Lesson 3

Oregon State Standards in Mathematics:

MA.HS.ME.01 Determine the appropriate units, scales, and tools for problem situations involving measurement.

MA.HS.ME.02 Solve problems involving unit conversions given the unit equivalencies.

MA.HS.PS.01 Interpret the concepts of a problem-solving task and translate them into mathematics.

Learning Targets:

- 1. Students will identify appropriate units used for nutritional and caloric content of food and percent daily value.
- 2. Students will understand that a ratio can be used to convey a mathematical relationship between variables of a real world problem.
- 3. Students will perform mathematical operations for unit conversion.

Assessment:

Formative Assessment:
For learning target #2, students will be assessed based on the reasoning they present in step 3 below.
For learning targets #1, #2, and #3, students will be assessed based on work they complete in step 7 below.

Instruction

1. Post and review essential question and learning targets for today. Review outcome: to provide a service for local food bank students are currently volunteering at.
2. Review conversions from dollars per ounce to dollars per gram students did in last lesson and definitions of fullness factor and ND Rating.
3. Pair students up and present this question: What ratio(s), would be useful in addressing the essential question? Give students time to discuss and prepare to present their answer to this question and reasoning. List responses on board. Based on student responses and reasoning, guide students to the ratios that will be provided to the food bank: Fullness Factor calories per dollar (as a fraction: Fullness Factor/$/cal) and ND Rating calories per dollar (as a fraction ND Rating/$/calorie). These ratios will provide information about foods that will fill you up for the least amount of money and foods that have the most nutrition for the least amount of money.
4. Based on above discussion, ask students to predict which foods brainstormed in lesson 1 will yield high and low ratios. Record student predictions.
5. Based on above discussion, students will need to convert from dollars per gram (the units the students presently have available) to dollars per calorie. Using the serving size and caloric information from www.nutritiondata.com, provide an example of converting from dollars per gram to dollars per calorie.

6. Using example provided, students will convert from dollars per gram to dollars per calorie for foods brainstormed in lesson 1.

7. Once students have completed these conversions, they can use that number as the denominator in the Fullness Factor calories per dollar and ND Rating calories per dollar ratios discussed earlier.

8. Wrap up: Students will be asked to give the highest and lowest Fullness Factor calories per dollar and ND Rating calories per dollar. Have them compare their results to predictions from earlier.