**Lesson Plan Outline Geometry in Construction**

**Title:**

Equations of Circles in the Coordinate Plane

General Form of a Circle

**Objective(s):**

Students will write an equation of a circle and graph it on the coordinate plane.  Students will define a locus of points.

The students will identify and graph the equation of a circle on the coordinate plane.

**Learning Standard(s):**

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

Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.

[CCSS.MATH.CONTENT.HSG.GPE.B.4](http://www.corestandards.org/Math/Content/HSG/GPE/B/4/)

Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).*

**Activities:**

Map out circular plot using the equation of a circle.

**Materials:**

Equations of Circles Packet

General Form of a Circle W.S.