5th Grade Math Essential Standards and Learning Targets

**Essential Standards**

- **S_M_1**: Students will demonstrate an understanding of the base-ten number system.
- **S_M_2**: Students will demonstrate an understanding of fractions and decimals.
- **S_M_3**: Students will understand and apply concepts of measurement.
- **S_M_4**: Students will develop, understand, and apply numeric and algebraic concepts.
- **S_M_5**: Students will recognize, compare, analyze, and describe geometric shapes.

**Learning Targets**

- **S_M_1.A**: Understand that a multi-digit number is a whole number constructed by combining ones, tens, and hundreds in various combinations. (M.S.-N.B.A.3) (CCSS-S-NBT1)
- **S_M_1.B**: Read, write, and understand numbers in the place value system. (M.S.-N.B.A.4) (CCSS-S-NBT2)
- **S_M_1.C**: Read, write, and identify numbers from billions to thousands using number names, base ten numerals, and expanded form. (M.S.-N.B.A.5) (CCSS-S-NBT3a)
- **S_M_1.D**: Compare two numbers from billions to thousands place. (M.S.-N.B.A.6) (CCSS-S-NBT4)
- **S_M_2.A**: Understand that parts of a whole can be expressed as decimals. (M.S.-N.M.A.1) (CCSS-S-NF.1)
- **S_M_2.B**: Compare and order decimals to the thousandths place using the symbols <, >, or =, and justify the solution. (M.S.-N.M.A.2) (CCSS-S-NF.3b)
- **S_M_2.C**: Understand that parts of a whole can be expressed as fractions. (M.S.-N.M.A.3) (CCSS-S-NF.3a)
- **S_M_2.D**: Estimate sums and differences with fractions. (M.S.-N.M.A.4) (CCSS-S-NF.1b)
- **S_M_2.E**: Solve problems involving addition and subtraction of fractions with mixed numbers with unlike denominators and justify the solution. (M.S.-N.M.A.5) (CCSS-S-NF.3a)
- **S_M_2.G**: Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the columns and generating the median. (M.S.-N.D.A.2) (CCSS-S-MD.3b)
- **S_M_3.A**: Extend the concept of multiplication to include the multiplication of fractions or whole numbers by a fraction. (M.S.-N.F.1) (CCSS-S-NS.1)
  a. Reciprocal of the relationship between multiplying fractions and finding the areas of rectangles with fractional side lengths.
  b. Calculate and interpret the product of a fraction by a whole number and a number by a fraction.
  c. Calculate and interpret the product of two fractions less than one.
- **S_M_3.B**: Compare and order decimals to the thousandths place using the symbols <, >, or =, and justify the solution. (M.S.-N.M.A.2) (CCSS-S-NF.3b)
- **S_M_3.C**: Understand the concept of volume and recognize that volume is measured in cubic units. (M.S.-G.M.A.1) (CCSS-S-8.G.9)
  a. Describe a cube with edge length 1 unit as a "unit cube" and use it to find the volume of other cubes using the same or different units, and justify the solution. (M.S.-N.F.1a) (CCSS-S-MS.1a)
  b. Understand that the volume of a right rectangular prism can be found by applying multiple layers of the base.
- **S_M_3.D**: Apply the formulas $V = lwh$ and $V = bh$ for volume of right rectangular prisms with whole-number edge lengths. (M.S.-G.M.B.4) (CCSS-S-8.G.9)
- **S_M_4.A**: Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution. (M.S.-N.N.R.A.4) (CCSS-S-8.NS.7b)
- **S_M_4.B**: Estimate sums and differences of decimals to the thousandths. (M.S.-N.N.R.A.4) (CCSS-S-8.NS.7b)
- **S_M_4.C**: Solve and justify multi-step problems involving whole numbers and decimals. (M.S.-N.N.R.A.5) (CCSS-S-8.NS.7b)
- **S_M_5.A**: Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution. (M.S.-N.N.R.A.1) (CCSS-S-8.NS.7b)
- **S_M_5.B**: Divide multi-digit Whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution. (M.S.-N.N.R.A.2) (CCSS-S-NS.3a)
- **S_M_5.C**: Write, evaluate, and interpret numerical expressions using the order of operations. (M.S.-N.R.A.8) (CCSS-S-8.A.1)
- **S_M_5.G**: Write, evaluate, and interpret numerical expressions using the order of operations. (M.S.-N.R.A.8) (CCSS-S-8.A.1)
- **S_M_5.H**: Estimate products of decimals to the thousandths. (M.S.-N.F.1) (CCSS-S-NS.1)
- **S_M_6.A**: Define a first quadrant Cartesian coordinate system. (M.S.-G.M.B.6) (CCSS-S-8.G.5)
  a. Represent the axes as extended perpendicular number lines that both intersect at 0, the origin.
  b. Identify a point on the Cartesian coordinate plane by its ordered pair coordinates.
  c. Define the first number in an ordered pair as the horizontal distance from the origin.
  d. Define the second number in an ordered pair as the vertical distance from the origin.
  a. Generate two numeric patterns when two rules.
  b. Translate two numeric patterns into two sets of ordered pairs.
  c. Graph numeric patterns on the Cartesian coordinate plane.
  d. Identify the relationship between two numeric patterns.
- **S_M_6.K**: Write a rule to describe or explain a given numeric pattern. (M.S.-N.R.A.2) (CCSS-S-8.A.3)
- **S_M_6.L**: Solve and justify multi-step problems involving variables, whole numbers, and fractions. (M.S.-N.R.A.3) (CCSS-S-8.NS.7b)
- **S_M_6.M**: Plot and interpret points in the first quadrant of the Cartesian coordinate plane. (M.S.-G.M.B.7) (CCSS-S-8.G.2)
- **S_M_6.N**: Create a line graph to represent a data set, and analyze the data to answer questions and solve problems. (M.S.-G.M.A.1) (CCSS-S-8.A.3)