**Domain: Standard Code: Teacher Name:**

Adapted from: Smith, Margaret Schwan, Victoria Bill, and Elizabeth K. Hughes. “Thinking Through a Lesson Protocol: Successfully Implementing High-Level Tasks.”

*Mathematics Teaching in the Middle School 14* (October 2008): 132-138.

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| **PART 1: SELECTING AND SETTING UP A MATHEMATICAL TASK** | |
| What are your mathematical goals for the lesson? (i.e., what do you want  students to know and understand about mathematics as a result of this lesson?) | Students will collect and analyze data. They will display numerical data in plot form. Histogram,dot plot, box plot. |
| * What are your expectations for students as they work on and complete this task? * What resources or tools will students have to use in their work that will give them entry into, and help them reason through, the task? * How will the students work—   independently, in small groups, or in pairs—to explore this task?   * How will students record and report their work? | Students will listen, ask questions, and prepare to share and explain their results to the class using posters or Elmo.  Need a world map.  Whole class grouping, wmall groups, & partners.  Record data on frequency table.  Histogram, dot plot, or pictograph. |
| How will you introduce students to the activity so as to provide access to *all*  students while maintaining the cognitive demands of the task? | Do you know where your shoes were made? For this activity, you will read the labels in all of your clothing to determine the country of manufacture. Record this information in your math notebook.  Build a frequency table using data from the entire class.  Working with a partner, analyze your data.  Build a plot. Determine the mode |
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| **PART 2: SUPPORTING STUDENTS’ EXPLORATION OF THE TASK** | |
| As students work independently or in small groups, what questions will you ask to—   help a group get started or make progress on the task?   focus students’ thinking on the  key mathematical ideas in the task?   assess students’ understanding of  key mathematical ideas, problem- solving strategies, or the representations?   advance students’ understanding  of the mathematical ideas? | How are you going to organize these numbers?  How will you share this information with others?  How will you represent this data in graph form? |
| How will you ensure that students remain engaged in the task?   What assistance will you give or what questions will you ask a  student (or group) who becomes  quickly frustrated and requests more direction and guidance is  solving the task?   What will you do if a student (or group) finishes the task almost  immediately? How will you  extend the task so as to provide additional challenge? |  |

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| **PART 3: SHARING AND DISCUSSING THE TASK** | |
| How will you orchestrate the class discussion so that you accomplish your mathematical goals?   Which solution paths do you want to have shared during the  class discussion? In what order will the solutions be presented? Why?   What specific questions will you ask so that students will—  1. make sense of the  mathematical ideas that you want them to learn?  2. expand on, debate, and question the solutions being shared?  3. make connections among the different strategies that are presented?  4. look for patterns?  5. begin to form generalizations?  What will you see or hear that lets you know that *all* students in the class  understand the mathematical ideas that  you intended for them to learn? | Graph the results creatively. You may use pencil, paper, manipulatives or other materials.    Students will discuss: Which graph type most effectively communicate you data? |
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