

Lesson 18: Lots of Milk

Standards Alignments

Building On 5.NBT.B
 Addressing 5.MD.C.5, 5.NBT.B

Teacher-facing Learning Goals

- Estimate products and quotients of whole numbers.

Student-facing Learning Goals

- Let's make estimates with big numbers.

Lesson Purpose

The purpose of this lesson is to estimate products and quotients using a volume context.

The purpose of this lesson is for students to use their understanding of multiplication and division to estimate products and quotients. This is the first of several lessons where students use multiplication and division to make estimates of large quantities. All of the lessons except the next one use a context of volume.

Students make estimates about the amount of milk consumed by different groups and the number of days it would take these groups to consume 1,000,000 cubic inches of milk. The estimates are structured to build on one another allowing students to use the associative property of multiplication.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR2 (Activity 1)

Instructional Routines

Estimation Exploration (Warm-up)

Lesson Timeline

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

Teacher Reflection Question

What connections did students make between the different strategies shared? What questions did you ask to help make the connections more visible?

Lesson Synthesis 10 min

Cool-down 5 min

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

🕒 5 min

So Much Milk

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Addressing 5.NBT.B

Student-facing Task Statement

There are 17,566 students in a city who drink a carton of milk at lunch one day. Each carton of milk is about 20 cubic inches. About how many cubic inches of milk do the students drink altogether? Explain or show your reasoning.

Student Responses

Sample responses:

- about 400,000 since $20 \times 20 = 400$ and there are close to 20,000 students
- about 350,000 since $17 \times 20 = 340$ and $18 \times 20 = 360$, so I took the number in the middle and multiplied by 1,000 since it's between 17 and 18 thousand