Rational and Irrational Numbers

Today's Standard

8.NS.A1 - Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

Real-World Applications for this Standard

Calculating square roots of non-perfect squares; Understanding repeating decimals in financial calculations; Using irrational numbers in geometry (e.g., π in circles); Converting repeating decimals in programming algorithms

Today I Learned

Today, we learned about rational and irrational numbers. Rational numbers can be written as fractions, and their decimals either stop or repeat. Irrational numbers cannot be written as simple fractions, and their decimals go on forever without repeating.

Common Stumbling Blocks

Some kids might think that all decimals must either stop or repeat, but that's not true for irrational numbers. Others might think that if a decimal doesn't repeat, it must be irrational, but some repeating decimals are actually rational.

Quiz Me

- What is a rational number?
- Can you give an example of an irrational number?
- What happens to the decimal of a rational number?
- How can you tell if a number is irrational?
- Why is it important to know about rational and irrational numbers?

Help Me

Rational numbers can be used in real life, like when you divide a pizza into equal parts. Irrational numbers show up, too, like when you measure the diagonal of a square. Understanding these helps us solve problems

in everyday life and in more advanced math.