

## Lesson Title: Look How Big My Fat Slice Is!

**Article Title:** Using School Lunches to Study Proportion

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**Grade Bands:** 5–6, 7–8

### Overview

In this cross-curricular lesson plan, students learn about nutrition from a health teacher or health-care professional; they create spreadsheets and do internet research with the help of an IT teacher; and finally, in their math class, they use ratios and proportion to interpret the affects of their food choices. Students collect information on the food they ate during lunch, find the grams of nutrients in each food, and see if the relative amounts they consumed in their lunches are proportional to the Recommended Daily Allowance (RDA) of the nutrients being monitored in this study.

### Learning Objectives

Students will:

- Collect, represent, and analyze data
- Determine averages (mean)
- Compare results to USDA recommendations

### Materials

- Activity Sheets
- Access to Excel and accompanying Excel spreadsheet (optional)

### Instructional Plan

1. Students begin by keeping a record of the food they eat for lunch every day for one week and transferring that information onto the *Weekly Food Chart* activity sheet. The next step is for students to find the approximate amount of protein, fat, fiber, and carbohydrates in their food. That information can be found using the suggested website (see Directions, #2); alternatively, a lesson in computer research could be incorporated into this activity, with students being asked to find appropriate websites on their own. A classroom visit from the school's health-care professional to discuss food sources for each nutrient and also to explain the function of each on the body will make this project more meaningful to students.

2. Teachers can provide students with the accompanying Excel spreadsheet to calculate the average number of grams of protein, fat, fiber, and carbohydrates consumed during lunch each day. Alternatively, students can create their own spreadsheets, depending on their level of computer expertise, or, in schools where IT is not available, students can do the calculations by hand. The next step is for students to find their personal RDA for each nutrient and also to calculate the percent of their RDA that they consumed during lunch. This step should lead to a discussion of how much food students consume during lunch compared with their other daily meals, as that will determine the percent of the RDA of nutrients that should be consumed during the lunch meal.
3. Finally, students will create two pie charts. The accompanying spreadsheet is programmed to do that for them, but again, students can be asked to create their pie charts by hand.
  - a. The first pie chart will illustrate the RDA for each of the monitored categories;
  - b. The second will illustrate the percentage of the RDA the student consumed.

Working with these charts, the classroom should consider questions about proportion. Teachers should ask students what their expectations are regarding the relative/comparative sizes of the slices in each chart. The amount of food eaten (reflected in the percent of RDA chart) should be smaller than the expected total for the day (RDA), but should the proportion of each nutrient be the same on each chart?

4. Students reflect on their findings with the provided questions.

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| <b>References</b> |
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“5 Things You Should Know.” *NEA Today* (January/February 2011): 11.

“Federal School Lunches—But Not Breakfasts—Linked to Childhood Obesity, Research Finds.” *ScienceDaily* (August 24, 2010). Available at <http://www.sciencedaily.com/releases/2010/08/100824141406.htm>.