***Lesson Plan Template for\_\_\_\_\_\_\_RP.6b\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

Adapted from: Smith, Margaret Schwan, Victoria Bill, and Elizabeth K. Hughes. “Thinking Through a Lesson Protocol: Successfully Implementi ng 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 be able to compare unit prices to find the best deal. |
| 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? | Background knowledge - A ratio compares 2 numbers/quantities  A ratio shows division  Division with decimals  Understanding money (pennies are in the hundredths value)  Students will work with pairs or groups.  Students will do work on scratch paper or in a math journal then make a poster to present. |
| How will you introduce students to the activity so as to provide access to *all*  students while maintaining the cognitive demands of the task? | Bring current grocery store ads the show products for sale 2 for $5.00. If I just want to buy one what would it cost?  Take a picture or bring in different sized candy bars. Tell students one candy bar weighs 1.5 oz. and costs $0.72 and the other weighs 2.5 oz. and costs $1.49. The largest candy bar weighs 4.4 ounces and cost $1.98. Which candy bar costs less per ounce? |

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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? | What strategy do you think would help you?  How did you organize your data?  Can you explain this part of your solution?  Have student explain to another student.  Have students do a think aloud while completing the task. |
| 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? | Point at specific numbers and ask what they mean.  Reread the question together and clarify if needed.  Ask students what they already tried or have thought of.  What if the smaller candy bars were on sale 3 for $1.80? |

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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? | Before participants begin sharing strategies, say, “Make sure you pay attention because I will all on someone to explain the strategy that was shared in their own words.”  Start with having a group share the unit price they calculated for the grocery store ad.  Then have a group share how they got the unit price for the small candy bar.  Finally have a group share what the unit price is for the large candy bar and what was the best deal per oz.  Guiding questions: Can you explain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_’s strategy in your own words?  Did anyone solve it the same way?  Which way is more efficient? |

Student Task:

Angie went to Fresh Market to get her chocolate fix for the day. She saw that there were different sizes of candy bars as well as different prices. Angie sees one smaller candy bar that is 8 ounces and costs $0.72. Then she spies a bigger candy bar that is the same kind but is 14 ounces for $1.15. Which candy bar should she purchase if she wants the best price per ounce?

Extension:

What if there was a display with 8-ounce candy bars that were packaged 3 for 1.80? Now which is the best purchase per ounce?