

MATHEMATICS CONTENT STANDARDS

Grade 3

Standard 1: Patterns and Algebraic Reasoning—The student will use a variety of problem-solving approaches to extend and create patterns.

1. Describe (orally or in written form), create, extend and predict patterns using numbers (e.g., 3, 6, 9, 12..., use a function machine to generate input and output values for a table, show multiplication patterns on a hundreds chart).
2. Analyze tables to formulate generalizations about patterns in a variety of situations (e.g., list the multiples of 5 in a table to show that multiples of 5 have a 0 or 5 in the ones place; given pairs of numbers with a common relationship, determine the rule and generate additional pairs with the same relationship).

Standard 2: Number Sense—The student will use numbers and number relationships to acquire basic facts.

1. Place Value
 - a. Model the concept of place value through 4 digits (e.g., base-10 blocks, bundles of 10s, place value mats).
 - b. Read, model and write whole numbers up to 4 digits (e.g., base-10 blocks, expanded form).
2. Whole Numbers and Fractions
 - a. Compare and order whole numbers up to 4 digits.
 - b. Compare and order fractions including halves, thirds, and fourths using a model (e.g., fraction circles, pictures, egg cartons, fraction strips).

Standard 3: Number Operations and Computation—The student will estimate and compute with whole numbers.

1. Estimate, find the sum and difference, with and without regrouping, of 3- and 4-digit numbers to solve application problems.
2. Multiplication Concepts
 - a. Demonstrate fluency with basic multiplication facts and fact families.
 - *b. Develop multiplication algorithms (e.g., use physical materials to show 4 groups of 3 objects, show multiplication as repeated addition).
 - c. Estimate the product of 2-digit numbers by rounding to the nearest multiple of 10 to solve application problems.
 - *d. Recognize and apply the commutative and identity properties of multiplication using models and manipulatives to develop computational skills (e.g., $3 \cdot 5 = 5 \cdot 3$, $7 \cdot 1 = 7$).
3. Solve problems involving money that require addition and subtraction.

Standard 4: Geometry and Measurement—The student will use geometric properties and relationships to recognize and describe shapes and use customary and metric measurements to solve problems.

1. Spatial Reasoning and Coordinate Locations

a. Describe and compare two- and three-dimensional shapes (e.g., count the edges and faces of a cube, combine or divide basic shapes to form new shapes, identify and draw congruent shapes).

b. Identify locations on a grid with ordered pairs (e.g., give the location of a ship on a grid by selecting D, 1).

2. Measurement

a. Solve problems with customary units involving length using half-inch and quarter-inch measurements and weight using pound and ounce.

b. Solve problems with metric units involving length using meter and centimeter and mass using gram and kilogram.

c. Use manipulatives to develop the concept of perimeter and area (e.g., cover a shape with pattern blocks to find area).

*3. Develop and use strategies to estimate measurements (e.g., use parts of the body as benchmarks for measuring length).

4. Tell time on digital and analog clocks to 5 minutes and use information to solve problems involving time and temperature (e.g., read a thermometer).

Standard 5: Data Analysis and Probability—The student will demonstrate an understanding of data collection, display and interpretation.

1. Data Analysis

*a. Pose questions, collect, record, and interpret data to help answer questions (e.g., Which was the most popular booth at our carnival?).

b. Read graphs and charts; identify the main idea, draw conclusions, make predictions based on the data (e.g., predict how many children will bring their lunch based on a menu).

c. Construct a bar graph or pictograph with labels and a title from a set of data.

2. Probability

a. Describe the probability (more, less, or equally likely) of chance events.

b. List arrangements (permutations) and combinations of up to three items (e.g., possible ways to arrange scoops of chocolate, strawberry and vanilla ice cream on a cone).