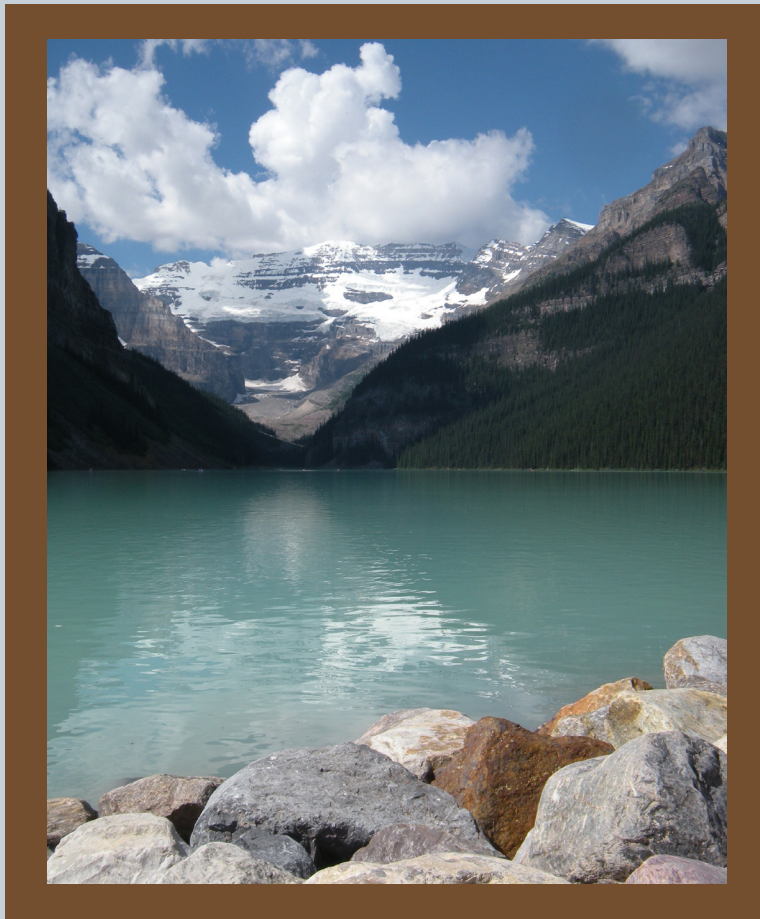


STEM *Sims*™

Water Quality



Water Quality

Do you need an idea for a scientific study? Try out one of our ideas or make one of your own.

Start learning right now about water quality basics and how you can keep your community's water supply safe. Take the following brief quiz to see how much you already know about water quality. See the bottom of page 4 to check your answers.



1. Where does the water that runs down the street by your home end up?
 - a. The water moves directly to a wastewater treatment plant to be cleaned.
 - b. The water drains down holes and goes deep underground.
 - c. The water drains to the nearest body of water.
 - d. The water is soaked up in your backyard and comes out through the garden hose.
2. What is a watershed?
 - a. an area where all the water in that region drains
 - b. a shed where a city's water supply is held, such as a water tower
 - c. a region where the water from the river meets the ocean
 - d. a pump to get underground water up to the surface
3. How many species of plants and animals live in the water?
 - a. about 3% of Earth's total plant and animal population
 - b. about 20% of all plants and animals
 - c. around half of all plants and animals
 - d. almost 93% of the earth's plants and animal populations
4. Some of our drinking water comes from groundwater. How did it get there?
 - a. after it rains or snows, the water moves down through the soil
 - b. from huge holding tanks built under the ground for water
 - c. water leaks out of the bottom of the ocean and comes up under the land
 - d. water from Earth's center rises all the way up to the soil level
5. Which of these activities causes the most water pollution?
 - a. washing your car in a grassy area
 - b. oil leaking from your car into storm drains
 - c. using natural fertilizers
 - d. cleaning up your dog poop

Is All Water, Water?

Material Required

- five water samples from safe drinking water supplies
- five clean paper cups for each student
- one copy of the data sheet and water rating scale for each student

Procedure

1. Collect five different samples of water from various potable sources. These could include water fountains, bottled water, tap water, and other safe drinking water supplies. The samples should be large enough so that every member of your class can test about 50 milliliters of the water.
2. Let each water sample come to room temperature.
3. Pour about 50 milliliters of one water sample into a clean paper cup. Prepare one cup for each student. Try to avoid letting students know which sample came from which water source.
4. Have each student taste his/her water sample and complete the rating report in Data Table 1 using the Water Rating Scale.
5. Properly dispose of the paper cup.
6. Repeat steps 3 - 5 for each water sample.

Analysis

1. For each sample/water source, find the class average rating for each water quality category (odor, clarity, and taste).
2. Decide which water sample provides the highest quality water based on the class results.
3. How could you have improved the experiment to make it a fairer test of the water samples?
4. Create your own Water Rating Scale.

Charts

Water Sample

Rating	Description
5	Tastes great!
4	I've had worse
3	Meh
2	Would drink only if stranded in the desert
1	Not fit for washing dirty feet



Sample	Source	Odor	Clarity	Taste	Comments

Water Quality

Did you know?

The soap used at a charity car wash can cause water pollution. Washing cars should not be done on paved areas where the soapy water runs off directly into storm drains. Many commercial car wash vendors offer options for schools and other local groups trying to raise funds to use their facilities for a charity car wash.



Bad dog!

Pet waste can pollute our water supply. Bacteria and excess nutrients from the waste can runoff into water resources. The bacteria can contaminate shellfish and other filter feeders in the aquatic environment. The excess nutrients encourage algae growth, which can deplete the amount of oxygen in the water and lead to fish kills. Make sure that you scoop the poop, double bag it, and dispose of the pet waste in the garbage.

Be a part of a Citizen Scientist program.

Get involved and become a member of a scientific team that observes, collects data, and analyzes natural patterns. A number of great programs exist including the longest running program, the Audubon Society's Christmas Bird Count, which started in 1900. One of the best water quality monitoring programs is in Rhode Island, where over 350 volunteers sample and analyze local aquatic environments. You can become involved in this project by accessing their web site at:

<http://www.birds.cornell.edu/citscitoolkit/projects/uri/watershedwatch/>



Please visit our site for more helpful information:
STEMsims.com

Answers: Page 2 Answers: 1) c. 2) a. 3) c. 4) a. 5) b.

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