

Water Quality in Local Environments

Objective: Describe the distribution and characteristics of water in local environments.

Introduction: The quality of our drinking water is tested all over Canada. Each community has a water treatment plant where employees conduct a variety of tests to ensure that our drinking water is clear and safe to drink. Contaminated water can pose a number of risks to our health, and it is important we ensure the safety of drinking water and obtain water testing that meets all regulator requirements and quality standards in Canada. One of the tests that are done at local water treatment plant is the pH test. A simple pH test determines the acidity of the water, with the goal of it being as neutral as possible. A neutral pH ensures that the water is safe to travel through pipes and to drink.

Curriculum Connections:

Students will identify major factors used in determining if water is potable, and describe and demonstrate tests water quality.

Supplies / Materials:

- Science Journal
- Water testing bags
- Straws
- Water samples
- Tablets



SCIENCE FOCUS

Lesson Subject

Science 7

Topic

Water Quality

Location

Classroom

Length

50 mins



Hook: Watch a short video explaining water quality testing. Choose from one of the videos on this website. Such as “clean your water tank” or “Ensure safe drinking water in the NWT”

<http://www.nwt drinkingwater.ca/videos-links-resources/videos/>

Intro Activity: Teacher leads a discussion about water quality testing, why it is important that the city tests the quality of our water, what they are looking for, how they clean water, what they add to our water to make it safe to drink.

Main Activity: Students will conduct a series of tests with samples of water to determine clear, salinity, and hardness of the water and to test for the pH level as well as the amount of chlorine in their water sample. Students are encouraged to sample water from a variety of sources (bottled, tap, local bodies of water, etc). As a class test the water quality of a sample of water collected from the school (bathroom tap or classroom sink). Give each student a testing bag, and get him or her to fill the bag up to the first line. Add a pH tablet and shake for 1 minute, watch as the water changes color. Compare the colour of the water to the pH scale to determine the pH level of the school's water supply.

Independent Student Work: have students bring in water samples from around the community. Students should have recorded the date, time and location of where the water sample was collected. Students will conduct a series of tests on their water sample. Some locations can include drinking water fountains, home faucets, local streams and lakes, ponds, street run off, rain, puddles, bottled water, etc.

Conclusion / Review: In your science journal write a small reflection based on your results. Did anything surprise you? Do you feel confident that the water you drink is safe? What does the city do to help ensure our drinking water is safe?

Homework Reflection: Test the water at home, and share your results in your science journal to share with the class.

Resources:

1. http://www.lifewater.ca/drill_manual/Section_16.htm
2. http://education.nationalgeographic.com/assets/file/freshwater_chapter4_v2.pdf
3. Canada Water Week: <http://www.nwtwaterstewardship.ca/news/canada-water-week-march-21-27-0>
4. NWT Water Stewardship: <http://www.nwtwaterstewardship.ca/resources>

5. NWT Drinking Water Information videos: <http://www.nwt drinkingwater.ca/videos-links-resources/videos/>