Lesson 11: Subtract Fractions Flexibly

Standards Alignments

Addressing   4.NF.B.3.c, 4.NF.B.3.d

Teacher-facing Learning Goals

- Subtract fractions and mixed numbers by decomposing numbers and reasoning about equivalence.

Student-facing Learning Goals

- Let's find all kinds of differences.

Lesson Purpose

The purpose of this lesson is for students to subtract fractions, including mixed numbers, by decomposing numbers and writing equivalent fractions, and to recognize when these strategies are useful for finding differences.

In the previous lesson, students learned to subtract a fraction from a whole number numerically, by writing an equivalent fraction for the whole number or decomposing the whole number into a sum of fractions with the name denominator. This lesson extends that work to include mixed numbers. It also prompts students to look for structure in subtraction expressions where decomposing one or both numbers makes the expression easier to evaluate (MP7). The work here builds students' ability to subtract fractions flexibly.

Access for:

♿ Students with Disabilities

- Action and Expression (Activity 1)

Instructional Routines

MLR1 Stronger and Clearer Each Time (Activity 2), Which One Doesn't Belong? (Warm-up)

Required Preparation

- Each group of 4 needs tools for creating a visual display during the lesson synthesis.

Lesson Timeline

Warm-up	10 min

Teacher Reflection Question

Reflect on evidence of student thinking that you observed today. Whose thinking was voiced and

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

heard? Whose thinking was not but could have enriched the conversations? What prompts or structures might better enable the latter to share their voice and reasoning?

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

A Shorter Strip, Please

Standards Alignments

Addressing   4.NF.B.3.d

Student-facing Task Statement

Lin has a strip of paper that is $7\frac{1}{4}$ inches long and needs to be trimmed by $2\frac{3}{4}$ inches. What is the length of the paper strip after it is trimmed? Explain or show your reasoning.

Student Responses

$4\frac{2}{4}$ inches. Sample reasoning:

- $7\frac{1}{4}$ is $6 + 1 + \frac{1}{4}$, which is $6 + \frac{4}{4} + \frac{1}{4}$ or $6 + \frac{5}{4}$. I subtracted 2 wholes from 6 wholes, which gives 4 wholes, and then subtracted $\frac{3}{4}$ from $\frac{5}{4}$, which gives $\frac{2}{4}$.

- I know 3 is $\frac{1}{4}$ more than $2\frac{3}{4}$. I subtracted 3 from $7\frac{1}{4}$ to get $4\frac{1}{4}$, and the I added $\frac{1}{4}$ back because I subtracted $\frac{1}{4}$ more than needed earlier.