# Lesson 16: Reason About Quotients

### Standards Alignments

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| --- | --- |
| 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 $48÷4$ is less than $48÷2$ because there are more groups of 2 in 48 than groups of 4. By the same reasoning $10÷\frac{1}{3}$ is less than $10÷\frac{1}{5}$ 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 $\frac{1}{4}÷15$ is less than $\frac{1}{4}÷12$ 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

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| --- | --- |
| 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 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) 5min

Both Types of Problems

### Standards Alignments

|  |  |
| --- | --- |
| Addressing | 5.NF.B.7 |

### Student-facing Task Statement

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

### Student Responses

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