Lesson Study Group Members: Katherine Correia, Scott Fusi, Kim Jepsen, Nichelle McDowell-Laws

Grade Level: 4th-6th
Title Lesson: Classify Quadrilaterals

Part I: Planning to Teach--Monday, March 1, 2010. To be taught by Scott Fusi (1st time) and Nichelle Laws (revised lesson).

1.) Research Goal: Students will be able to solve problems using critical thinking skills while taking risks.

2.) Lesson Intent: Identify, describe, and classify quadrilaterals in as many ways as possible.

3.) Rationale/ Standards met: MG 2.0, 2.2 and MR 2.3, 2.4, 3.2 *see Unit 6/5th Grade TE for entire standard.

4.) Prerequisite Skills needed for lesson: prior knowledge of basic geometrical shapes and basic vocabulary (especially flow chart)

   a.) Vocabulary: polygon, quadrilateral, parallelogram, rhombus, trapezoid, parallel sides, perpendicular sides, congruent, right angles

   b.) Math concepts: quadrilaterals and their attributes

5.) Plan for Differentiation-
   * Benchmark Group: (Making Progress)
   Modifications:
   -choral reading of directions
   -working in pairs
   -modeling
   -administer Problem Solving p.18.2 for homework (PS 117)

   * Strategic Group: (Special needs, below grade level standards, Mid to advanced EL students)
   Modifications:
   -pre-labeled quadrilaterals
   -modeling
   -reading direction
   -working in small groups
   -administer Reteach p.18.2 for homework (RW 117)
*Intensive Group: (At risk students, intensive EL students)*

Modifications:
- Evaluation problem will work in pairs
- administer Reteach p.18.2 for homework (RW 117)

6.) **Materials/Manipulatives/Technology:** Text book, construction paper quadrilaterals, quadrilateral flowchart for each group and one large chart, white boards, white board markers and erasers

7.) **Plan for Assessment & Analysis of Student Learning:**

- Entry Level - Review of vocabulary
- Progress Monitoring – check for understanding using white boards after first activity
- Summative- worksheet 18.2, PW 117 p.33 #1-4, 7 and 9 (this page modified to exclude #’s 5, 6, and 8)

8.) **References:** 5th grade standards, 5th math Teacher’s Edition

**Part II: Procedures for the Lesson**

**Total time allotted for the lesson:** 60 minutes

<table>
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<tr>
<th>Time Breakdown</th>
<th>Lesson Plan: *Teacher Dialogue/Script *Activities</th>
<th>Possible Student Responses/Teacher Support</th>
<th>Points of Evaluation: Entry Level, Progress Monitoring, Summative</th>
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<td><strong>15 mins.</strong></td>
<td>The teacher will start out with a review of quadrilaterals. T: Today we will be looking at quadrilaterals. Can anyone tell me what a quadrilateral is?</td>
<td>PS: -It has 4 sides. -It has 4 angles. -No response</td>
<td>Intro questions and discussion about quadrilaterals.</td>
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If no one responds say:
T: Can anyone tell me by raising your hand what the word “quad” means? (give meaning if no one responds) Quad means 4 and lateral means sides, so a quadrilateral is any 4-sided closed figure. Now let’s review some more vocabulary that will help us with this lesson.

T: Can one of you tell me the definition of congruent? Perpendicular? Parallel?

Next ask:
T: Can you look around the room or think of any examples of something that is parallel? Perpendicular?

Draw shapes and show symbols that signal a shape is congruent, 90 degree box for perpendicular, and

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<th>PS:</th>
<th>a quad is something you drive/ride</th>
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<tr>
<td>PS:</td>
<td>*No response *Congruent - same, same size, same shape, equal *Perpendicular- right angles, makes 90 degree angles *parallel- lines that don’t cross</td>
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<td>PS:</td>
<td>parallel-the sides of the desk, sides of the board Perpendicular-intersection</td>
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arrows on lines that are parallel.

There are five basic types of quadrilaterals. They are trapezoid, parallelogram, rectangle, rhombus, and square. Quadrilateral is the more general term to name all of these shapes. However, in a minute we are going to explore how and why these shapes are different.

T: I am going to pass out some shapes to each group. First, mark parallel, perpendicular, and congruent symbols on your quadrilaterals. Let's practice. On this shape, what would I put on the sides that are parallel? Congruent? Perpendicular? Second, you will discuss all possible places the shapes can go. Each member of your group will bring a

A: flow chart
shape up to the front of the room and place it in one of the columns. If you see that shape already in that column, is there another column you can place it in?
So, I'm going to give you 1 minute to discuss where you might put your shapes.
Go over to timer (or use clock) and say: You have one minute to discuss, starting now. Start timer. When the timer goes off, call one person from each group to put their shapes on the chart.
T: Now I'm going to call one person from each group. (number off students in each group then pick a number and call all students with that number to come up)
Stop and ask: T: Does everyone agree with where the shapes are placed?
Continue until all shapes are on the chart.
<table>
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<td>15 mins.</td>
<td>Discuss the classifications of the shapes.</td>
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<td>Reveal the name of each column to the students and discuss how each shape can be classified into several types of categories. (Ex: the quadrilateral column should have several diff. shapes but under square there should only be squares) Teacher reads the definition of each quadrilateral and explains how different quadrilaterals can fit into that column.</td>
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<td>Using white boards, check for understanding drawing shapes with the symbol and have students write the name of the specific quadrilateral.</td>
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<td>10 min.</td>
<td>Pass out 1 flowchart to each group along with quadrilateral labels. Give 2 minutes to...</td>
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discuss and label. Look at groups' work on either side and discuss necessary changes, if any. Make changes needed at this time.

**T:** Now let's go over the flow chart together. (Draw the chart on the board and then ask a student to come up and complete chart)

**T:** I would like a volunteer to position the names where they think they should go. Discuss the position of the terms until it is correct.

| 10 min. | Pass out the assessment page. Students are expected to do this activity individually. |

**Part III: Reflecting on Student Learning Outcomes after You Teach the Lesson**