8th Grade Math Curriculum Bundle # 5

Title	Suggested Dates
Similarity and Transformations	November 16 – December 4 (12 days)

Big Idea/Enduring Understanding	Guiding Questions
Similar figures are the same shape, but can be different sizes. The scale factor between similar figures is the factor by which the image/object is reduced or enlarged, and can thereby help to determine lengths of un-known sides.	1. What methods can be used to determine the scale factor of an enlargement or reduction? 2. What methods can be used to determine the missing length of similar figures?
Reflections and translations are transformations that keep the size and shape of an object the same, so the image is equivalent to the original object with a different orientation. Dilations are transformations that enlarge or reduce an object proportionally, creating a figure similar to the original object but not equivalent.	1. What is the resulting effect on a figure when reflected over a horizontal axis or a vertical axis? 2. What is the resulting effect on a figure when a value is added/subtracted from the original coordinate values? 3. What is the significance of scale factors being less than one or greater than one?
When all of the dimensions of a shape are changed proportionally, the value of the perimeter and area are affected by the changes in all dimensions.	1. If each dimension of a shape is doubled/halved, is the perimeter also doubled/halved? Why or why not? 2. If each dimension of a shape is doubled/halved, is the area also doubled/halved? Why or why not?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)	
8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. 8.7D locate and name points on a coordinate plane using ordered pairs of rational numbers	• use rational numbers in all four quadrants including coordinate points in/on geometric figures • identify the all four quadrants		**Prentice Hall** Chapter 3-Section 4 Pg 124

8th Grade Math Curriculum Bundle # 5

8.6 Geometry and spatial reasoning. The student uses transformational geometry to develop spatial sense. 8.6A generate similar figures using dilations including enlargements and reductions	• graph figures on a coordinate grid • label dilations with 'prime notation' • find the scale factor • use scale factor to create similar figures • using the origin as the center of the dilation	**CMP2 Stretching and Shrinking** Pearson Investigation 4, 5	**Region IV TAKS Math Preparation Grade 8** Coordinate Dilation Lesson Pg 172-184 **Understanding Math** Understand Graphing: Topic 3
8.6 Geometry and spatial reasoning. The student uses transformational geometry to develop spatial sense. 8.6B graph dilations, reflections, and translations on a coordinate plane	• reflect across the x- or y- axis • translate horizontally and vertically (or both), using verbal descriptions or rules • Ex: (x,y) $\longrightarrow$ (x – 5, y + 2) • dilate with enlargements and reductions • use scale factors to dilate		**Dana Center** By the Sea **TAKS Math Preparation Grade 8** Coordinate Reflection Lesson Pg 156-171 **Region IV TAKS Math Preparation Grade 8** Coordinate Translation Lesson Pg 124-140
8.10 Measurement. The student describes how changes in dimensions affect linear, area, and volume measures. 8.10A describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally	• use a scale factor to change shape dimensions • find missing dimensions on changed shape • generalize the effects on perimeter and area if the dimensions are changed by the same scale factor		**Region IV Accelerated Curriculum 8th Grade** Unit 7 Lesson 2- Effects of Proportional Change on Perimeter Unit 7 Lesson 3- Effects of Proportional Change on Area
8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. 8.7B use geometric concepts and properties to solve problems in fields such as art and architecture Note: Focus on scale factors here - Repeated in Bundle 6 for use with finding missing sides and bundle 7 for finding area and perimeter of complex shapes	• using map scales to solve proportion problems Example: 1 in = 25 miles		**Prentice Hall** Chapter 4-Section 6 Pg. 192-195

8th Grade Math Curriculum Bundle # 5

8.9 Measurement. The student uses indirect measurement to solve problems. 8.9B use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements.	• set up proportions to find missing measurements • use a scale factor to find missing measurements • identify the corresponding sides of similar figures when the figure is/is not rotated or reflected • identify pairs of corresponding congruent angles given a similarity statement • identify the pairs of corresponding sides and write the equivalent ratios from a similarity statement		**Region IV Accelerated Curriculum 8th Grade** Unit 3 Lesson 1- Similar Figures