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| **How Tall are You?- 6.EE.8** | |
| **Domain** | **Expressions and Equations** |
| **Cluster** | **Reason about and solve one-variable equations and inequalities.** |
| **Standard(s)** | **6.EE.8** Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.  **6.EE.5** Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. **6.EE.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. |
| **Materials** | Activity sheet |
| **Task** | **How Tall are You?**  Thomas is talking to Robin and Matt about his height. Thomas says, “I am taller than Robin, but shorter than Matt.”  Part 1:  Write 2 separate inequalities that express the height of Thomas (*T*) compared to Robin and Matt.  Part 2:  Thomas then says, “I am less than 5 inches taller than Robin. I am also more than 6 inches shorter than Matt. If each person’s height is in whole inches, 2 separate inequalities that express the height of Thomas (*T*) compared to Robin and Matt.  Part 3:  If Thomas is between 4 and 5 feet tall, how tall could Robin and Matt be?  Part 4:  Write an explanation about 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: *T >* *R; T* < *M* * Part 2: *T* < *R* + 5; *T* + 6 < *M* * Part 3: If Thomas is 4 feet or 48 inches tall, Robin is between 44 and 47 inches taller. Matt is more than 54 inches tall.   If Thomas is 5 feet or 60 inches tall, Robin is between 56 and 59 feet tall. Matt is more than 66 inches tall.   * 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. |

**How Tall are You?**

Thomas is talking to Robin and Matt about his height. Thomas says, “I am taller than Robin, but shorter than Matt.”

Part 1:

Write 2 separate inequalities that express the height of Thomas (*T*) compared to Robin and Matt.

Part 2:

Thomas then says, “I am less than 5 inches taller than Robin. I am also more than 6 inches shorter than Matt. If each person’s height is in whole inches, 2 separate inequalities that express the height of Thomas (*T*) compared to Robin and Matt.

Part 3:

If Thomas is between 4 and 5 feet tall, how tall could Robin and Matt be?

Part 4:

Write an explanation about how you solved Part 3.