12}{12} + \frac{6}{12} = 1\frac{18}{12}$

$$2\frac{6}{12} = \underline{\hspace{2cm}}$$

STEP 4 Find the difference of the fractions. Then find the difference of the whole numbers. Write the answer in simplest form. Check to make sure your answer is reasonable.

$$2\frac{1}{2} = 2\frac{6}{12} = \square$$

$$\underline{-1\frac{5}{6} = -1\frac{10}{12} = -1\frac{10}{12}}$$

- Find various recipes that contain fractions and mixed number measurements. Pose addition and subtraction types of questions using the recipes.

• Real World Situation:

A pitcher contains $2\frac{3}{4}$ pints of orange juice. After you pour $\frac{5}{8}$ of a pint into a glass, How much is left in the pitcher?