

Algebra/Geometry Institute Summer 2010

Faculty Name: Christopher McCoy

School: West Bolivar High School
Rosedale, MS

Grade Level: 7th Grade



1. Teaching objective(s)

- Students will solve real-world and mathematical problems involving the volume of three-dimensional figures.
 - **7th Grade Measurement (Mathematics Framework)**
 - 4. Apply appropriate techniques, tools and formulas to determine measurements with a focus on real-world problems. Recognize that formulas in mathematics are generalized statements about rules, equations, principles or other logical mathematical relationships.
 - ∞ c. Develop and justify geometric formulas for volume and surface area of cylinders, pyramids and prisms.
 - **Institute Content Based**
 - III. Identify and apply geometric principles to polygons and angles as well as to two- and three-dimensional figures.
 - ∞ c. Develop measurement concepts and formulas through the use of geometry.

2. Instructional Activities

- The teacher will begin the lesson by allowing the students to define volume.
 - **Volume** is the number of cubic units needed to fill a given space.
- The teacher will discuss the characteristics of rectangular prisms.
 - **Rectangular Prisms** are prisms in the shape of rectangles that have six faces; all of which are rectangular. (i.e. rectangular box, such as a [shirt] gift box)
- Students will complete a hands-on activity involving finding the volume of rectangular prisms.
 - Activity 1 – Students will work in groups and use manipulatives (building cubes) to fill empty rectangular prisms and calculate volume.

- Activity 2 – Teacher will provide guided practice calculating the volume of rectangular prisms using a worksheet. To calculate the volume for rectangular prisms, use the formula $V = l \times w \times h$, where l = length, w = width and h = height.

3. Materials and Resources

- Enright, B., Fox, J., Gyles, R., Leonescu, M., & Remer, F. (2005). Breakaway Math. New Hampshire: Options Publishing
- Worksheet
- Chalk
- Chalkboard
- Rectangular Prisms
- Building Cubes

4. Assessment

- Answer Key, Oral Answers from Students, Observe Students