# Lesson 20: How Much in the Group? (Optional)

### Standards Alignments

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

### Teacher-facing Learning Goals

* Represent and solve problems involving division of a whole number by a unit fraction.

### Student-facing Learning Goals

* Let’s solve more problems involving multiplication and division with fractions.

### Lesson Purpose

The purpose of this lesson is for students to solve fraction division problems that ask: “How many in one group?”

In this optional lesson, students solve problems where a whole number quantity is a unit fraction of an unknown whole number.  In these situations students may rely on their understanding of the relationship between multiplication and division. For example, if 8 ounces is $\frac{1}{4}$ of the amount of water in a bottle, students might represent this with a tape diagram:



The tape diagram suggests the equation $8=\frac{1}{4}×?$ which students will likely solve by seeing that $?=4×8$. The equation $8=\frac{1}{4}×?$ can also be written using division with the equation $?÷4=8$.

### Access for:

###  Students with Disabilities

* Engagement (Activity 2)

###  English Learners

* MLR8 (Activity 1)

### Instructional Routines

Estimation Exploration (Warm-up)

### Lesson Timeline

|  |  |
| --- | --- |
| Warm-up | 10 min |
| Activity 1 | 20 min |
| Activity 2 | 10 min |
| Activity 3 | 10 min |
| Lesson Synthesis | 10 min |
| Cool-down | 5 min |

### Teacher Reflection Question

What do you love most about math? How are you sharing that joy with your students and encouraging them to think about what they love about math?

## Cool-down

(to be completed at the end of the lesson) 5min

Drive to School

### Standards Alignments

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

### Student-facing Task Statement

* 1. If $\frac{1}{3}$ of the drive to Han’s school is 2 miles, how long is the whole drive to school? Draw a diagram and explain your reasoning.
	2. Write a division equation that represents this situation.

### Student Responses

* 1. The drive is 6 miles. The diagram shows each $\frac{1}{3}$ of the drive is 2 miles, and that makes the whole drive 6 miles long since it's 3 groups of 2.
	+ 
	1. $2÷\frac{1}{3}=6$