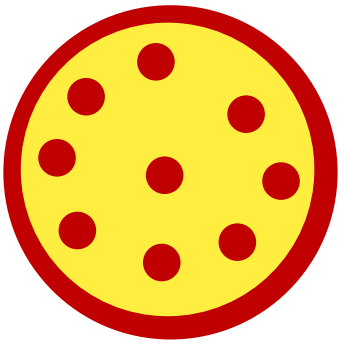
Fractions Bite – What's So Improper About Fractions?

Remember that a fraction can be used to count pieces of something (in this series, I've been using pizza.) So the fraction $\frac{5}{6}$ represents 5 pieces of a pizza that's been cut into 6 pieces

$$\frac{5}{6} = \frac{\#\ pieces\ you\ get}{total\ \#\ pieces}$$



But then what would $\frac{7}{6}$ mean?

$\frac{7}{6} = \frac{7\ pieces}{6\ total\ pieces}$, which means that we have more than a whole pizza:

Fractions like this, where the numerator (top) is greater than the denominator (bottom) are called **improper fractions**. Improper fractions can be rewritten in a form that includes a whole number and a fraction that's called a **mixed number**.

How do you convert from one type of fraction to another?

First, you can only convert improper fractions to mixed numbers – the numerator (top) has to be greater than the denominator (bottom.) If the numbers are small, you can sometimes work it out in your head.

Ex: Convert $\frac{13}{6}$ to a mixed number using pizzas:

What if the numbers are too big to draw a picture, or you don't like pizza?

If you don't want to draw a picture, you'll need to use long division to work it out.

Ex: Convert $\frac{13}{6}$ to a mixed number.

Ex: Convert $\frac{100}{7}$ to a mixed number.

Ex: Convert $\frac{10}{2}$ to a mixed number.

What if you want to convert back from a mixed number to an improper fraction?

Since we use division to go from improper fractions to mixed numbers, we use multiplication to go from mixed numbers to improper fractions:

Ex: Convert $2\frac{1}{6}$ to an improper fraction

Ex: Convert $10\frac{3}{5}$ to an improper fraction

When should you use each type? Generally speaking, unless you are asked to write answers as a mixed number, leave your answer as an improper fraction. The one exception is word problems – when answering a word problem, you should usually use a mixed number.