Lesson 6: Relate Fractions to Benchmarks

Standards Alignments

Building On   3.NF.A.2, 3.NF.A.3
Addressing   4.NF.A.2
Building Towards   4.NF.A.2

Teacher-facing Learning Goals

- Locate fractions on the number line and compare their size to $\frac{1}{2}$ and to 1.

Student-facing Learning Goals

- Let's compare the size of fractions to $\frac{1}{2}$ and to 1.

Lesson Purpose

The purpose of this lesson is for students to locate fractions on the number line and compare their size to $\frac{1}{2}$ and to 1.

In this lesson, students continue to identify fractions on the number line by reasoning about known distances or intervals. They also consider the size of fractions in relation to $\frac{1}{2}$ and 1, by examining the position and distance of fractions from these benchmarks on the number line.

Although students consider the distance between a point on the number line and either $\frac{1}{2}$ or 1, finding differences of two fractions is not the focus of this lesson. (That mathematical work will take place in a future unit.) What is important is for students to reason about the relative sizes of fractions using number lines, their knowledge of equivalent fractions and familiar benchmarks, and the meaning of numerator and denominator. Activity 2 is optional and allows an opportunity for students to use the relationships between numerator and denominator in a fraction and between different denominators without requiring them to use the number line.

This lesson has a Student Section Summary.

Access for:

♿ Students with Disabilities

- Representation (Activity 3)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

Card Sort (Activity 2), Notice and Wonder (Warm-up)

Materials to Copy

- Where Do They Belong (groups of 2): Activity 2

Lesson Timeline

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

Teacher Reflection Question

What question asked today seemed to promote students reasoning about benchmarks to compare fractions?

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

Greater Than or Less Than . . .?

Standards Alignments

Addressing   4.NF.A.2

Student-facing Task Statement

For each question, explain or show your reasoning. Use a number line if it is helpful.

1. Is $\frac{6}{10}$ more or less than $\frac{1}{2}$?
2. Is $\frac{11}{12}$ more or less than 1?

Student Responses

1. More than $\frac{1}{2}$. Sample reasoning: I know that $\frac{5}{10}$ is equivalent to $\frac{1}{2}$ and $\frac{6}{10}$ is more than $\frac{5}{10}$.
2. Less than 1. Sample reasoning: I know that $\frac{12}{12}$ is 1 and $\frac{11}{12}$ is less than $\frac{12}{12}$.