

# Math

At the end of the school year, students will be able to...

## GOAL 6 Numbers Sense and Computations

**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.**

- \_\_\_\_\_ Identify, read, write, compare and model numerals to billions.
- \_\_\_\_\_ Rename numbers written in exponential notation.
- \_\_\_\_\_ Demonstrate use of basic fraction concepts and operations.
- \_\_\_\_\_ Demonstrate relationships of fractions, decimals and percents.
- \_\_\_\_\_ Explore prime and composite numbers, greatest common factors, and least common multiples.
- \_\_\_\_\_ Explore real world applications with integers.

### STANDARD B

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

- \_\_\_\_\_ Explore division by 2-digits.
- \_\_\_\_\_ Practice adding and subtracting fractions with like denominators and explore with unlike.
- \_\_\_\_\_ Practice adding and subtracting multi-digit whole numbers and decimals.
- \_\_\_\_\_ Explore multiplication and division of decimals by whole numbers.
- \_\_\_\_\_ Solve problems using a variety of methods and multiple operations.

### STANDARD C

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

- \_\_\_\_\_ Multiply by 2-digits.
- \_\_\_\_\_ Divide by 1-digit.
- \_\_\_\_\_ Estimate solutions in all problem-solving situations.
- \_\_\_\_\_ Round to nearest 10, 100, 1000 and decimals to the nearest hundredth.
- \_\_\_\_\_ Demonstrate mental math strategies with addition, subtraction, multiplication and fractions.

**STANDARD D**

**Solve problems using comparisons of quantities, ratios, proportions and percents.**

- \_\_\_\_\_ Explore the use of rates and ratios in problem-solving situations.
- \_\_\_\_\_ Compare the relationship of percents, decimals and fractions.

**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.**

- \_\_\_\_\_ Measure length, distance, weight, volume and capacity in customary and metric units.
- \_\_\_\_\_ Make change to one hundred dollars.
- \_\_\_\_\_ Demonstrate measurement of angles in degrees.
- \_\_\_\_\_ Find area and perimeter of regular and irregular shapes.
- \_\_\_\_\_ Distinguish between circumference and area of circles

**STANDARD B**

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

- \_\_\_\_\_ Determine what units of measure are appropriate for given situations.

**STANDARD C**

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

- \_\_\_\_\_ Measure length, distance, weight, volume and capacity using customary and metric units.
- \_\_\_\_\_ Convert equivalent units to time measurements.
- \_\_\_\_\_ Apply money concepts to problem solving situations.

**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.**

- \_\_\_\_\_ Write and solve multiplication and division number sentences.
- \_\_\_\_\_ Use mathematical symbols (<, >, and =) to write and evaluate number sentences.
- \_\_\_\_\_ Explore order of operations.

**STANDARD B**

**Interpret and describe numerical relationships using tables, graphs and symbols.**

- \_\_\_\_\_ Identify and complete number and geometrical patterns.

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

- \_\_\_\_\_ Apply number properties (commutative, zero, identity).
- \_\_\_\_\_ Write and solve number sentences for addition, subtraction, multiplication and division.

**STANDARD D** Using algebraic concepts and procedures to represent problem solving.

- \_\_\_\_\_ Graph ordered pairs in four-quadrant system.

**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 solids.

- \_\_\_\_\_ Identify characteristics of and draw two and three-dimensional shapes.
- \_\_\_\_\_ Classify and identify properties of polygons.
- \_\_\_\_\_ Classify polygons based on their properties.
- \_\_\_\_\_ Find perimeter, area and volume of basic geometric shapes.
- \_\_\_\_\_ Explore constructions of line segments, areas, angles and triangles.

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

- \_\_\_\_\_ Identify concepts of lines and segments (intersecting and parallel).
- \_\_\_\_\_ Explore area/circumferences of circles using formulas.
- \_\_\_\_\_ Rotate figures.
- \_\_\_\_\_ Identify vertices, faces and edges of three-dimensional figures.
- \_\_\_\_\_ Explore shapes that tessellate.

**STANDARD C** Construct convincing arguments and proofs to solve problems.

- \_\_\_\_\_ Classify and identify properties of polygons.

**STANDARD D** Use trigonometric ratios and circular functions to solve problems.

- \_\_\_\_\_ Identify and classify different types of angles.

**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.

- \_\_\_\_\_ Read, interpret and construct bar and line graphs.

**STANDARD B**

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

- \_\_\_\_\_ Find mean, median, mode and range of data and use to compare.
- \_\_\_\_\_ Develop and implement a plan for collecting and analyzing data.
- \_\_\_\_\_ Write mathematical questions.

**STANDARD C**

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

- \_\_\_\_\_ Use probabilities in games and problems to find likeliness of outcomes.