Unit Map 2012-2013

Monroe #2 - Orleans BOCES (Regional Collaboration)

Collaboration / Math 6* / Grade 6 (Math Regional Curriculum)

Wednesday, October 31, 2012, 12:10PM

Standard/Module: Proficiency with Geometry Concepts 6.G.1 (Week 25, 7 Weeks)

Stage 1: Desired Results

Standards Focus

- Supporting (20%) Links to 6.NS.3 and 6.EE.1, 6.EE2c

6 Grade CCS Map.pdf

Standards

NYS: CCLS:Mathematics, NYS: 6th Grade , Geometry

6.G Solve real-world and mathematical problems involving area, surface area, and volume.

- 1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

Enduring Understandings	Essential Questions
1. Area of triangle can be found using the formula A=1/2 bh 2. Area of a triangle formula is from deconstructing the formula of a quadrilateral 3. Area is how many square units are within a shape. 4. The area of a polygon can be found by dividing it into smaller shapes and then adding the areas of those shapes. 5. The base is perpendicular to the height. 6. Any side of a triangle can be called the base. 7. The height of the triangle is the perpendicular distance from the opposite vertex to the base. 8. The height of a shape: a. The height is sometimes the actual side of the shape. b. The height is sometimes the symbolic	1. What characteristics are used to classify quadrilaterals? 2. What are the characteristics of a right triangle? 3. What is the relationship between the area of a triangle and quadrilateral, which share the same base, and height? 4. What's the difference from finding the area of a right triangle and any other type of triangle (acute or obtuse)?

dotted line in a shape	

Critical Content

1. Shapes and identification
   a. Triangles (right, and other)
   b. Quadrilaterals (square, rectangles, rhombus, parallelogram, trapezoid, and kite)
   c. Other polygons
2. Formulas for area
   a. base x height
   b. ½ b x h
   c. 1/2h (b1 + b 2)
   d. other needed formulas for area
3. Area is based on the number of square units within a shape.
4. Relationship between base and height of polygons

Skills	**Vocabulary**
1. Find the area of: a. right triangles b. other triangles c. special quadrilaterals d. polygons 2. By composing and decomposing into other shapes 3. Apply these techniques into real word and	Tier 2: Perpendicular Parallel Area Formula Substitute Base

mathematical problems 4. Identify/classify: a. triangles b. quadrilaterals c. polygons 5.Identify the formula for area of triangles, quadrilaterals and other shapes. 6. Identify the relationship of base and heights in shapes	Height Tier 3: Vertex Square Units Commutative Property

Stage 2: Assessment Evidence

Assessments

Formative: Other: Quiz

1.) Find the area of a triangle with a base length of three units and a height of four units.

2.) Find the area a trapezoid using the formulas for rectangles and triangles if the trapezoid has bases measuring 12 ft and 7 ft and has a height of 3 ft. (Draw the trapezoid first)

3.) A rectangle measures 3 inches by 4 inches. If the lengths of each side double, what is the effect on

the area?

4.) The area of the rectangular school garden is 24 square units. The length of the garden is 8 units.

What is the length of the fence needed to enclose the entire garden?

5.) The sixth grade class at Hernandez School is building a giant wooden H for their school. The H will be 10 feet tall and 10 feet wide and the thickness of the block letter will be 2.5 feet.

How large will the H be if measured in square feet?

The truck that will be used to bring the wood from the lumber yard to the school can only hold a piece of wood that is 60 inches by 60 inches. What pieces of wood (how many pieces and what dimensions) are needed to complete the project?

Stage 3: Learning Plan

Learning Activities	**Resources**
Illustrative math tasks: **"6.G.1 Base and Height"** **Scavenger Hunt** You will need a ruler, yardstick, or measuring tape. Find each of the following items around your school. 1.Something square that has a perimeter less than 20 square inches 2.Something rectangular that has an area of more than 75 square inches 3.Something square that has an area of more than 30 square inches 4.Something rectangular that has a perimeter of less than 20 inches 5.Something square that has an area less than 36 square inches	http://engageny.org/common-core/ http://illustrativemathematics.org/ www.livebinders.com/play/play/52180 http://illuminations.nctm.org/

6.Something rectangular that has a perimeter greater than 15 inches Bonus! 7.Find the perimeter and area of a room in your house.	http://www.mathsisfun.com/geometry/polyhedron.html http://www.korthalsaltes.com/

Differentiation Opportunities

Show Me!

Make the playing cards below. Mix the cards well and place them face down on the table. Take turns selecting one card and drawing an example of the figure described on the card.

CARDS:

quadrilateral with only 2 equal sides
quadrilateral with only 2 parallel sides
quadrilateral with no equal sides
quadrilateral with 4 equal sides
quadrilateral with at least 2 right angles
equilateral triangle
equiangular triangle
acute isosceles triangle
obtuse isosceles triangle
right triangle
acute scalene triangle
obtuse scalene triangle

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