6th Grade Math Essential Standards and Learning Targets

**Essential Standards**

- **6.M.1:** Students will understand, apply and perform operations with rational numbers to solve real-world and mathematical problems.
- **6.M.2:** Students will develop, understand, and apply numerical and geometric concepts to solve real-world and mathematical problems.
- **6.M.3:** Students will understand and apply geometric concepts to solve real-world and mathematical problems.
- **6.M.4:** Students will understand statistical data to illustrate and interpret one-variable data.

**Learning Targets**

- **6.M.1.A:** Understand a rational number as a comparison of two quantities and represent these comparisons. (6.NS.A.1) (CCSS.6.NS.1)
  - a. Create tables of equivalent ratios, find missing values in the table 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 use unit rates to solve problems. (6.RP.A.2) (CCSS.6.RP.2)
  - a. Understand that a ratio and its equivalent (additive inverse) are located on opposite sides of the zero on the number line. (6.NS.C.6) (CCSS.6.NS.6)
  - b. Solve unit rate problems.
- **6.M.1.D:** Solve problems involving ratios and rates. (6.RP.A.2) (CCSS.6.RP.2)
  - a. Convert measurement units within and between two systems of measurement.
  - b. Extend prior knowledge to generate equivalent representations of rational numbers between fractions, decimals and percents. (Limited to terminating decimals and benchmark fractions of 1/2, 1/4, and 3/4) (6.NS.A.3b) (CCSS.6.NS.3a)
  - a. Solve percent problems.
- **6.M.1.H:** Compute and interpret quotients of positive fractions including dividing problems involving division of fractions by fractions. (6.NS.A.1) (CCSS.6.NS.1)
  - a. Solve problems involving division of fractions by fractions.
  - b. Demonstrate fluency with addition of decimals. (6.NS.B.3) (CCSS.6.NS.3)
  - c. Demonstrate fluency with subtraction of decimals. (6.NS.B.3) (CCSS.6.NS.3)
  - d. Demonstrate fluency with multiplication of decimals. (6.NS.B.3) (CCSS.6.NS.3)
  - e. Demonstrate fluency with division of multi-digit whole numbers. (6.NS.B.2) (CCSS.6.NS.2)
  - f. Demonstrate fluency with division of multi-digit decimals. (6.NS.B.3) (CCSS.6.NS.3)
- **6.M.2.A:** Use positive and negative numbers to represent quantities. (6.NS.C.5) (CCSS.6.NS.5)
  - a. Locate rational numbers on a horizontal or vertical number line.
- **6.M.2.B:** Identify and generate equivalent algebraic expressions using mathematical properties. (6.EE.A.1) (CCSS.6.EE.1)
  - a. Understand signs of numbers in ordered pairs as indicating quadrants in Quadrants of the Cartesian coordinate plane.
  - b. Solve problems by graphing points in all four quadrants of the Cartesian coordinate plane. (6.NS.A.3a) (CCSS.6.NS.6c)
  - c. 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.2.C:** Solve problems involving expressions and variables and whole number exponents. (6.EE.A.2c) (CCSS.6.EE.2)
  - a. Include exponents in expressions involving whole number exponents. (6.EE.A.1) (CCSS.6.EE.1)
  - b. Solve problems involving expressions with exponents and whole number exponents. (6.EE.A.3) (CCSS.6.EE.3)
  - c. Include exponents in expressions involving whole number exponents and evaluate expressions. (6.EE.A.1) (CCSS.6.EE.1)
- **6.M.2.D:** Define and evaluate expressions involving variables and whole number exponents. (6.EE.A.2b) (CCSS.6.EE.2)
  - a. Include variables in expressions with exponents and evaluate expressions. (6.EE.A.1) (CCSS.6.EE.1)
  - b. Write, read, and evaluate expressions involving variables and whole number exponents. (6.EE.A.2a) (CCSS.6.EE.2a)
  - c. Find values of expressions involving one variable. (6.EE.A.3) (CCSS.6.EE.3)
  - d. Write and evaluate algebraic expressions.
- **6.M.2.E:** Generate equivalent algebraic expressions involving variables and whole number exponents. (6.EE.A.3) (CCSS.6.EE.3)
  - a. 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. (6.EE.B.6) (CCSS.6.EE.6)
  - a. Write an equation to frame a situation and an equation to frame an inequality in the context of the situation. (6.EE.B.6) (CCSS.6.EE.6)
  - b. Write an expression to frame a situation and an expression to frame an equation in the context of the situation.
  - c. Use substitution to determine whether an equation is true or false. (6.EE.B.5) (CCSS.6.EE.5)
  - d. Understand that a solution to an equation is a value of the variable that makes the equation true. (6.EE.B.5) (CCSS.6.EE.5)
- **6.M.2.K:** Solve one and two-step equations in context involving one or more rational numbers. (6.EE.C.7) (CCSS.6.EE.7)
  - a. Represent inequalities that may have infinitely many solutions. (6.EE.C.7) (CCSS.6.EE.7)
  - b. Solve one-step inequalities in context involving one or more rational numbers. (6.EE.C.7) (CCSS.6.EE.7)
  - c. Analyze the choices of measures and variability to the shape of the data distribution and the context of the data.
  - d. Create and interpret circle graphs. (6.SP.A.1) (CCSS.6.SP.5c)