

M Mathematics

PreK-2

Number Sense, Concepts, and Operations

Standard 1:

The student understands the different ways numbers are represented and used in the real world. (MA.A.1.1)

1. associates verbal names, written word names, and standard numerals with the whole numbers less than 1000.
2. understands the relative size of whole numbers between 0 and 1000.
3. uses objects to represent whole numbers or commonly used fractions and relates these numbers to real-world situations.
4. understands that whole numbers can be represented in a variety of equivalent forms.

Standard 2:

The student understands number systems. (MA.A.2.1)

1. understands and applies the concepts of counting (by 2s, 3s, 5s, 10s, 25s, 50s), grouping, and place value with whole numbers between 0 and 100.
2. uses number patterns and the relationships among counting, grouping, and place value strategies to demonstrate an understanding of the whole number system.

Standard 3:

The student understands the effects of operations on numbers and the relationships among these operations, selects appropriate operations, and computes for problem solving. (MA.A.3.1)

1. understands and explains the effects of addition and subtraction on whole numbers, including the inverse (opposite) relationship of the two operations.
2. selects the appropriate operation to solve specific problems involving addition and subtraction of whole numbers.

3. adds and subtracts whole numbers to solve real-world problems using appropriate methods of computing, such as objects, mental mathematics, paper and pencil, calculator.

Standard 4:

The student uses estimation in problem solving and computation. (MA.A.4.1)

1. provides and justifies estimates for real-world quantities.

Standard 5:

The student understands and applies theories related to numbers. (MA.A.5.1)

1. classifies and models numbers as even or odd.

Measurement

Standard 1:

The student measures quantities in the real world and uses the measures to solve problems. (MA.B.1.1)

1. uses and describes basic measurement concepts including length, weight, digital and analog time, temperature, and capacity.
2. uses standard customary and metric (centimeter, inch) and nonstandard units, such as links or blocks, in measuring real quantities.

Standard 2:

The student compares, contrasts, and converts within systems of measurement (both standard/nonstandard and metric/customary). (MA.B.2.1)

1. uses direct (measured) and indirect (not measured) comparisons to order objects according to some measurable characteristics (length, weight).
2. understands the need for a uniform unit of measure to communicate in real-world situations.

Standard 3:

The student estimates measurements in real-world problem situations. (MA.B.3.1)

1. using a variety of strategies, estimates lengths, widths, time intervals, and money and compares them to actual measurements.

Standard 4:

The student selects and uses appropriate units and instruments for measurement to achieve the degree of

precision and accuracy required in real-world situations.

(MA.B.4.1)

1. selects and uses an object to serve as a unit of measure, such as a paper clip, eraser, or marble.
2. selects and uses appropriate instruments, such as scales, rulers, clocks, and technology to measure within customary or metric systems.

Geometry and Spatial Sense

Standard 1:

The student describes, draws, identifies, and analyzes two- and three-dimensional shapes. (MA.C.1.1)

1. understands and describes the characteristics of basic two- and three-dimensional shapes.

Standard 2:

The student visualizes and illustrates ways in which shapes can be combined, subdivided, and changed.

(MA.C.2.1)

1. understands basic concepts of spatial relationships, symmetry, and reflections.
2. uses objects to perform geometric transformations, including flips, slides, and turns.

Standard 3:

The student uses coordinate geometry to locate objects in both two- and three-dimensions and to describe objects algebraically. (MA.C.3.1)

1. uses real-life experiences and physical materials to describe, classify, compare, and sort geometric figures, including squares, rectangles, triangles, circles, cubes, rectangular solids, spheres, pyramids, cylinders, and prisms, according to the number of faces, edges, bases, and corners.
2. plots and identifies positive whole numbers on a number line.

Algebraic Thinking

Standard 1:

The student describes, analyzes, and generalizes a wide variety of patterns, relations, and functions. (MA.D.1.1)

1. describes a wide variety of classification schemes and patterns related to physical characteristics and sensory attributes, such as rhythm, sound, shapes, colors, numbers, similar objects, similar events.
2. recognizes, extends, generalizes, and creates a wide variety of patterns and relationships using symbols and objects.

Standard 2:

The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (MA.D.2.1)

1. understands that geometric symbols (●, ■, ▲) can be used to represent unknown quantities in expressions, equations, and inequalities.
2. uses informal methods to solve real-world problems requiring simple equations that contain one variable.

Data Analysis and Probability

Standard 1:

The student understands and uses the tools of data analysis for managing information. (MA.E.1.1)

1. displays solutions to problems by generating, collecting, organizing, and analyzing data using simple graphs and charts.
2. displays data in a simple model to use the concepts of range, median, and mode.
3. analyzes real-world data by surveying a sample space and predicting the generalization onto a larger population through the use of appropriate technology, including calculators and computers.

Standard 2:

The student identifies patterns and makes predictions from an orderly display of data using concepts of probability and statistics. (MA.E.2.1)

1. understands basic concepts of chance and probability.
2. predicts which simple event is more likely, equally likely, or less likely to occur.

Standard 3:

The student uses statistical methods to make inferences and valid arguments about real-world situations.

(MA.E.3.1)

1. designs a simple experiment to answer a class question, collects appropriate information, and interprets the results using graphical displays of information, such as line graphs, pictographs, and charts.
2. decides what information is appropriate and how data can be collected, displayed, and interpreted to answer relevant questions.