**Task 2 - Comparing Rectangles I**

(This Task builds from “Ordering Rectangles” Task 1)

*Adapted from North Carolina Department of Public Instruction*

**Student Objective:** “I can compare area (sizes) of rectangles by decomposing and recomposing them.”

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| **Common Core Standards to Measure** | **Mathematical Practices Addressed** |
| **3.MD.5** Recognize area as an attribute of plane figures and understand concepts of area measurement. | #1: Make sense of problems and persevere in solving  them.  #3: Construct viable arguments and critique the  reasoning of others.  #6: Attend to precision. |

**Materials:**

Rectangle Comparison Sheet, 2 sheets per group of 4-5

Ordering Rectangles demonstration set (cut from Comparison sheet)

1 index card per student, 2 congruent construction paper rectangles, different colors

Chart paper or large construction paper

Scissors

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| G  **Engage Students with the Goal** | State and Rate  Objective: “I can compare area (sizes) of rectangles by decomposing and recomposing them.”  Students rate themselves to the goal (1, 2, 3, 4). | Setting Objectives and Providing Feedback |
| A  **Access Prior**  **Knowledge** | Remind students of the previous lesson where they compared areas of rectangles by relating them to chocolate bars. Review overlapping to compare area with the Ordering Rectangles set.  **Ask:** “What other methods could we use to compare rectangles?”  Allow students to discuss and question with a partner. (Someone should suggest cutting the figures up and laying one on top of another to compare.) | Nonlinguistic Representations  Identifying Similarities and Differences |
| N  **New Information** | Distribute index cards to students. *Are the areas of the index cards the same? How do we know?*  Designate groups of 4-5 students. Challenge groups to cut their index cards in half in at least 2 different ways.  Demonstrate the cutting and reconfiguring of a rectangle using a sheet of paper.  Tape a sheet of paper to the board.  Compare the area of an identical sheet of paper to the one on the board by overlapping.  *Are the areas of the two sheets of paper the same? How do we know?*  Cut the second sheet of paper in half, attaching the short ends and holding next to the uncut sheet.  **Ask:**  *Are the areas of the sheets of paper still the same? How do we know?*  Compare by reassembling the paper and holding it next to or over to the original.  Allow the groups to reconfigure their pieces into different rectangles. | Similarities and Differences  Nonlinguistic Representation  Cues, Questions, and Advance Organizers |
| A  **Application** | Introduce the activity. Allow students to predict the relationships of the rectangles and the order from least to greatest. Record 3-4 predictions on the board.  Notify the students that they may have to cut the rectangles into more than 2 pieces in order to compare the areas to the original rectangles. Encourage them to think carefully before cutting to avoid very small pieces.  Students need to decide roles in their groups:  -cut out rectangles  -make a chart for responses (writing the >, <, or = symbols to compare the rectangles)  -glue the shapes on the chart (uncut shapes glued to the top of the chart, cut and reassembled shapes glued and labeled in order from least to greatest)  Have students post their completed charts around the room when done.  Student charts should reflect the following information:  A1>A2 B1<B2 C1>C2 Order: B1, B2, A2, A1, C2, C1  **Discussion:**  Have students look at the charts that were created and discuss any differences. Ask them to justify their solutions.    **Ask students:**  *How does cutting and reconfiguring the shapes help you compare them?*  (Cutting and rearranging allows for direct comparison of area.) | Cooperative Learning  Providing Feedback  Generating and Testing Hypotheses  Identifying Similarities and Differences  Practice and Homework |
| G  **Revisit the Goal** | Have students write a statement of learning in their interactive notebooks/journals using words and pictures. Have students share their entry with other students.  State and Rate  Objective: “I can compare area (sizes) of rectangles by decomposing and recomposing them.”  Students rate themselves to the goal (1, 2, 3, 4). | Setting Objectives and Providing Feedback  Summarizing and Note-Taking |

**Rectangle Comparison Sheet**

**Task 2**

**C2**

**A2**

**A1**

**C1**

**B1**

**B1**

**B2**