Math Moments that Matter

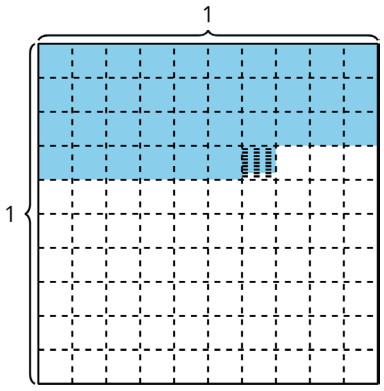
FIFTH GRADE

Place Value and Operations with Whole Numbers

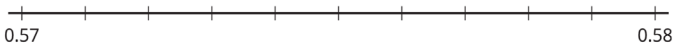
In 5th grade, students extend what they know about our number system to include decimals. They explore how each place is ten times the value of the place to its right and worth ten times less than the place to its left. Using models, drawings, and number lines, students make sense of how to read, write, compare, and operate with decimals—and how these numbers connect to the whole number operations they already understand. These experiences help students see patterns in place value and build confidence working with both whole numbers and decimals.

Students use unit grids and number lines to explore place value and operations with whole numbers. In the first image, the 100-square grid shows how decimals are built by shading 3 tenths, 6 hundredths and 8 thousandths, helping students see the structure of the number and how each part contributes to its value. In the second image, the number line shows decimals as distances between 0.57 and 0.58, helping students compare values by their size. These visuals help students see that working with decimals is like working with whole numbers, just with smaller pieces.

EXAMPLE: *The grid shows how tenths, hundredths, and thousandths work together to make a decimal.*



EXAMPLE: *Number line used to compare decimals*



Modeling and Data Analysis in Math

When 5th graders work with whole numbers and decimals, they use modeling to describe patterns and make sense of real situations. Modeling helps them see how each place in our number system is ten times greater—or one-tenth as much—as the place on both the left and right side of it. They learn to:

- Apply math to real situations, such as comparing prices, distances, or amounts of money
- Notice patterns in how digits shift when multiplying or dividing by powers of ten
- Represent numbers with models and diagrams and explain what those models show
- Explain their reasoning and interpret results to check whether answers make sense

Through modeling, students connect place value and decimals to everyday contexts—strengthening their understanding of how numbers work and how math describes the world around them.

What You Might See in the Classroom

Students using grids, place-value charts that show ones, tenths, and hundredths or number lines to model decimals and whole numbers.

Teachers asking:

- "How does multiplying by 10 change each digit's value?"
- "Where should the decimal go, and why?"
- "What patterns do you notice?"
- "What does this digit tell us about the number?"

Students explaining how digits move when multiplying or dividing by powers of ten.

Students rounding or estimating to check if their answers are reasonable.

Students discussing how decimals connect to whole numbers using clear math language.

What You Can Do at Home

Use real-life examples: "This costs $4.50. What happens if we buy 10 of them?"

Ask: "What happens when you divide by 10? How do you know?"

Try it: "Solve 3.45 × 10 and 3.45 ÷ 10. What do you notice?"

Play: "Estimate before adding prices. Does your answer seem reasonable?"

Talk it out: "What does the 3 in 7.32 represent? How much is it worth?"

Make it a Math Moment!

Math helps us make sense of the world. When students talk about how digits shift in decimal problems, they're uncovering patterns that help them understand how numbers grow, shrink, and connect to real situations.

Tap or Scan for Interactive Tools and More Resources!

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