Math Moments that Matter

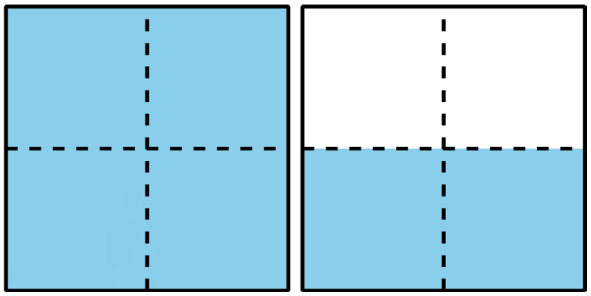
THIRD GRADE

Fractions as Numbers

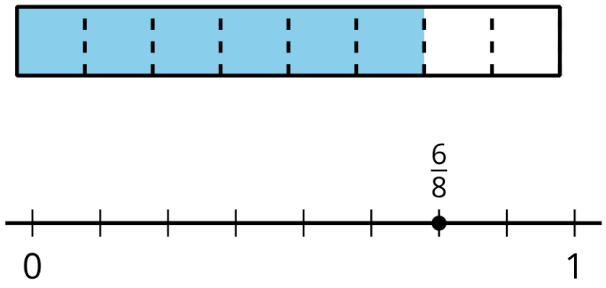
In 3rd grade, students learn that fractions are numbers that describe equal parts of a whole. and can be placed on a number line. They explore fractions using shapes, number lines, and real-life examples—like sharing food or folding paper—to see that fractions have size and can be compared. These hands-on experiences help students understand how fractions fit into our number system and build confidence as they reason about parts and wholes.

Students use pictures, fraction strips, and number lines to show what fractions mean. In the first image, the whole is divided into equal parts. The square on the left shows the entire shape shaded, and the other shows two of the equal parts shaded. Together, the two images represent one whole plus two additional parts. In the second image, a bar model (a long rectangle divided into equal parts) and a number line both show the same fraction, helping students see that fractions aren't just pieces of shapes—they are numbers with a position and size. Seeing fractions represented in different ways helps students compare and understand them more easily.

EXAMPLE: *Shape showing equal parts of a whole*



EXAMPLE: *Fraction model and number line showing the same fraction*



Communicating Reasoning in Math

When students talk about fractions, they're learning to explain their thinking using pictures, models, and clear language. They learn to:

- Explain how they know a fraction represents equal parts of a whole or set
- Compare models to see how different representations can show the same fraction
- Use drawings and visuals to support their ideas
- Use math language, such as words like "halves," "thirds," "fourths," "equal parts," and "one out of"
- Explain their reasoning through examples: "I know this is one-third because the shape is divided into three equal parts."

These conversations help students refine their thinking and understand fractions as meaningful numbers they can compare and reason about.

What You Might See in the Classroom

Students using fraction strips, circles, and number lines to show parts of a whole.

Teachers asking:

- "How many equal parts make the whole?"
- "Which fraction is larger? How do you know?"
- "Where does this fraction belong on the number line?"

Students comparing and ordering fractions using models or benchmarks like ½ and 1 (familiar reference points).

Students explaining how different fractions can represent the same amount.

Students using precise math language to describe fractional parts.

What You Can Do at Home

Use everyday examples: "If we cut this sandwich into four equal parts and you eat one, how much is left?"

Ask: "Is one-half more or less than ⅓? How can you tell?"

Play: Roll two dice—the smaller number becomes the numerator (top number) and the larger the denominator (bottom number). Ask whether the fraction is closer to 0, ½, or 1.

Connect ideas: "If you fold your paper into two parts and I fold mine into four, what's the same and what's different?"

Talk it out: "If two out of eight pieces are gone, what fraction is missing?"

Make it a Math Moment!

Math is talk! When students explain fractions with shapes and number lines, they're learning to describe size and fairness—turning fractions into ideas they can compare, reason about, and confidently explain.

Tap or Scan for Interactive Tools and More Resources!

IOWA Department of Education