🕐 10–15 min **Interactive Learning**

Overview In this lesson, students solve problems by writing equivalent mixed numbers and improper fractions.

Essential Question How are mixed numbers and improper fractions related?

California Content Standard NS 1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers.

**Vocabulary** mixed number, improper fraction

Engage

Set the Purpose *Today you will be learning how to write fractions that represent more than a whole.*

Connect Point out to students that often there are more objects than people sharing them. *If 6 people share 10 snacks, they will each get more than 1 snack but less than 2 snacks.*

Pose the Problem *Three friends divide 4 snack bars equally. How much will each friend get?* Allow students to work in pairs to solve the problem. **LSEA4 ELD Listening and Speaking**

Model/ Demonstrate *What operation will you use?* [Division] *What division sentence represents this problem?* [$4 \div 3 = ?$] *What fraction represents the division?* [$\frac{4}{3}$] On the board, draw a large, thin rectangle and divide it into 4 equal parts. *Each of these parts will represent 1 snack bar. How many whole snack bars will each friend get?* [1] On the board, cross out 3 parts of the model and write 1 below it. *How many snack bars are left?* [1] *How can 3 friends share 1 snack bar?* [Divide the snack bar into 3 parts.] *What fraction represents the division?* [$\frac{1}{3}$] On the board, write $\frac{1}{3}$ next to the 1. *How many snack bars will each friend get?* [$1\frac{1}{3}$] **LSB2 ELD Listening and Speaking**

Academic Vocabulary Point out that students have written improper fractions and mixed numbers in order to solve the problem. *An improper fraction is a fraction in which the numerator is equal to or greater than the denominator. A mixed number has a whole number part and a fraction part.*
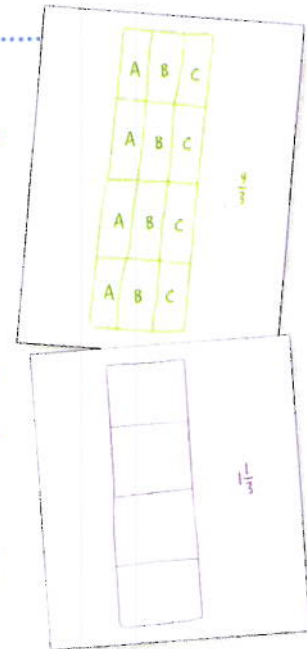
Extend *Write $\frac{37}{12}$ as a mixed number.* [$3\frac{1}{12}$] 📘 **eTools** Fractions www.pearsonsuccessnet.com.

⏰ 10–15 min # Interactive Learning

Overview In this activity, students formulate a method for subtracting fractions with unlike denominators.

Essential Question How can you subtract fractions with unlike denominators?

California Content Standard NS 2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less) and express answers in the simplest form.

Materials Fraction Models: Strips [Teaching Tool 27], scissors (1 per pair)

Engage

Set the Purpose *You have added fractions with unlike denominators. Today you will learn to subtract fractions with unlike denominators.*

Connect *When in everyday life might you want to subtract fractions with different denominators?* [Possible answers: measuring amounts for recipes; comparing lengths]


Pose the Question *Rose bought $\frac{4}{5}$ yd of copper pipe. She used $\frac{1}{2}$ yd to repair the shower. How much pipe does she have left? Work with a partner to solve.* Students may solve the problem in any way they choose, including using fraction strips or drawings. Have them record their work on paper. Afterward, invite students to share their solutions. [$\frac{3}{10}$ yd] **WEI2 ELD Writing**

Link to Prior Knowledge *How would you add two fractions with unlike denominators, such as $\frac{4}{5}$ and $\frac{1}{2}$?* [Write equivalent fractions with like denominators and add the numerators; $\frac{4}{5} = \frac{8}{10}$ and $\frac{1}{2} = \frac{5}{10}$; $\frac{8}{10} + \frac{5}{10} = \frac{13}{10}$ or $1\frac{3}{10}$.] Remind students that they know how to subtract fractions with like denominators. **LSA6 ELD Listening and Speaking**

Expand Student Response *You know how to add fractions with unlike denominators and how to subtract fractions with like denominators. How do you think you will subtract fractions with unlike denominators?* [Rewrite the fractions as equivalent fractions that share a common denominator. Find the difference between the numerators.]

$\frac{8}{10} - \frac{5}{10} = \frac{3}{10}$ yard left

$\frac{4}{5} = \frac{8}{10}$

$\frac{2}{5} = \frac{5}{10}$

$\frac{3}{10}$ yard
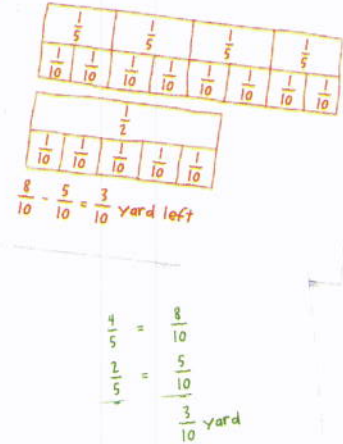
Extend Subtract: $\frac{3}{4} - \frac{1}{3} - \frac{1}{6}$. [$\frac{3}{12}$ or $\frac{1}{4}$]

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