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| **How Fast Can You Type?- 6.EE.7** | |
| **Domain** | **Expressions and Equations** |
| **Cluster** | **Reason about and solve one-variable equations and inequalities.** |
| **Standard(s)** | **6.EE.7** Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.  **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 Fast Can You Type?**  Hector and Maria both sit down at their computers to type up their Science report. Hector types *H* words per minute, while Maria typed 1 and 2/3 times as many words as Hector.  Part 1:  Write an expression to show how many words Hector and Maria can both type in one minute in terms of Hector (*H*).  Part 2:  Write an expression to show how many words would they type total if they typed for 1 minute? 2 minutes? 4 minutes? 20 minutes?  Part 3:  If Hector typed 24 words a minute, how many words could each student type if they typed for 1 minute? 2 minutes? 4 minutes? 20 minutes?  Part 4:  If Hector and Maria each typed up a report that was between 400 and 500 words per minute, what was the shortest time that each could finish? What was the longest time that it could take for each to finish?  Part 5:  Write an explanation about how you solved Part 4. |

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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: Hector: *H*; Maria: 1 and 2/3 x *H*; *H* + 1 2/3 *H* =   2 2/3 *H*   * Part 2: 1 minute: 2 2/3 x *H*; 2 minutes: 5 1/3 x *H*; 4 minutes: 10 2/3 x *H*; 20 minutes: 53 1/3 x *H* * Part 3: Hector: 1 min: 24 words; 2 min: 48 words; 4 min: 96 words; 20 min: 480 min; Maria: 1 min: 40 words; 2 min: 80 words; 4 min: 160 min; 20 min: 800 min. * Part 4: 400 words: Hector: 400 words/24 words per min; 16 and 16/24 minutes or 16 and 2/3 minutes; Maria: 400 words/40 words per min; 10 minutes; * 500 Words: Hector: 500 words/ 24 words per min; 20 and 20/24 or 20 and 5/6 minutes; Maria: 500 words/ 40 words per min; 12 and 20/40 or 12 ½ minutes. * Part 5: 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 Fast Can You Type?**

Hector and Maria both sit down at their computers to type up their Science report. Hector types *H* words per minute, while Maria typed 1 and 2/3 times as many words as Hector.

Part 1:

Write an expression to show how many words Hector and Maria can both type in one minute in terms of Hector (*H*).

Part 2:

Write an expression to show how many words would they type total if they typed for 1 minute? 2 minutes? 4 minutes? 20 minutes?

Part 3:

If Hector typed 24 words a minute, how many words could each student type if they typed for 1 minute? 2 minutes? 4 minutes? 20 minutes?

Part 4:

If Hector and Maria each typed up a report that was 500 words per minute how many minutes did it take each student to type their report?

Part 5:

Write an explanation about how you solved Part 4.