**8th Grade Math Pacing Guide 2018-2019**

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| **DATES** | **CONCEPT** | **I CAN!s** | **STANDARDS** | **FOCUS DOMAINS** |
| 8/27-9/14/18  (14 days) | Real Numbers  Exponents & Scientific Notation | 8.1  8.2  8.3 | 8 NS 1, 2  8 EE 1, 2  8 EE 3, 4 | EXPRESSIONS & EQUATIONS |
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| 9/17-10/12/18  (19 days) | Proportional & Slope  Graphing: Slope & y-intercept | 8.4 (8.8) | 8 EE 5  (8 F 4, 5) |
| **Milestone #1 Window 10/22-11/5/18 I CAN!s: 8.1, 8.2, 8.3, 8.4**  **Data Day 11/13/2018** | | | | |
| 10/15-11/9/18  (20 days) | Writing Linear Equations  Equations to Model Relationships  (Bivariate Data) | 8.5  8.8  (8.13) | 8 EE 6  8 F 4, 5  (8 SP 1) | FUNCTIONS |
| 11/14-12/14/18  (18 days) | Functions  (Distributive Property) | 8.7  8.8 | 8 F 1-3  8 F 4, 5 |
| 1/7-1/25/19  (14 days) | Solving Systems of Equations | 8.6 | 8 EE 7, 8 |
| **Milestone #2 (1/14-1/25/19) I CAN!s: 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8**  **Data Day 2/15/2019** | | | | |
| 1/28-2/14/19  (19 days) | Geometric Transformations | 8.10 | 8 G 1-4 | GEOMETRY |
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| 2/19-3/8/19  (14 days) | Angles, Lines & their Relationships | 8.11 | 8 G 5 | GEOMETRY  (Continued) |
| **Milestone #3 Window (3/18-3/29/19) I CAN!s: 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.10, 8.11**  **Data Day 4/5/2019** | | | | |
| 3/11-3/22/19  (10 days) | Pythagorean Theorem & its Proof | 8.9  (8.13) | 8 G 6, 7, 8  (8 SP 1-4) | GEOMETRY (Continued) |
| 3/25-4/8/19  (10 days) | Volume & Surface Area of 3D Figures | (8.12) | 8 G 9 |
| 4/9-4/26/19  (9 days) | Data, Scatter Plots, Frequency Tables | (8.13) | (8 SP 1-4) | STATISTICS |
| 4/29-5/10/19 | **CAASPP Prep & Testing** | | | |
| 5/13-6/13/19  (23 days) | **I CAN! Review**  **Onramp to Next Grade**  **Demonstration of Mastery** | | | |

**8th Grade Math I CAN!s and CAN I?s**

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|  | **I CAN!s** | **CAN I?s** |
| 8.1 | I CAN represent and compare rational and irrational number approximations with decimal expansions, radical signs and locate them on a number line.  8 NS 1, 2 | * Tell the difference between a rational and irrational number? * Know how to convert between fractions and decimals? * Know when a decimal is terminal and when it is repeating? * Find find the decimal value of numbers with a radical sign? * Explain how to compare fractions, decimals and numbers with radical sign? |
| 8.2 | I CAN know and apply the properties of integer exponents, fluently know small perfect squares and cube roots, and use square and cube roots to express a number.  8 EE 1, 2 | * Describe what an exponent represents? * Calculate numbers and expressions with negative exponents? * Explain the difference between a cube root and a square root? * Know fluently perfect squares and their square roots and perfect cubes and their cube roots? * Explain why is irrational? |
| 8.3 | I CAN use scientific notation to express measurement of very small and very large quantities.  8 EE 3, 4 | * Estimate large and small numbers using exponents? * Use the integer power of 10 to express numbers? * Relate decimal value to scientific notation value? * Apply scientific notation to measurement? * Interpret scientific notation that has been created by technology? |
| 8.4 | I CAN compare proportional values draw a graph of their relationships and know the unit rate is the slope of the graph. 8 EE 5 | * Relate the parts of a proportion to the parts of a graph? * Explain how to determine the unit rate? * Compare proportional relationships by interpreting their graphs? * Describe the slope of a graph? * Tell how the slope of a graph and proportional value are related? |
| 8.5 | I CAN derive the equation of a line y = mx + b where the slope (m) can be found using similar triangles and the y-intercept (b) is where the line crosses the vertical axis. 8 EE 6 | * Describe what makes two triangles similar? * Draw a coordinate plane including: x-axis, y-axis, quadrants, the origin and unit values? * Find the slope of a line using two distinct points on the line? * Recall the equation of a line and name the parts? * Explain the difference between a positive and negative slope? |
| 8.6 | I CAN solve pairs of linear equations with one variable and interpret the solution (one, infinitely many, or none). 8 EE 7, 8 | * Determine the difference between and expression and a equation? * Combine like terms within an equation? * Solve a linear equation in one variable? * Use various methods to solve pairs of linear equations: Graphing, substitution & elimination? * Know that when there is one solution I put my answer in the form (x, y)? |
| 8.7 | I CAN understand a function as a rule where a graph of ordered pairs represents the rule, express properties of two functions in different ways (algebra, graph, tables or verbally), and interpret equations as linear functions. 8 F 1-3 | * Create a function table and graph the values? * Interpret the graph of a function to determine rate of change? * Give examples of functions that are NOT linear and explain why? * Describe & define the input and output of a function table? * Relate a function to the equation y=mx+b? |
| 8.8 | I CAN construct a function to model the relationship between two quantities and describe the relationship by analyzing a table or sketching a graph. 8 F 4, 5 | * Determine the rate of change of a function? * Relate a function to a real world situation? * Locate the initial value of a function? * Describe the relationship of two quantities illustrated by a graph? * Verbally describe a function by looking at a graph? |
| 8.9 | I CAN use the Pythagorean Theorem to find the distance, find lengths in right triangles in two and three dimensions, and explain a proof of the theorem and its converse. 8 G 6, 7, 8 | * Restate the Pythagorean Theorem and what it represents? * Know various proofs of the Pythagorean Theorem? * Name the sides of a right triangle and how they relate to the Pythagorean Theorem? * Apply the Pythagorean Theorem to find the distance between points in the coordinate plane? * Solve for an unknown value in the Pythagorean Theorem? |
| 8.10 | I CAN verify the properties of rotations, reflections and translations and use that knowledge to establish congruence of shapes, determine similarity and how they can change a shape in the coordinate plane. 8 G 1-4 | * Use math vocabulary to describe translations (line, segment, angle, parallel)? * Know when two geometric shapes are congruent? * Use models to demonstrate translations? * Describe translations in the coordinate planes by using coordinates of points? * Describe 2D figures by their geometric properties? |
| 8.11 | I CAN use reasoning about triangles to derive and know properties involving angle sums, exterior angles, and similar triangles.  8 G 5 | * Use mathematical language to give informal arguments? * Define geometric terms: Parallel, exterior angle, transversal, and similarity? * Describe the angle-angle criterion for similarity of triangles? * Know and apply the angle sum theorem? * Describe the relationships between interior angles and exterior angles? |
| 8.12 | I CAN know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. 8 G 9  *(additional or supporting I CAN)* | * Identify 3D shapes: Cone, cylinder and sphere? * Locate the various parts of 3D shapes? * Find the area and circumference of a circle? * Find the area and perimeter of quadrilaterals? * Locate and describe 3D shapes in the world? |
| 8.13 | I CAN construct and interpret scatter plots, use a straight line to model the data, and use what I know about lines to solve data problems. 8 SP 1-4  *(additional or supporting I CAN)* | * Identify bivariate data and identify its graph? * Define statistical vocabulary: Clustering, outliers, frequencies, positive or negative association, linear association and nonlinear association? * Find the line of best fit using statistical data? * Find patterns in bivariate data sets and scatter plots? * Use a linear equation y=mx+b to summarize statistical data? |

**Standards of Mathematical Practice (SMPs)**

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| #1 Make sense of problems and persevere in solving them. | #5 Use appropriate tools strategically. |
| #2 Reason abstractly and quantitatively. | #6 Attend to precision. |
| #3 Construct viable arguments & critique the reasoning of others. | #7 Look for and make use of structure. |
| #4 Model with mathematics. | #8 Look for and express regularity in repeated reasoning. |