Lesson 9: Registremos productos parciales: Factores de un dígito y factores de tres o de cuatro dígitos

Standards Alignments

Addressing   4.NBT.B.5

Teacher-facing Learning Goals

- Multiply multi-digit whole numbers by one-digit numbers using an algorithm that uses partial products.

Student-facing Learning Goals

- Analicemos y probemos un algoritmo en el que se usan productos parciales.

Lesson Purpose

The purpose of this lesson is for students to multiply a multi-digit number by a one-digit number using an algorithm that uses partial products. Students make connections between this algorithm, rectangular diagrams, and equations.

In previous lessons, students used diagrams to represent multiplication of a one-digit number and a whole number of up to four digits. They learned to decompose larger factors by place value and used diagrams and corresponding expressions to support them in finding partial products. In this lesson, students learn an algorithm for keeping track of partial products that come from multiplying the digits of the factors. This algorithm that uses partial products lays the foundation for the standard algorithm for multiplication.

Students engage in quantitative and abstract reasoning (MP2) as they relate the partial products in a diagram and in an algorithm. Because this lesson offers an initial exposure to the new notation, students are not required to use an algorithm that uses partial products to multiply. They can rely on other methods they have learned so far.

Access for:

♿ Students with Disabilities

- Action and Expression (Activity 2)

🌐 English Learners

- MLR8 (Activity 1)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Lesson Timeline

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

Teacher Reflection Question

What part of the lesson went really well today in terms of students learning? What did you do that made that part go well?

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

Productos parciales

Standards Alignments

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Student-facing Task Statement

Encuentra el valor de $5 \times 1{,}023$. Muestra cómo razonaste.

Student Responses

5,115. Sample responses:

- $5 \times 3 = 15$, $5 \times 20 = 100$, and $5 \times 1{,}000 = 5{,}000$. The sum of 15, 100, and 5,000 is 5,115.

$$
\begin{array}{r}
1{,}0\;2\;3 \\
\times \qquad\quad 5 \\
\hline
1\;5 \\
1\;0\;0 \\
0 \\
+\;\;5{,}0\;0\;0 \\
\hline
5{,}1\;1\;5
\end{array}
$$