Sheridan County School District #3
Eighth Grade Math Priority Standards

	WyTopp Standard	*New Wyoming Math Standards*
* Standards 8.NS.A & 8.EE.B are no longer WyTopp Standards ***BUT*** are still counted as Priority Standards for SCSD#3	*8.NS.A Approximating and comparing irrational numbers	**8.NS.A.2** Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π2). *For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations*.
	*8.EE.B Work with radicals and integer exponents	**8.EE.B.1** Understand and apply the laws of exponents (i.e., product rule, quotient rule, power to a power, product to a power, quotient to a power, zero power property, negative exponents) to generate equivalent numerical expressions limited to integer exponents.
		8.EE.B.3 Explore the relationship between quantities in decimal and scientific notation. A. Express very large and very small quantities, p, in scientific notation in the form a x 10^b = p where 1 is less than or equal to a and a is less than 10 and b is an integer B. Translate between decimal notation and scientific notation. C. Estimate and compare the relative size of two quantities in scientific notation.
8.EE.C Understand the connections between proportional relationships, lines, and linear equations.		**8.EE.C.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.
		8.EE.C.6 Explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at (0,b).
8.EE.D Analyze and solve linear equations and pairs of simultaneous linear equations.		**8.EE.D.7** Extend concepts of linear equations and inequalities in one variable to more complex multi-step equations and inequalities in real-world and mathematical situations. A. Solve linear equations and inequalities with rational number coefficients that include the use of the distributive property, combining like terms, and variable terms on both sides. B. Recognize the three types of solutions to linear equations: one solution, infinitely many solutions, or no solutions. C. Generate linear equations with the three types of solutions. D. Justify why linear equations have a specific type of solution.
		8.EE.D.8 Analyze and solve pairs of simultaneous linear equations. A. Understand that solutions to a system of two linear equations in two variables correspond to points of

	intersection of their graphs, because points of intersection satisfy both equations simultaneously. B. Solve systems of two linear equations in two variables with integer solutions by graphing the equations. C. Solve simple real-world and mathematical problems leading to two linear equations in two variables given y=mx + b form with integer solutions.
8.F.E Define, evaluate, and compare functions.	**8.F.E.1** Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. *Function notation is not required in grade 8.*
	8.F.E.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
	8.F.E.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.
8.F.F Use functions to model relationships between quantities.	**8.F.F.4** Apply the concepts of linear functions to real-world and mathematical situations. A. Understand that the slope is the constant rate if change and the y-intercept is the point where x = 0. B. Determine the slope and the y-intercept of a linear function given multiple representations, including two points, tables, graphs, equations, and verbal descriptions. C. Construct a function in slope-intercept form that models a linear relationship between two quantities. D. Interpret the meaning of the slope and the y-intercept of a linear function in the context of the situation.
	8.F.F.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph, where the function is increasing or decreasing, constant, linear or nonlinear. Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
8.G.G Understand congruence and similarity using physical models, transparencies, or geometry software.	**8.G.G.1** Verify experimentally the properties of rotations, reflections, and translations. A. Lines are taken to lines, and line segments to line segments of the same length. B. Angles are taken to angles of the same measure C. Parallel lines are taken to parallel lines.
	8.G.G.2 Recognize through visual comparison that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them**.**

	8.G.G.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
	8.G.G.4 Recognize through visual comparison that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
	8.G.G.5 Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.
8.G.H Understand and apply the Pythagorean Theorem	**8.G.H.6** Use models or diagrams to explain the Pythagorean Theorem and its converse.
	8G.H.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems.
	8.G.H.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
8.G.I Solve real world and mathematical problems involving volume of cylinders, cones, and spheres.	**8G.I.9** Given the formulas, solve real-world and mathematical problems involving volume and surface area of cylinders.
8.SP.J Investigate patterns of association in bivariate data.	**8.SP.J.1** Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe the association by form (linear/nonlinear), direction (positive/negative), strength (correlation), and unusual features.
	8.SP.J.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the dat points to the line.
	8.SP.J.3 Use an equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.
	8.SP.J.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. A. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. B. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.