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Environmental Health Issues Meet Algebra

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by Nancy F. Rudolph

The last time you grabbed an apple, rinsed it off and took a bite, did you think about pesticide residues on it? If your food was not labeled "Organic" it came to you with pesticide(s) added. In this unit, I want my students to learn about potential health risks from common pesticide products in order to make informed decisions about their use and consider "green" alternatives. In the process of learning about health risks from pesticides, I will interject mathematics. Students will use government-published data to consider their potential level of exposure to pesticides from multiple sources: ingestion (food or water), inhalation (breathing), and dermal (skin contact). A critical math skill necessary for these calculations is converting units; therefore, the overriding mathematic theme of this unit will be Dimensional Analysis, sometimes referred to as the Factor-Label Method. This unit, as written, can be used for math students in middle or high school; however, the data sources referenced in this unit can also be applied to Statistics, Algebra 2, and even Pre-Calculus math courses. The unit also makes connections to English and Science with suggested reading activities and practice interpreting tables and graphs.

(Developed for Intermediate Algebra and Pre-Calculus, grades 11-12; recommended for Math, grades 7-12, and Science, Physical Science, Chemistry, Physics, and Environmental Science, grades 9-12)