



Name: ANSWER KEY

Water Quality Quiz

Grades 9-12

Maximum score 53 points

1. **Name and describe the two major sources of drinking water. (2)**
 1. Surface water: found on earth's surface in lakes, rivers, dugouts and reservoirs
 2. Ground water: found in underground lakes called aquifers

2. **Name four contaminants that may be found in drinking water. (2)**
 1. Nutrients
 2. Chemicals
 3. Inorganic Compounds
 4. Organic Compounds

3. **How many sources of contamination can you list? (8)**

(Each article from this list is worth 1 point)

 1. Landfills
 2. Sewage
 3. Erosion of rock and soil
 4. Farmland
 5. Industrial discharges
 6. Residential discharges
 7. Wastewater treatment plants
 8. Motor boats such as Jet-skis

4. **List and describe the effects of contaminants in drinking water. (4)**
 - *Aesthetic* – Tastes, smells or looks bad; can cause stains on laundry, sinks, toilets and bathtubs
 - *Cosmetic* – Affects one's appearance (skin rashes, or mottling of teeth)
 - *Acute* – Effects seen within hours (diarrhea and/or vomiting)
 - *Chronic* - Effects not seen for years (liver disease, cancer)

5. **Describe the main differences between Urban and Rural water sources and treatments. (4)**

Urban water is tested, sometimes daily.
Rural water sometimes gets tested twice a year.
Rural water users have to worry about spring runoff, livestock, and pesticides.
Urban water often has higher levels of chlorine.

- 6. What is Alkalinity and why do we test our water for it? (5)**
Alkalinity is a measure of the ability of your water to resist changes in pH (1)
which would tend to make the water more acidic (1)
The pH is a value given to indicate how acidic or how basic a substance is (1)
It is important that there is a good balance to the alkalinity of our water (1)
If the levels are higher or lower than optimum, there can be problems with water
quality (1)
- 7. Are there health risks if the pH level of the water is too low or too high? (1)**
There are no health risks associated with consuming water that is slightly acidic or
basic
- 8. Where does the colour of the water come from? (5)**
When water has a visible tint to it, it is usually due to the presence of decaying
organic material (1)
or inorganic contaminants (1)
such as iron (1) copper (1) or manganese (1)
- 9. What is a heterotroph? (2)**
A heterotroph is any organism that cannot make its own food (1)
and is, therefore dependent on other substances for nutrition (1)
- 10. What does THMs stand for, please explain? (5)**
THM's have been shown to be potentially carcinogenic (Cancer causing) (1)
and are, therefore, carefully monitored in water systems that are routinely chlorinated
(1)
While recommendations only state minimum residual chlorine levels, it is important
that a careful balance is maintained in drinking water (1)
There needs to be enough chlorine to make sure everything is properly disinfected
(1)
However, an extreme excess of chlorine is not necessary and may lead to high
levels of THMs and the adverse health risks described previously (1)
- 11. Describe the basic differences between native culture and white man culture
pertaining to water? (2)**
Native Culture believes water is alive (1)
White culture believes water is a resource to buy and sell (1)
- 12. What are the components of a Medicine Wheel? (4)**
Water (1)
Air (1)
Land (1)
Fire (1)
- 13. Describe the meaning of being “interconnected” and how it relates to water?
(4)**
Teacher discretion

14. Of the following places, show if they are governed by national or international drinking water regulations or only localised guidelines? (4)

United States of America National regulations

Europe International Regulations

Rural Canada Local Guidelines

Urban Canada Provincial Guidelines

15. Are you concerned about the quality of drinking water in rural Canada since you have participated in OWD? (1)

Yes