

**Grade:** 4th      **Topic:** Adding and Subtracting Fractions (4.NF.3)

**Key Vocabulary:**

**numerator** - the top number in a fraction that shows how many parts we have

**denominator** - the bottom number in a fraction that shows how many equal parts the whole is divided into

**mixed number** - a whole number and a fraction combined into one "mixed number"

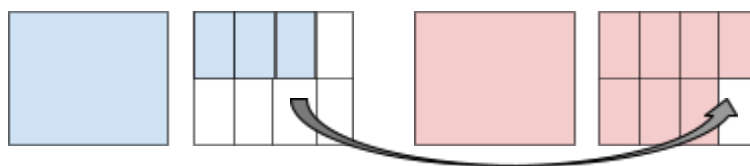
$1\frac{3}{4}$   
 ↑ whole number      ← fraction

**Key Ideas:**

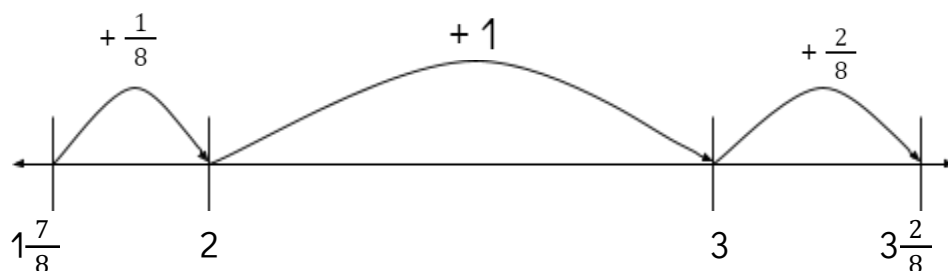
Students add and subtract fractions, including mixed numbers, using area and length models. They will also solve word problems and write equations to match visual representations.

**Addition Strategies**

$$1\frac{3}{8} + 1\frac{7}{8}$$



1. Draw both fractions.
2. Regroup ( $\frac{1}{8}$  can go with  $\frac{7}{8}$  to make a whole)
3. Find the total.  $3\frac{2}{8}$



**Sample Problems:**

Brielle ran  $1\frac{2}{3}$  miles less than Kim.  
 Brielle ran  $2\frac{2}{3}$  miles. How far did Kim run?

$$\frac{7}{12} + \frac{11}{12} = n$$

What does  $n$  represent?

- a.  $\frac{18}{24}$
- b.  $1\frac{8}{12}$
- c.  $1\frac{6}{12}$
- d.  $\frac{4}{12}$

$$\frac{1}{6} + \frac{3}{6} = n$$

What does  $n$  represent?

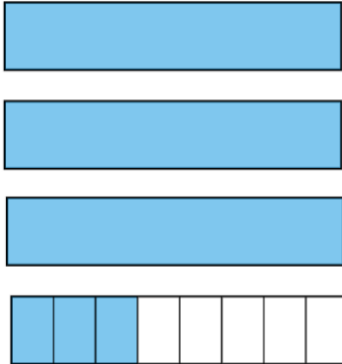
- a.  $\frac{4}{12}$
- b.  $\frac{2}{3}$
- c.  $\frac{4}{8}$
- d.  $\frac{5}{6}$

### Subtraction Strategies

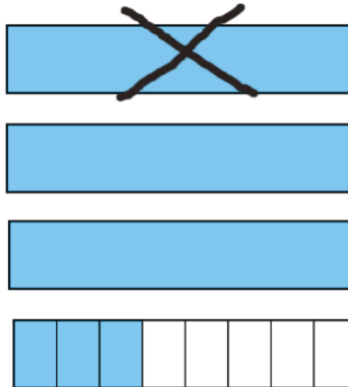
$$3\frac{3}{8} - 1\frac{7}{8}$$

#### Area Model/Bar Model

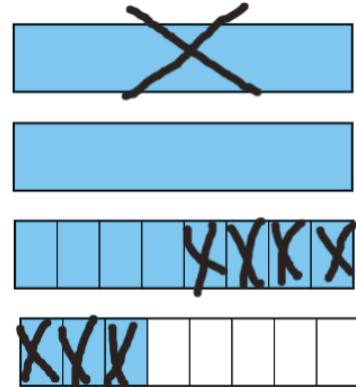
1. Draw the larger amount.



2. Cross out the wholes.

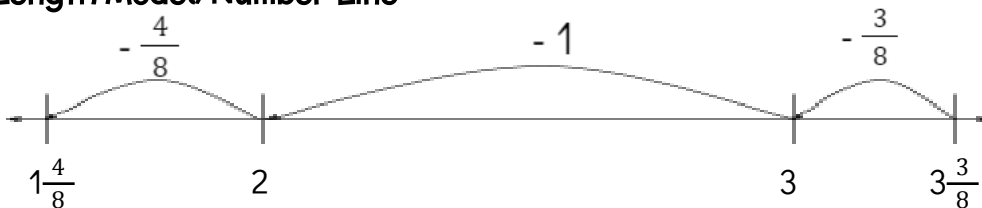


3. Ungroup to cross out the eighths.



4. Determine the amount left over.  $1\frac{4}{8}$

#### Length Model/Number Line



1. Begin at the starting number.
2. Decompose the mixed number to make easier jumps backward.
3. Determine your ending point.

\* The number line can also be used to find the difference between two fractions by starting at the smaller amount and jumping up to the larger amount.

#### Sample Problems:

There is some firewood on the pile. Mr. Mickelson adds  $\frac{7}{8}$  pounds of firewood. If there is now  $2\frac{1}{8}$  pounds of firewood on the pile, how much firewood was first there?

Which of the following fractions make this statement true?

$$\underline{\hspace{1cm}} - \frac{5}{8} >$$

a)  $\frac{11}{8}$ , b)  $1\frac{1}{6}$ , c)  $1\frac{1}{4}$ , d)  $1\frac{1}{3}$ , f)  $1\frac{2}{10}$

$$8\frac{4}{12} - 3\frac{7}{12} = n$$

What is the value of  $n$ ?