


8th Grade Math Curriculum Bundle # 7

Title		Suggested Dates
Perspective Drawings, Perimeter, Surface Area, and Volume		January 5 – January 29 (18 days)

Big Idea/Enduring Understanding	Guiding Questions
<p>The understanding and application of formulas, along with the skills necessary to determine the reasonableness of answers, will provide a foundation in which we develop measurement skills in situations (such as the amount of water an aquarium will hold or the amount of paper needed to wrap a gift) by using estimation, models and nets.</p>	<ol style="list-style-type: none"> 1. How does the volume of a cube compare to the volume a square pyramid? A cone to a cylinder? A sphere to a cylinder? 2. What strategies can be used to determine the surface area of a 3-dimensional figure? 3. How do you determine which formula is appropriate to use in different situations?
<p>Being familiar with perspective views allows us to compare 3-dimensional models using 2-dimensional face images.</p>	<ol style="list-style-type: none"> 1. How can a three-dimensional figure be shown using two-dimensional side views? 2. What techniques are used to create a 3-dimensional appearance?

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)	
<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>8.7A draw three-dimensional figures from different perspectives</p>	<ul style="list-style-type: none"> • identify, build or draw 3-dimensional figures given front, side and/or top views (real-world, some non-cubical) • build a model w/ cubes given a drawing of the top view and the # of cubes in each stack • draw two-dimensional views when a three-dimensional figure is given 	<p><u>Region IV Accelerated Curriculum 8th Grade</u> Unit 8 Lesson 2 Three-Dimensional Views</p> <p><u>Understanding Math</u> Understanding Measurement and Geometry: Topic 8</p>	
<p>8.8 Measurement. The student uses procedures to determine measures of three-dimensional figures.</p> <p>8.8A find lateral and total surface area of prisms, pyramids, and cylinders using concrete models and nets (two-dimensional models)</p>	<ul style="list-style-type: none"> • use formula chart to solve problems • connect lateral area of a cylinder to the distance it rolls in one revolution • identify base and height when figure is not sitting on the base • identify perimeter of the base as “P” 	<p><u>Region IV Accelerated Curriculum 8th Grade</u> Unit 8 Lesson 1 Lateral and Total Surface Area</p>	
<p>8.8 Measurement. The student uses procedures to determine measures of three-dimensional figures.</p> <p>8.8B connect models of prisms, cylinders, pyramids, spheres, and cones to formulas for volume of these</p>	<ul style="list-style-type: none"> • match nets and models to appropriate formulas to problem solve • use real-world models • identify area of the base as “B” 	<p><u>CMP2 Filling and Wrapping</u> Pearson Investigations 4, 5 (Get concepts from Investigations 1-3 either</p>	<p><u>Understanding Math</u> Understanding Measurement and Geometry: Topic 4</p>

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objects	<ul style="list-style-type: none"> • connect the relationship formulas for volume of pyramids to volume of prisms and volume of cones to volume of cylinders 	through CMP2 or another resource)	
<p>8.8 Measurement. The student uses procedures to determine measures of three-dimensional figures.</p> <p>8.8C estimate measurements and use formulas to solve application problems involving lateral and total surface area and volume</p>	<ul style="list-style-type: none"> • use metric and customary units in problems (conversions within a system) • use compatible numbers to estimate • estimate surface area and volume before calculating • use real-world models • create nets to find lateral and total surface area • use formula-chart ruler 		<p><u>Understanding Math</u> Understanding Measurement and Geometry: Topic 4</p>
<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>8.7B use geometric concepts and properties to solve problems in fields such as art and architecture</p>	<ul style="list-style-type: none"> • area of polygons including complex and shaded areas • perimeter, circumference, area • connecting circumference to the distance a circular object rolls or revolves 		<p><u>Region IV Accelerated Curriculum 8th Grade</u> Unit 7 Lesson 1 Perimeter, Circumference and Area</p> <p><u>Region IV Closing the Distance</u> Lesson 11 Perimeter, Area and Circumference Pg 169-185</p>
<p>8.10 Measurement. The student describes how changes in dimensions affect linear, area, and volume measures.</p> <p>8.10B describe the resulting effect on volume when dimensions of a solid are changed proportionally</p>	<ul style="list-style-type: none"> • use a scale factor to change shape dimensions • find missing dimensions on changed shape • generalize the effects on volume if the dimensions are changed by the same scale factor 		<p><u>Region IV Accelerated Curriculum 8th Grade</u> Unit 9 Lesson 3 Effects of Proportional Change on Volume</p>