

Lesson 12: Number Talk

Standards Alignments

Addressing 4.NBT.A.1, 4.NBT.B, 4.NF.B, 4.NF.B.4

Teacher-facing Learning Goals

- Apply understanding of addition, subtraction, multiplication, and division to create a Number Talk activity.

Student-facing Learning Goals

- Let's create our own Number Talks.

Lesson Purpose

The purpose of this lesson is for students to use patterns, structure, and understanding of properties of operations to design a series of expressions for a Number Talk activity.

This lesson provides an opportunity to listen to ways in which students make use of structure and repeated reasoning to design a Number Talk. In the warm-up, students are given a typical Number Talk with four expressions and discuss how the expressions are related. In the first activity, students practice anticipating the different ways someone might reason about addition and subtraction for a group of expressions and create expressions that would fit with the given string of expressions. In the final two activities, students are given incomplete sets with a decreasing number of expressions and asked to write new expressions to create a Number Talk activity. This lesson can take 1–2 days if students facilitate their creations with other groups.

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR7 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min

Teacher Reflection Question

Think about two questions you asked students today: a question that yielded insight into student thinking and one that you wish you had framed differently. How do the questions

Activity 3	30 min	compare? How would you ask the latter differently to elicit the desired reasoning or insight?
Lesson Synthesis	10 min	
Cool-down	5 min	

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

 5 min

Reflection

Standards Alignments

Addressing 4.NBT.B, 4.NF.B

Student-facing Task Statement

As mathematicians, we often use patterns to help us reason about new problems. Observing something that repeats over and over can also help us solve problems.

Describe a time, during today's lesson or recently, when you noticed a pattern or a repetition and used it to help you think through a problem. How did the pattern or repetition help you?

Student Responses

Sample response: Recently, I noticed that one way to find the product of a whole number and a fraction like $\frac{1}{8}$ is to divide the whole number by the denominator of the fraction. When I multiply 16 by $\frac{1}{8}$, the result is the same as the result of dividing 16 by 8. I have used this observation to check my answers to multiplication problems like this.