

Mathematics Grade 5

Concepts and Principles of Measurement

1. Measure, identify, and draw angles, perpendicular and parallel lines, rectangles, and triangles by using appropriate tools.
2. Know that the sum of the angles of any triangle is 180 degrees and the sum of the angles of any quadrilateral is 360 degrees and use this information to solve problems.
3. Convert units of length and time.

Data Analysis, Probability, and Statistics

1. Know the concepts of mean, median, range, and mode; compute and compare simple examples to show that they may differ.
2. Identify ordered pairs of data from a graph and interpret the meaning of the data in terms of the situation depicted by the graph
3. Know how to write ordered pairs correctly.

Number and Operation

1. Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions; compute a given percent of a whole number
2. Determine the prime factors of all numbers through 50 and write the numbers as product of their prime factors by using exponents to show multiples of a factor.
3. Identify and represent on a number line decimals, fractions, mixed numbers, and positive and negative integers.
4. Add, subtract, multiply, and divide with decimals.
5. Demonstrate proficiency with division including division with decimals and multi-digit divisors.
6. Solve simple problems, including ones arising in concrete situations involving the addition and subtraction of fractions and mixed numbers. Express answers in simplest form.
7. Compute and perform simple multiplication and division of fractions.

Concepts and Language of Algebra and Functions

1. Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.
2. Know and use the distributive property in equations and expressions with variables.
3. Identify and graph ordered pairs in the four quadrants of the coordinate plane
4. Solve problems involving linear functions with integer values.

Concepts and Principles of Geometry

1. Students understand and compute the volumes and areas of simple objects.
2. Construct a cube and rectangular box from two-dimensional patterns and use these patterns to compute the surface area for these objects.
3. Understand the concept of volume and use the appropriate units in common measuring systems

Mathematical Reasoning (Not in Descartes)

1. Students make decisions about how to approach problems
2. Use estimation to verify the reasonableness of calculated results
3. Apply strategies and results from simpler problems to more complex problems
4. Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models to explain mathematical reasoning
5. Make precise calculations and check the validity of the results from the context of the problem
6. Evaluate the reasonableness of the solution in the context of the original situation
7. Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems
8. Develop generalizations of the results obtained and apply them in other circumstances