Lesson 11: Use Factors to Find Equivalent Fractions

Standards Alignments

Addressing   4.NF.A.1

Teacher-facing Learning Goals

- Generate equivalent fractions by using factors of the numerator and denominator.
- Reason about fraction equivalence numerically, by using multiples or factors of the numerator and denominator.

Student-facing Learning Goals

- Let's find equivalent fractions by working with numerators and denominators.

Lesson Purpose

The purpose of this lesson is for students to generate equivalent fractions numerically, by using factors and multiples of the numerator and denominator.

In earlier lessons, students saw that one way to generate equivalent fractions is by grouping unit fractions on a number line into larger units. For instance, 12 twelfths could be put in groups of 3 to make 4 equal parts, each part being a fourth. Or they could be put into groups of 2 to make 6 equal parts, each part being a sixth, which means that $\frac{12}{12} = \frac{4}{4} = \frac{6}{6}$. Some students may have related these observations to the fact that $12 \div 4 = 3$ and $12 \div 2 = 6$. These insights are formalized and generalized in this lesson.

Students have also generated equivalent fractions and verified equivalence by multiplying the numerator and denominator by the same number. In this lesson, they find equivalent fractions by dividing a and b by a factor n that is common to both numbers.

This lesson has a Student Section Summary.

Access for:

♿ Students with Disabilities

- Engagement (Activity 2)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

Card Sort (Activity 3), Which One Doesn't Belong? (Warm-up)

Materials to Copy

- Fractions Galore (groups of 3): Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

What evidence did you see of students choosing a method strategically as they generated equivalent fractions? For students who chose a fixed way regardless of the given fractions, what questions could you ask them to prompt them to be more strategic?

Cool-down (to be completed at the end of the lesson)   🕐   5 min

Find Three or More

Standards Alignments

Addressing   4.NF.A.1

Student-facing Task Statement

Name at least 3 fractions that are equivalent to $\frac{20}{100}$. Explain or show your reasoning.

Student Responses

Sample responses: $\frac{2}{10}, \frac{4}{20}, \frac{10}{50}, \frac{40}{200}$

$\frac{20 \div 2}{100 \div 2} = \frac{10}{50}, \frac{20 \div 5}{100 \div 5} = \frac{4}{20}, \frac{20 \div 10}{100 \div 10} = \frac{2}{10}, \frac{20 \times 2}{100 \times 2} = \frac{40}{200}$