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| **Which Perimeter is Larger?- 6.NS.8** |
| **Domain** | **The Number System** |
| **Cluster** | **Apply and extend previous understandings of numbers to the system of rational numbers.** |
| **Standard(s)** | **6.NS.8** Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.**6.NS.5** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. |
| **Materials** | Activity sheet |
| **Task** |  **Which Perimeter is Larger?**Part 1:Rectangle A has vertices at (-8,4), (1,4), (1,9) and one other point.Rectangle B has vertices at (-3,-2), (-3, 2), (4,2) and one other point. Find the missing vertices.Draw the rectangles and label the points on the coordinate grid.*Coordinate grid on the activity sheet.* Part 2:What is the perimeter of each rectangle? Part 3:Draw a rectangle that has a perimeter that is larger than one of the rectangles that you drew and smaller than the other rectangle’s perimeter. Write down the 4 ordered pairs for the vertices of your new rectangle.Part 4:Explain how you solved Part 3.  |

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| **Rubric** |
| **Level I** | 1. **Level II**
 | **Level III** |
| Developing Proficiency* Student uses inappropriate solution strategy and does not get the correct answer.
 | Not Yet Proficient * There are one or two errors.
 | Proficient in Performance * Accurately solves problem
* Part 1: The two rectangles are drawn correctly. The missing vertices are (-8, 9) for Rectangle A and (4,-2) for Rectangle B.
* Part 2: Rectangle A: 28 units; Rectangle B: 22 units.
* Part 3: The new rectangle is 24 or 26 units. The ordered pairs are correct.
* Part 4: The explanation is clear and accurate.
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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. |

**Which Perimeter is Larger?**

Part 1:

Rectangle A has vertices at (-8,4), (1,4), (1,9) and one other point.

Rectangle B has vertices at (-3,-2), (-3, 2), (4,2) and one other point.

Draw the rectangles and label the points on the coordinate grid.



Part 2:

What is the perimeter of each rectangle?

Part 3:

Draw a rectangle that has a perimeter that is larger than one of the rectangles that you drew and smaller than the other rectangle’s perimeter. Write down the 4 ordered pairs for the vertices of your new rectangle.

Part 4:

Explain how you solved Part 3.