

Third Grade - Fifth Grade Mathematics Milestones

Third Grade

- Know how to multiply and divide numbers through 10×10
- Begin to multiply numbers with more than one digit (e.g., multiplying 9×80)
- Solve word problems using addition, subtraction, multiplication, and division
- Understand a fraction as a number on a number line (e.g., $1/4$, $1/2$ and $3/4$).
- Explore the concept of area
- Solve problems involving measurement, intervals of time, liquid volumes, and masses of objects

Fourth Grade

- Compare and order fractions and decimals
- Add, subtract, and multiply fractions
- Collect data and create a graph to represent the data
- Measure angles using a protractor
- Describe how a pattern follows a repeated rule

Fifth Grade

- Describe mathematical patterns
- Extend the understanding of place value to include decimals
- Multiply and divide multi-digit numbers
- Add, subtract, multiply, and divide fractions
- Graph points on a coordinate grid
- Find the volume of rectangular prisms
- Convert like measurement units

Family Engagement

How to help your student succeed in mathematics:

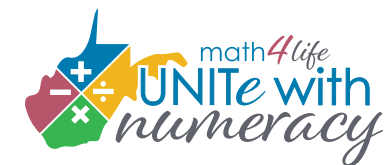
Make mathematics a part of your student's daily routine by:

- » Practicing math facts
- » Following a recipe
- » Reviewing charts from news media
- » Estimating distance, area or volume
- » Creating math stories to solve everyday problems

Talk with the teacher about the problem-solving strategies and content your student is learning and practice those strategies at home.

Visit the *math4life* website at: wvde.us/math4life for information about:

- » Resources for families
- » Examples of fostering success in mathematics
- » Information about what your student should master in each grade level
- » Activities to help with mathematics fluency and understanding
- » Links to the best apps and sites for practice and assistance in mathematics



What Students Will Learn

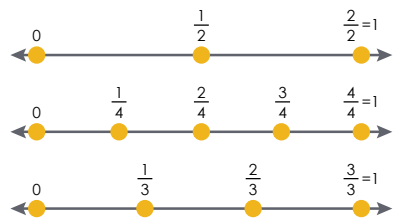
3RD GRADE - 5TH GRADE



Sample Problems for Third Grade - Fifth Grade

Third Grade: Introduction to fractions

Students are given number lines and fraction models to represent and solve problems with fractions. Using number lines helps students compare the value of fractions as well as prepare them for using rulers for measurement. Some questions students may answer:



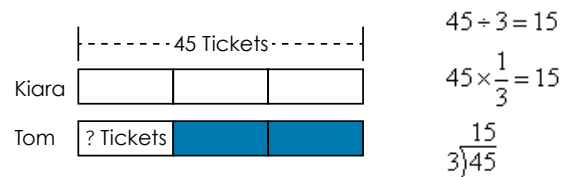
- Which fraction is larger, $\frac{1}{3}$ or $\frac{3}{4}$?
- Why are there three different fractions equal to 1 in the drawing?
- Are there any other fractions on the number lines that equal each other?

Fourth Grade: Using diagrams to represent problems

Kiara sold 45 tickets to the school play. Tom sold $\frac{1}{3}$ as many tickets as Kiara.

Students could solve in several ways:

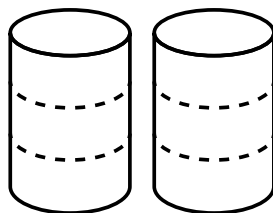
Using a diagram and coming up with multiple ways to solve helps students see the relationship among multiplication, division, and fractions.



Fifth Grade: Applying diagrams and fractions to solve word problems

How many $\frac{1}{3}$ cup servings are in 2 cups of raisins?

Students may draw a diagram to represent 2 cups and then divide the cups into thirds.



The student states, "There are six $\frac{1}{3}$ cup servings in 2 cups of raisins." The teacher asks, "How do you know?" The student says, "I divided each cup into thirds and counted the number of thirds that were there." The teacher asks the student to write an equation for their explanation.

Possible equations are $2 \div \frac{1}{3} = 6$ or $2 \times 3 = 6$. Using visuals and multiple representations help students to learn and understand the standard algorithm for dividing fractions.

Students can rewrite division by a fraction as multiplying by the reciprocal. The drawing helps the student to understand how the standard algorithm works.

$$2 \div \frac{1}{3} = 6 \qquad \frac{2}{1} \times \frac{3}{1} = \frac{6}{1} \qquad \frac{6}{1} = 6$$

Mathematical Habits of Mind Thinking Skills for Life

MHM1: Make sense of problems and persevere to solve them.

Identify what the problem is asking and continue working until a solution is found.

MHM2: Reason abstractly and quantitatively.

Use reasoning to examine and connect numbers and ideas.

MHM3: Construct viable arguments and critique the reasoning of others.

Explore, explain, discuss, and share thinking and reasoning used to solve problems.

MHM4: Model with Mathematics.

Represent problems in multiple ways using drawings, objects, charts, and equations.

MHM5: Use appropriate tools strategically.

Use math tools that will help solve a problem such as blocks, manipulatives, rulers, protractors, drawings, etc.

MHM6: Attend to precision.

Use clear and accurate language, units, calculations, and symbols to solve problems and check the reasonableness of answers.

MHM7: Look for and make use of structure.

Look for patterns and structure to gain understanding and speed in problem solving. Ex. $4 + 7$ and $7 + 4$ both equal 11.

MHM8: Look for and express regularity in repeated reasoning.

Look for repeated patterns in calculations to make generalizations and solve problems.