Lesson 2: Potencias de 10

Standards Alignments

Addressing   5.NBT.A.1, 5.NBT.A.2
Building Towards   5.NBT.A.2

Teacher-facing Learning Goals

- Use whole-number exponents to denote powers of 10.

Student-facing Learning Goals

- Usemos exponentes para mostrar potencias de 10.

Lesson Purpose

The purpose of this lesson is for students to recognize exponential notation for powers of 10 and use exponential notation to represent large numbers.

In the previous lesson, students multiplied and divided numbers by 10 or 100 and noticed place value patterns and relationships. This lesson continues to look at patterns when several factors of 10 are multiplied together. It also introduces a convenient strategy for recording these numbers, exponential notation for positive powers of 10. Students represent numbers up to 1,000,000,000 and apply their understanding of multiplication by 10 and its powers to see why exponential notation is a convenient way to represent certain large numbers. This lesson includes an optional activity that allows students to explore the number 1 trillion.

Access for:

♿ Students with Disabilities

- Engagement (Activity 2)

🌐 English Learners

- MLR2 (Activity 1)

Instructional Routines

How Many Do You See? (Warm-up)

Lesson Timeline

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

Teacher Reflection Question

What unfinished learning or misunderstandings do you have about powers of 10 and exponential notation? How can you leverage those partial understandings in a positive way to further the understanding of the class?

Activity 3	10 min
Lesson Synthesis	10 min
Cool-down	5 min

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

Notación exponencial

Standards Alignments

Addressing   5.NBT.A.2

Student-facing Task Statement

1. Usa notación exponencial para escribir 10,000 y 100,000. Explica o muestra cómo razonaste.

2. Escribe 10^6 como un número.

Student Responses

1. 10^4 and 10^5 because 10,000 is $10 \times 10 \times 10 \times 10$ and 100,000 has one more factor of 10.
2. 1,000,000