Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 8* / Grade 8 (Math Regional Curriculum)

Wednesday, October 31, 2012, 2:14PM

Standard/Module: Proficiency with Geomerty: 8.G.9 (Week 32, 8 Weeks)

Stage 1: Desired Results

Standards Focus

- Additional (10%) 8.EE.2
  8.NS.1
  8.NS.2

Grade 8 Map

Standards

NYS: CCLS:Mathematics, NYS: 8th Grade , Geometry

8.G Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

- 9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Enduring Understandings	Essential Questions
Volume formulas of three-dimensional shapes	1. Why are mathematical formulas important? 2. Where/When would you use formulas for volume of cone, cylinder, or sphere?

Critical Content

Volume formulas

- Cones
- Cylinders
- Spheres

Skills	Vocabulary
1. Derive the formulas for cones and cylinders based on prior knowledge of prisms and pyramids. 2. Know when to use the formulas for the volumes of cones, cylinders, and spheres. 3. Know how to use the formulas for the volumes of cones, cylinders, and spheres. 4. Use the volume formulas for real-world problems.	Tier 2: height Tier 3: cone, cubic units, cylinder, diagonal, diameter, hemisphere, perpendicular height, radius, pi (π), slant height, sphere, volume

5. Know when to leave expressions in terms of π and when to use approximations. 6. Given the volume of a cone, cylinder, or sphere, find the radius, or height.	

Stage 2: Assessment Evidence

Assessments

Apply formulas for volumes of cones, cylinders, and spheres
Formative: Test: Written

Apply the formulas for volumes of cones, cylinders, and spheres when presented with real-world problems such as the volume of an ice cream cone with ice cream in which (measurements are given of the cone and the ice cream scooper, assuming it produces ice cream in the shape of a perfect sphere).

Stage 3: Learning Plan

Learning Activities	Resources
Derive the formulas for cones and cylinders based on prior knowledge of prisms and pyramids. Experiment with situations that require the student to know when to use the formulas for the volumes of cones, cylinders, and spheres. Calculate with the formulas for the volumes of cones, cylinders, and spheres in real-world problems. Determine when to leave expressions in terms of π and when to use approximations. Given the volume of a cone, cylinder, or sphere, find the radius, or height.	www.illuminations.nctm.org www.illustrativemathematics.org

Differentiation Opportunities

Use hands-on models as much as possible. 3D geometry is not conceptualized when it is always presented in 2D formats.

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