

Sixth Grade Math Extended Indicators

MA 6.1	NUMBER: Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
MA 6.1.1	Numeric Relationships: Students will demonstrate, represent, and show relationships among fractions, decimals, percents, and integers within the base-ten number system.
MA 6.1.1.a	Determine common factors and common multiples using prime factorization of numbers with and without exponents.
MAE 6.1.1.a	Identify the common factors of 4 and 6, 6 and 9, 8 and 10, given the factors of both numbers.
MA 6.1.1.b	Represent non-negative whole numbers using exponential notation.
MAE 6.1.1.b	Represent 10, 100, 1,000, or 10,000 as a power of 10.
MA 6.1.1.c	Compare and order rational numbers both on the number line and not on the number line.
MAE 6.1.1.c	Compare and order halves, quarters, and tenths of whole numbers 0–1 on a number line.
MA 6.1.1.d	Convert among fractions, decimals, and percents using multiple representations.
MAE 6.1.1.d	Convert halves, fourths, and tenths to decimals using a model, 0–1.
MA 6.1.1.e	Determine ratios from drawings, words, and manipulatives.
MA 6.1.1.f	Explain and determine unit rates.
MA 6.1.1.g	Model integers using drawings, words, manipulatives, number lines, and symbols.
MAE 6.1.1.g	Identify models of integers –10 to 10 using a number line.
MA 6.1.1.h	Compare and order integers and absolute value both on the number line and not on the number line.
MAE 6.1.1.h	Compare and order integers (–10 to 10) on a number line.
MA 6.1.1.i	Determine absolute value of rational numbers.
MAE 6.1.1.i	Identify the absolute value of an integer –10 to 10.
MA 6.1.2	Operations: Students will compute with fractions and decimals accurately.
MA 6.1.2.a	Multiply and divide non-negative fractions and mixed numbers.
MAE 6.1.2.a	Multiply and divide positive fractions, halves, fourths, thirds and tenths using models.
MA 6.1.2.b	Evaluate expressions with positive exponents.
MA 6.1.2.c	Divide multi-digit whole numbers using the standard algorithm.
MAE 6.1.2.c	Divide a two-digit number by a one-digit number with a remainder.
MA 6.1.2.d	Add, subtract, multiply, and divide decimals using the standard algorithms.
MAE 6.1.2.d	Add and subtract numbers 0–10 with one decimal place without regrouping.
MA 6.1.2.e	Estimate and check reasonableness of answers using appropriate strategies and tools.
MAE 6.1.2.e	Estimate the sum of two decimal numbers with tenths (e.g., 5.2 + 3.7 is about 9).

MA 6.2	Algebra: Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
MA 6.2.1	Algebraic Relationships: Students will demonstrate, represent, and show relationships with expressions, equations, and inequalities.
MA 6.2.1.a	Create algebraic expressions (e.g., one operation, one variable as well as multiple operations, one variable) from word phrases.
MAE 6.2.1.a	Match a simple word phrase with an input/output box.
MA 6.2.1.b	Recognize and generate equivalent algebraic expressions involving distributive property and combining like terms.
MA 6.2.1.c	Represent and analyze the relationship between two variables using graphs, tables, and one-step equations.
MA 6.2.2	Algebraic Processes: Students will apply the operational properties when evaluating expressions and solving expressions, equations, and inequalities.
MA 6.2.2.a	Simplify expressions using the distributive property and combining like terms.
MAE 6.2.2.a	Identify whole number expressions using the distributive property (e.g., $2(3 + 4)$).
MA 6.2.2.b	Use substitution to determine if a given value for a variable makes an equation or inequality true.
MA 6.2.2.c	Evaluate numerical expressions, including absolute value and exponents, with respect to order of operations.
MAE 6.2.2.c	Demonstrate understanding of order of operations involving addition, subtraction, and multiplication.
MA 6.2.2.d	Given the value of the variable, evaluate algebraic expressions (which may include absolute value) with respect to order of operations (non-negative rational numbers).
MA 6.2.2.e	Solve one-step equations with non-negative rational numbers using addition, subtraction, multiplication, and division.
MAE 6.2.2.e	Solve a one-step equation using addition and subtraction.
MA 6.2.2.f	Use equivalent ratios relating quantities with whole numbers to create a table. Find missing values in the table.
MAE 6.2.2.f	Find a missing number in a table with the ratio of 1:2, 1:3, or 1:10.
MA 6.2.2.g	Represent inequalities on a number line (e.g., graph $x > 3$).
MAE 6.2.2.g	Identify a solution to an inequality on a number line (-10 to 10).
MA 6.2.3	Applications: Students will solve real-world problems involving ratios, unit rates, and percents.
MA 6.2.3.a	Write equations (e.g., one operation, one variable) to represent real-world problems involving non-negative rational numbers.

MA 6.2.3.b	Solve real-world problems involving non-negative rational numbers.
MAE 6.2.3.b	Solve real-world problems with addition and subtraction of decimal numbers to the tenth without regrouping.
MA 6.2.3.c	Solve real-world problems involving percents of numbers.
MA 6.2.3.d	Solve real-world problems using ratios and unit rates.
MAE 6.2.3.d	Solve real-world problems using ratios up to 1:3.
MA 6.3	GEOMETRY: Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
MA 6.3.1	Characteristics: Students will identify and describe geometric characteristics and create two- and three-dimensional shapes.
MA 6.3.1.a	Identify and create nets to represent two-dimensional drawings of prisms, pyramids, cylinders, and cones.
MAE 6.3.1.a	Identify a cube, cylinder, or cone from a given two-dimensional representation.
MA 6.3.2	Coordinate Geometry: Students will determine location, orientation, and relationships on the coordinate plane.
MA 6.3.2.a	Identify the ordered pair of a given point in the coordinate plane.
MA 6.3.2.b	Plot the location of an ordered pair in the coordinate plane.
MA 6.3.2.c	Identify the quadrant of a given point in the coordinate plane.
MAE 6.3.2.c	Identify a point on a 4 by 4 grid in quadrant 1.
MA 6.3.2.d	Draw polygons in the coordinate plane given coordinates for the vertices.
MAE 6.3.2.d	Identify the location of one vertex of a triangle in quadrant 1 with one vertex on the origin.
MA 6.3.2.e	Calculate vertical and horizontal distances in the coordinate plane to find perimeter and area.
MA 6.3.3	Measurement: Students will perform and compare measurements and apply formulas.
MA 6.3.3.a	Determine the area of quadrilaterals, including parallelograms, trapezoids, and triangles by composition and decomposition of polygons as well as application of formulas.
MAE 6.3.3.a	Find the area of a rectangle using its whole number side lengths.

MA 6.3.3.b	Determine the surface area of rectangular prisms and triangular prisms using nets.
MAE 6.3.3.b	Find the surface area of a rectangular prism by counting unit squares in a net.
MA 6.3.3.c	Apply volume formulas for rectangular prisms.
MAE 6.3.3.c	Find the volume of a rectangular prism using the volume formula.
MA 6.4	DATA: Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.
MA 6.4.1	Representations: Students will create displays that represent data.
MA 6.4.1.a	Represent data using line plots, dot plots, box plots, and histograms.
MA 6.4.2	Analysis & Applications: Students will analyze data to address the situation.
MA 6.4.2.a	Solve problems using information presented in line plots, dot plots, box plots, and histograms.
MAE 6.4.2.a	Interpret a histogram that matches a data set.
MA 6.4.2.b	Compare and interpret data sets based upon their graphical representations (e.g., center, spread, and shape).
MAE 6.4.2.b	Solve basic problems using histograms (e.g., How many times did Sara knock down 9 pins? How many more students have 1 pet than have 2 pets?).
MA 6.4.2.c	Find and interpret the mean, median, mode, and range for a set of data.
MAE 6.4.2.c	Find the mode of a set of ordered whole number data.
MA 6.4.2.d	Compare the mean, median, mode, and range from two sets of data.
MAE 6.4.2.d	Find the median of a set of ordered whole number data.
MA 6.4.3	Probability: Students will interpret and apply concepts of probability.
	No additional indicator(s) at this level.