

Grade Two Mathematics

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 and use the basic addition facts through the nines table and the corresponding subtraction facts. Students will also begin to estimate and make measurements. 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 identify the place value of each digit in a three-digit numeral, using numeration models.
- 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 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 one-half, one-third, one-fourth, one-eighth, and one-tenth and write the corresponding fraction.
- 2.5 The student will count by twos and fives to 100 and by threes and fours to 96, using mental mathematics, paper and pencil, hundred chart, calculators, and/or concrete objects.
- 2.9 The student will solve addition and subtraction problems using data from simple charts and picture graphs. Problems will require a one-step solution.
- 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., $3 + _ = 7$, $_ + 3 = 7$, $7 - 3 = _$, and $7 - _ = 3$).
- 2.11 The student will
 - count, compare, and make change, using a collection of coins and one-dollar bills; and
 - identify the correct usage of the cent symbol (¢), dollar symbol ($\text{\$}$), and decimal point (\.).

Computation and Estimation

- 2.6 The student will recall basic addition facts, 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 99 or less, will
 - estimate the difference; and
 - find the difference using various methods of calculation (mental computation, concrete materials, and
- 2.12 The student will estimate and then use a ruler to make linear measurements to the nearest centimeter and inch, including the distance around a polygon (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 (determine area).
- 2.14 The student will estimate and then count the number of cubes in a rectangular box (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.

Geometry

- 2.18 The student will identify and describe a cube, rectangular solid, sphere, cylinder, and cone, according to the number and shape of faces, edges, bases, and corners.
- 2.19 The student will identify and create figures, symmetric along a line, using various concrete materials.
- 2.20 The student will compare and contrast plane and solid geometric shapes (circle/sphere, square/cube, triangle/pyramid, and rectangle/rectangular solid).

Probability and Statistics

- 2.21 The student will read, construct, and interpret a simple picture and bar graph.
- 2.22 The student, given a calendar, will determine past and future days of the week and identify specific dates.
- 2.23 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

- 2.24 The student will complete a sequence of 10 or fewer consecutive whole numbers 0 through 999.
- 2.25 The student will identify, create, and extend a wide variety of patterns using symbols and objects.
- 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.