

At the end of the school year, students will be able to...(No Calculators Allowed)

## GOAL 6 Number Sense and Computation

**Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.**

### STANDARD A

**Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.**

#### Representing and Ordering

- \_\_\_\_\_ Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 10,000. (*Introduce: up to 100,000*)
- \_\_\_\_\_ Identify and write (in words and standard form) whole numbers up to 10,000. (*Introduce: up to 1,000,000*)
- \_\_\_\_\_ Recognize and compare common fractions represented with a pictorial model.
- \_\_\_\_\_ Represent multiplication as repeated addition, e.g., skip count by 2, 3, 4, 5, and 10.
- \_\_\_\_\_ Order and compare whole numbers up to 1,000 using symbols ( $>$ ,  $<$ , or  $=$ ) and words (e.g., greater/more than, less than, equal to, between). (*Introduce: up to 10,000*)
- \_\_\_\_\_ Identify and express values to a dollar. (*Introduce: Order and compare decimals expressed using monetary values.*)
- \_\_\_\_\_ Identify and locate whole numbers on a number line. (*Introduce: halves*)
- \_\_\_\_\_ Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, greater than, less than).

### STANDARD B

**Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication and division) and their properties, algorithms, and relationships.**

### STANDARD C

**Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.**

#### Computation, Operations, Estimation, and Properties

- \_\_\_\_\_ Solve problems and number sentences involving addition and subtraction with two-digit numbers and regrouping. (mastery of basic addition and subtraction facts)
- \_\_\_\_\_ Solve problems involving the value of a collection of bills and coins whose total value is \$1.00 or less, and make change. (*Introduce: values up to \$10.00 or less*)
- \_\_\_\_\_ Use the inverse relationships between addition and subtraction to complete basic fact sentences and solve problems (e.g., fact families).
- \_\_\_\_\_ Model and apply basic multiplication facts (up to  $10 \times 10$ ). (*Introduce: apply facts to related multiples of 10, e.g.,  $3 \times 4 = 12$ ,  $30 \times 4 = 120$  and division with physical objects*)
- \_\_\_\_\_ Solve problems involving the additive identity of zero (e.g.,  $3 + 0 = 3$ ) and the additive identity of zero (e.g.,  $3 + 0 = 3$ ).
- \_\_\_\_\_ Make estimates appropriate to a given situation with whole numbers.

## GOAL 7 Measurement

**Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.**

### STANDARD A

**Measure and compare quantities using appropriate units, instruments, and methods.**

### STANDARD B

**Estimate measurements and determine acceptable levels of accuracy.**

### STANDARD C

**Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.**

#### Units, Tools, Estimation, and Applications

- \_\_\_\_\_ Solve problems involving simple elapsed time. (*Introduce: compound units e.g., hours, minutes, days*)
- \_\_\_\_\_ Select and use appropriate standard units and tools to measure length (to nearest inch or cm), time (to nearest 5 minute), and temperature (to nearest degree).
- \_\_\_\_\_ Solve problems involving perimeter of a polygon with given side lengths or a given non-standard unit (e.g., paper clip).
- \_\_\_\_\_ Solve problems involving the area of a figure when whole and half square units are shown within the figure. (*Introduce: Determine the volume of a solid figure that shows cubic units.*)
- \_\_\_\_\_ Compare and estimate length (including perimeter), and weight/mass using referents.
- \_\_\_\_\_ Solve problems involving simple unit conversions within the same measurement system for time. (*Introduce: length*)

## GOAL 8 Algebra

**Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.**

### STANDARD A

**Describe numerical relationships using variables and patterns.**

#### Representations, Patterns, and Expressions

- \_\_\_\_\_ Determine a missing term in a pattern, describe a pattern, and extend a pattern when given a description or pattern.
- \_\_\_\_\_ Write an expression to represent a situation.

### STANDARD C

**Solve problems using systems of numbers and their properties.**

### STANDARD D

**Use algebraic concepts and procedures to represent and solve problems.**

#### Writing, Interpreting, and Solving Equations

- \_\_\_\_\_ Represent simple mathematical relationships with number sentences (equalities and inequalities).
- \_\_\_\_\_ Solve one-step addition and subtraction equations that have a missing number or missing operation sign (e.g.,  $3 + \square = 5$ ,  $6 - \square = 1$ ).
- \_\_\_\_\_ Solve word problems involving unknown quantities (may include more than one step).



## GOAL 9 Geometry

**Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.**

### STANDARD A

**Demonstrate and apply geometric concepts involving points, lines, planes and space.**

#### Properties of Single Figures and Coordinate Geometry

- \_\_\_\_\_ Identify and describe two-dimensional shapes (triangles, squares, rectangles, pentagons, hexagons, and octagons) according to the number of sides, length of sides, and number of vertices. (*Introduce: sketch shapes*)
- \_\_\_\_\_ Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, and pyramids) according to their characteristics (faces, edges, vertices). (*Introduce: prisms*)
- \_\_\_\_\_ Locate and identify points using numbers and symbols on a grid, and describe how points relate to each other on a grid (e.g.,  is 2 units below , point A is 3 units to the right of point B).
- \_\_\_\_\_ Identify whether or not a figure has a line of symmetry, and identify the line of symmetry.
- \_\_\_\_\_ (*Introduce: Identify parallel lines.*)

### STANDARD B

**Identify, describe, classify and compare relationships using points, lines, planes and solids.**

#### Relationships Between and Among Multiple Figures

- \_\_\_\_\_ (*Introduce: Identify the two-dimensional components of a three-dimensional object, e.g., a cube has square faces.*)
- \_\_\_\_\_ (*Introduce: Identify a three-dimensional object from its net.*)
- \_\_\_\_\_ Predict the result of putting shapes together and taking them apart.
- \_\_\_\_\_ Identify congruent figures by visual inspection.
- \_\_\_\_\_ Determine the distance between two points on the number line in whole numbers.

## GOAL 10 Data Collection and Statistical Analysis

**Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.**

### STANDARD A

**Organize, describe, and make predictions from existing data.**

### STANDARD B

**Formulate questions, design data collection methods, gather and analyze data and communicate findings.**

#### Data Analysis and Statistics

- \_\_\_\_\_ Read and interpret data represented in a pictograph, bar graph, Venn diagram (with two circles), tally chart, or table.
- \_\_\_\_\_ Complete missing parts of a pictograph, bar graph, tally chart, or table for a given set of data.

### STANDARD C

**Determine, describe and apply the probabilities of events.**

#### Probability

- \_\_\_\_\_ Classify events using words such as certain, possible, and impossible.