

Lesson 12: Equations with Unknowns

Standards Alignments

Addressing 2.MD.B.6, 2.NBT.B.5, 2.OA.A.1

Teacher-facing Learning Goals

- Write equations and represent sums and differences on a number line.

Student-facing Learning Goals

- Let's represent equations with a ? for the unknown.

Lesson Purpose

The purpose of this lesson is for students to represent equations with an unknown in all positions on the number line and find the unknown values.

In previous lessons, students found the value of sums and differences within 100, represented their thinking on the number line, and compared different methods.

In this lesson, students find the number that makes addition and subtraction equations true within 100 in equations with unknowns in all positions. They continue to think about the relationships between the numbers in each equation and reason about how they can use the structure of the number line, the relationship between addition and subtraction, and their understanding of place value to find the number that makes each equation true (MP7). The context of the first activity encourages all students to reason with the number line. In the second activity, students may use the methods and representations that make the most sense to them. The work of this lesson helps students make sense of the way the number line can be used to represent and solve story problems which will be useful in upcoming lessons.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

True or False (Warm-up)

Materials to Copy

- Number Line to 100 (groups of 1): Activity 1

- Number Line to 100 (groups of 1): 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

Reflect on how students work together during partner work. How are students supporting one another when reasoning together and sharing mathematical ideas?

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

 5 min

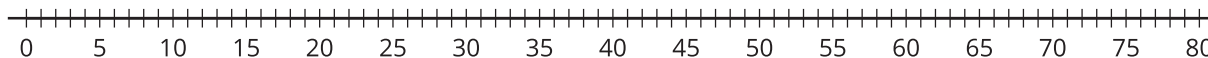
Jumps on the Number Line

Standards Alignments

Addressing 2.MD.B.6, 2.NBT.B.5

Student-facing Task Statement

- I started on 59 and jumped to 68. How far did I jump?
 - Write an equation to represent the problem with a ? for the unknown.
 - Find the number that makes the equation true.
 - Represent your thinking on the number line.



Student Responses

- $59 + ? = 68$
 - 9
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