LESSON PLAN FORMAT

**Student  Teacher’s  Name:**Gretchen Morris-Archinal            **Date:**  May 23, 2014

**Grade Level:** 3   **Topic/Unit:**  Area/Geometry     **School:**Trombly       **District:**  Grosse Pointe

**Common Core/Objective**

* **Common Core**

**[CCSS.MATH.CONTENT.3.MD.C.7](http://www.corestandards.org/Math/Content/3/MD/C/7/)**  
Relate area to the operations of multiplication and addition.

**[CCSS.MATH.CONTENT.3.MD.C.7.A](http://www.corestandards.org/Math/Content/3/MD/C/7/a/)**  
Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.

**[CCSS.MATH.CONTENT.3.MD.C.7.B](http://www.corestandards.org/Math/Content/3/MD/C/7/b/)**Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.

**[CCSS.MATH.CONTENT.3.MD.C.7.C](http://www.corestandards.org/Math/Content/3/MD/C/7/c/)**Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths *a* and *b* + *c* is the sum of *a* × *b* and *a* × *c*. Use area models to represent the distributive property in mathematical reasoning.

**[CCSS.MATH.CONTENT.3.MD.C.7.D](http://www.corestandards.org/Math/Content/3/MD/C/7/d/)**Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.

* **Objective**

Find and compare the area of 6 different shapes derived from a rectangle cut in ½ on the diagonal by tiling it**.**

**Learning Resources and Materials**

* Construction paper for rectangles
* Pencil to draw rectangles and record area of each shape
* Scissors
* Glue sticks
* Large paper to glue shapes onto.
* Rulers or post-it notes to iterate

**Development of Lesson**

* Introduction - In a large group, the teacher asks the students the following as discussion starters regarding geometry and area.

Ask:

* + What are some of the common shapes that we see each day?
  + Where do we see them?
  + What are some of the different ones?
  + Ever wonder how big a shape is?
  + We can use area to figure it out. Do you remember what area is?
  + Do you remember how to find the area of a rectangle?  How about a triangle?
  + We’re going to experiment today with a rectangle and triangles.

**Methods/Procedures**

1. Have students pair with their math partners
2. Pass out materials to each pair
3. Instruct students to:
   1. Cut out 6 3”x5” rectangles from a large piece of construction paper.  There should be a total of 6 rectangles for each pair
   2. Have students fold and cut the rectangles on the diagonal, making two identical triangles.
   3. Then the students will rearrange the triangles into as many shapes as they can, including the original rectangle as a shape.
   4. Only the sides of the same length can be matched up and they must match exactly.
   5. Glue each of the shapes on a large piece of paper.
   6. Once glued down, the students measure the shape using post-it notes to tile the shape. They may tear the post-it notes to smaller pieces as necessary to represent fractions.
4. On a separate paper, students record the shape, the array and solve for the area with addition or multiplication.

**Accommodations/Adaptations**

* Provide oral and written directions to accommodate a variety of learning styles.

**Assessment/Evaluation of Student Learning**

* Use a check list with the following criteria to record the teachers informal observations for assessment purposes:
  + Number of shapes
  + Iterations
  + Addition and Multiplication of area.

**Closure**

After the students have completed the activity, ask the students the following questions and discuss their responses:

* The area and shape of each different response
* Does one shape have a greater area than the rest?
* How do you know?
* Did one take more paper to make?

State: “Ok, let’s get the room cleaned up so that we can go to recess.”

**Teacher Reflection/Plans for Revision**

Over all I think that this plan went well and was enthusiastically received by the students. One area I would change would be the proportional size between the post-it note and the triangles. 2 inch square post-it notes are too large for a 3”x 5” shape. One suggestion is to use a transparency with centimeter squares on it to measure the arrays.

This plan hits on a variety of learning styles including: auditory, visual and tactile. Fine motor skills are involved with the cutting and the iterations of the post-it notes.

**Names of Pair: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* Cut out 6 3”x5” rectangles from a large piece of construction paper.  There should be a total of 6 rectangles for each pair.
* Fold and cut the rectangles on the diagonal, making two identical triangles.
* Rearrange the triangles into as many shapes as you can
* Only the sides of the same length can be matched up and they must match exactly.
* Glue each of the shapes on a large piece of paper.
* Once glued down, measure the shape using post-it notes to tile the shape. You may tear the post-it notes to smaller pieces as necessary to represent fractions.
* Draw your shape in the shape box, copy that shapes array in array box and add or multiply to find the area of each shape.

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| **Shape** | **Array** | **Area** |
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**Area of Shape Activity -** [**CCSS.MATH.CONTENT.3.MD.C.7**](http://www.corestandards.org/Math/Content/3/MD/C/7/)

**Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Name** | **Number of Shapes** | **Iterations** | **Addition/Multiplication of Area.** |
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