

Food for thought, but not for eating



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Food has always been a staple of middle school laboratory investigations. Examples of popular food-based questions that students can explore include the following:

- Does the color of popcorn kernels affect how many will pop when heated?
- What conditions affect the browning of apple slices?
- What test can you use to determine the difference between samples of diet and regular soda?
- How much salt do you need to add to water so that an egg will float in it?
- Does the vitamin C level of a fruit drop with heating?
- How does temperature affect the amount cookies will rise during baking?

These activities are great motivators because each uses materials with which students are very familiar and that can be found in their home kitchens. However, students are often tempted to eat food items that they are working with in the lab, just as they would if they were at home. Some teachers even use food as a reward for students upon completion of a food-based lab, and this practice is also suggested by authors of popular lab activity manuals. The problem is that the science lab is not your mom's kitchen.

Before you bite in

Science teachers should familiarize themselves with best practices before proceeding with any food-based lab. In NSTA's *Safety in the Science Classroom* (2008), a safety handout for students at the beginning of the school year, it is recommended that:

Eating, drinking, gum chewing, applying cosmetics, manipulating contact lenses, and other unsafe activities are not permitted in the laboratory.

The National Research Council's *Prudent Practices in the Laboratory* (1995) advises the following:

Eating, drinking, smoking, gum chewing, applying cosmetics, and taking medicine in laboratories where hazardous chemicals are used should be strictly prohibited. Food, beverages, cups, and other drinking and eating utensils should not be stored in areas where hazardous chemicals are handled or stored. Glassware used for laboratory operations should never be used to prepare or consume food or beverages. Laboratory refrigerators, ice chests, cold rooms, ovens, and so forth should not be used for food storage or preparation. Laboratory water sources and deionized laboratory water should not be used for drinking water.

NSTA's *Inquiring Safely: A Guide for Middle School Teachers* (Kwan and Texley 2003, p. 134), explains that the hidden dangers of eating or drinking food in the lab fall into two categories:

First, the area may be contaminated with surprisingly persistent toxins, including heavy metals, organic compounds, molds, and pathogens. Second, students who are in the habit of eating in a science workspace may be tempted to taste a material that is meant for research. The best rule is the most simple: Nothing should be tasted or eaten as part of science lab work. No snacks or food should be eaten in a science room or in the part of the general room where science investigations have taken place.

OSHA also weighs in on this matter in its Sanitation Standard [1910.141(g)(2)]:

No employee shall be allowed to consume food or beverages in a toilet room nor in any area exposed to a toxic material.

So, are food labs out?

Food labs do not have to be abandoned, but experiments or activities involving food must be done out of the science lab in a location designed for preparation and eating of food, such as a family and consumer science lab or home economics room. These areas meet the appropriate health codes and professional standards for the use and eating of food.

Final thoughts

If food or drink is to be used in a science experiment or activity, assume that students may decide to sample the wares. If you do want to include a food-based lab, plan ahead and secure a work area where food preparation and eating are approved.

References

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