Unit Name	Module	Lessons	Vocabulary
UNIT 1 –REAL NUMBERS, EXPONENTS & SCIENTIFIC NOTATION			
8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. **8.EE.3** Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. **8.EE.4** Perform multiplication and division with numbers expressed in scientific notation, including problems where both standard decimal form and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. Interpret scientific notation that has been generated by technology.	**2- EXPONENTS AND SCIENTIFIC NOTATION**	**2.1 - 2.4**	Scientific Notation **Review Words:** Base Exponent Standard Notation Integers

UNIT 2 – Proportional and Nonproportional Relationships and Functions			
8.EE.6 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 equations y=mx+b for a line intercepting the vertical axis at b **8.F.4** 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, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. **8.EE.5** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.	**3 -PROPORTIONAL RELATIONSHIPS**	**3.1 - 3.3**	Proportional Relationship Direct Variation Constant of Proportionality **Review Words:** Constant Equivalent Ratios Proportion Rate Ratio Unit Rate
8.EE.6 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 equations y=mx+b for a line intercepting the vertical axis at b **8.F.2** . Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **8.F.3** Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line. Recognize examples of functions that are linear and non-linear **8.F.4** 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, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	**4 – NONPROPORTIONAL RELATIONSHIPS**	**4.1 - 4.4**	Nonproportional Relationship Linear Equation y-Intercept Slope Intercept Form of an Equation **Review Words:** Slope Ordered Pairs Rate of Change x coordinate y coordinate

8.F.4 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, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. **8.SP.1** 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.	**5 – WRITING LINEAR EQUATIONS**	**5.1 - 5.3**	Magnitude of Slope Nonlinear Relationship Bivariate Data
INTERIM ASSESSMENT #1 (11/27-11/28)	**MODULES 2-5**		
8.F.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. **8.F.2** Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). **8.F.3** Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line. Recognize examples of functions that are linear and non-linear **8.F.5** Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described in a real-world context.	**6 - FUNCTIONS**	**6.1 - 6.4**	Domain Range Input Output Linear Function

UNIT 3 – Solving Equations and Systems of Equations			
8.EE.7 Solve linear equations in one variable. **8.EE.7a** Recognize when linear equations in one variable have one solution, infinitely many solutions, or no solutions. Give examples and show which of these possibilities the case is by successively transforming the given equation into simpler forms. **8.EE.7b** Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and combining like terms.	**7- SOLVING LINEAR EQUATIONS**	**7.1 - 7.4**	Distributive Property **Review Words:** Coefficient Algebraic Expression Common Denominator Equation Variable Solution Operations Like Terms Least Common Multiple
8.EE.8a 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. Recognize when the system has one solution, no solution, or infinitely many solutions **8.EE.8b** Solve systems of two linear equations in two variables with integer coefficients: graphically, numerically using a table, and algebraically. Solve simple cases by inspection.	**8 - SOLVING SYSTEMS OF LINEAR EQUATIONS**	**8.1 - 8.5**	System of Equations Solutions of a System of Equations **Review Words:** x-axis y-axis

UNIT 4 – Transformational Geometry			
8.G.1 Verify experimentally the properties of rotations, reflections, and translations **8.G.1a** Verify experimentally lines are mapped to lines, and line segments to line segments of the same length. **8.G.1b** Verify experimentally angles are mapped to angles of the same measure. **8.G.1c** Verify experimentally parallel lines are mapped to parallel lines **8.G.2** Know that a two-dimensional figure is congruent to another if the corresponding angles are congruent and the corresponding sides are congruent. Equivalently, two two-dimensional figures are congruent if one is the image of the other after a sequence of rotations, reflections, and translations. Given two congruent figures, describe a sequence that maps the congruence between them on the coordinate plane **8.G.3** Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates	**9 – TRANSFORMATIONS AND CONGRUENCE**	**9.1 - 9.5**	Transformations Translation Reflection Rotation Isometries Congruent Line of Reflection Preimage Center of Rotation **Review Words:** Coordinate Plane Parallelogram Trapezoid Rhombus Quadrilateral

8.G.3 Describe the effect of dilations, translations, rotations and reflections on two-dimensional figures using coordinates **8.G.4** . Know that a two-dimensional figure is similar to another if the corresponding angles are congruent and the corresponding sides are in proportion. Equivalently, two two-dimensional figures are similar if one is the image of the other after a sequence of rotations, reflections, translations, and dilations. Given two similar two-dimensional figures, describe a sequence that maps the similarity between them on the coordinate plane	**10 – TRANSFORMATIONS AND SIMILARITY**	**10.1 - 10.3**	Dilation Similar Figures Enlargement Reduction Magnitude/Scale Factor k Center of Dilation **Review Words:** Quadrants Origin
UNIT 5 – Measurement Geometry			
8.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.	**11 - ANGLE RELATIONSHIPS IN PARALLEL LINES AND TRIANGLES**	**11.1 - 11.3**	Alternate Interior Angles Alternate Exterior Angles Corresponding Angles Exterior Angles Interior Angles Remote Interior Angles Same Side Interior Angles Transversal **Review Words:** Acute Angles Angle Obtuse Angles Parallel Lines Vertex

8.G.9 Solve problems, mathematical and real world, which use the formulas for the volume of cones, cylinders, and spheres.	**13 - VOLUME**	**13.1 - 13.3**	Cone Cylinder Sphere **Review Words:** Area Base Circumference Perimeter Radius Right Angle Height Width Diameter Length
INTERIM ASSESSMENT #2 (2/27-2/28)	**MODULES 6-11**		
UNIT 6 - Statistics			
8.SP.1 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 **8.SP.3** Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.	**14 - SCATTER PLOTS**	**14.1 - 14.2**	Cluster Outlier Scatter Plot Trend Line **Review Words:** Bivariate Data Data
8.SP.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. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables	**15 - TWO-WAY TABLES**	**15.1 - 15.2**	Frequency Relative Frequency Joint Relative Frequency Marginal relative Frequency Two-Way Table Relative Frequency Table

NYS CC ASSESSMENT PREP (NYS CC ASSESSMENT 5/1-5/2)			
UNIT 1- Real Numbers, Exponents, and Scientific Notation			
8.NS.1 Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0s or eventually repeat. Know that other numbers that are not rational are called irrational. **8.NS.2** Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions.	**1 - REAL NUMBERS**	**1.1 - 1.3**	Cube Root Irrational Number Perfect Cube Perfect Square Principal Square Root Rational Number Real Number Repeating Decimal Square Root Terminating Decimal
UNIT 5 – MEASUREMENT GEOMETRY			
8.G.6 Understand a proof of the Pythagorean Theorem and its converse. **8.G.7** Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions **8.G.8** Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	**12 - THE PYTHAGOREAN THEOREM**	**12.1 - 12.3**	Hypotenuse Legs Theorem Vertex **Review Words:** Right Triangle