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| **Sea Level Locations- 6.NS.6** | |
| **Domain** | **The Number System** |
| **Cluster** | **Apply and extend previous understandings of numbers to the system of rational numbers.** |
| **Standard(s)** | **6.NS. 6** Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.  **6.NS.6a** Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.  **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** | **Sea Level Locations**  Part 1:  Draw a number line and label all of the locations visited by a hiker in South America.   1. He starts 3 meters above sea level. 2. From 3 meters above sea level, he travels to a lower area until he is the same distance from 0 but below sea level. 3. He then moves 1 meter higher. 4. Next he moves higher until he is the same distance from 0 but above sea level. 5. He then moves 3 meters higher. 6. He then moves lower until he is the same distance from 0 but below sea level. 7. He returns to sea level.   Part 2:  Name all the pairs of points visited that are the same distance from 0. Example: 4 meters above sea level (4) and 4 meters below sea level (-4).  Part 3:  Write an explanation about how you knew that you were correct in your labeling of the points on the number line. |

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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 number line has points plotted correctly. * Part 2: A (3) and B (-3); C (-2) and D (2); E (5) and F (-5) * Part 3: The explanation should be 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. |

**Sea Level Locations**

Part 1:

Draw a number line and label all of the locations visited by a hiker in South America.

1. He starts 3 meters above sea level.
2. From 3 meters above sea level, he travels to a lower area until he is 3 meters from 0 but below sea level.
3. He then moves 1 meter higher.
4. Next he moves higher until he is the same distance from 0 but above sea level.
5. He then moves 3 meters higher.
6. He then moves lower until he is the same distance from 0 but below sea level.
7. He returns to sea level.

Part 2:

Name all the pairs of points visited that are the same distance from 0. Example: 4 meters above sea level (4) and 4 meters below sea level (-4).

Part 3:

Write an explanation about how you knew that you were correct in your labeling of the points on the number line.