

6th Grade Math Essential Standards and Learning Targets

Essential Standards

<p>6_M_1 Students will understand, apply and perform operations with rational numbers to solve real-world and mathematical problems.</p>	<p>6_M_2 Students will develop, understand, and apply numerical and algebraic concepts to solve real-world and mathematical problems.</p>	<p>6_M_3 Students will understand and apply geometric concepts to solve real-world and mathematical problems.</p>	<p>6_M_4 Students will understand statistical data to illustrate and interpret one-variable data.</p>
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Learning Targets

<ul style="list-style-type: none"> ● 6_M_1_A: Understand a ratio as a comparison of two quantities and represent these comparisons. (MLS-6.RP.A.1) (CCSS-6.RP.1) ● 6_M_1_B: Solve problems involving ratios and rates. (MLS-6.RP.A.3a) (CCSS-6.RP.3a) <ul style="list-style-type: none"> a. Create tables of equivalent ratios, find missing values in the tables and plot the pairs of values on the Cartesian coordinate plane. ● 6_M_1_C: Understand the concept of a unit rate associated with a ratio, and describe the meaning of unit rate. (MLS-6.RP.A.2) (CCSS-6.RP.2) ● 6_M_1_D: Solve problems involving ratios and rates. (MLS-6.RP.A.3b) (CCSS-6.RP.3b) <ul style="list-style-type: none"> b. Solve unit rate problems. ● 6_M_1_E: Solve problems involving ratios and rates. (MLS-6.RP.A.3d) (CCSS-6.RP.3d) <ul style="list-style-type: none"> d. Convert measurement units within and between two systems of measurement. ● 6_M_1_F: Extend prior knowledge to generate equivalent representations of rational numbers between fractions, decimals and percentages (limited to terminating decimals and benchmark fractions of 1/3 and 2/3) (MLS-6.NS.C.8) (CCSS-6.RP.3c) ● 6_M_1_G: Solve problems involving ratios and rates. (MLS-6.RP.A.3c) (CCSS-6.RP.3c) <ul style="list-style-type: none"> c. Solve percent problems. ● 6_M_1_H: Compute and interpret quotients of positive fractions including solving problems involving division of fractions by fractions. (MLS-6.NS.A.1) (CCSS-6.NS.1) <ul style="list-style-type: none"> a. Solve problems involving division of fractions by fractions. ● 6_M_1_I: Demonstrate fluency with addition of decimals. (MLS-6.NS.B.3) (CCSS-6.NS.3) ● 6_M_1_J: Demonstrate fluency subtraction of decimals. (MLS-6.NS.B.3) (CCSS-6.NS.3) ● 6_M_1_K: Demonstrate fluency with multiplication of decimals. (MLS-6.NS.B.3) (CCSS-6.NS.3) ● 6_M_1_L: Demonstrate fluency with division of multi-digit whole numbers. (MLS-6.NS.B.2) (CCSS-6.NS.2) ● 6_M_1_M: Demonstrate fluency with division of decimals. (MLS-6.NS.B.3) (CCSS-6.NS.3) ● 6_M_1_N: Find common factors and multiples. (MLS-6.NS.B.4) (CCSS-6.NS.4) <ul style="list-style-type: none"> a. Find the greatest common factor (GCF) and the least common multiple (LCM). b. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers. 	<ul style="list-style-type: none"> ● 6_M_1_O: Use positive and negative numbers to represent quantities. (MLS-6.NS.C.5) (CCSS-6.NS.5) ● 6_M_1_P: Locate a rational number as a point on the number line. (MLS-6.NS.C.6a) (CCSS-6.NS.6c) <ul style="list-style-type: none"> a. Locate rational numbers on a horizontal or vertical number line. ● 6_M_1_Q: Locate a rational number as a point on the number line. (MLS-6.NS.C.6c) (CCSS-6.NS.6c) <ul style="list-style-type: none"> c. Understand that a number and its opposite (additive inverse) are located on opposite sides of the zero on the number line. ● 6_M_1_R: Locate a rational number as a point on the number line. (MLS-6.NS.C.6b) (CCSS-6.NS.6c) <ul style="list-style-type: none"> b. Write, interpret, and explain problems involving the ordering of rational numbers. ● 6_M_1_S: Understand that the absolute value of a rational number is its distance from 0 on the number line. (MLS-6.NS.C.7) (CCSS-6.NS.7) 	<ul style="list-style-type: none"> ● 6_M_2_A: Identify and generate equivalent algebraic expressions using mathematical properties. (MLS-6.EE.I.A.3) (CCSS-6.EE.3/6.EE.4) ● 6_M_2_B: Create and evaluate expressions involving variables and whole number exponents. (MLS-6.EE.I.A.2) (CCSS-6.EE.1) ● 6_M_2_C: Create and evaluate expressions involving variables and whole number exponents. (MLS-6.EE.I.A.2c) (CCSS-6.EE.2c) <ul style="list-style-type: none"> c. Evaluate non-negative rational number expressions. ● 6_M_2_D: Create and evaluate expressions involving variables and whole number exponents. (MLS-6.EE.I.A.2b) (CCSS-6.EE.2c) <ul style="list-style-type: none"> b. Evaluate expressions at specific values of the variables. ● 6_M_2_E: Create and evaluate expressions involving variables and whole number exponents. (MLS-6.EE.I.A.2a) (CCSS-6.EE.2b) <ul style="list-style-type: none"> a. Identify parts of an expression using mathematical terminology. ● 6_M_2_F: Create and evaluate expressions involving variables and whole number exponents. (MLS-6.EE.I.A.2d) (CCSS-6.EE.2a) <ul style="list-style-type: none"> d. Write and evaluate algebraic expressions. ● 6_M_2_G: Create and evaluate expressions involving variables and whole number exponents. (MLS-6.EE.I.A.2e) (CCSS-6.EE.2a) <ul style="list-style-type: none"> e. Understand the meaning of the variable in the context of the situation. ● 6_M_2_H: Write and solve equations using variables to represent quantities, and understand the meaning of the variable in the context of the situation. (MLS-6.EE.I.B.6) (CCSS-6.EE.6) ● 6_M_2_I: Describe the difference between an expression and an equation. (MLS-6.EE.I.A.1) ● 6_M_2_J: Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true. (MLS-6.EE.I.B.4) (CCSS-6.EE.5) ● 6_M_2_K: Understand that if any solutions exist, the solution set for an equation or inequality consists of values that make the equation or inequality true. (MLS-6.EE.I.B.5) (CCSS-6.EE.5) ● 6_M_2_L: Solve one-step linear equations in one variable involving non-negative rational numbers. (MLS-6.EE.I.B.7) (CCSS-6.EE.7) ● 6_M_2_M: Recognize that inequalities may have infinitely many solutions. (MLS-6.EE.I.B.8) (CCSS-6.EE.8) <ul style="list-style-type: none"> a. Write an inequality of the form $x > c$, $x < c$, $x \geq c$ or $x \leq c$ to represent a constraint or condition. b. Graph the solution set of an inequality. ● 6_M_2_N: Identify and describe relationships between two variables that change in relationship to one another. (MLS-6.EE.I.C.9) (CCSS-6.EE.9) <ul style="list-style-type: none"> a. Write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable. b. Analyze the relationship between the dependent and independent variables using graphs, tables and equations and relate these representations to each other. 	<ul style="list-style-type: none"> ● 6_M_3_A: Solve problems by graphing points in all four quadrants of the Cartesian coordinate plane. (MLS-6.GM.A.3a) (CCSS-6.NS.6c) <ul style="list-style-type: none"> a. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the Cartesian coordinate plane ● 6_M_3_B: Solve problems by graphing points in all four quadrants of the Cartesian coordinate plane. (MLS-6.GM.A.3b) (CCSS-6.NS.6b) <ul style="list-style-type: none"> b. Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes ● 6_M_3_C: Solve problems by graphing points in all four quadrants of the Cartesian coordinate plane. (MLS-6.GM.A.3c) (CCSS-6.NS.8) <ul style="list-style-type: none"> c. Find distances between points with the same first coordinate or the same second coordinate. ● 6_M_3_D: Find the area of polygons by composing or decomposing the shapes into rectangles or triangles. (MLS-6.GM.A.1) (CCSS-6.G.1) ● 6_M_3_E: Solve problems by graphing points in all four quadrants of the Cartesian coordinate plane. (MLS-6.GM.A.3d) (CCSS-6.G.3) <ul style="list-style-type: none"> d. Construct polygons in the Cartesian coordinate plane. ● 6_M_3_F: Find the volume of right rectangular prisms. (MLS-6.GM.A.2) (CCSS-6.G.2) <ul style="list-style-type: none"> a. Understand that the volume of a right rectangular prism can be found by filling the prism with multiple layers of the base. b. Apply $V = l * w * h$ and $V = Bh$ to find the volume of right rectangular prisms. ● 6_M_3_G: Solve problems using nets. (MLS-6.GM.A.4) (CCSS-6.G.4) <ul style="list-style-type: none"> a. Represent three-dimensional figures using nets made up of rectangles and triangles. b. Use nets to find the surface area of three-dimensional figures whose sides are made up of rectangles and triangles. 	<ul style="list-style-type: none"> ● 6_M_4_A: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. (MLS-6.DSP.A.1) (CCSS-6.SP.1) ● 6_M_4_B: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread and overall shape. (MLS-6.DSP.A.2) (CCSS-6.SP.2) ● 6_M_4_C: Display and interpret data. (MLS-6.DSP.B.4a) (CCSS-6.SP.4) <ul style="list-style-type: none"> a. Use dot plots, histograms, and box plots to display and interpret data. ● 6_M_4_D: Summarize numerical data sets in relation to the context. (MLS-6.DSP.B.5a-b) (CCSS-6.SP.5a-b) <ul style="list-style-type: none"> a. Report the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. ● 6_M_4_E: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary from a single number. (MLS-6.DSP.A.3) (CCSS-6.SP.3) ● 6_M_4_F: Summarize numerical data sets in relation to the context. (MLS-6.DSP.B.5c) (CCSS-6.SP.5c) <ul style="list-style-type: none"> c. Give quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context of the data. ● 6_M_4_G: Summarize numerical data sets in relation to the context. (MLS-6.DSP.B.5d) (CCSS-6.SP.5d) <ul style="list-style-type: none"> d. Analyze the choice of measures of center and variability to the shape of the data distribution and the context of the data. ● 6_M_4_H: Create and interpret circle graphs. (MLS-6.DSP.B.4b)
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