

PAP 7th Grade Curriculum Bundle #9

Title	Suggested Dates
2-D Geometry (continued), 3-D Geometry	February 22 – March 12 (15 days)

Big Idea/Enduring Understanding	Guiding Questions
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.	<ol style="list-style-type: none"> 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?
3-D solids are classified by their characteristics.	<ol style="list-style-type: none"> 1. What characteristics are used to classify 3-D figures?
3-D figures can be “unfolded” to reveal pieces which are 2-D figures. When put together correctly (to form a net of a figure), these pieces build a solid.	<ol style="list-style-type: none"> 1. How can you draw a net for a triangular prism? 2. Can a 3-D figure have more than one net? Explain 3. Can the faces that make a 3-D figure form a net for the figure by taping the faces in any order?
Your perspective while viewing a 3-D object will alter the silhouette you see.	<ol style="list-style-type: none"> 1. When would it be important to be able to see the different perspectives/views of a 3D figure?
Volume is present in real world situations such as containers for liquids or solids, laying cement, filling holes, etc.	<ol style="list-style-type: none"> 1. What ways can you estimate the volume of a figure before actually calculating it? 2. What are different ways to determine the volume of a prism or cylinder? 3. What situation would require you to find the volume of a prism or cylinder in the real world? 4. Is it your opinion that finding volumes using the formula or the net is better? Please explain your choice.

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>8.9 Measurement. The student uses indirect measurement to solve problems.</p> <p>8.9B use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements.</p>	<ul style="list-style-type: none"> • 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 	<p>CMP2 Comparing and Scaling Pearson Investigations 3, 5</p>	<p>Accelerated Curriculum for Mathematics Grade 8 Unit 3 Lesson 1 pg 109-124</p> <p>PH Textbook (7th) 5.5</p>

PAP 7th Grade Curriculum Bundle #9

<p>Note: Focus on 2-D here – Repeated in bundle 10 for 3-D</p>	<ul style="list-style-type: none"> • identify the pairs of corresponding sides and write the equivalent ratios from a similarity statement 		<p>NCTM: Navigating through Measurement Pg 41-59, 116-118, 122-127</p> <p>PH Textbook (8th) Lesson 4-7</p> <p>AIRR 8th grade Activity 232, 233</p> <p>Accelerated Curriculum 8th Unit 3 Lesson 1 Unit 7 Lesson 2</p> <p>Closing the Distance 8th Lesson 7 pg. 99-116</p>
<p>8.10 Measurement. The student describes how changes in dimensions affect linear, area, and volume measures.</p> <p>8.10A describe the resulting effects on perimeter and area when dimensions of a shape 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 perimeter and area if the dimensions are changed by the same scale factor 		<p>AIRR 8th grade Activity #236-241</p> <p>PH Textbook (8th) Lesson 4-4b</p> <p>NCTM: Navigating through Measurement Pg 45 – 64, 116-118</p> <p>Accelerated Curriculum 8th Unit 7 Lesson 3</p>
<p>7.9 Measurement. The student solves application problems involving estimation and measurement.</p> <p>7.9A estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes</p> <p>Note: Include shaded/un-shaded areas and complex shapes</p>	<ul style="list-style-type: none"> • use all polygons on the formula chart • utilize ruler on formula chart (using standard measurement to nearest eighth of an inch and metric to nearest millimeter) • integrate measurement conversions (both within a system and between systems) • estimate before calculations • evaluate reasonableness of answers • recognize units related to area and perimeter • solve multi-step problems involving perimeter, area, and circumference (including but not limited to complex figures) • use pi as 3.14 and $\frac{22}{7}$ to solve problems relating to area and circumference • given the area, perimeter, or circumference, find 		<p>PH Textbook (7th) Chapter 8.1 – 8.5</p> <p>PH Textbook (8th) Lessons 2-6, 7-6, 7-7</p> <p>AIRR 7th grade Activity #278-296</p> <p>Kamico 7th Grade (Book 2) Activity p. 125 “Corky’s Clubhouse”</p> <p>Navigating through Measurement</p>

PAP 7th Grade Curriculum Bundle #9

	<p>the missing dimension (leave Π in formula or expression)</p>		<p>pg 27 – 38, 43-44, 105-111, 114-115</p> <p>Region IV 7th TAKS Perimeter and Area Lesson</p> <p>Understanding Math Understanding Measurement and Geometry: Topic 3</p> <p>Closing the Distance 7th Lesson 11 pg. 185-202 Lesson 12 pg. 205-220</p> <p>LTF Maximizing Area (new – available on-line) Polygons in a Circle pg 148-159 (updated version on-line) Area Under a Curve pg 286-293</p>
<p>8.7B 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> <p>Note: This TEKS covers 7.8C</p>	<ul style="list-style-type: none"> • include work with angles, triangles, quadrilaterals • Perimeter, area, shaded area, area of irregular polygons 		<p>Prentice Hall (7th) 8.1-8.4</p> <p>AIRR 8th grade Activity #155-173</p>
<p>7.6 Geometry and spatial reasoning. The student compares and classifies two- and three-dimensional figures using geometric vocabulary and properties.</p> <p>7.6C use properties to classify three-dimensional figures, including pyramids, cones, prisms, and cylinders</p>	<ul style="list-style-type: none"> • connect to models of three-dimensional figures • use sides, bases and angles to classify • use nets to classify three-dimensional figures 		<p>PH Textbook(7th) Chapter 8.8</p> <p>PH Textbook (8th) Chapter 8.1</p> <p>Kamico 7th Grade (Book 2) Activity p. 30 “3-D Concentration”</p> <p>AIRR 7th Grade Activity #216-221</p>
<p>8.7 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</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) 		<p>Accelerated Curriculum for Mathematics 8th Grade Unit 8 Lesson 2 pg 358-370</p>

PAP 7th Grade Curriculum Bundle #9

<p>8.7A draw three-dimensional figures from different perspectives</p> <p>Note: This TEKS covers 7.8A</p>	<ul style="list-style-type: none"> • 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>www.mathsnet.net follow the path: Interactive/3D use activities: Rotating Views, Rotating Houses, Building Houses 1 and 2</p> <p>Accelerated Curriculum 8th Unit 8 Lesson 2</p> <p>AIRR 7th grade Activity #250-258</p> <p>AIRR 8th grade Activity #151-154</p> <p>PH Textbook (8th) Lesson 8-2</p> <p>Understanding Math Understanding Measurement and Geometry: Topic 8</p> <p>LTF Unit 5 Diagnostic</p>
<p>7.8 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world.</p> <p>7.8B make a net (two-dimensional model) of the surface area of a three-dimensional figure.</p>	<ul style="list-style-type: none"> • Given a 3-D shape, create one or more nets • Given a net, describe the 3-D shape it will create 		<p>AIRR 7th grade Activity #259-263</p> <p>PH Textbook (8th) Lesson 8-3a thru 8-3</p> <p>LTF Nets for a Cube pg 288</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 objects</p> <p>Note: This TEKS covers 7.9B</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” • connect the relationship formulas for volume of pyramids to volume of prisms and volume of cones to volume of cylinders 	<p>CMP2 Filling and Wrapping Pearson Investigations 1-4 (Focus on nets and volume)</p>	<p>Understanding Math Understanding Measurement and Geometry: Topic 4</p> <p>PH Textbook (8th) Lesson 8-6a</p> <p>Accelerated Curriculum 8th Unit 9 Lesson 1</p>

PAP 7th Grade Curriculum Bundle #9

<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> <p>Note: This TEKS covers 7.9C Note: Focus on volume here – repeated in bundle 10 for additional time. Repeated in bundle 12 to cover surface area.</p>	<ul style="list-style-type: none"> • use metric and customary units in problems (conversions within a system and between systems) • use compatible numbers to estimate • estimate surface area and volume before calculating • use real-world models • use formula-chart ruler 		<p>Understanding Math Understanding Measurement and Geometry: Topic 4</p> <p>Accelerated Curriculum 8th Unit 9 Lesson 2</p> <p>LTF Box it Up pg 94-103 Fill it Up Please Part I and II (new – available on-line) We All Scream for Ice Cream pg 236-241</p> <p>AIRR 8th grade Activity #209, 211-219</p> <p>PH Textbook (8th) Lesson 8-6 thru 8-8</p>
<p>8.2 Number, operation, and quantitative reasoning. The student selects and uses appropriate operations to solve problems and justify solutions.</p> <p>8.2D use multiplication by a given constant factor (including unit rate) and solve problems involving proportional relationships including conversions between measurement systems.</p> <p>Note: The wording of this TEKS has changed to include conversions between measurement systems. Note: Focus on measurement conversions here.</p>	<ul style="list-style-type: none"> • Include application problems that require conversions both within a system and between measurement systems. 		<p>NCTM: Navigation Number and Operation Exchanging Currency Teacher notes pg 90-92 Student notes pg 133</p> <p>PH Textbook (8th) 4-2 Converting Units pg 166</p> <p>LTF Metric and Customary (English Measurements pg 194-203</p>