

**Richmond Public Schools**  
Curriculum Framework  
*Grade 8*

<b>Strand: Measurement and Geometry</b>	
8.8 The student will construct a three-dimensional model, given the top or bottom, side, and front views.	
<b>Suggested Pacing</b>	
Third Nine Weeks – 5 Instructional Days (including common assessment)	
<b>Related Standards</b>	
<b>Spiral Down</b> <i>*No Spiral Down</i>	<b>Spiral Up</b> <i>*No Spiral Up</i>
<b>Essential Questions</b>	<b>Common Misconceptions</b>
<p><b>How does knowledge of two-dimensional figures inform work with three-dimensional objects?</b></p> <p><i>It is important to know that a three-dimensional object can be represented as a two-dimensional model with views of the object from different perspectives.</i></p>	<ul style="list-style-type: none"> <li>● Students have difficulty visualizing a 3D figure in a 2D perspective.</li> <li>● Students will need more practice building models, then illustrating 3 perspective views.</li> </ul>
<b>Understanding the Standard</b>	<b>Essential Knowledge and Skills</b>
<ul style="list-style-type: none"> <li>● A three-dimensional object can be represented as a two-dimensional model with views of the object from different perspectives.</li> <li>● Three-dimensional models of geometric solids can be used to understand perspective and provide tactile experiences in determining two-dimensional perspectives.</li> <li>● Three-dimensional models of geometric solids can be represented on isometric paper.</li> <li>● The top view is a mirror image of the bottom view.</li> </ul>	<p><b>The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representation to</b></p> <ul style="list-style-type: none"> <li>● Construct three-dimensional models, given the top or bottom, side, and front views.</li> <li>● Identify three-dimensional models given a two-dimensional perspective.</li> <li>● Identify the two-dimensional perspective from the top or bottom, side, and front view, given a three-dimensional model.</li> </ul>

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Vocabulary	Instructional Activities Organized by Learning Objective
2-Dimensional 3-dimensional Face Vertex Side View Front View Top View	<p><b>Virginia Department of Education</b>  <u>3D Figures</u> – Lesson Plan</p> <p><b>Textbook</b>  <i>Virginia Pre-Algebra, ©2012, Glencoe/McGraw-Hill</i></p> <ul style="list-style-type: none"> <li>• Geometry Lab: Drawing Three Dimensional Figures, page(s) 705</li> </ul>
Assessment	<p><b>Notes</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Three-Dimensional Models</a></li> </ul> <p><b>Resources</b></p> <ul style="list-style-type: none"> <li>• <b>Print</b> <ul style="list-style-type: none"> <li>○ <i>Virginia Coach, NEW SOL Edition, Grade 8, Mathematics, Lesson 12– page 91 (Construct a Three-Dimensional Model)</i></li> </ul> </li> <li>• <b>Technology-based</b> <ul style="list-style-type: none"> <li>○ <i>ExploreLearning.com (Gizmos) – <a href="#">3D and Orthographic Views</a> – Interactive Instructional Resource</i></li> </ul> </li> </ul> <p><b>Station Activities</b></p> <ul style="list-style-type: none"> <li>• Cube activity (<a href="#">VDOE activity</a>)</li> <li>• Task Cards - Have students complete problems in small groups Think-Pair-Share</li> </ul>
<p>RPS PowerSchool Unit Test – RPS 8.8 Common Assessment            Test ID#:</p> <p><b>Formative Assessments</b>            Kahoot.it            Plickers            Exit Tickets            Graphic Organizers</p>	
Cross-Curricular Connections	Differentiations
<p><b>English</b>            Students can journal about activities they would do to see the top view, front view, or side view of an object.</p>	<ul style="list-style-type: none"> <li>• Have students build three-dimensional models with fewer linking cubes and draw the views.</li> <li>• Give students three-dimensional models to sketch the three views.</li> </ul>

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#### **Technology**

[MSiCs lesson Cube-o-nometry](#)

- Have students shade each view a different color.
- Use computer software programs and the internet to demonstrate an understanding of three-dimensional modeling.