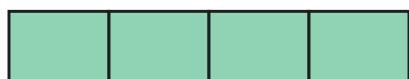


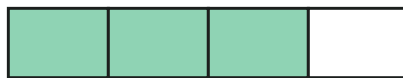
Improper Fractions and Mixed Numbers: How It Works

Two ways to write an amount that is more than one whole.

1. Two names for the same amount



1 whole



3 fourths

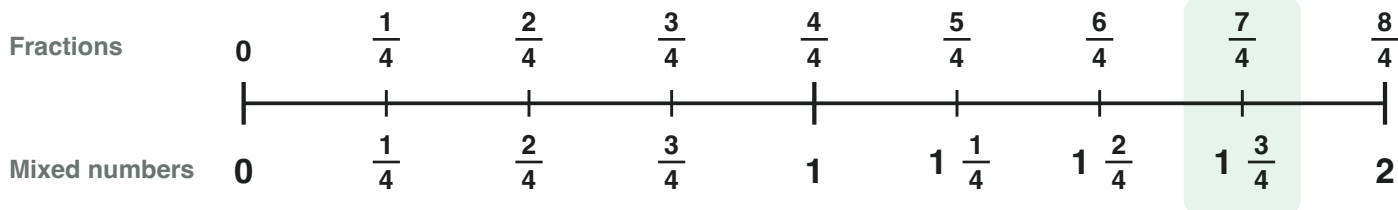
$$\frac{7}{4} = 1 \frac{3}{4}$$

improper fraction mixed number

Count every piece and you get 7 fourths: $\frac{7}{4}$. Count the whole first and you get 1 whole and 3 fourths: $1 \frac{3}{4}$.

An **improper fraction** has a top as big as or bigger than its bottom. A **mixed number** is a whole number and a fraction together.

2. On the number line



Past 1, every point has two names. It is the same point, so it is the same amount.

3. How to change one into the other

Improper fraction to mixed number $\frac{11}{4}$

Step 1. Divide the top by the bottom.
 $11 \div 4 = 2$ remainder 3.

Step 2. The answer, 2, is the whole number. The remainder, 3, is the new top.

Step 3. The bottom stays 4.

So $\frac{11}{4} = 2 \frac{3}{4}$

Mixed number to improper fraction $2 \frac{3}{5}$

Step 1. Multiply the whole number by the bottom.
 $2 \times 5 = 10$. That is 10 fifths.

Step 2. Add the top. $10 + 3 = 13$.

Step 3. The bottom stays 5.

So $2 \frac{3}{5} = \frac{13}{5}$

Improper to mixed: divide. The answer is the whole number, the remainder is the top.

Mixed to improper: whole number $\times$ bottom, then add the top.

Watch out

The bottom number never changes. Fourths stay fourths.

When the division has no remainder, the answer is a whole number with no fraction part. $\frac{8}{4}$ is exactly 2.



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