

Bottled Water vs. Tap Water

Time: 1 class period (40-45 min.)

National Benchmarks: Benchmarks 5A: Diversity of Life; 5D Interdependence of Life; 5E: Flow of Matter and Energy; 9B:Symbolic Relationships; 9D:Uncertainty; 12B:Computation and Estimation; 12D:Communication Skills; 12E:Critical-Response Skills.

National Science Content Standards: *Science as Inquiry: A; Life Science: C:* Biological Evolution; The Interdependence of Organisms; Matter, Energy, and Organization in Living Systems; *Science and Technology: E:* Abilities of Technological Design; Understandings about Science and Technology; *Science in Personal and Social Perspectives: F:* Population Growth; Natural Resources: Environmental Quality; Natural and Human-induced Hazards; Science and Technology in Local, National, and Global Challenges

New York State Standards: 1, 2, 4, 5, 6, 7

Objectives: Students will be able to analyze the similarities and differences between tap water and bottled water and make informed decisions about their use of each.

Materials: 4 different types of bottled water, tap water, clear cups, water analysis handout for each student.

Preparation: The water samples should all be at the same temperature.

Engagement: Take a poll of the students in the class. Ask the students if they drink mostly tap water straight from the tap or water fountain, if they filter their tap water with something like Brita or the filters that go over the faucet, or if they drink bottled water. Tally the numbers on the board. Then ask the students if there is a particular brand of bottled water they prefer. Record these results on board also. Define potable on the board for the students. Ask what they think are the standards for water to be potable. Discuss.

Exploration: Give each student a cup of each water sample and have them fill out the water analysis handout. Have students compare in small groups and then as a class which water sample they liked the most, which the least, any odors.

Explanation: Tell students which samples are which and discuss results. Discuss the sources of the various waters including where their tap water comes from and the sources of the bottled waters. Also, what is added to the different waters. Chlorine is usually added to tap water and different minerals of electrolytes may be added to bottled waters. Discuss why taste alone is not a good judge of whether or not water is potable.

Extension: Have students create bar graphs for water type vs. number of students and bottled water preference vs. number of students. Read articles, “Which Water is Tastiest?” and “The Purity Factor” from the New York Times, 2004.

Evaluation: Have students write responses to the two articles including what they learned from today’s activity.

Comments: This activity works best if the water samples are diverse. Good choices include, tap water, distilled water, an artesian water such as Fiji, a spring water such as Poland Spring or Evian, and a purified water such as Aquafina or Dasani.

Name _____ Class _____ Date _____

Water Analysis

Water Sample	Clarity	Odor	Taste	Rating
A				
B				
C				
D				
E				

Rating Scale

5 = excellent

4 = very good, would drink it daily

3 = fair, OK for cooking

2 = inferior, strictly for bathing

1 = terrible, wouldn't wash my dog in it