8th Math Year at a Glance	
1st 9 Weeks	**2nd 9 Weeks**

1st 9 Weeks

Unit 1: Real Numbers
8.2(A) extend previous knowledge of sets & subsets using a visual representation to describe relationships between sets of real numbers;
8.2(B) approximate the value of an irrational number, including pi and square roots of numbers less than 225, and locate that rational number approximation on a number line;
8.2 (C) convert between standard decimal notation and scientific notation; and
8.2 (D) order a set of real numbers arising from mathematical and real-world contexts

Unit 2: Solving Equations
8.8 (A) write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants;
8.8(B) write a corresponding real-world problem when given a 1-variable equation or inequality w/variables on both sides of the equal sign using rational number coefficients & constants
8.8(C) model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants

2nd 9 Weeks

Unit 3 Linear Relationships
8.4(A) use similar right triangles to develop an understanding that slope, m, given as the rate comparing the change in y-values to the change in x-values, $(y_2 - y_1)/ (x_2 - x_1)$, is the same for any two points (x_1, y_1) and (x_2, y_2) on the same line
8.4(B) graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship;
8.4(C) use data from a table or graph to determine the rate of change or slope & y-intercept in math and real-world prob.
8.5(A) represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$;
8.5(B) represent linear non-proportional situations w/ tables, graphs, & equations in the form of $y = mx + b$, where $b \neq 0$;
8.5(E) solve problems involving direct variation;
8.5(F) distinguish between prop.l and non-proportional situations using tables, graphs, & equations in the form $y = kx$ or $y = mx + b$, where $b \neq 0$;
8.5(G) identify function using sets of ordered pairs, tables, mappings, and graphs
8.5(H) identify examples of proportional & non-proportional functions that arise from mathematical & real-world problems
8.5(I) write an equation in the form y = mx + b to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations
(8.9) identify and verify the values of x and y that simultaneously satisfy two linear equations in the form $y = mx + b$ from the intersections of the graphed equations

Unit 4: Pythagorean Theorem
8.6(C) use models and diagrams to explain the Pythagorean theorem
8.7(C) use the Pythagorean Theorem and its converse to solve problems
8.7(D) determine the distance between two points on a coordinate plane using the Pythagorean Theorem

Unit 5: Angle Relationships:
8.8(D) use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.s

3rd 9 Weeks	4th 9 Weeks
Unit 6: Geometry: 8.6(B) model the relationship between the volume of a cylinder and a cone having both congruent bases and heights and connect that relationship to the formulas 8.7(B)use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders 8.6(A) describe the volume formula $V = Bh$ of a cylinder in terms of its base area and its height; 8.7(A) solve problems involving the vol of cyl., cones, & spheres; **Unit 7: Transformations & Dilations:** 8.3(A) generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape & its dilation 8.3(B) compare & contrast the attributes of a shape & its dilation(s) on a coordinate plane 8.3(C) use an algebraic representation to explain the effect of a given positive rational scale factor applied to 2-dimensional figures on a coordinate plane with the origin as the center of dilation 8.10(A) generalize the properties of orientation & congruence of rotations, reflections, translations, & dilations of 2-D shapes on a coordinate plane; 8.10(B) differentiate between transformations that preserve congruence and those that do not; 8.10(C) explain the effect of translations, reflections over the x- or y-axis, and rotations limited to 90°, 180°, 270°, & 360° as applied to 2-D shapes on a coordinate plane using an algebraic representation	**Unit 8: Financial Literature:** 8.12(D) calculate and compare simple interest and compound interest earnings 8.12(A) solve real-world problems comparing how interest rate and loan length affect the cost of credit 8.12(C) explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time 8.12(G) estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college **Unit 9: Data Analysis** 8.5(D) use a trend line that approximates the linear relationship between bivariate sets of data to make predictions 8.5(C) contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation 8.11(A) construct a scatterplot and describe the observed data to address questions of association such as linear, nonlinear, and no association between bivariate data 8.11(B) determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points