Coal City Unit District #1
Math 7
Math Curriculum

MA.7.1 Students will be able to add, subtract, multiply, and divide rational numbers fluently as well as solve real-world and mathematical problems.

MA.7:1-1	Identify that opposite quantities have a value of 0.
MA.7:1-2	Divide decimals including quotients using repeating decimals.
MA.7:1-3	Add and subtract positive and negative rational number which include fractions, mixed numbers and decimals in one problem.
MA.7:1-4	Multiply and divide positive and negative rational numbers, which include multiplying fractions, mixed numbers and decimals in one problem.
MA.7:1-5	Divide integers and demonstrate understanding that zero cannot be in the divisor.
MA.7:1-6	Simplify complex fraction.
MA.7:1-7	Solve real world mathematical problems involving four operations with rational numbers including fractions, decimals and mixed numbers.
MA.7:1-8	Convert fractional, decimal and percent equivalences.
MA.7:1-9	Covert a number to scientific notation using both positive and negative exponents.
MA.7:1-10	Convert scientific notation to standard form using both positive and negative exponents.

MA.7:2 Students will analyze and demonstrate an understanding of proportional relationship in verbal descriptions, tables, equations, and graphs.

MA.7.2-1	Compute unit rates.
MA.7:2-2	Decide whethere two quantities are proportional by testing equivalent ratios.
MA.7:2-3	Determine the constant of proportionality and use it to write equations in the form of y=kx (k is your constant).
MA.7:2-4	Graph proportional relationships on a coordinate plane and use the graph to identify the constant.
MA.7.2-5	Given (0,0) and (1,r) identify the slope/unit rate in a real world context (y=3x where 3 is your slope or $3 per hour).
MA.7.2-6	Decide if a unit rate/slope in charts, graphs, and situations demonstrates a proportional relationship.
MA.7.2-7	Given an equation in the form of y=mx determine that m is the slope/unit rate.

MA.7:3 Students will demonstrate an understanding that percent represents part of a whole, with multi-step problems involving real world concepts as percent of a number, percent increase or decrease, and simple interest

MA.7:3-1 Analyze percent of a number including percents greater than 100.
MA.7:3-2 Solve multi step percent problems using proportions to find the unknown.
MA.7:3-3 Solve multi-step percent problems using percents to find the unknown.
MA.7:3-4 Solve real-world problems involving percent change and percent error.
MA.7:3-5 Solve problems with percent increase and percent decrease.
MA.7:3-6 Compute simple interest including sales tax, gratuity, commission, and mark up.

MA.7:4 Students will apply their understanding of properties when adding, subtracting, factoring, and expanding expressions with special attention to the distributive property.

MA.7:4-1 Represent variables as unknonws and be able to substitute.
MA.7:4-2 Use the distributive property to distribute a number through parentheses and understand that the 2 expressions are equivalent.
MA.7:4-3 Combine like terms with multiple variables.
MA.7:4-4 Use equivalent expressions to examine relationships between quanttities and interpret information in real world problems.
MA.7:4-5 Distinguish the difference between an expression and equation.
MA.7:4-6 Factor expressions.

MA.7:5 Students will interpret and solve multi-step, real-world and mathematical problems using algebraic and numerical expressions, equations, and inequalities

MA.7:5-1 Solve two-step linear equations algebraically with rational numbers.
MA.7:5-2 Solve equations using the distributive property.
MA.7:5-3 Solve two-step linear inequalities algebraically.

MA.7:6 Students will demonstrate their understanding of statistics by drawing conclusions, making predictions, and comparing populations.

- MA.7:6-1 Identify the difference between a sample space and a population
- MA.7:6-2 Looking at a random sample(s) draw inference both qualitative and quantitative about the population.
- MA.7:6-3 Identify parts of a box and whisker plot with special attention to the inner quartile range.
- MA.7:6-4 Compare populations using the mode, mean, median, range, and mean absolute deviation (mad).
- MA.7:6-5 Decide whether the sample space is valid or not valid.
- MA.7:6-6 Select an appropriate sample size based upon the population in a real-life situation.

MA.7:7 Students will be able to determine basic probability in real-world context.

- MA.7:7-1 Identify the probability an event will occur.
- MA.7:7-2 Understand and compare both theoretical and experimental probability
- MA.7:7-3 Develop a probability model by running an experiment and placing those data in a frequency data table.
- MA.7:7-4 Calculate compound probability.
- MA.7:7-5 Make a prediction based on a probability of an event. (e.g. rolling a die 600 times you would expect it to land on a 3 100 times)

MA.7:8 Students will demonstrate an understanding of basic geometry. (7.G.1, 7.G.2, 7.G.3, 7.G.4, 7.G.5, 7.G.6)

- MA.7:8-1 Compute actual length of a distance using a scale drawing and geometric figures.
- MA.7:8-2 Construct geometric shapes with a ruler, protractor and other technology with provided conditions paying special attention to a triangle.
- MA.7:8-3 Using facts about complementary, supplementary, vertical and adjacent angles, calculate unknown angles in a figure.
- MA.7:8-4 Calculate the area and circumference of a circle.
- MA.7:8-5 Determine the two-dimensional shape formed when a three dimensional shape is diced by using cross sections.
- MA.7:8-6 Calculate surface area of a rectangular prism, cylinder, and triangular prisms.
- MA.7:8-7 Calculate the volume of triangular prisms.
- MA.7:8-8 Calculate the area of more complex figures with special attention to trapezoids.