In this lesson, students learn to recognize equivalent fractions. They begin with denominators that are powers of 2, so that they can check for equivalent fractions by multiplying by 2. They then learn to find equivalent fractions by multiplying by any number, and finally, to find equivalent fractions by dividing.

**COMMON CORE STANDARD(S)**

- **3.NF.A.3.a** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
- **3.NF.A.3.b** Recognize and generate simple equivalent fractions, (e.g., \( \frac{1}{2} = \frac{2}{4}, \frac{4}{6} = \frac{2}{3} \)). Explain why the fractions are equivalent, e.g., by using a visual fraction model.
- **3.NF.A.3.c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
- **3.NF.A.3.d** Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

**DURATION**

Two 45-minute classroom periods
Engage and Explore, Explain, Elaborate page 1—one 45-minute classroom period
Elaborate page 2, Evaluate—second 45-minute classroom period

**ENGAGE AND EXPLORE**

Open the class with a challenging problem that warms up students to thinking about equivalent fractions on their own:

A recipe for croissants needs \( \frac{27}{36} \) of a block of butter. How can you cut up a whole block of butter to get \( \frac{27}{36} \)? Is there more than one way?
Ask students to discuss the meaning of 27 and 36 in the fraction, and then ask students to write or draw a possible solution. Some students may focus on different ways to cut the block into 36 pieces, and other students may start thinking about ways to cut the block into fewer pieces. Either way, this exercise helps students recall what they know about fractions, and may start them thinking about equivalent fractions as well. It is not necessary to have them share their solutions at the end of the exercise, since some students may have arrived at a conclusion that uses equivalent fractions, which could leave some students confused. You could revisit the solutions at the end of the lesson.

EXPLAIN

WATCH THE GENERATION GENIUS EQUIVALENT FRACTIONS VIDEO AS A GROUP
Facilitate a conversation using the Discussion Questions.

ELABORATE

Direct students to use their new understanding to complete the practice problem worksheets. Page 1 contains bare mathematical problems to solidify understanding of the process. Page 2 contains application problems for students to apply the process to solve real-world problems.

EVALUATE

Have students gather in groups of 2 or 4 to compare and discuss their answers to the problems. Allow students enough time to communicate with their peers about their process and their thinking. Encourage students to use correct mathematical language when discussing their process. Have each group choose two questions they want more information about, or they want to discuss as a class.

When groups are ready, take questions from students. Encourage groups to answer questions brought up by other groups.

Students can play the online Kahoot! quiz game located below the video. It provides downloadable scores at the end of the quiz game. Alternatively, you can use the paper quiz, or the exit ticket questions. All these resources are located below the video in the assessment section.