**Lesson Plan Outline Geometry in Construction**

**Title:**

Types of Quadrilaterals

Properties of Parallelograms

**Objective(s):**

Students will define special types of quadrilaterals through exploration of parallelogram, rhombus, square, rectangle, and trapezoid

The students will investigate the specific properties of parallelogram, rhombus, square, rectangle, and trapezoid; namely opposite & adjacent sides, opposite & adjacent angles, and their diagonals.

**Learning Standard(s):**

[CCSS.MATH.CONTENT.HSG.CO.C.11](http://www.corestandards.org/Math/Content/HSG/CO/C/11/)Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals*.

[CCSS.MATH.CONTENT.HSG.CO.C.9](http://www.corestandards.org/Math/Content/HSG/CO/C/9/)Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints*.

**Activities:**

Students will cut 4 boards at specific lengths and angles and put them together to see the types of shapes that are formed; students will determine properties of shape once put together

Students will use a geometry “app” or software to compare and contrast types of quadrilateral

**Materials:**

Boards for cutting

Parallelograms with Boards Activity

Properties of Parallelograms Exploration Activity