

Math Moments that Matter

FOURTH GRADE

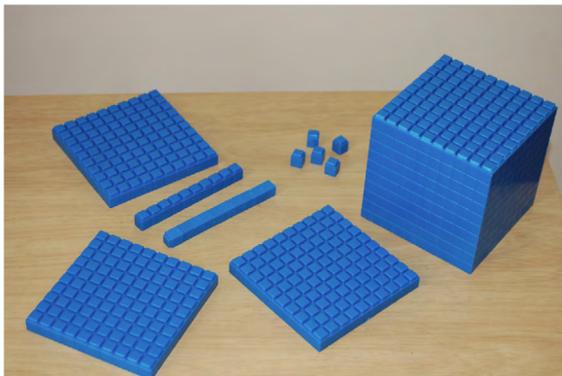


Place Value Understanding and Structure of the Base-Ten System

In 4th grade, students deepen their understanding of how our number system works. They learn that each place is ten times the value of the one before it (for example, ten ones make one ten, and ten tens make one hundred) and use this idea to read, write, and compare large numbers. Using models, drawings, and real-life examples, students see how place value helps them make sense of bigger numbers and prepares them for more complex problem-solving.

Students learn about place value by building and breaking apart numbers using tools they can see and touch. In the image, students use base-ten blocks to model the number 1,325: the large cube shows 1,000, the flats show 300, the rods show 20, and the small cubes show 5. Modeling numbers this way helps students understand how thousands, hundreds, tens, and ones fit together. These visuals make it easier for students to see how large numbers grow and how each digit has its own job.

EXAMPLE: *Base-ten blocks showing 1,325*



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Modeling and Data Analysis in Math

When students model place value, they're using math to make sense of how numbers work in the world around them. Modeling helps them see patterns in our base-ten system—like how each place is ten times greater than the one before—and how this structure supports the math they use every day. They learn to:

- Apply math to real situations, like reading large numbers or comparing data
- Notice patterns, such as how a digit's value changes when it moves places
- Represent numbers using base-ten blocks, expanded form (writing a number by showing the value of each digit), or place-value charts
- Explain their thinking and describe what their model shows in context

These experiences help students see that place value isn't just a rule—it's a system that makes numbers easier to understand, compare, and use.

What You Might See in the Classroom

Students using base-ten blocks or place-value charts (tables that organize digits by place) to show how digits change in value.

Teachers asking:

- “What happens when you move one place to the left?”
- “How does the value of each digit change?”
- “Why do zeros matter in large numbers? like 4,500?”

Students expanding and regrouping numbers (trading tens, hundreds, or thousands) to show their thinking.

Students comparing and ordering numbers using place-value reasoning.

Students discussing how place value helps them solve larger problems with confidence.

What You Can Do at Home

Use everyday examples: “If we multiply 300 by 10, what happens to the digits?”

Ask: “How does 4,500 compare to 450? What changed?”

Try it: “Write 6,342 in expanded form. What does each part mean?”

Play: “Use these digits—3, 8, 1, and 6—to make the largest number you can.”

Talk it out: “How does understanding place value help when multiplying or dividing?”

Make it a Math Moment!

Math helps us make sense of the world. When students describe how digits shift and grow across places, they’re uncovering the logic behind our number system and gaining confidence with larger, more complex numbers.

