

Lesson 15: Common Denominators to Compare

Standards Alignments

Building On	4.OA.B.4
Addressing	4.NF.A.1, 4.NF.A.2
Building Towards	4.NF.A.2

Teacher-facing Learning Goals

- Compare two fractions with different denominators by rewriting both into equivalent fractions with a common denominator.

Student-facing Learning Goals

- Let's compare fractions by writing equivalent fractions with the same denominator.

Lesson Purpose

The purpose of this lesson is for students to compare two fractions with different denominators by rewriting both into an equivalent fraction with a common denominator.

Previously, students worked with fractions whose features encouraged different comparison strategies. For instance, the fractions might:

- have a common numerator or a common denominator
- be noticeably greater or less than a familiar benchmark, and their distance from a benchmark could be discerned
- have related denominators, in which one denominator is a factor or a multiple of the denominator of the other, making it intuitive to rewrite one fraction into an equivalent fraction with the same denominator as the second fraction

In this lesson, students encounter pairs of fractions with different denominators, in which neither denominator is a factor or multiple of the other, and for which other means of comparison are not feasible or intuitive. These fractions motivate students to find another way to compare: by rewriting both fractions into equivalent fractions with a shared denominator.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR8 (Activity 1)

Instructional Routines

What Do You Know About ____? (Warm-up)

Lesson Timeline

Warm-up	5 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

How did students' earlier work on factors and multiples support their work in this lesson? What surprised you about the insights students brought forth to help them find common denominators? What challenges did you not anticipate seeing?

Cool-down (to be completed at the end of the lesson)

 5 min

Which is Greater?

Standards Alignments

Addressing 4.NF.A.2

Student-facing Task Statement

In each pair of fractions, which fraction is greater? Explain or show your reasoning.

- $\frac{3}{10}$ or $\frac{2}{6}$
- $\frac{99}{100}$ or $\frac{9}{10}$

Student Responses

- $\frac{2}{6}$. Sample reasoning: $\frac{3 \times 6}{10 \times 6} = \frac{18}{60}$ and $\frac{2 \times 10}{6 \times 10} = \frac{20}{60}$.
- $\frac{99}{100}$. Sample reasoning: $\frac{99}{100}$ is $\frac{1}{100}$ less than 1. $\frac{9}{10}$ is $\frac{1}{10}$ less than 1, so it is farther away from 1 and less than $\frac{99}{100}$.