**Lesson Plan Outline Geometry in Construction**

**Title:**

Geometric Constructions

**Objective(s):**

Students will learn how to perform basic geometric constructions including parallel and perpendicular lines

**Learning Standard(s):**

#### [CCSS.MATH.CONTENT.HSG.MG.A.1](http://www.corestandards.org/Math/Content/HSG/MG/A/1/)Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

[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*.

#### [CCSS.MATH.CONTENT.HSG.MG.A.3](http://www.corestandards.org/Math/Content/HSG/MG/A/3/)Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

**Activities:**

Students will learn how to perform basic geometric constructions using technology and using a compass and straightedge.

Students will design a patio using various shapes and will given a budget and restrictions for building.  Students will create patio design that stays within budget and meets the requirements.

Team Building Activity: Survival Scenario

 *Students will work together to determine the twelve most useful objects in a plane crash*

Students will use algebra to solve problems with basic geometric constructions

**Materials:**

iPad with Constructions Tutor App & Geometry Pad App

Constructions Instruction Packet & Constructions with Compass & Straightedge

Patio Design Project