

Lesson 16: Reason About Quotients

Standards Alignments

Addressing 5.NF.B.7, 5.NF.B.7.b

Teacher-facing Learning Goals

- Assess the reasonableness of quotients.
- Divide unit fractions and whole numbers.

Student-facing Learning Goals

- Let's apply what we know about division to make sure our answers make sense.

Lesson Purpose

The purpose of this lesson is for students to find quotients involving a whole number and a unit fraction and assess the reasonableness of their answers.

In previous lessons students found the value of quotients of a unit fraction and a whole number. In this lesson they think about comparing the value of these quotients without calculating. For example, students know from earlier work that $48 \div 4$ is less than $48 \div 2$ because there are more groups of 2 in 48 than groups of 4. By the same reasoning $10 \div \frac{1}{3}$ is less than $10 \div \frac{1}{5}$ because $\frac{1}{5}$ s are smaller than $\frac{1}{3}$ s and so it takes more $\frac{1}{5}$ s to make an amount. This kind of reasoning also shows that $\frac{1}{4} \div 15$ is less than $\frac{1}{4} \div 12$ because dividing the same amount into more pieces creates smaller pieces.

Access for:

Students with Disabilities

- Engagement (Activity 1)

Instructional Routines

Estimation Exploration (Warm-up), MLR1 Stronger and Clearer Each Time (Activity 1)

Lesson Timeline

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

Teacher Reflection Question

Reflect on a time your thinking changed about something in class recently. How will you alter your teaching practice to incorporate your new understanding?

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

🕒 5 min

Both Types of Problems

Standards Alignments

Addressing 5.NF.B.7

Student-facing Task Statement

Which is greater, $5 \div \frac{1}{3}$ or $\frac{1}{3} \div 5$. Explain or show your reasoning.

Student Responses

Sample response: $5 \div \frac{1}{3}$ is greater than $\frac{1}{3} \div 5$. $5 \div \frac{1}{3}$ is greater than 1 because there are a lot more than one thirds in 5. $\frac{1}{3} \div 5$ is less than 1 because $\frac{1}{3}$ is being divided into smaller pieces.