Unit 1 Intro to Geometry

Title: Unit 1		Subject/Course: Geometry
Topic: Geometry Terms	Grade: 10-12	Designer: Anthony Padrnos

Stage 1- Desired Results

State Math Standards addressed:

- (9.3.2.1) Understand the roles of axioms, definitions, undefined terms and theorems in logical arguments
- (9.3.2.2) Accurately interpret and use words and phrases such as "if…then," "if and only if," "all," and "not." Recognize the logical relationships between an "if…then" statement and its inverse, converse, and contrapositive.
- (9.3.2.3) Assess the validity of a logical argument and give counterexamples to disprove a statement.
- (9.3.2.5) Use technology tools to examine theorems, make and test conjectures, perform constructions and develop mathematical reasoning skills in multi-step problems. The tools may include compass and straight edge, dynamic geometry software, design software, or internet applets.

ISTE Standards addressed:

- Creativity and Innovation
  - Student will use technology on a variety of activities to creatively create understanding of material.
- Communication and Collaboration
  - Students will collaborate, using technology (wikis & glossary) to create a product.
- Critical Thinking, Problem Solving, and Decision Making
  - Students will use technology to critically think and problem solve through the use of GeoGebra, Wiki's, and Assessments.
- Technology Operations and Concepts
  - Student will operate technology to demonstrate geometric concepts through digital presentations, GeoGebra, and digital imaging.

Unit Understandings:	Unit (Topical) Essential Questions:
Students will understand that… • Basic geometry vocabulary is important for the foundation of Euclidean geometry. • Geometry terms are related to each other. • Point, Line, & Plane are the building blocks of all Euclidean geometry.	• What are the essential words for geometry? • What tools are used in geometry?
Students will know … • All essential vocabulary for Euclidian geometry • How to decode "if…then" statements	Students will be able to … • recognize different types of polygons • measure angles with a protractor • identify different parts of a circle

Essential new vocabulary •	• Sketch images of essential vocabulary Common misconceptions students bring to the unit…

Stage 2 – Assessment Evidence	
Formative assessments • vocabulary quiz • warm-ups • homework • activ-vote	Informal assessment tasks • think-pair share • group work
Summative assessments • 50 point multiple choice/ constructed response test	

Stage 3 – Learning Plan

Learning Activities
Students will…

- **[0.1/0.2] Intro, paper folding, symmetry** (9.3.2.1)
  - paper folding activity
- **[0.3/0.4] Tools & design** (9.3.2.1)
  - protractor worksheet
  - design worksheet
  - personal design assignment
- **[1.1] Building blocks of geometry** (9.3.2.1)
  - jigsaw activity with glossary
- **[1.2] Pool room math** (9.3.2.1)
  - Pool math activity/ worksheet
  - Angle Applet
- **[1.3] What's a widget** (9.3.2.1), (9.3.2.2), (9.3.2.3)
  - "if…then" statement worksheet
  - group wiki
- **[1.4] Polygons** (9.3.2.1)
- **[1.5] Triangles & quadrilaterals** (9.3.2.1)
  - group wiki
- **[1.6] Circles** (9.3.2.1), (9.3.2.5)
  - GSP circle lab

Differentiation possibilities…

- Daily assignments that are ability based
- Ability grouping for group/ partner activities
- Interest assignment with personal geometric design