Lesson 20: Envíos de basura

Standards Alignments

Addressing   5.MD.C.5, 5.NBT.B.5, 5.NBT.B.6

Teacher-facing Learning Goals

- Estimate and calculate products and quotients of whole numbers.

Student-facing Learning Goals

- Estimemos volúmenes.

Lesson Purpose

The purpose of this lesson is to estimate and calculate products and quotients of whole numbers in order to understand the volume of recyclable plastic the United States ships abroad each year.

This lesson uses the structure of the first lesson in this section where students estimated how much milk different groups of students drink in a day and then how many days it would take the students to drink specified amounts of milk. In this lesson, students make similar estimates and calculations, but now they are estimating the volume of recyclable garbage students at their school produce. Continuing the context of the previous lesson as well as the large numbers, students start to conceptualize how much recyclable garbage the United States produces and ships overseas. They first encountered this context at the end of the first unit and now can use the whole number multiplication and division strategies they learned in this unit to study the situation in greater depth. Because there are a lot of estimates involved, students also see a quotient of numbers much larger than they have seen to this point. They find the value of this quotient using known facts and reasoning about place value.

Throughout the lesson, students make estimates and simplifying assumptions in order to answer complex mathematical questions (MP4).

Access for:

⬤ Students with Disabilities

- Engagement (Activity 1)

⬤ English Learners

- MLR1 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Lesson Timeline

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

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

Envíalo

Standards Alignments

Addressing   5.NBT.B.5, 5.NBT.B.6

Student-facing Task Statement

1. Otro contenedor de carga mide 40 pies de largo, 9 pies de ancho y 8 pies de alto.

    a. ¿Cuál es el volumen de este contenedor? Explica o muestra tu razonamiento.

    b. En una escuela se producen 24 pies cúbicos de plástico reciclable cada día. ¿Cuántos días tardaría esa escuela en llenar este contenedor? Explica o muestra cómo pensaste.

Student Responses

1. a. 2,880 cubic feet. I first found $40 \times 9 = 360$ and then found 360×8.

    b. 120.

$$
\begin{array}{r}
\boxed{120} \\
20 \\
100 \\
24\overline{)2{,}880} \\
-2{,}400 \\
\hline
480 \\
-480 \\
\hline
0
\end{array}
$$