

## 2<sup>nd</sup> Grade– Math

### **CONTENT: Number, Number Sense and Operations Standard**

<b>Skills Based on Academic Content Standards</b>
Use place value concepts to represent, compare and order whole numbers using physical models, numerals and words, with ones, tens and hundreds. For example:  a. Recognize 10 can mean “10 ones” or a single entity (1 ten) through physical models and trading games. b. Read and write 3-digit numerals (e.g., 243 as two hundred forty three, 24 tens and 3 ones, or 2 hundreds and 43 ones, etc.) and construct models to represent each.
Recognize and classify numbers as even or odd.
Count money and make change using coins and a dollar bill.
Represent and write the value of money using the ¢ sign and in decimal form when using the \$ sign.
Represent fractions (halves, thirds, fourths, sixths and eighths), using words, numerals and physical models. For example:  a. Recognize that a fractional part can mean different amounts depending on the original quantity. b. Recognize that a fractional part of a rectangle does not have to be shaded with contiguous parts. c. Identify and illustrate parts of a whole and parts of sets of objects. d. Compare and order physical models of halves, thirds and fourths in relation to 0 and 1.
Model, represent and explain subtraction as comparison, take-away and part-to-whole; e.g., solve missing addend problems by counting up or subtracting, such as “I had six baseball cards, my sister gave me more, and I now have ten. How many did she give me?” can be represented as $6 + ? = 10$ or $10 - 6 = ?$ .
Model, represent and explain multiplication as repeated addition, rectangular arrays and skip counting.
Model, represent and explain division as sharing equally and repeated subtraction.
Model and use the commutative property for addition.
Demonstrate fluency in addition facts with addends through 9 and corresponding subtractions; e.g., $9 + 9 = 18$ , $18 - 9 = 9$ .
Add and subtract multiples of 10.
Demonstrate multiple strategies for adding and subtracting 2- or 3-digit whole numbers, such as:  a. compatible numbers; b. compensatory numbers; c. informal use of commutative and associative properties of addition.
Estimate the results of whole number addition and subtraction problems using front-end estimation, and judge the reasonableness of the answers.

## CONTENT: Measurement Standard

Skills Based on Academic Content Standards
Identify and select appropriate units of measure for: <ul style="list-style-type: none"><li>a. length – centimeters, meters, inches, feet or yards;</li><li>b. volume (capacity) – liters, cups, pints or quarts;</li><li>c. weight – grams, ounces or pounds;</li><li>d. time – hours, half-hours, quarter-hours or minutes and time designations, a.m. or p.m.</li></ul>
Establish personal or common referents for units of measure to make estimates and comparisons; e.g., the width of a finger is a centimeter, a large bottle of soda pop is 2 liters, a small paper clip weighs about one gram.
Describe and compare the relationships among units of measure, such as centimeters and meters; inches, feet and yards; cups, pints and quarts; ounces and pounds; and hours, half-hours, and quarter-hours; e.g., how many inches in a foot?
Tell time to the nearest minute interval on digital and to the nearest 5 minute interval on analog (dial) timepieces.
Estimate and measure the length and weight of common objects, using metric and U.S. customary units, accurate to the nearest unit.
Select and use appropriate measurement tools; e.g., a ruler to draw a segment 3 inches long, a measuring cup to place 2 cups of rice in a bowl, a scale to weigh 50 grams of candy.
Make and test predictions about measurements, using different units to measure the same length or volume.

## CONTENT: Geometry and Spatial Sense Standard

Skills Based on Academic Content Standards
Identify, describe, compare and sort three-dimensional objects (i.e., cubes, spheres, prisms, cones, cylinders and pyramids) according to the shape of the faces or the number of faces, edges or vertices.
Predict what new shapes will be formed by combining or cutting apart existing shapes.
Recognize two-dimensional shapes and three-dimensional objects from different positions.
Identify and determine whether two-dimensional shapes are congruent (same shape and size) or similar (same shape different size) by copying or using superposition (lay one thing on top of another).
Create and identify two-dimensional figures with line symmetry; e.g., what letter shapes, logos, polygons are symmetrical?

## CONTENT: Patterns, Functions and Algebra Standard

Skills Based on Academic Content Standards	
Extend simple number patterns (both repeating and growing patterns), and create similar patterns using different objects, such as using physical materials or shapes to represent numerical patterns.	
Use patterns to make generalizations and predictions; e.g., determine a missing element in a pattern.	
Create new patterns with consistent rules or plans, and describe the rule or general plan of existing patterns.	
Use objects, pictures, numbers and other symbols to represent a problem situation.	
Understand equivalence and extend the concept to situations involving symbols; e.g., $4 + 5 = 9$ and $9 = 4 + 5$ , and $4 + 5 = 3 + 6 = \Delta + \dots$	
Use symbols to represent unknown quantities and identify values for symbols in an expression or equation using addition and subtraction; e.g., $\_ + \_ = 10$ , $\Delta - 2 = 4$ .	
Describe qualitative and quantitative changes, especially those involving addition and subtraction; e.g., a student growing taller versus a student growing two inches in one year.	

## CONTENT: Data Analysis and Probability Standard

Skills Based on Academic Content Standards	
Pose questions, use observations, interviews and surveys to collect data, and organize data in charts, picture graphs and bar graphs.	
Read, interpret and make comparisons and predictions from data represented in charts, line plots, picture graphs and bar graphs.	
Read and construct simple timelines to sequence events.	
Write a few sentences to describe and compare categories of data represented in a chart or graph, and make statements about the data as a whole.	
Identify untrue or inappropriate statements about a given set of data.	
Recognize that data may vary from one population to another; e.g., favorite TV shows of students and of parents.	
List some of the possible outcomes of a simple experiment, and predict whether given outcomes are more, less or equally likely to occur.	
Use physical models and pictures to represent possible arrangements of 2 or 3 objects.	