Mrs. Snure	7th Grade Math Unit 7	February 3- 15
Unit Title: Geometry and Measurement: Two Dimensional		

TEKS:

7.2 Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, or divides to solve problems and justify solutions. The student is expected to:
7.2B Use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals.
7.2F Select and use appropriate operations to solve problems and justify the selections.
7.2G Determine the reasonableness of a solution to a problem.

7.3 Patterns, relationships, and algebraic thinking. The student solves problems involving direct proportional relationships. The student is expected to:
7.3B Estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units

7.4 Patterns, relationships, and algebraic thinking. The student represents a relationship in numerical, geometric, verbal, and symbolic form. The student is expected to:
7.4A Generate formulas involving unit conversions within the same system (customary and metric), perimeter, area, circumference, volume, and scaling.

7.6 Geometry and spatial reasoning. The student compares and classifies two- and three-dimensional figures using geometric vocabulary and properties. The student is expected to:
7.6A Use angle measurements to classify pairs of angles as complementary or supplementary. Use, Classify, Compare
7.6B Use properties to classify triangles and quadrilaterals.
7.8 Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. The student is expected to:
7.8C Use geometric concepts and properties to solve problems in fields such as art and architecture.

7.9 Measurement. The student solves application problems involving estimation and measurement. The student is expected to:
7.9A Estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes.

7.13 Underlying processes and mathematical tools. The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:
7.13A Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics.
7.13B Use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness.
7.13C Select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.
7.13D Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.

7.14 Underlying processes and mathematical tools. The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models. The student is expected to:
7.14A Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical,

numerical, physical, or algebraic mathematical models.

7.15 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:
7.15A Make conjectures from patterns or sets of examples and nonexamples;
7.15B Validate his/her conclusions using mathematical properties and relationships.

Guiding Questions Related to Key Understandings:
- A solution to an equation from an everyday problem situation can be validated by using concrete models and pictorial representations to solve the equation and symbols to record the actions.
- The process of solving an equation involves using a plan or strategy to keep the values on both sides of the equation equally balanced and validating the solution for reasonableness.

Performance Indicators:
Generate a complete model (e.g., blueprint, design book, etc.) with labels of angle measures, dimensions, and a geometric classification of each figure in a given real-life problem situation which involves length and area. Use mathematical language to identify a pair of complementary and supplementary angles. Use the complete model to find a reasonable solution to the real-life problem situation. Validate all solutions with a calculator. Write a justification of the solution process describing the mathematical properties, relationships, and formulas used to determine the angles, dimensions, and geometric classifications of the figures in the problem.

Lesson Activity 1: February 2-3, 2012, Engage 1

Students use prior knowledge to identify, classify, and name polygons based on side and angle attributes.

Student Responsibility, February 2, 2012: Polygon Search, Triangle Family Tree, Where Do I Reside?

Lesson Activity 2: February 3, 2012, Explore/Explain 1

Students investigate the relationship between the angles and sides of polygons as they relate to the classification of triangles and quadrilaterals. Students formalize different geometric terms involving parallel sides, congruency, and right angles in triangles and quadrilaterals.

Student Responsibility, February 3, 2012: Triangle and Quadrilateral Properties, Geometry Graffiti

Lesson Activity 3: February 7, 2012, Practice

Students practice classifying triangles and quadrilaterals.

Student Responsibility, February 7, 2012: Gizmo

Lesson Activity 4: February 8, 2012, Explore/Explain 2

Students explore and classify complementary and supplementary angles.

Student Responsibility, February 8, 2012: Complementary and Supplementary Angles

Lesson Activity 5: February 8, 2012, Elaborate 1

Students justify the classification of triangles and quadrilaterals.

Student Responsibility, February 8, 2012: Angle, Triangle and Quadrilateral Identification

Lesson Activity 6: February 9, 2012, Engage 2

Students use prior knowledge to determine the area and perimeter of triangles and quadrilaterals without the use of
the formula.

Student Responsibility, February 9, 2012: Triangle and Quadrilateral: Perimeter and Area

Lesson Activity 7: February 10, 2012, Explore/Explain 3

Students match the formulas for perimeter, area, and circumference on the Grade 7 STAAR Mathematics
Reference Materials to models of the formula and application problems that involve the use of a formula to work the
problem. Students use ratios to review measurement conversions for metric and customary units in application
problems.

Student Responsibility, February 10, 2012: Perimeter, Circumference and Area Match Up

Lesson Activity 8: February 13, 2012, Explore/Explain 4

Students find the area and perimeter of composite figures created from rectangles, triangles, parallelograms,
trapezoids, and/or semi circles.

Student Responsibility, February 13, 2012: Composite Figures, Rulers for Similar Figures

Lesson Activity 9: February 13-14, 2012, Elaborate 2

Students solve real-life application problems involving perimeter, circumference, and area.

Student Responsibility, February 13-14, 2012: Measurement Applications, Room Makeover

Lesson Activity 10: February 15, 2012, Evaluate

Students are evaluated with the performance indicator and unit test.

Student Responsibility, February 15, 2012: Performance Indicator, Unit Test