

Hands-On Activity

What's in the Drinking Water?

Objective:

Students will observe two different samples of drinking water using their senses of sight and taste. They will use their observations to conclude that drinking water contains dissolved substances that affect the taste of the water.

Estimated time to complete: 10 minutes

Materials:

For each class of 25 students:

- 50 disposable paper cups (2 or 3 oz)
- two identical clear plastic pitchers (1 L)
- local tap water
- any brand of noncarbonated bottled drinking water

Procedure:

Place each sample of water in a different pitcher. Pitchers should be labeled “A” and “B” so that students cannot tell the source of either sample.

Inform students that each pitcher holds a sample of drinking water. Instruct students to pour themselves a small sample from each pitcher and return to their seats. Ask students to write observations of each sample in their notebooks.

Emphasize to students that they are never to taste anything in the chemistry classroom or lab without specific directions from the teacher to do so. Explain that they are being allowed to taste this solution only because you procured it yourself and know it is safe. Then ask students to taste each sample and record pertinent observations in their notebooks.

As they make their observations, ask students to think about the following questions:

- *Is all drinking water the same?*
- *What could account for any differences you observe?*
- *What is the solvent in each sample you observed?*
- *What might the solutes be in each sample you observed?*

Inquiry and Nature of Science Skills in this Activity:

- Gather Data
 - Use senses to observe:
 - Seeing (color, shape, size, texture, motion)
 - Smelling (flavor, odor)
 - Use the appropriate format to record data:
 - Writing (journal, worksheet, electronic text)
- Interpret Data
 - Sort and classify using scientific reasoning by:
 - Sorting objects, substances and organisms by characteristic
- Evaluate Evidence
 - Draw and support a conclusion by:
 - Formulating scientific explanations/arguments
- Scientific Investigation
 - Scientific Investigation:
 - Scientific investigation results in things we know and things we don't know.
 - Scientific investigation leads to more questions.
 - Different explanations can be given for the same evidence, and it is not always possible to tell which one is correct without further inquiry.
 - Scientific investigations lead to the development of scientific explanations.