

Add Unlike Fractions

Planning Your Time		
Intro & Set-up	Assess	Correct
15 min	20 min	20 min
		

Objective

Add fractions with unlike denominators.

Materials

- Deluxe Rainbow Fraction Circles
- Overhead Deluxe Rainbow Fraction Circles
- Prepare transparency of Fraction Master 1: Fraction Circles

Grouping

Whole class, then small groups

Open It Up

Distribute sets of fraction circles to students. Have them follow along as you demonstrate the lesson. Write the fraction $\frac{1}{2}$ and show half (pink piece) on one of the circles on the fraction circle transparency on the overhead. Review how to find equivalent fractions and how to add fractions with like denominators.

Ask: What part of the circle is shown? [$\frac{3}{4}$] What is an equivalent fraction in fourths? [$\frac{2}{4}$] Eighths? [$\frac{6}{8}$] Model each of the equivalent fractions on the fraction circles transparency.

Write the problem $\frac{1}{4} + \frac{1}{4} = \underline{\quad}$ at the top of the fraction circle transparency.

Ask: How do you add fractions with like denominators? [Add the numerators; use the same denominator.] What is the sum? [$\frac{2}{4}$]

Can you write the sum another way? Explain. [Simplify $\frac{2}{4}$ to $\frac{1}{2}$.]

$\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$ ← Add the numerators.
 $\frac{1}{4} \quad \frac{1}{4} \quad \frac{2}{4}$ ← Use the same denominator.

Demonstrate & Discuss

Write the problem $\frac{1}{2} + \frac{1}{4} = \underline{\quad}$ at the top of the fraction circle transparency.

Ask: What do you notice about these two fractions? [The denominators are different.] How would you model this addition problem? [Show $\frac{1}{2}$ (pink) and $\frac{1}{4}$ (yellow) together in the circle.]

Say: In order to add fractions with unlike denominators, you have to find equivalent fractions for one or both of the fractions so that both fractions have the same denominator.

Ask: What is an equivalent fraction for $\frac{1}{2}$ that might

be used to add these two fractions? [$\frac{2}{4}$]

Place the two yellow pieces ($\frac{2}{4}$) on top of the pink piece ($\frac{1}{2}$) to show that the fractions are equivalent. Write $\frac{2}{4} + \frac{1}{4} = \underline{\quad}$ under the first number sentence. Since the fractions now have like (or common) denominators, you can add the numerators and use the same denominator.

$$\frac{1}{2} + \frac{1}{4} = \underline{\quad}$$

$$\downarrow \quad \downarrow$$

$$\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$

Student Activity

Plan ahead: Each small group will need a set of fraction circles.

Tell students to use the large circle as a work mat to model the addition problems. Leave the model in place long enough to draw a picture of the addends with unlike denominators and then a picture with like denominators showing the sum. Challenge students to rewrite the sum for problem 7 in simplest form.

Informal Assessment

Observe students as they model the given problem and then use equivalent fractions.

Ask: How do you know which equivalent fraction to use to replace one of the addends? [I look at both fractions and use the equivalent fraction that matches the denominator of the other fraction.] / COMPREHENSION/

Note: The response is true for the problems in this lesson; however, when adding fractions like $\frac{1}{3}$ and $\frac{1}{4}$, 3 and 4 must be factors of the denominator (12).

Sum It Up

Say: Today we learned how to add fractions with unlike denominators.

Ask: What is $\frac{1}{4} + \frac{1}{8}$? [$\frac{2}{8} + \frac{1}{8} = \frac{3}{8}$]/APPLY/

Extension

Have students find sums for pairs of unlike fractions using halves, fifths, and tenths; or halves, thirds, and sixths; or halves, thirds, fourths, sixths, and twelfths.