Grade Three

The third-grade standards place emphasis on learning multiplication and division facts through the twelves table. Students will be fluent in the basic addition facts through the tens table and the corresponding subtraction facts. Concrete materials and two-dimensional representations will be used to introduce addition and subtraction with fractions and the concept of probability as chance. Students will use standard units (U.S. Customary and metric) to measure temperature, length, liquid volume, and weight and identify relevant properties of shapes, points, line segments, rays, angles, vertices, and lines. Students will investigate and describe the identity and commutative properties for addition and multiplication.

While learning mathematics, students will be actively engaged, using concrete materials and appropriate technologies such as calculators and computers. However, facility in the use of technology shall not be regarded as a substitute for a student's understanding of quantitative concepts and relationships or for proficiency in basic computations.

Mathematics has its own language, and the acquisition of specialized vocabulary and language patterns is crucial to a student's understanding and appreciation of the subject. Students should be encouraged to use correctly the concepts, skills, symbols, and vocabulary identified in the following set of standards.

Problem solving has been integrated throughout the six content strands. The development of problem-solving skills should be a major goal of the mathematics program at every grade level. Instruction in the process of problem solving will need to be integrated early and continuously into each student's mathematics education. Students must be helped to develop a wide range of skills and strategies for solving a variety of problem types.

Number and Number Sense
Focus: Place Value and Fractions

3.1   The student will
  a) read and write six-digit numerals and identify the place value and value of each digit;
  b) round whole numbers, 9,999 or less, to the nearest ten, hundred, and thousand; and
  c) compare two whole numbers between 0 and 9,999, using symbols (>, <, or =) and words (*greater than, less than*, or *equal to*).

3.2   The student will recognize and use the inverse relationships between addition/subtraction and multiplication/division to complete basic fact sentences. The student will use these relationships to solve problems.

3.3   The student will
  a) name and write fractions (including mixed numbers) represented by a model;
  b) model fractions (including mixed numbers) and write the fractions' names; and
  c) compare fractions having like and unlike denominators, using words and symbols (>, <, or =).

Computation and Estimation
Focus: Computation and Fraction Operations

3.4   The student will estimate solutions to and solve single-step and multistep problems involving the sum or difference of two whole numbers, each 9,999 or less, with or without regrouping.

3.5   The student will recall multiplication facts through the twelves table, and the corresponding division facts.

3.6   The student will represent multiplication and division, using area, set, and number line models, and create and solve problems that involve multiplication of two whole numbers, one factor 99 or less and the second factor 5 or less.

3.7   The student will add and subtract proper fractions having like denominators of 12 or less.

Measurement
Focus: U.S. Customary and Metric Units, Area and Perimeter, and Time

3.8   The student will determine, by counting, the value of a collection of bills and coins whose total value is $5.00 or less, compare the value of the bills and coins, and make change.

3.9   The student will estimate and use U.S. Customary and metric units to measure

    a)   length to the nearest $\frac{1}{2}$-inch, inch, foot, yard, centimeter, and meter;

    b)   liquid volume in cups, pints, quarts, gallons, and liters;

    c)   weight/mass in ounces, pounds, grams, and kilograms; and

    d)   area and perimeter.

3.10   The student will

    a)   measure the distance around a polygon in order to determine perimeter; and

    b)   count the number of square units needed to cover a given surface in order to determine area.

3.11   The student will

    a)   tell time to the nearest minute, using analog and digital clocks; and

    b)   determine elapsed time in one-hour increments over a 12-hour period.

3.12   The student will identify equivalent periods of time, including relationships among days, months, and years, as well as minutes and hours.

3.13   The student will read temperature to the nearest degree from a Celsius thermometer and a Fahrenheit thermometer. Real thermometers and physical models of thermometers will be used.

Geometry
Focus: Properties and Congruence Characteristics of Plane and Solid Figures

3.14   The student will identify, describe, compare, and contrast characteristics of plane and solid geometric figures (circle, square, rectangle, triangle, cube, rectangular prism, square pyramid, sphere, cone, and cylinder) by identifying relevant characteristics, including the number of angles, vertices, and edges, and the number and shape of faces, using concrete models.

3.15   The student will identify and draw representations of points, line segments, rays, angles, and lines.

3.16   The student will identify and describe congruent and noncongruent plane figures.

Probability and Statistics
Focus: Applications of Data and Chance

3.17   The student will

    a)   collect and organize data, using observations, measurements, surveys, or experiments;

    b)   construct a line plot, a picture graph, or a bar graph to represent the data; and

    c)   read and interpret the data represented in line plots, bar graphs, and picture graphs and write a sentence analyzing the data.

3.18   The student will investigate and describe the concept of probability as chance and list possible results of a given situation.

Patterns, Functions, and Algebra
Focus: Patterns and Property Concepts

3.19   The student will recognize and describe a variety of patterns formed using numbers, tables, and pictures, and extend the patterns, using the same or different forms.

3.20   The student will
        a) investigate the identity and the commutative properties for addition and multiplication; and
        b) identify examples of the identity and commutative properties for addition and multiplication.