

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 and above; decimals to thousandths.
- _____ Rename numbers written in exponential notations.
- _____ Apply fraction concepts (equivalent fractions, improper numbers, mixed numbers and simplest form).
- _____ Demonstrate relationships between fractions, decimals, and percents.
- _____ Explore exponents.
- _____ Compare/order integers.

STANDARD B

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

- _____ Practice adding and subtracting integers. Explore multiply/divide.
- _____ Use prime and composite numbers, greatest common factors, and least common multiples.
- _____ Practice adding, subtracting and multiplying decimals. Explore dividing decimals.
- _____ Demonstrate use of decimals through the ten-thousandths.

STANDARD C

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

- _____ Multiply and divide by 2-digits.
- _____ Solve problems using a variety of methods with multiple operations.
- _____ Solve multiplication/division problems involving powers of 10.
- _____ Demonstrate estimation and mental math with addition, subtraction and multiplication of whole numbers and fractions.
- _____ Round to nearest 100, 1000; decimals to thousandths.

STANDARD D

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

- _____ Convert and compare decimals, fractions and percents.
- _____ Find proportions and explore solving proportions.
- _____ Represent rates with formulas, tables and graphs.
- _____ Explore uses of ratios and ways of expressing ratios.

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 using customary and metric units.
- _____ Find and compare perimeter/area of regular shapes using formulas.
- _____ Find and distinguish between circumference and areas of circles.
- _____ Measure and create angles in degrees.

STANDARD B

Estimate measurements and determine acceptable levels of accuracy.

- _____ Determine what units of measurement are appropriate for given situations.

STANDARD C

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

- _____ Explore using scales and scale drawings for given 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.

- _____ Use mathematical symbols and include exponents.
- _____ Identify and complete number and geometric patterns.
- _____ Apply order of operations to evaluate expressions and solve number sentences.
- _____ Explore simplifying and solving linear equations with a variable.

STANDARD B

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

- _____ Identify and complete number and geometric patterns.
- _____ Graph ordered pairs in four-coordinate system.

STANDARD C

Solve problems using systems of numbers and their properties.

- _____ Simplify expressions using order of operations with symbols of inclusion and the four basic operations.

STANDARD D

Using algebraic concepts and procedures to represent problem solving.

- _____ Practice writing and evaluating algebraic expressions and equations.

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.

- _____ Draw two and three-dimensional shapes.
- _____ Identify vertices, faces, edges and bases of three-dimensional figures.
- _____ Identify and classify polygons.
- _____ Demonstrate construction of line segments, areas, angles and triangles.
- _____ Demonstrate identifying and creating congruent and similar shapes with one or more lines of symmetry.
- _____ Explore creating tessellation.

STANDARD B

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

- _____ Identify and apply concepts of lines (intersecting, parallel and perpendicular).
- _____ Use formulas to find area and circumference of circles.
- _____ Construct all types of angles (acute, obtuse or right).

STANDARD C

Construct convincing arguments and proofs to solve problems.

- _____ Apply geometric relationships in problem solving.

STANDARD D

Use trigonometric ratios and circular functions to solve problems.

- _____ Explore use of Pythagorean theorem.

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 graphs, tables, schedules, time lines and charts.
- _____ Collect and compare data from a variety of sources.
- _____ Estimate solutions for all problem-solving situations.

STANDARD B

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

- _____ Find mean, median, mode and range of data.
- _____ Write mathematical questions.
- _____ Develop and implement a plan for collecting and analyzing data using statistical vocabulary.

STANDARD C

Determine, describe and apply the probabilities of events.

- _____ Use probability to predict results in real world situations.