Math Moments that Matter

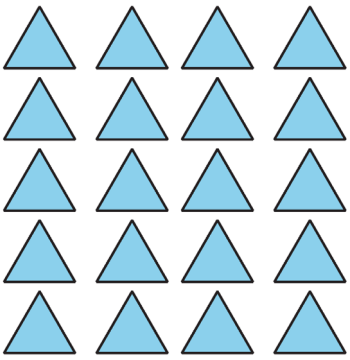
THIRD GRADE

Multiplication and Division within 100

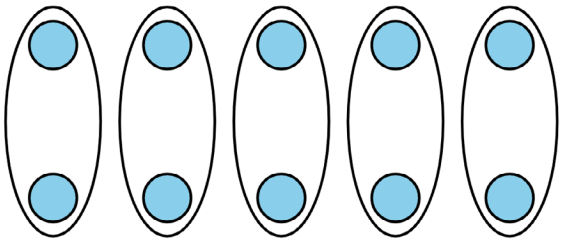
In 3rd grade, students build understanding of multiplication and division by working with equal groups, arrays (objects arranged in rows and columns) and number patterns they can see and touch. They use counters, drawings, and models to show situations in which numbers are shared fairly or added repeatedly. Through these hands-on experiences, students begin to see how multiplication and division connect and learn to choose strategies that make sense for the problem they're solving.

Students use tools like counters, connecting cubes, and arrays to show what is happening in a math story. In the first image, students arrange objects into equal rows and columns to build an array that represents multiplication. In the second image, students place the same number of objects into each group to model division and show how quantities can be shared equally. These simple pictures help students see that multiplication and division are about equal groups—either putting groups together or splitting a whole into equal parts—and give them clear ways to explain their thinking.

EXAMPLE: *Array showing equal rows and columns*



EXAMPLE: *Objects grouped equally to model division*



Problem Solving in Math

When students work with multiplication and division, they're learning how numbers fit together in groups and shares. Real-life examples—like arranging objects in equal rows or dividing snacks fairly—help them decide when to multiply, when to divide, and how the two operations connect. They learn to:

- Make sense of a story problem and decide whether to multiply or divide
- Use drawings, counters, or equations to show what's happening
- Explain how they know their answer makes sense
- Use math language, such as "groups of," "each," "times," "divided into," and "equal shares"
- Explain their reasoning by showing their model and talking through their ideas

These habits help students understand that multiplication and division describe real situations and can be represented in many ways.

What You Might See in the Classroom

Students using equal groups, arrays (objects arranged in rows and columns) number lines, or repeated addition (adding the same number again and again) to solve multiplication and division problems.

Teachers asking:

- "What is this problem showing?"
- "How do you know which operation to use?"
- "Can you model it another way?"

Students using fact families (related addition, subtraction, multiplication, and division facts) to show how multiplication and division are connected.

Classmates comparing strategies and discussing what makes sense.

Students skip counting (counting by equal jumps, like 5, 10, 15...) or building models to make sense of unknown facts.

What You Can Do at Home

Use real items: "Let's make 4 groups of 6 snacks. How many do we have in all?"

Ask: "How do you know if this is a multiplication or division problem?"

Connect ideas: "If 6 × 4 = 24, what division problem goes with that?"

Play: "I'll say a number, and tell me two numbers you can multiply to make it."

Talk it out: "If you count by 8s, what comes before 32? What comes after?"

Make it a Math Moment!

Math stories are everywhere. When students work with equal groups, arrays, and sharing, they're uncovering the story behind multiplication and division—making sense of how numbers grow, split, and connect in ways that feel real and understandable.

Tap or Scan for Interactive Tools and More Resources!

IOWA™ | Department of Education