



# Water-Themed Lessons & Activities

from **FAIRMOUNT WATER WORKS**

## ***Tip Top Tap: Taste and Odor Activity***

### ***Introduction:***

You be the judge. Good drinking water is cool, delicious, healthy and refreshing and there are many reasons why Philadelphia tap water has a distinguishing taste and odor. Our water has a recipe of ingredients—natural minerals, food-grade additives such as calcium carbonate, fluoride and orthophosphate and chlorine as a preservative. Run your own mouth-smell test experiment and discover the science of taste by just holding our noses.

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### ***Learning Objectives:***

Students will be able to

- **Discover** the connection between the sense of smell and taste for tap water
- **Experience** the power of **retronasal** smell to enhance your enjoyment of foods and beverages

### ***Materials:***

- Room temperature and refrigerated glass of tap water
  - Flavorful beverage such as chocolate milk or grape soda
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### ***Activity Procedure:***

(Source : *We Judge Water Using our Senses in Surprising Ways* by Gary Burlingame and Andrea Dietrich, PhD. Gary Burlingame is the Director of the PWD Bureau of Laboratory Services and Andrea Dietrich is professor of environmental engineering and Adjunct Professor of food science and technology at Virginia Tech), Blacksburg, VA *Opflow* March 2016)

1. Warm a glass of your flavorful beverage to room temperature.
2. Close your nose with your fingers
3. Take a good sip, swish it around in your mouth and chew it; keep your nose closed
4. Swallow and notice the flavors while keeping your nose pinched. You might experience sweet and bitter tastes along with some mouth feeling, such as the soda's bubbles if you chose soda
5. Repeat these steps 1-4 but as you swallow, with your mouth closed, release your fingers and breathe deeply through your nose. Did a burst of flavor come through? That is because you picked it up by **retronasal** smell (the **retronasal** passage is at the back of the throat associated with mouth rather than the nose and is recognized for the role it plays in the enjoyment of food AND WATER TASTE TESTS)
6. Now repeat these steps with that glass of Philadelphia tap water you have at room temperature and the refrigerated sample and judge for yourself.

**Suggested Grade Level:** 3<sup>rd</sup>-8<sup>th</sup>

**Suggested Subject Area(s):** Environmental Science