

Lesson 10: The Numbers in Subtraction

Standards Alignments

Building On 4.NF.B.3.a, 4.NF.B.4.b
Addressing 4.NF.B.3.c, 4.NF.B.3.d, 4.NF.B.4.c

Teacher-facing Learning Goals

- Subtract a fraction from a whole number by decomposing the whole number and reasoning about equivalence.

Student-facing Learning Goals

- Let's subtract fractions from whole numbers.

Lesson Purpose

The purpose of this lesson is for students to recognize that a fraction can be subtracted from a whole number by writing an equivalent fraction for the whole number. It can also be done by decomposing the whole number, the fraction, or both, into a sum of fractions with the same denominator.

In earlier lessons, students explored addition and subtraction of fractions in context and out of context. They used diagrams to represent and find the values of sums and differences, and they also reasoned numerically. Students learned that a non-unit fraction can be decomposed—in at least one way—into a sum of other fractions with the same denominator. They recognized adding and subtracting fractions as joining and removing parts that refer to the same whole.

In this lesson, students apply these insights, as well as their knowledge of equivalent fractions from an earlier unit and from grade 3, to find differences of a whole number and a fraction.

Access for:

Students with Disabilities

- Representation (Activity 1)

Instructional Routines

5 Practices (Activity 1), Card Sort (Activity 2), MLR2 Collect and Display (Activity 2), Number Talk (Warm-up)

Materials to Copy

- Card Sort: Twelfths (groups of 2): Activity 2

Lesson Timeline

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

Teacher Reflection Question

How did the student work that you selected impact the direction of class discussion? How would you adjust your selection if you teach the lesson again?

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

 5 min

Two Differences

Standards Alignments

Addressing 4.NF.B.3.c

Student-facing Task Statement

Find the value of each difference. Show your reasoning.

- $2 - \frac{5}{6}$
- $4 - \frac{11}{6}$

Student Responses

- $\frac{7}{6}$ or $1\frac{1}{6}$. Sample response:
 - $2 - \frac{5}{6} = \frac{12}{6} - \frac{5}{6} = \frac{7}{6}$
 - $2 - \frac{5}{6} = (1 + \frac{6}{6}) - \frac{5}{6} = 1 + (\frac{6}{6} - \frac{5}{6}) = 1 + \frac{1}{6} = 1\frac{1}{6}$
- $\frac{13}{6}$ or $2\frac{1}{6}$. Sample response:
 - $4 - \frac{11}{6} = \frac{24}{6} - \frac{11}{6} = \frac{13}{6}$
 - $4 - \frac{11}{6} = (2 + \frac{12}{6}) - \frac{11}{6} = 2 + (\frac{12}{6} - \frac{11}{6}) = 2 + \frac{1}{6} = 2\frac{1}{6}$
 - $\frac{11}{6}$ is $\frac{1}{6}$ away from 2. I subtracted 2 from 4, and then add $\frac{1}{6}$ back to get $2\frac{1}{6}$