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| --- | --- | --- | --- |
| **LG #** | **G08** | **Standards:** | **G-GMD.1.1, G-GMD.1.3, G-GMD2.4** |
| **4.0** | **In addition to Score 3.0, in-depth inferences and applications that go beyond instruction to the standard.****The student will be able to:*** Compare the volumes of the 3D objects formed when a 2D object is rotated about the *x*-axis and *y*-axis.

**No major errors or omissions regarding the score 4.0 content.** |
| **3.5** | In addition to 3.0, in-depth inferences and applications with partial success. |
| **3.0** | **Students will be able to explain volume formulas and use them to solve problems, and visualize relationships between 2D and 3D objects.****The student will be able to:*** [Give an informal argument for the formulas for the circumference of a circle and area of a circle using dissection arguments, Cavalieri’s principle, and informal limit arguments.](http://www.cpalms.org/Public/PreviewResource/Preview/71089) ([G-GMD.1.1](http://www.cpalms.org/Public/PreviewResource/Preview/71092))
* Give an informal argument for the formulas for the volume of a [cylinder](http://www.cpalms.org/Public/PreviewResource/Preview/71300), [pyramid](http://www.cpalms.org/Public/PreviewResource/Preview/71263), and [cone](http://www.cpalms.org/Public/PreviewResource/Preview/71307) using dissection arguments, Cavalieri’s principle, and informal limit arguments.(G-GMD.1.1)
* Use volume formulas for [pyramids](http://www.cpalms.org/Public/PreviewResource/Preview/59177), [cones](http://www.cpalms.org/Public/PreviewResource/Preview/57555), and [spheres](http://www.cpalms.org/Public/PreviewResource/Preview/57556) to solve problems. (G-GMD.1.3)
* [Identify three-dimensional objects generated by rotations of two-dimensional objects](http://www.cpalms.org/Public/PreviewResource/Preview/56776) (i.e. [triangles](http://www.cpalms.org/Public/PreviewResource/Preview/55011) and [rectangles](http://www.cpalms.org/Public/PreviewResource/Preview/55014)). (G-GMD.2.4)

**No major errors or omissions regarding the score 3.0 content (simple or complex).** |
| **2.5** | No major errors or omissions regarding 2.0 content and partial knowledge of 3.0 content. |
| **2.0** | **The student recognizes and describes specific terminology such as:**

|  |  |  |
| --- | --- | --- |
| * Informal Argument
 | * Circumference
 | * Area
 |
| * Volume
 | * Cylinder
 | * Pyramid
 |
| * Cone
* Height
* Radius
 | * Sphere
* Slant Height
* Oblique
 | * Cross-section
* Base
 |

**The student will be able to:*** [Use volume formulas for cylinders to solve problems. (G-GMD.1.3)](http://www.cpalms.org/Public/PreviewResource/Preview/57553)
* [Identify and describe the shapes of two-dimensional cross-sections of three-dimensional objects.](http://www.cpalms.org/Public/PreviewResource/Preview/71357) ([G-GMD.2.4](http://www.cpalms.org/Public/PreviewResource/Preview/71370))
 |
| **1.5** | Partial knowledge of the score 2.0 content, but major errors or omissions regarding score 3.0 content. |
| **1.0** | With 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 some of the simpler details and processes and some of the more complex ideas and processes. |
| **0.0** | Even with help, no understanding or skill is demonstrated |