Lesson 1: Add, Subtract, and Multiply Fractions

Standards Alignments

Addressing   4.NF.B.3, 4.NF.B.4, 4.NF.C.5

Teacher-facing Learning Goals

- Solve problems involving addition and subtraction of fractions.
- Solve problems involving multiplication of a fraction by a whole number.

Student-facing Learning Goals

- Let's practice solving problems involving fractions.

Lesson Purpose

The purpose of this lesson is for students to represent and solve problems involving fraction operations. Students also reason about equivalence to compare fractions to whole numbers.

In this lesson, students practice multiplying a fraction and a whole number and adding and subtracting fractions, including mixed numbers. They rely on their understanding of equivalence and the properties of operations to decompose fractions, whole numbers, and mixed numbers to enable comparison, addition, subtraction, and multiplication (MP7).

If students need additional support with the concepts in this lesson, refer back to Unit 3, Section B in the curriculum materials.

Access for:

♿ Students with Disabilities

- Representation (Activity 2)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min

Teacher Reflection Question

What evidence from today's lesson indicates students are thinking flexibly as they add, subtract, and multiply fractions?

Activity 3	10 min
Lesson Synthesis	10 min
Cool-down	5 min

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

Compare to 2

Standards Alignments

Addressing   4.NF.B.3

Student-facing Task Statement

Here are some fractions: $\frac{15}{10}$ $\frac{13}{10}$ $\frac{53}{100}$ $\frac{9}{10}$

1. Select two fractions that have a sum greater than 2. Explain or show your reasoning.

2. Use all four fractions to write an expression that has a value greater than 1 but less than 2.

Student Responses

1. Sample response:

   a. $\frac{13}{10} + \frac{9}{10} = \frac{22}{10} = \frac{10}{10} + \frac{10}{10} + \frac{2}{10} = 2\frac{2}{10}$

   b. I know $\frac{15}{10}$ is the same as $1\frac{1}{2}$. All the other choices are more than $\frac{1}{2}$, so I could pick $\frac{15}{10}$ and any of the others.

   c. $\frac{15}{10} + \frac{53}{100} = \frac{203}{100} = \frac{100}{100} + \frac{100}{100} + \frac{3}{100} = 2\frac{3}{100}$

2. $\frac{15}{10} + \frac{53}{100} - \frac{9}{10} + \frac{13}{10}$ or $\frac{15}{10} + \frac{9}{10} - \frac{53}{100} - \frac{13}{100}$