**Lesson Plan Outline Geometry in Construction**

**Title:**

Geometric Constructions

**Objective(s):**

The students will use various construction methods to create a design

**Learning Standard(s):**

[CCSS.MATH.CONTENT.HSG.SRT.A.1](http://www.corestandards.org/Math/Content/HSG/SRT/A/1/)

Verify experimentally the properties of dilations given by a center and a scale factor:

[CCSS.MATH.CONTENT.HSG.SRT.A.1.A](http://www.corestandards.org/Math/Content/HSG/SRT/A/1/a/)

A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.

[CCSS.MATH.CONTENT.HSG.SRT.A.1.B](http://www.corestandards.org/Math/Content/HSG/SRT/A/1/b/)

The dilation of a line segment is longer or shorter in the ratio given by the scale factor.

[CCSS.MATH.CONTENT.HSG.CO.D.12](http://www.corestandards.org/Math/Content/HSG/CO/D/12/)Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).*Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line*.

**Activities:**

Activity: Sports Area Design; the students will use properties of parallelograms and geometric constructions to design a basketball, hockey, baseball, soccer, or football field to the proper scale.

**Materials:**

Tape measures, string, washable paint or chalk

Scale drawing activity from previous day