**Title** Lesson 4: Angle Properties

**Project title** If You Build It, Will It Fly??????

**Grade Band Team:** Grades 6-8 ,Team C

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**Date** July 26, 2011

**Key Terms:**

Math terms Science terms

angles, angle of attack,

measurement, wing

acute, right angle, fuselage

obtuse, complementary,

supplementary

**Learning Objectives:**

Student will be able to…

1. Measure and Identify types of angles (right, acute, obtuse, supplementary, complementary)

**Common Core Standards in Math**

Geometry 7.G

**Draw, construct, and describe geometrical figures and describe the**

**relationships between them.**

1. Solve problems involving scale drawings of geometric figures,

including computing actual lengths and areas from a scale drawing

and reproducing a scale drawing at a different scale.

2. Draw (freehand, with ruler and protractor, and with technology)

geometric shapes with given conditions. Focus on constructing

triangles from three measures of angles or sides, noticing when the

conditions determine a unique triangle, more than one triangle, or no

triangle.

**Solve real-life and mathematical problems involving angle measure,**

**area, surface area, and volume.**

5. Use facts about supplementary, complementary, vertical, and adjacent

angles in a multi-step problem to write and solve simple equations for

an unknown angle in a figure.

**Career Cluster Pathways in Manufacturing**

* Production
* Manufacturing production process development
* Installation and repair

**Materials**

styrofoam glider;

rulers/straight edge

pencil

protractor

bread twist-tie

lab notebooks

**Procedure**

1. Review yesterday’s Gizmo Lesson on Angles.
2. Discuss the parts of angles
3. Students use two straws as rays and the twist tie to connect at the vertex. Discus the properties and form angles including right, acute, obtuse. Draw and label an example of each in your lab notebook.
4. Place students in pairs and have them use both sets of straws to form two angles that put together form a right angle (complementary). Measure and discuss the angles. Draw and label an example of each in your lab notebook.
5. Place students in pairs and have them use both sets of straws to form two angles that put together form a straight line (supplementary). Measure and discuss the angles. Draw and label an example of each in your lab notebook.
6. Use their gliders to measure the angle of attack on the wing. Discuss how this angle is important to flight. Write any improvements you would make to wing design in your lab notebooks.

**Assessment**

**Pre-assessment**

Pre-test as well as Gizmo-Investigating Angle Theorem-Act. A (www.explorelearning.com) -

**Formative Assessment**

Observe students as they construct the various angles as they are discussed.

**Summative Assessment**

Lab notebook and Post-test

**REACT Model of Contextual Teaching**

**Relating** Students will be able to relate their examples of angles they find in the world around them.

**Experiencing** Students will experience measuring angles with straws and with their built gliders.

**Applying** Students will apply their knowledge of angles to the construction of their own modified gliders. They will determine what angle of attack and type of wing gives them the farthest distance and most accuracy.

**Cooperating**  Students will work with others to create and measure complementary and supplementary angles.

**Transferring**  Students will transfer their knowledge of angles to the real world. They will understand that you can put two angles together to form another angle such as wood trim around a door or a picture frame.