Lesson 7: Estimating the Volume of the World's Largest Wagon

Standards Alignments

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

Teacher-facing Learning Goals

- Multiply and divide multi-digit whole numbers.
- Solve problems involving volume.

Student-facing Learning Goals

- Let's solve problems about volume.

Lesson Purpose

The purpose of this lesson is for students to solve problems involving volume. Students multiply and divide multi-digit whole numbers using the algorithms learned in the previous sections.

The purpose of this lesson is to make an estimate of the volume of the world's largest toy wagon based on an image. In order to make reasoned estimates for the length, width, and height of the wagon students will need to:

- choose an appropriate unit of measure so that the estimates are whole numbers of the right size to visualize
- use the people in the wagon which are the one point of reference allowing to make an accurate estimate of the length, width, and height of the wagon

When students choose an appropriate unit of measure and use the picture to reason about the length, width, and height of the wagon, they are applying abstract mathematical reasoning to make conclusions about a real world object that they most likely have not actually seen (MP4).

For actual images of the wagon, search "World's Largest Toy Wagon 2019."

Access for:

♿ Students with Disabilities

- Engagement (Activity 1)

🌐 English Learners

- MLR7 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Rulers: Activity 2
- Yardsticks: Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

As students worked in their small groups today, whose ideas were heard, valued, and accepted? How can you adjust the group structure tomorrow to ensure each student's ideas are part of the collective learning?

Cool-down (to be completed at the end of the lesson)   🕐   5 min

The Volume of the Wagon

Standards Alignments

Addressing   5.MD.C.5

Student-facing Task Statement

If the Radio Flyer wagon is 27 feet long 13 feet wide and 2 feet deep, what is the volume of the wagon?

Student Responses

Sample response: $27 \times 13 \times 2$ or 702 cubic feet.