

**Common Core State Standards for Mathematics**

**Domain: Geometric Measurement and Dimension**

**Volume (explain volume formulas and use them to solve problems) (G-GMD)**

**High School**

Score		Example Activities
4.0	<p><b>In addition to Score 3.0, in-depth inferences and applications that go beyond instruction to the standard. The student will:</b></p> <ul style="list-style-type: none"> <li>• give an informal argument using Cavalieri’s principle for the formulas for the volume of a sphere and other solid figures (G-GMD.2)</li> </ul>	
3.5	In addition to score 3.0 performance, in-depth inferences and applications with partial success.	
3.0	<p><b>The student will:</b></p> <ul style="list-style-type: none"> <li>• give informal arguments for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid and cone (G-GMD.1)</li> </ul> <p><b>The student exhibits no major errors or omissions.</b></p>	<p><u>Informal Arguments</u> – Students will be required to write an informal explanation defining the variables of the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid and cone. Having informally defined all variables of the formulas, students will be required to write an informal explanation as to why each of the formulas is true. Initially students will work individually, and then will share their thoughts with a partner. The teacher will circulate the room providing specific feedback.</p>
2.5	No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content	
2.0	<p><b>There are no major errors or omissions regarding the simpler details and processes as the student will:</b></p> <ul style="list-style-type: none"> <li>• recognize or recall specific vocabulary, such as:                             <ul style="list-style-type: none"> <li>○</li> </ul> </li> <li>• perform basic processes, such as:                             <ul style="list-style-type: none"> <li>○ use the volume formulas for cylinders, pyramids, cones, and spheres to solve problems (G-GMD.3)</li> </ul> </li> </ul> <p><b>However, the student exhibits major errors or omissions regarding the more complex ideas and processes.</b></p>	<p><u>Volume of Pyramids, Cylinders, Cones, and Spheres</u> – Students will be given pyramids, cylinders, cones, and spheres and required to find the volume of each. The students will be required to work individually using the correct formula to determine the volume of each shape. The teacher will circulate the room as the students work providing immediate and specific feedback to students. A student will get an accuracy check before moving to the next shape.</p>
1.5	Partial knowledge of the 2.0 content but major errors or omissions regarding the 3.0 content	
1.0	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.	
0.5	With help, a partial understanding of the 2.0 content but not the 3.0 content	
0.0	Even with help, no understanding or skill demonstrated.	