Lesson 18: Dividamos con cocientes parciales

Standards Alignments

Addressing   4.NBT.B.6, 4.OA.A.3

Teacher-facing Learning Goals

- Analyze ways of using and recording partial quotients to divide multi-digit numbers.

Student-facing Learning Goals

- Analicemos y usemos un algoritmo en el que se usan cocientes parciales.

Lesson Purpose

The purpose of this lesson is to introduce students to ways to record partial quotients when dividing multi-digit numbers.

Previously, students have found quotients by decomposing a dividend and finding the quotient for each decomposed part until all of the dividend is divided. They have also reasoned in terms of multiplication—adding partial products until they reach the value of the dividend—and in terms of place value. They have also used area diagrams and base-ten diagrams—among other representations—to support their reasoning.

In this lesson, students use partial quotients and a couple of ways to record them systematically—by writing a series of equations, and by using an algorithm that uses partial quotients.

Access for:

♿ Students with Disabilities

- Action and Expression (Activity 2)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Base-ten blocks: Activity 1

Lesson Timeline

Warm-up	10 min

Teacher Reflection Question

Today's lesson encouraged small-group collaboration. How did students interact with

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

each other's ideas today in the work? Who was heard in their group? Who was not heard? How can you ensure in future small-group collaborations that all student's voices are heard?

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

Resta grupos

Standards Alignments

Addressing 4.NBT.B.6

Student-facing Task Statement

Priya y Tyler usan métodos diferentes para encontrar el valor de $430 \div 5$. Su trabajo está incompleto. Completa el trabajo de Priya y el de Tyler.

El trabajo de Priya

$$300 \div 5 =$$
$$100 \div 5 =$$
$$30 \div 5 =$$
$$\overline{430 \div 5 =}$$

El trabajo de Tyler

$$\begin{array}{r} 6 \\ 20 \\ 60 \\ 5\overline{)430} \\ -\ \ 300 \quad 5 \times 60 \\ \hline \end{array}$$

¿Cuál es el valor de $430 \div 5$?

Student Responses

86. Sample reasoning: 300 is 60 groups of 5, 100 is 20 groups of 5, and 30 is 6 groups of 5. Adding the groups of 5—the 60, 20, and 6—gives the quotient.

Priya's work

$$300 \div 5 = 60$$
$$100 \div 5 = 20$$
$$30 \div 5 = 6$$
$$\overline{430 \div 5 = 86}$$

Tyler's work

$$
\begin{array}{r}
\boxed{86} \\
6 \\
20 \\
60 \\
5\,)\overline{430} \\
\end{array}
$$

```
        86
         6
        20
        60
   5 )430
  −  300      5 × 60
     130
  −  100      5 × 20
      30
  −   30      5 × 6
       0
```