

2 Develop the Concept: Interactive



10–15 min

Interactive Learning

Overview Students compare and order fractions using models. They change fractions to equivalent fractions to compare.



Essential Question How can you use equivalent fractions to compare and order fractions?

California Content Standard NS 3.1

Compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context (e.g., $\frac{1}{2}$ of a pizza is the same amount as $\frac{2}{4}$ of another pizza that is the same size; show that $\frac{3}{8}$ is larger than $\frac{1}{4}$).

Materials Fraction Models: Strips (Teaching Tool 28)



Set the Purpose *You have learned that fractions name equal parts of a whole. Today, you will compare and order fractions.*

Connect *When might you need to decide which of two fractions is greater?*
[Possible answers: To compare slices of fruit, lengths on a sports field]

Pose the Problem

Lois and Tran are painting two lines on a ball field. When they finish, the lines will be of equal length. Tran has painted $\frac{3}{8}$ of his line. Lois has painted $\frac{1}{4}$ of her line. Which line is longer? Give students time to use fraction strips to decide the order. [Tran's line is longer.]

Expand Student Responses

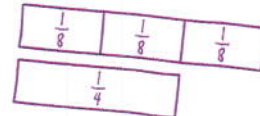
How do you decide which fraction is greater? [Use fraction strips to show one $\frac{1}{4}$ strip and three $\frac{1}{8}$ strips; put the $\frac{1}{8}$ strips right next to one another and put the $\frac{1}{4}$ strip below them. The strips should begin at the same place on the left.] **LS1 ELD Listening and Speaking**

Model / Demonstrate

Model how to use equivalent fractions to help compare. Display three $\frac{1}{8}$ strips and one $\frac{1}{4}$ strip. *How can you use $\frac{1}{8}$ strips to match the length of the $\frac{1}{4}$ strip?* [Show two $\frac{1}{8}$ strips.] *How do $\frac{1}{4}$ and $\frac{3}{8}$ compare?* [$\frac{3}{8}$ is greater than $\frac{2}{8}$, so $\frac{3}{8}$ is greater than $\frac{1}{4}$.] **LSE12 ELD Listening and Speaking**

Small-Group Interaction

On the board, write the following two pairs of fractions: " $\frac{3}{6}$, $\frac{1}{3}$ " and " $\frac{1}{2}$, $\frac{2}{3}$ ". *Work together to compare each pair of fractions. Which fraction is greater? Draw pictures of the fraction strips you use and record your answers.* [$\frac{3}{6} > \frac{1}{3}$, $\frac{2}{3} > \frac{1}{2}$]



$\frac{3}{8} > \frac{1}{4}$
Tran's line is longer.



Use fraction strips to find at least three equivalent fractions for $\frac{1}{2}$.
[Possible answers: $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, $\frac{5}{10}$...]



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2 Develop the Concept: Interactive



10–15 min

Interactive Learning

Overview Students use fraction strips to compare fractions.

Essential Question How can you use models to compare fractions?

California Content Standard NS 3.1 Compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context.

Materials Scissors; crayons; Fraction Models: Strips (Teaching Tool 28), 1 set per group

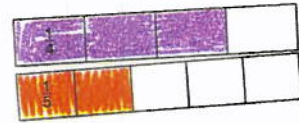


Set the Purpose *You already know how to compare whole numbers. Today you will learn to compare fractions.*

Connect *How can you use the greater than and less than symbols to compare 35 and 42 in two different ways? [35 < 42; 42 > 35]*

Pose the Problem

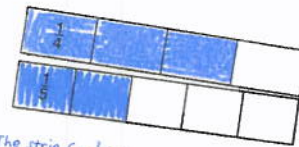
*Trina and Cal are painting two walls that are the same size and shape. Trina has painted $\frac{3}{4}$ of one wall. Cal has painted $\frac{2}{5}$ of the other wall. Who painted more of the wall, Trina or Cal? Work with your partner and use the fraction strips to help you. Invite students to share their work and solutions. **LS1| ELD Listening and Speaking***



Trina painted more.

Use Objects/ Manipulatives

How much of the wall did Trina paint? [$\frac{3}{4}$] What fraction strip can you use to show that part of the wall? [the $\frac{1}{4}$ strip] How many parts of the strip do you need to color to show $\frac{3}{4}$? [3] Give students time to color $\frac{3}{4}$ of the strip if they have not already done so. Repeat for the $\frac{2}{5}$ of the wall Cal painted. Compare the colored parts of the strips. Which colored part is longer? [$\frac{3}{4}$] So which is greater, $\frac{3}{4}$ or $\frac{2}{5}$? [$\frac{3}{4}$] Who painted more? [Trina]



*The strip for $\frac{3}{4}$ is longer than the strip for $\frac{2}{5}$.
 $\frac{3}{4} > \frac{2}{5}$.
So Trina painted more than Cal.*

Written Record

*On the board, write $\frac{3}{4}$ and $\frac{2}{5}$ with a space between them for the inequality symbol. When you write a comparison symbol, which number does the symbol point to, the greater or the smaller number? [the smaller number] So which of these fractions should the symbol point to? [$\frac{2}{5}$] Write > between the fractions. How else could we write a number sentence to compare these fractions? [$\frac{2}{5} < \frac{3}{4}$] **W1| ELD Writing***

Small-Group Interaction

On the board, write: $\frac{1}{3} \circ \frac{1}{6}$, $\frac{1}{2} \circ \frac{7}{10}$, and $\frac{5}{8} \circ \frac{11}{12}$. Show each pair of fractions with fraction strips. Then use the strips to compare the fractions. Use > or < to write complete number sentences. [$\frac{1}{3} > \frac{1}{6}$; $\frac{1}{2} < \frac{7}{10}$; $\frac{5}{8} < \frac{11}{12}$]



Use your fraction strips. Write $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{5}{8}$ in order from least to greatest. [$\frac{2}{3}$, $\frac{1}{2}$, $\frac{5}{8}$]



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