UNIT OF STUDY

Title: Unit 8	Subject/Course: Math	Length: 4 weeks
Topic: Geometry	Grade: 5th	Designer: O'Cain, Smith

UNIT GOALS AND EXPECTATIONS

IMPORTANT CONCEPTS:

- A Polygon has the same number of angles as it has sides.
- Lines in the same plane either intersect or are parallel.
- Parallel, intersecting, and perpendicular are three ways to describe the relationship between two lines.
- The maximum length of a chord in a circle is the circle's diameter, or twice the radius of the circle.

ESSENTIAL QUESTIONS:

- How can plane and solid shapes be described?
- How are angles measured?
- How are angles classified?
- What is the difference between a point, ray, line, line segment?
- How are points, lines, line segments, rays, and angles related?

STUDENT LEARNING EXPECTATIONS:

G.8.5.1
Identify and model regular and *irregular polygons* including decagon
G.8.5.2
Identify and draw *congruent*, *adjacent*, *obtuse*, *acute*, *right* and *straight* angles (Label parts of an angle: *vertex*, *rays*, *interior* and *exterior*)
G.8.5.3
Model and identify circle, *radius*, *diameter*, *center*, *circumference* and *chord*

G.8.5.4
Model and identify the properties of *congruent* figures
G.11.5.1
Using grid paper, draw and identify *two-dimensional patterns (nets)* for *cubes*
M.13.5.6
Use benchmark angles to estimate the measure of angles
Ex. 45 degrees, 90 degrees, 120 degrees, 180 degrees

SPECIFIC DECLARATIVE KNOWLEDGE – What I know

Explain Vocabulary terms:

Polygon	regular polygon
irregular polygon	angle
side	triangle
quadrilateral	pentagon
hexagon	octagon
decagon	relationships
parallel lines	congruent
adjacent angle	obtuse angle
acute angle	right angle
straight angle	vertex
ray	interior
exterior	point
circle	radius
diameter	center
circumference	chord
two-dimensional cube	net
three-dimensional	

benchmark angles 45°, 90°, 120°, and 180°
right angle
obtuse angle
acute angle
straight angle

SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do

*identify the characteristics of regular and irregular polygons
*measure lengths of sides and degrees of angles to identify regular and irregular polygons
*identify regular and irregular polygons
*relationships among polygons
*parallel lines
A.
*use a protractor to measure and draw angles
*identify acute, obtuse, right and straight angles from their measurements
*compare angle measures to determine congruence
*identify adjacent angles
B.
*identify interior and exterior points of an angle
*label the parts of an angle
*label the parts of a circle
*distinguish among radius, chord and diameter
*model circumference using real-world objects
Ex.
string, tape measure
*Identify and model the properties of congruent figures
*know there are several patterns for a cube
*use manipulatives to form cubes
*using grid paper, draw and identify two-dimensional patterns (nets) for cubes
*identify benchmark angles 45°, 90°, 120°, and 180°
*estimate angle measures using benchmark angles

UNIT ASSESSMENTS (Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)	
Construct and label parts of a circle identifying *radius, diameter, center, circumference and chord* on a paper plate	
Traditional Assessments: Teacher made quiz Teacher made tests	Other Evidence of Learning: Weekly homework Classwork activities

ACTIVITIES AND LEARNING EXPERIENCES	Resources
1. Introduce regular and irregular polygons using modeling and student text.	Harcourt Ch. 20 Lesson 3
2. Reinforce learning experience using video from Brainpop. - www.brainpop.com	http://www.brainpop.com/math/geometryandmeasurement/polygons/preview.weml
3. Model & draw congruent, adjacent, obtuse, acute, right and straight angles (	Smart Board activities
4. Using the smart board, label parts of an angle: vertex, ray, interior and exterior.	Harcourt Math Center
5. Reinforce angles using video from Brainpop. - www.brainpop.com	http://www.brainpop.com/math/geometryandmeasurement/angles/
6. Introduce parts of a circle using teacher modeling on the smart board and student text book.	Harcourt Ch. 20 Lesson 4
7. Reinforce learning experience of circles and polygons using video. - www.unitedstreaming.com	http://player.discoveryeducation.com/index.cfm?guidAssetId=4135420B-394C-4EB1-9EDD-2A01E90A8771&blnFromSearch=1&productcode=US
8. Using student text, introduce Congruent and Similar figures.	Harcourt Ch. 20 Lesson 5
9. Reinforce similar figures using video from Brainpop. - www.brainpop.com	http://www.brainpop.com/math/geometryandmeasurement/similarfigures/preview.weml
10. Using student text, introduce nets for solid figures.	Harcourt Ch. 27 Lesson 1
11. Practice using manipulative for nets.	Folding Geometric Shapes
12. Discuss using benchmark angles to estimate the measure of angles.	Harcourt Ch. 20

Career Connections
Discuss how architects use geometry in everyday work.

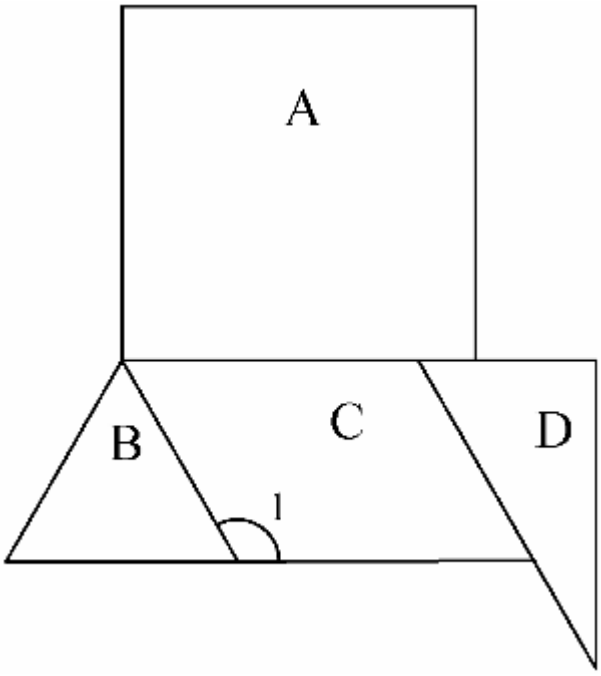
Name

Homeroom

Date

HOTS QUESTION

Sabrina used her ruler and grid paper to make the following four polygons. Study her drawing below.



1. Which of the four polygons in Sabrina's drawing are regular polygons? Explain your thinking.
2. If Sabrina viewed her drawing as one large polygon, what name could she give it based on the number of its sides? Explain your thinking.
3. On your Student Response Sheet, add a ray to angle 1 so that two adjacent angles are formed. Name them angle 2 and angle 3. Make sure angle 2 is obtuse and angle 3 is acute.

BE SURE TO LABEL YOUR RESPONSES 1, 2, AND 3.