

Math

FIFTH GRADE

Students in fifth grade experience increased social and emotional development. They become more aware of their independence, opinions, and level of thinking as compared to others. Students enjoy and benefit from content presented in a way that allows for in-depth understanding, heightens interest and enthusiasm, and provides relevance to real-world situations.

In fifth grade, students need a positive learning environment that encourages and challenges student effort and progress toward learning mathematics. This environment is supported through the use of active learning experiences and content-related questions that foster mathematical communication.

The mathematics curriculum in fifth grade emphasizes fluency in computing and problem solving with whole numbers, decimals, and fractions. Students apply basic operations to problem-solving situations with a greater understanding of the meanings of operations and how they relate to one another. By actively acquiring new knowledge of symbolic representation, fifth-grade students move toward an abstract level of thinking.

Number and Operations

1. Demonstrate number sense by comparing, ordering, rounding, and expanding whole numbers through millions and decimals to thousandths
 - Relate percents to parts out of 100 by using equivalent fractions and decimals
 - Determine the value of a digit to thousandths
2. Solve problems involving basic operations on whole numbers, including addition and subtraction of 7-digit numbers, multiplication with 2-digit multipliers, and division with 2-digit divisors
 - Estimate products and quotients
 - Determine divisibility by 2, 3, 4, 5, 6, 7, 8, 9, and 10
 - Demonstrate computational fluency with addition, subtraction, multiplication, and division of whole numbers
 - Complete 100 math facts [-, +, x, /] in three minutes
3. Solve word problems that involve decimals, fractions, money, time, and percent.
 - Solve word problems involving elapsed time
 - Demonstrate converting decimal to fraction and fraction to decimal
4. Determine sum and difference of fractions with common and uncommon denominators
 - Change mixed numbers to improper fractions
 - Solve problems involving addition and subtraction of fractions with common and uncommon denominators
 - Use least common multiples and greatest common multiples
 - Estimate sums and differences of fractions
5. Identify numbers less than zero by extending the number line

Algebra

6. Demonstrate commutative, associative, and identity properties of addition and multiplication of whole numbers
7. Write a number sentence for a problem expressed in words
8. Create a word problem for a given number sentence
9. Recognize and calculate order of operation with parenthesis and exponents

Geometry

10. Identify regular polygons and congruent polygons
 - Identifying angles as right, obtuse, acute, or straight
 - Classifying triangles as equilateral, isosceles, or scalene
 - Identifying figures that have rotational symmetry
 - Predicting the results of a flip (reflection), turn (rotation), or slide (translation)
11. Identify components of the Cartesian plane, including the x-axis, y-axis, origin, and quadrants
12. Identify the center, radius, and diameter of a circle

Measurement

13. Identify the appropriate measurable attribute to solve a problem
 - Use protractors to measure angles
 - Use standard units (yards, meters, degrees, other units) to measure objects
14. Write a number sentence for a problem expressed in words using percent, fractions, and decimals.
15. Use estimation skills and follow up with proof to support it.
 - Estimate and determine the perimeter of polygons and real-world objects
 - Estimate and determine the areas of rectangles and estimate the area within any closed figure
 - Estimate and determine the volume of a rectangular prism using manipulatives and formulas
 - Estimate and determine elapsed time
 - Determine and use equivalent units within the same system
 - Use perimeter, area, volume, and elapsed time to solve problems

Statistics

16. Use statistics to solve problems

- List all possible outcomes of an event with a limited number of possible results
- Find the probability of an event with equally likely outcomes and express as a fraction or ratio
- Conduct an experiment and make a prediction based on the outcomes of the experiment

17. Use statistics to gather and display data

- Gather relevant data and compile the results to answer a question
- Organize and display data using stem-leaf-line plots or line graphs
- Analyze and interpret the graphs
- Find the mean, median, mode, and range of a given set of data