**Lesson Plan Outline Geometry in Construction**

**Title:**

Volume of prism, pyramid, cone, cylinder, and sphere

**Objective(s):**

The students will use formulas to calculate the volume of 3D figures in problem solving situations.

**Learning Standard(s):**

[CCSS.MATH.CONTENT.HSG.GMD.A.1](http://www.corestandards.org/Math/Content/HSG/GMD/A/1/)Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments*.

[CCSS.MATH.CONTENT.HSG.GMD.A.3](http://www.corestandards.org/Math/Content/HSG/GMD/A/3/)Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.\*

**Activities:**

The students will be given boxes and containers to find the possible volume for each object.  Students will create formula packet with pictures and drawings to calculate volume of each shape.

Popcorn container construction & volume exploration

Cones & Pyramid water filling comparison to prism

**Materials:**

Boxes of various shapes and sizes

Paper, Scissors, Rulers

Popcorn

Hollow plastic cones and pyramids with water

Popcorn Picker Activity