8th Grade Math

First 9 Weeks

- Know numbers, which are not rational. Approximate irrational number by using rational numbers
- Compare, place on a number line & estimate value of irrational numbers
- Know and apply the properties of integer exponents to generate equivalent numerical expressions
- Solve linear equations in one variable

Common Assessment 1 – Week of August 29, 2016

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- Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions.
- Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and combining like terms.

Common Assessment 2 – Week of October 3, 2016

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Second 9 Weeks

- Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.
- Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; 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 b.

- Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
- Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line
- Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values.

Common Assessment 3 – Week of November 7, 2016

- 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.
- Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. Solve real-world and mathematical problems leading to two linear equations in two variables.
- Understand that a function is a rule that assigns to each input exactly one output.
- Give examples of functions that are not linear.
- Describe qualitatively the functional relationship between two quantities by analyzing a graph.

Common Assessment 4 – Week of December 12, 2016

Third 9 Weeks

- Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
- 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 data points to the line.
- Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.
- Use square root and cube root symbols to represent solutions
- Evaluate small square/cube roots
- Explain a proof of the Pythagorean Theorem and its converse.

Common Assessment 5 – Week of January 30, 2017

- Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
- Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
- Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
- Know and apply the properties of integer exponents to generate equivalent numerical expressions. (Laws of Exponents)
- Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities.

- Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.

Common Assessment 6 – Week of March 6, 2017

Fourth 9 Weeks

- 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.
- Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
- Understand 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.
- Understand 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.

Common Assessment 7 – Week of April 3, 2017

Math 8th Grade State Standards are found:

http://tn.gov/assets/entities/education/attachments/std_math_gr_8.pdf

*All common assessments will be scheduled within the week assigned. Each school may adjust the day of the week to meet the individual's school schedule.

*Common assessments may be rescheduled due to inclement weather.