

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

G R A D E 4

State Goal 6 Numbers and Sense of Computation

The students will be able to demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios, and proportions.

STANDARD A

The students will be able to demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.

- _____ Read, write, compare and model numerals through 100,000 and explore to 1,000,000.
- _____ Demonstrate place value to 6 digits.
- _____ Demonstrate expanded notation.
- _____ Explore Roman numerals I, V, X.
- _____ Explore fractions including equivalent and improper fractions, mixed numbers, and simplest form.
- _____ Use decimals through hundredths with money applications.
- _____ Explore prime and composite numbers as well as factors, multiples, and divisors.
- _____ Count by fours starting at different numbers and use a calculator to explore the patterns.

STANDARD B

The students will be able to investigate, represent, and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms, and relationships.

- _____ Add and subtract accurately.
- _____ Demonstrate multiplication and division facts through tens.
- _____ Multiply by three digits and divide by one digit.
- _____ Explore division by 2 digits.
- _____ Add and subtract fractions with like denominators with and without physical models.
- _____ Explore adding and subtracting unlike denominators.
- _____ Add and subtract decimals through hundredths with money.
- _____ Problem solve using a variety of methods and with multiple operations.

STANDARD C

The students will be able to compute and estimate using mental mathematics, paper-and-pencil methods, calculators, and computers.

- _____ Estimate solutions to addition, subtraction and multiplication problems.
- _____ Round to nearest ten, hundred, dollar, thousand, ten-thousand, and hundred-thousand.
- _____ Demonstrate mental math strategies with addition, subtraction, multiplication and fractions.

STANDARD D

The students will be able to solve problems using comparison of quantities, ratios, proportions, and percents.

- _____ Compare the relationship of percents, decimals and fractions.
- _____ Explore ratios and proportions.

State Goal 7 Measurement

The students will be able to estimate, make, and use measurements of objects, quantities, and relationships and determine acceptable levels of accuracy.

STANDARD A

The students will be able to measure and compare quantities using appropriate units, instruments, and methods.

- _____ Measure length, distance, weight, volume, and temperature using English and metric units.
- _____ Identify and express values to \$1000.
- _____ Make change to \$1000.
- _____ Tell time including elapsed time.

STANDARD B

The students will be able to estimate measurements and determine acceptable levels of accuracy.

STANDARD C

The students will be able to select and use appropriate technology, instruments and formulas to solve problems, interpret results, and communicate findings.

- _____ Measure length, distance, weight, volume, and temperature using customary and metric units.
- _____ Find perimeters, areas and volumes of shapes by counting and using the formula.

State GOAL 8 Algebra

The students will be able to use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems, and predict results.

STANDARD A

The students will be able to describe numerical relationships using variables and patterns.

- _____ Use mathematical symbols and explore use of $<$, $>$, and 1 .
- _____ Use concept of variable to represent objects or attributes.

STANDARD B

The students will be able to interpret and describe numerical relationships using tables, graphs, and symbols.

- _____ Identify and complete number and geometric patterns with and without physical models.
- _____ Find missing terms in equations containing addition, subtraction, multiplication, and division.

STANDARD C

The students will be able to solve problems using systems of numbers and their properties.

- _____ Demonstrate set theory including commutative and associative properties and identity element.
- _____ Calculate using order of operations.

STANDARD D

The students will be able to use algebraic concepts and procedures to represent and solve problems.

- _____ Graph ordered pairs in a one-quadrant coordinate system.
- _____ Find missing terms in equations containing addition, subtraction, and multiplication operations.
- _____ Wonder and pose mathematical questions.

State Goal 9 Geometry

The students will be able to use geometric methods to analyze, categorize, and draw conclusions about points, lines, planes, and space.

STANDARD A

The students will be able to demonstrate and apply geometric concepts involving points, lines, planes, and space.

- _____ Distinguish two dimensional versus three dimensional shapes.
- _____ Create basic polygons and solids including a rhombus.

STANDARD B

The students will be able to identify, describe, classify, and compare relationships using points, lines, planes, and solids.

- _____ Identify concepts of line segments, e.g., parallel and perpendicular lines.
- _____ Explore circle vocabulary, e.g., radius, diameter, and circumference.
- _____ Create congruent and similar figures.
- _____ Create shapes and designs which have one or more lines of symmetry.

STANDARD C

The students will be able to construct convincing arguments and proofs to solve problems.

STANDARD D

The students will be able to use trigonometric ratios and circular functions to solve problems.

- _____ Identify right angles.

State Goal 10 Data Collection and Statistical Analysis

The students will be able to collect, organize, and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.

STANDARD A

The students will be able to organize, describe, and make predictions from existing data.

- _____ Read, interpret, and construct simple graphs, tables, schedules, time lines, and charts.
- _____ Explore finding averages of sets of data.

STANDARD B

The students will be able to formulate questions, design data collection methods, gather and analyze data, and communicate findings.

- _____ Develop and implement a plan for collecting and analyzing data.
- _____ Wonder and pose mathematical questions.

STANDARD C

The students will be able to determine, describe, and apply the probabilities of events.

- _____ Explore chance through games and problems.