Estimating Large and Small Quantities

Today's Standard

8.EE.A3 - Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 times 10^8 and the population of the world as 7 times 10^9, and determine that the world population is more than 20 times larger.

Real-World Applications for this Standard

Estimating populations of cities or countries; Comparing the sizes of planets or stars; Calculating distances in space; Evaluating scientific data in biology or chemistry; Understanding financial figures in economics

Today I Learned

Today we learned how to use scientific notation to estimate and compare really big or really small numbers. For example, we can say the population of the United States is 3 times 10^8 and the population of the world is 7 times 10^9.

Common Stumbling Blocks

Sometimes kids think that multiplying by 10 just adds 10 to a number, but it actually moves the decimal point. Another common mistake is mixing up the base and the exponent, like thinking 10^3 is the same as 3^10.

Quiz Me

- What is scientific notation?
- How do you write 1,000 in scientific notation?
- What happens when you multiply a number by 10?
- Which is bigger: 10^3 or 3^10?
- Why do we use scientific notation?

Help Me

Scientific notation helps us work with really big or really small numbers. For example, scientists use it to measure things in space or look at tiny cells. It makes the numbers easier to understand and compare.