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| **NC.5.G.3****Squares, Rhombuses, and Rectangles** |
| **Domain** | **Geometry** |
| **Cluster** | **Classify quadrilaterals.** |
| **Standard(s)** | **NC.5.G.3** Classify quadrilaterals into categories based on their properties.* Explain that attributes belonging to a category of quadrilaterals also belong to all subcategories of that category.
* Classify quadrilaterals in a hierarchy based on properties.
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| **Materials** | Geoboard, task handoutOnline geoboard can be found at this site: <http://nlvm.usu.edu/en/nav/frames_asid_172_g_2_t_3.html?open=activities>  |
| **Task** | **Squares, Rhombuses, and Rectangles****Part 1**Using your Geoboard make the following shapes. Draw the shapes on the task handout and name them based on their characteristics. 1. A quadrilateral that has a perimeter of 16 units and 4 right angles that has 4 sides of equal length.
2. A quadrilateral that has a perimeter of 16 units and 4 right angles and 2 sets of sides that are equal length. All 4 sides are not the same length.
3. A quadrilateral that has 4 sides of equal length and 2 obtuse angles.
4. A quadrilateral that has 2 obtuse angles and 2 sets of sides with equal length. All 4 sides are not the same length.

**Part 2** While working on the tasks above, Sam commented, “I feel like rectangles and rhombuses are both related to a square, but such different shapes.” Help Sam. How are rectangles similar to and different from squares? How are rhombuses similar to and different from squares? **Part 3:** How are rhombuses and rectangles similar to and different from each other?  |

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| **Rubric** |
| **Level I****Not Yet** | 1. **Level II**
2. **Progressing**
 | **Level III****Meets Expectations** |
| * Student is not yet able to create the 4 shapes on geoboards, explain how squares are similar to and different from rectangles, explain how rhombuses are similar to and different from squares, or explain how rhombuses and rectangles are similar to and different from each other.
 | Student completes 2-3 of the following responses correctly:* Student creates the 4 shapes described on a geoboard.
* Student explains that rectangles and squares both have 4 sides, opposite parallel sides, and 4 right angles. Squares always have 4 congruent sides, but rectangles can have sides that are different lengths.
* Student explains that rhombuses and squares both have 4 sides, opposite parallel sides, and congruent sides. A square always has right angles, but a rhombus can have acute and obtuse angles.
* Rhombuses and rectangles both have 4 sides and opposite parallel sides. A rectangle always has 4 right angles, but a rhombus can have acute and obtuse angles. A rhombus always has congruent sides, but a rectangle can have sides that are different lengths.
 | Student completes all of the following responses correctly:* Student creates the 4 shapes described on a geoboard.
* Student explains that rectangles and squares both have 4 sides, opposite parallel sides, and 4 right angles. Squares always have 4 congruent sides, but rectangles can have sides that are different lengths.
* Student explains that rhombuses and squares both have 4 sides, opposite parallel sides, and congruent sides. A square always has right angles, but a rhombus can have acute and obtuse angles.
* Rhombuses and rectangles both have 4 sides and opposite parallel sides. A rectangle always has 4 right angles, but a rhombus can have acute and obtuse angles. A rhombus always has congruent sides, but a rectangle can have sides that are different lengths.
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| **Standards for Mathematical Practice** |
| **1. Makes sense and perseveres in solving problems.** |
| **2. Reasons abstractly and quantitatively.** |
| 3. Constructs viable arguments and critiques the reasoning of others. |
| **4. Models with mathematics.** |
| 5. Uses appropriate tools strategically. |
| 6. Attends to precision. |
| **7. Looks for and makes use of structure.** |
| 8. Looks for and expresses regularity in repeated reasoning. |

**Squares, Rhombuses and Rectangles**

**Part 1**

Using your Geoboard make the following shapes. Draw the shapes on the task handout and name them based on their characteristics.

1. A quadrilateral that has a perimeter of 16 units and 4 right angles that has 4 sides of equal length.
2. A quadrilateral that has a perimeter of 16 units and 4 right angles and 2 sets of sides that are equal length. All 4 sides are not the same length.
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**Part 2**

While working on the tasks above, Sam commented, “I feel like rectangles and rhombuses are both related to a square, but such different shapes.” Help Sam.

How are rectangles similar to and different from squares?

 How are rhombuses similar to and different from squares?

**Part 3:**

How are rhombuses and rectangles similar to and different from each other?