

Grade Two

The second-grade standards extend the study of number and spatial sense to include three-digit numbers and three-dimensional figures. Students will continue to learn, use, and gain proficiency in the basic addition facts through the nines table and the corresponding subtraction facts. Students will begin to use standard U.S. Customary and metric units of measurement; predict, using simple probability; and create and interpret picture and bar graphs. Students will work with a variety of patterns and will develop knowledge of equality by identifying missing numbers in addition and subtraction facts.

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

- 2.1 The student will
 - a) read, write, and identify the place value of each digit in a three-digit numeral, using numeration models; and
 - b) round two-digit numbers to the nearest ten.
- 2.2 The student will compare two whole numbers between 0 and 999, using symbols ($>$, $<$, or $=$) and words (*greater than*, *less than*, or *equal to*).
- 2.3 The student will identify the ordinal positions first through twentieth, using an ordered set of objects.
- 2.4 The student will identify the part of a set and/or region that represents fractions for one-half, one-third, one-fourth, one-eighth, and one-tenth and write the corresponding fraction.

- 2.5 The student will
- count forward by twos, fives, and tens to 100, starting at various multiples of 2, 5, or 10, using mental mathematics, paper and pencil, hundred chart, calculators, and/or concrete objects, as appropriate;
 - count backward by tens from 100;
 - group objects by threes and fours; and
 - recognize even and odd numbers, using objects.

Computation and Estimation

- 2.6 The student will recall basic addition facts — i.e., sums to 18 or less — and the corresponding subtraction facts.
- 2.7 The student, given two whole numbers whose sum is 99 or less, will
- estimate the sum; and
 - find the sum, using various methods of calculation (mental computation, concrete materials, and paper and pencil).
- 2.8 The student, given two whole numbers, each of which is 99 or less, will
- estimate the difference; and
 - find the difference, using various methods of calculation (mental computation, concrete materials, and paper and pencil).
- 2.9 The student will create and solve one-step addition and subtraction problems using data from simple tables, picture graphs, bar graphs, and practical situations.
- 2.10 The student, given a simple addition or subtraction fact, will recognize and describe the related facts which represent and describe the inverse relationship between addition and subtraction (e.g., $3 + \underline{\quad} = 7$, $\underline{\quad} + 3 = 7$; $7 - 3 = \underline{\quad}$, and $7 - \underline{\quad} = 3$).

Measurement

- 2.11 The student will
- count and compare a collection of pennies, nickels, dimes, and quarters whose total value is \$2.00 or less; and
 - identify the correct usage of the cent symbol (¢), dollar symbol ($\text{\$}$), and decimal point (\.).
- 2.12 The student will estimate and then use a ruler to make linear measurements to the nearest centimeter and inch, including measuring the distance around a polygon in order to determine perimeter.
- 2.13 The student, given grid paper, will estimate and then count the number of square units needed to cover a given surface in order to determine area.

- 2.14 The student will estimate and then count the number of cubes in a rectangular box in order to determine volume.
- 2.15 The student will estimate and then determine weight/mass of familiar objects in pounds and/or kilograms, using a scale.
- 2.16 The student will tell and write time to the quarter hour, using analog and digital clocks.
- 2.17 The student will use actual measuring devices to compare metric and U.S. Customary units (cups, pints, quarts, gallons, and liters) for measuring liquid volume, using the concepts of *more*, *less*, and *equivalent*.
- 2.18 The student will
- a) use calendar language appropriately (e.g., months, *today*, *yesterday*, *next week*, *last week*);
 - b) determine past and future days of the week; and
 - c) identify specific dates on a given calendar.
- 2.19 The student will read the temperature on a Celsius and/or Fahrenheit thermometer to the nearest 10 degrees.

Geometry

- 2.20 The student will identify, describe, and sort three-dimensional (solid) concrete figures, including a cube, rectangular solid (prism), square pyramid, sphere, cylinder, and cone, according to the number and shape of the solid's faces, edges, and corners.
- 2.21 The student will identify and create figures, symmetric along a line, using various concrete materials.
- 2.22 The student will compare and contrast plane and solid geometric shapes (circle/sphere, square/cube, and rectangle/rectangular solid).

Probability and Statistics

- 2.23 The student will read, construct, and interpret a simple picture and bar graph.
- 2.24 The student will record data from experiments, using spinners and colored tiles/cubes, and use the data to predict which of two events is more likely to occur if the experiment is repeated.

Patterns, Functions, and Algebra

- 2.25 The student will identify, create, and extend a wide variety of patterns, using numbers concrete objects and pictures.
- 2.26 The student will solve problems by completing a numerical sentence involving the basic facts for addition and subtraction. Examples include: $3 + \underline{\quad} = 7$, or $9 - \underline{\quad} = 2$. Students will create story problems, using the numerical sentences.