Adding Fractions
A Closer Look at the Video

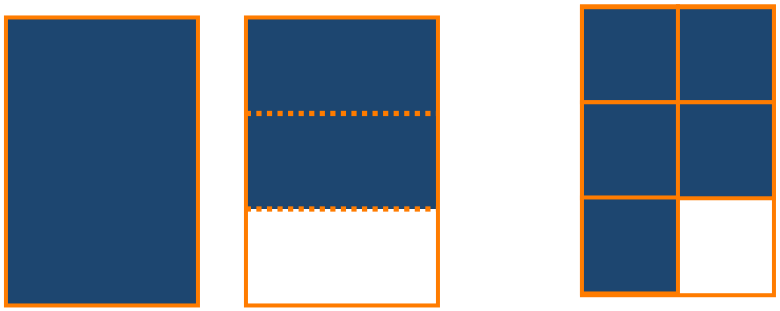
After watching the *Adding Fractions* video, make sense of the mathematics by taking a closer look at the problem situation and solution. Use the comments and questions in bold to help you add fractions and solve the problem.

Problem: A construction crew is helping rebuild homes after a recent natural disaster. The crew estimates they will need $1\frac{2}{3}$ pounds of nails to frame the bedroom walls, and $\frac{5}{6}$ pound of nails to frame the dining room. How many pounds of nails will the construction crew need?

You want to find the total pounds of nails needed to frame the bedroom walls and dining room. Add the two amounts to find the total.

$1\frac{2}{3} + \frac{5}{6}$

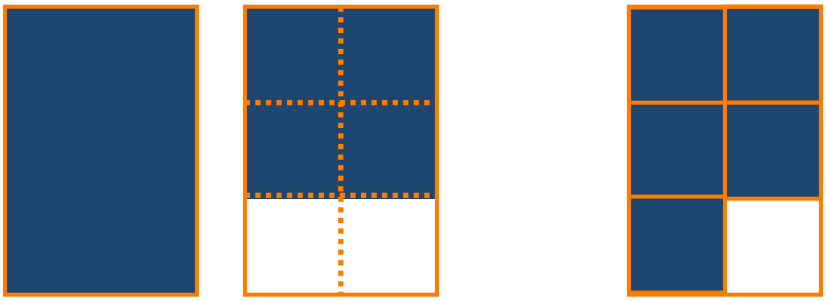
The following rectangular regions represent the fractions from the problem.



1 pound $\frac{2}{3}$ pound $\frac{5}{6}$ pound

When adding fractions, it is important that both fractions have the same denominators, so the parts you are adding are the same size. In this problem you are adding thirds and sixths. What is the common denominator? Six is a multiple of three, so six is a common denominator. When the denominator of one fraction is a multiple of the denominator of another fraction, the fractions are *similar*. In similar fractions, a common denominator is always the numerically larger of the two denominators.

Rename one and two thirds, so the denominator is six. Two thirds is equivalent to four sixths. When you double the number of total parts, you also double the number of shaded parts. View the *Equivalent Fraction* Video to review equivalent fractions.

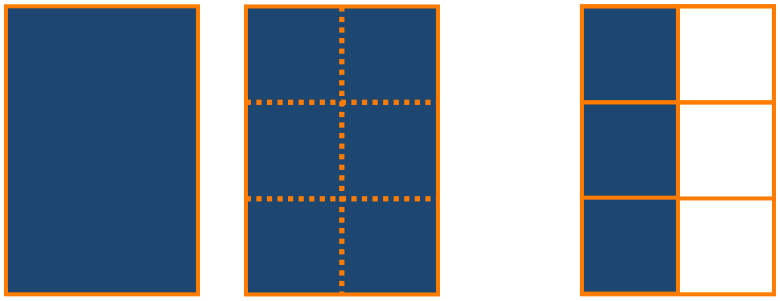


1 pound $\frac{4}{6}$ pound $\frac{5}{6}$ pound

Write the problem with common denominators and add the fractions.

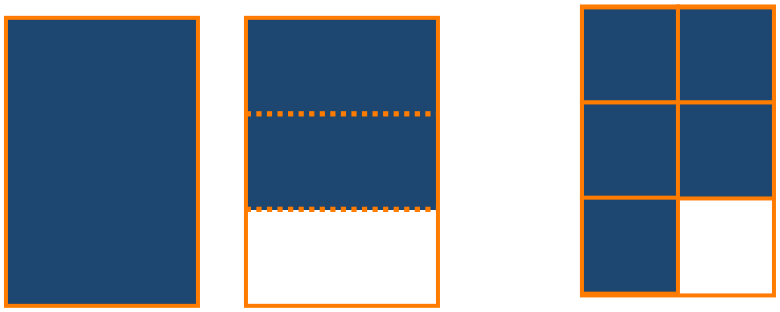
$1\frac{2}{3} + \frac{5}{6} \longrightarrow 1\frac{4}{6} + \frac{5}{6} = 1\frac{9}{6}$

What is another way to write the answer? Since $\frac{9}{6} = 1\frac{3}{6}$, $1\frac{9}{6} = 2\frac{3}{6}$ or $2\frac{1}{2}$.



1 pound 1 pound $\frac{1}{2}$ pound

Another way to solve this problem is to look at one and two thirds and realize that you need one third more to make two.



1 pound $\frac{2}{3}$ pound $\frac{5}{6}$ pound

If you take one third, or two sixths, from five sixths, three sixths remain. You now have two and three sixths. The answer is two and three sixths, or two and one half. This is an efficient way to think about the problem mentally.

1 pound 1 pound $\frac{1}{2}$ pound