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1st Quarter Standards/Objectives		
8.EE.A.1	**Expressions and Equations**	● Understand the properties of integer exponents. ● Use the properties of integer exponents to evaluate expressions with exponents. ● Generate equivalent expressions.
8.EE.A.2	**Expressions and Equations**	● Identify perfect squares between 1 and 225. ● Understand that $x^2$and $\sqrt{2}$ are inverses as are $x^3$and $\sqrt[3]{x}$. ● Solve equations with squares and cubes ($y^2 = a$ and $x^3 = a$). ● Use squares, cubes, square roots, and cube roots to solve word problems. ● Understand and use the square root and cube root symbols.
8.NS.A.1	**The Number System**	● Understand what rational and irrational numbers are. ● Identify rational and irrational numbers. ● Express a repeating decimal as a fraction.
8.NS.A.2	**The Number System**	● Estimate square roots to the nearest hundredth. ● Compare and order rational and irrational numbers using a number line. ● Estimate the value of expressions.
8.EE.A.3	**Expressions and Equations**	● Write numbers using scientific notation. ● Express numbers written in scientific notation in standard form. ● Given two numbers written in scientific notation, identify how many times as much one is than the other.

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<table>
<tr><th colspan="3">1st Quarter Standards/Objectives</th></tr>
<tr><td>8.EE.A.4</td><td>Expressions and Equations</td><td>● Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.
● Solve real-world problems that require operations with numbers expressed in scientific notation.
● Choose units of appropriate size for large and small measurements.
● Interpret scientific notation that has been generated by technology.</td></tr>
<tr><td colspan="2">Topics covered:
● Exponents
● Square and Cube Roots
● Rational and Irrational Numbers
● Scientific Notation</td><td>Major assignments:
1) Exponents Test
2) square and cube roots/rational and irrational tests
3) Scientific Notation Test 1
4) Scientific Notation Test 2
5) Quarter 1 Benchmark</td></tr>
<tr><td colspan="3">Notes:</td></tr>
</table>

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2nd Quarter Standards/Objectives:		
8.F.A.1	**Functions**	• Understand that a function is a rule that assigns to each input exactly one output. • Identify whether a relationship is a function from a diagram, table of values, graph, or equation.
8.F.A.3	**Functions**	• Determine if a function is linear or nonlinear. • Interpret the equation $y = mx + b$.
8.F.B.5	**Functions**	• I can Analyze a graph to qualitatively describe a relationship between two quantities. • I can Sketch a graph of a function from a verbal description.
8.EE.B.5	**Expressions and Equations**	• Graph proportional relationships. • Interpret the unit rate of a proportional relationship as the slope of its graph. • Understand that the y-intercept is always 0 for proportional relationships. • Compare two different proportional relationships represented in different ways.
8.EE.B.6	**Expressions and Equations**	• Understand that similar triangles have proportional side lengths. • Use the slope and y-intercept to derive an equation for a linear function.
8.F.A.2	**Functions**	• Translate among forms of linear functions: equation, table, graph, or verbal description. • Identify the rate of change and initial value of a function. • Compare rate of change and initial value in two linear functions, each represented in a different way.

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<table>
<tr><th colspan="3">2nd Quarter Standards/Objectives:</th></tr>
<tr><td>8.F.B.4</td><td>Functions</td><td>

Understand that the rate of change of a linear function is the slope of a line: $\frac{rise}{run}$ or $\frac{change\ in\ y-value}{change\ in\ x-value}$
Find slope of a line given two points from a table or graph using the formula $\frac{x_2-x_1}{y_2-y}$.
Find the slope of a line from an equation.
Understand that the initial value of a function is the y-intercept.
Find the y-intercept given a table, graph, or equation.
Make a table of values, write an equation, or construct a graph to represent a linear function in a real-world context.

</td></tr>
<tr><td colspan="2">Topics covered:
Functions</td><td>Major assignments:
1) Functions Test 1
2) Functions Test 2
3) Functions Test 3
4) Benchmark
5) Semester Exam</td></tr>
<tr><td colspan="3">Notes:</td></tr>
</table>

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3rd Quarter Standards/Objectives:		
8.EE.C.7	**Expressions and Equations**	• Solve multi-step linear equations with rational coefficients and with variables on both sides of the equation. • Identify and provide examples of equations that have exactly one solution, infinitely many solutions, or no solutions.
8.EE.C.7a	**Expressions and Equations**	• Identify and provide examples of equations that have exactly one solution, infinitely many solutions, or no solutions.
8.EE.C.7b	**Expressions and Equations**	• Solve multi-step linear equations with rational coefficients and with variables on both sides of the equation.
8.EE.C.8	**Expressions and Equations**	• Describe solution sets of systems of linear equations.
8.EE.C.8a	**Expressions and Equations**	• Determine whether a system of linear equations has exactly one solution, infinitely many solutions, or no solution, by graphing and analyzing the equations.
8.EE.C.8b	**Expressions and Equations**	• Solve systems of two linear equations algebraically, by substitution or elimination. • Estimate solutions of systems of equations by graphing the equations.
8.EE.C.8c	**Expressions and Equations**	• Write systems of linear equations to represent mathematical and real-world problems. • Understand that variables in the related equations must represent the same quantities and have the same value. • Graph systems to estimate solutions and describe how the graph represents the situation modeled. • Solve systems of equations algebraically and explain what the solution means in context of the problem.

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3rd Quarter Standards/Objectives:		
8.G.A.1	**Geometry**	• Give a general description of a rotation, reflection, or translation. • Describe the effect of translations on the properties of two- dimensional figures. • Describe the effect of rotations on the properties of two-dimensional figures. • Describe the effect of reflections on the properties of two-dimensional figures.
8.G.A.1a	**Geometry**	• Lines are taken to lines, and line segments to line segments of the same length.
8.G.A.1b	**Geometry**	• Angles are taken to angles of the same measure.
8.G.A.1c	**Geometry**	• Parallel lines are taken to parallel lines.
8.G.A.2	**Geometry**	• 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. • Recognize and describe translations, rotations, reflections, and dilations individually and in a sequence. • Given an image and its transformed image, use coordinate notation to describe the transformation. • Make dilations of figures by a given scale factor. • Distinguish between similar and congruent. • Understand that a figure is congruent to its image after a rigid transformation. • Describe translations, rotations, and reflections individually and in a sequence. • Understand how to translate, rotate, and reflect two-dimensional figures on the coordinate plane. • Describe the effect of translations, rotations, and reflections on two- dimensional figures using coordinates.

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3rd Quarter Standards/Objectives:		
8.G.B.4	**Geometry**	• Explore the relationships of the areas of squares built on all sides of a triangle. • Know that in a right triangle, $a^2 + b^2 = c^2$ (the Pythagorean Theorem). • Understand and explain a proof of the Pythagorean Theorem. • Understand and explain a proof of the converse of the Pythagorean Theorem.
8.G.B.5	**Geometry**	• I can Use the Pythagorean Theorem to solve for a missing side length of a right triangle given the other two side lengths. • I can Use the Pythagorean Theorem to solve problems in real-world contexts, including three-dimensional contexts.
8.G.B.6	**Geometry**	• I can Use the Pythagorean Theorem to find the distance between any two points on the coordinate plane.
Topics covered: • *Equations* • *Systems of Equations* • *Transformations* • *Pythagorean Theorem*		**Major assignments:** 1) Equations Test 2) Systems of Equations Test 3) Transformations Test 4) Pythagorean Theorem Test 5) Benchmark

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3rd Quarter Standards/Objectives:
Notes:

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4th Quarter Standards/Objectives:		
8.G.C.7	**Geometry**	• Use formulas to find the volumes of cylinders, cones, and spheres. • Solve real-world and mathematical problems involving the volumes of cylinders, cones, and spheres. • Compare volumes of cylinders, cones, and spheres. • Understand the relationship between the volume of a cylinder and the volume of a cone. • Understand the relationship between the volume of a cylinder and the volume of a sphere. • Compare the volumes of different-sized cylinders, cones, and spheres, and explain how different-sized figures can have the same volume.
8.SP.A.1	**Statistics and Probability**	• Construct a two-way frequency table of categorical data. • Interpret and describe relative frequencies for possible associations from a two-way table. • Construct a scatter plot using two sets of quantitative data. • Identify clusters and outliers in a scatter plot. • Determine if there is a linear or nonlinear association in a scatter plot. • Determine if a linear association in a scatter plot is positive or negative.
8.SP.A.2	**Statistics and Probability**	• Recognize that a straight line can be used on a scatter plot to model the relationship between two quantitative variables. • Draw a straight line on a scatter plot that closely fits the data points. • Informally evaluate the fit of the line by judging the closeness of data points to the line.

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4th Quarter Standards/Objectives:		
8.SP.A.3	**Statistics and Probability**	• Use the equation of a linear model to solve problems. • Interpret the meaning of the slopes as a rate of change and the meaning of the *y*-intercept in context given quantitative data.
8.SP.B.4	**Statistics and Probability**	• Find the probabilities of compound events. • Use tables, tree diagrams, and lists to describe sample space. • Identify favorable and total outcomes using ratios.
8.G.A.3	**Geometry**	• Understand that the measure of an exterior angle of a triangle is equal to the sum of the measures of the non- adjacent angles. • Know that the sum of the measures of the angles of a triangle equals 180°. • Find the measures of interior and exterior angles of triangles. • Recognize that if two triangles have two pairs of congruent angles, then they are similar triangles (angle-angle criterion).
Topics covered: • Volume of 3D Figures • Statistics • Probability • Angles		**Major assignments:** 1) Volume of 3D Figures Test 2) Statistics Test 3) Probability Test 4) TNReady 5) Angles Test 6) Final Exam

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4th Quarter Standards/Objectives:
Notes:
Procedures for Parental Access for Instructional Materials: 1) Many instructional materials can be accessed digitally via the FSSD website (fssd.org) using your student's unique username and password. a. Student Resources : FSSD website > Parents & Students > Parent Information > Online Resources > Student b. Parent Resources: FSSD website > Parents & Students > Parent Information > Online Resources > Parent 2) If additional information is needed regarding instructional materials, a written request may be submitted to your child's teacher. Instructional material review is included in Board Policy 4.400.