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| **8th Grade Math – 2nd Quarter** |
| **Strand** | **Cluster** | **Standard** | **Learning Targets** | **Resources** | **Module** | **Module Unit Name** |
| **Geometry** | 8.G.3 Verify experimentally the properties of rotations, reflections, and translations: | 8.G.3  **Verify experimentally the properties of rotations, reflections, and translations:** 3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. | * I can describe the changes occurring to the x- and y- coordinates of a figure after a translation.
* I can describe the changes occurring to the x- and y- coordinates of a figure after a reflection.
* I can describe the changes occurring to the x- and y- coordinates of a figure after a rotation.
* I can describe the changes occurring to the x- and y- coordinates of a figure after dilation.
 |  | **3** | **Similarity** |
| 8.G.4 Verify experimentally the properties of rotations, reflections, and translations: | 8.G.4  **Verify experimentally the properties of rotations, reflections, and translations:** 4. 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. | * I can explain how transformations can be used to prove that two figures are similar.
* I can describe a sequence of transformations to prove or disprove that two given figures are similar.
 |  | **3** |
| **Geometry** | 8.G.5 Verify experimentally the properties of rotations, reflections, and translations: | 8.G.5  **Verify experimentally the properties of rotations, reflections, and translations:** 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. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so. | * I can informally prove that the sum of any triangle's interior angles will have the same measure as a straight angle (i.e., by tearing off the three corners of a triangle and arranging them to form a 180 degree straight angle.
* I can informally prove that the sum of any polygon's exterior angles will be 360 degrees.
* I can make conjectures regarding the relationships and measurements of the angles created when two parallel lines are cut by a transversal.
* I can apply proven relationships to establish minimal properties to justify similarity.
 |  | **3** | **Similarity** |
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| **Expressions and Equations** | 8.EE.5 Understand the connections between proportional relationships, lines, and linear equations. | 8.EE.5 **Understand the connections between proportional relationships, lines, and linear equations.** 5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. (end of 2 into 3) | * I can graph proportional relationships in the coordinate plane.
* I can interpret the unit rate of a proportional relationship as the slope of the graph.
* I can justify that the graph of a proportional relationship will always intersect the origin (0, 0) of the graph.
* I can use a graph, a table, or an equation to determine the unit rate of a proportional relationship and use the unit rate to make comparisons between various proportional relationships.
 |  | **4** | **Linear Equations** |
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| **Expressions and Equations** | 8.EE.6 Understand the connections between proportional relationships, lines, and linear equations. | 8.EE.6 **Understand the connections between proportional relationships, lines, and linear equations.** 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 equation y = mx + b for a line intercepting the vertical axis at b. | * I can create right triangles by drawing a horizontal line segment and vertical line segment from any two points on a non-vertical line in the coordinate plane.
* I can justify that these right triangles are similar by comparing the ratios of the lengths of the corresponding legs.
* I can justify that since the triangles are similar, the ratios of all corresponding hypotenuses, representing the slope of the line, will be equivalent.
* I can justify that an equation in the form y = mx will represent the graph of a proportional relationship with a slope of m and y-intercept of 0.
* I can justify that an equation in the form y = mx + b represents the graph of a linear relationship with a slope of m and a y-intercept of b.
 |  | **4** | **Linear Equations** |
| **Expressions and Equations** | 8.EE.7a Analyze and solve linear equations and pairs of simultaneous linear equations. | 8.EE.7a **Analyze and solve linear equations and pairs of simultaneous linear equations.** 7. Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). | * I can use the properties of real numbers to determine the solution of a linear equation.
* I can simplify a linear equation by using the distributive property and/or combining like terms.
* I can give examples of linear equations with one solution, infinitely many solutions, and no solution.
 |  | **4** | **Linear Equations** |