

SCH 3U Bottled Water: The Big Debate

"Should We All Dive In?"



Name: _____ Group Members: _____

Purpose

- ⇒ to engage in public discourse
- ⇒ to explore matters of scientific concern
- ⇒ to listen to both sides of an issue, weigh the facts, and make an informed decision
- ⇒ to develop skills for scientifically literate citizenship

You have been formally invited to a debate surrounding the issue of bottled water use in the town of Aurora! For years now, the fad of drinking bottled water over tap water, or well water has been growing rapidly. The town of Aurora is facing a dilemma surrounding water consumption. Due to the rapid growth in the population, the town is predicting that it will one day in the future have difficulty providing clean drinking water to all of the sub-communities if the current consumption rate continues. While the town has not started to implement a strategy, members of the community have become aware of the town's concerns. It is not a surprise that they have been influenced by the media's display of the advantages of drinking bottled water. This is especially true after the Walkerton incident and more recently, the Flint Michigan incident. Inspection of water treatment plants in Ontario found several problems with respect to the safety of our drinking water. As a result many townspeople have switched over to using bottled water for drinking purposes only. However, some towns people are starting to wonder if this is a wise idea. There are many reports that claim that our tap water is safe and in fact better than tap water.

Since the general public is not aware of the pros and cons of drinking bottled water versus tap water (and well water) your task as a credible stakeholder will be to research and provide the community with sufficient knowledge and background information regarding this matter. As a stakeholder in this situation, please consider attending the debate in order to help the community of Aurora come to an informed decision regarding drinking bottled water versus tap water.

The question is: **Is my tap water safe to drink OR Should I buy bottled water?**

The TASK:

1. After reading this information, do some of your own research on the issue. Things to consider might include:
 - ⇒ Where does your tap drinking water come from?
 - ⇒ What is the original source of your bottled water?
 - ⇒ What is the difference between the source of bottled water vs. tap water?
 - ⇒ What are major sources of water pollution?
 - ⇒ How do chemicals get into the water?
 - ⇒ How is water treated before it gets to our tap?
 - ⇒ What do you use tap and/or bottled water for? How much do you consume?
 - ⇒ How much "water" do we have available for home use (drinking, showering, laundry, cooking, etc.)
 - ⇒ What regulations are in place for the production and sale of bottled water?
 - ⇒ What are the different types of "bottled water" available for sale? How is this water treated? Or purified? (Read some different water bottle labels)
 - ⇒ What is really the difference between bottled water and tap water?
 - ⇒ What are the allowable concentrations of contaminants in our tap water? In bottled water?
 - ⇒ How does the cost of each source of water compare?

2. Write a journal entry describing what you think about the issue. Use the page titled **Personal Journal Entry**. This will be collected before the debate!

3. Your group will be assigned a stakeholder position by your teacher from the following list:

- ◆ Citizens of Aurora
- ◆ Environmentalists
- ◆ Health Care Professionals
- ◆ Manger of a steel processing plant located along Lake Ontario
- ◆ Government representatives
- ◆ Representatives from a bottled water company
- ◆ Water treatment plant representative

You will be working in groups of 3-4 people who share the same opinions as you. Your group is required to arrive at an overall consensus with regards to your position (for or against). **Each person** will be required to present a different argument to the class that supports your group's position. You must work as a group to research your position to ensure that no argument is repeated. Use the questions listed above as a starting point for your research. Once you have collected and reviewed your research fill out the **Stakeholder Planning Sheet**. If you have more than four people in your group or you have more than four arguments just add these onto another page. Here are some resources to get you started and there are several more, including your textbook:

- ◆ www.bottledwaterblues.com
- ◆ www.cwqa.com/html/q_n_a_on_bottled.html

Your arguments should (where possible) be linked to the unit of Solutions and Solubility. Also remember to keep a detailed bibliography list of your resources.

4. Once you have filled out the **Stakeholder Planning Sheet**, each group must prepare a one- minute introduction from their assigned viewpoint. This must be complete in class and will be evaluated before the debate by the teacher.

5. The Debate: We will draw straws to decide which group will present their position first. Each group will be permitted one-minute to state their viewpoint. While this is happening, you should be taking down points or writing down questions that you would like to ask to that group, when given the opportunity. Other groups will then be allowed to respond to each position. Responses should be no longer than two minutes long. After each group has been given an opportunity to respond we will open the debate up and the mediator will keep track of who would like to speak. Everyone is expected to participate in the debate. Each student will be evaluated individually. See Rubric.

Reflection:

6. Answer the following questions after the debate. This will be the second part of your journal entry.

- a) Did the class come to a conclusion about the proposal? Was a compromise reached or are some parties still unsatisfied?
- b) What solutions or suggestions were developed through the debate? Are these likely to work? Why or why not?
- c) How difficult was it to share information from a different perspective? What did you learn? What might you do differently next time?

Each person will submit:

1. Two journal entries (#2 and #6)
2. Organized research notes
3. Properly formatted bibliography

Each group will submit:

1. Stakeholder Planning Sheet
2. Introductory Position

Below is a detailed description of each stakeholder position to aid you in your research.

An Aurora Citizen

As a citizen of the town of Aurora, your teenage children have succumbed to the advertisements and insist on drinking bottled water only. You even find yourself drinking a bottle every now and then as you figure it must be better for you than tap water. After all, how can the water of such a large community be totally clean for drinking? While you have seen the ads for the different bottled water companies, you have also read some articles in different newspapers and magazines that detail exactly why people should NOT be drinking bottled water. This concerns you greatly. What is your position?

Environmentalist

As an environmentalist in the town of Aurora, you have been promoting a heightened awareness of environmental issues that may affect the lives of the townspeople for several years. Your concern has now turned to the issue of bottled water. What is your position?

Health Care Worker

As a healthcare worker in the town of Aurora, you are dedicated to providing long term healthcare to all of the community members. These days it is impossible to avoid the ingestion of harmful substances. You have also witnessed a decline in the general health and well-being of the community members. You are concerned with whether or not the consumption of bottled water poses a health risk due to the amounts of minerals/ions/other dissolved substances that bottled water contains. You have recently heard from a colleague, a hygienist, that the health of teeth is declining at a faster rate than recorded previously due to lack of fluoride. What is your position?

Government Representative

After the Walkerton water incident, the government has heightened its focus on ensuring that tap water is regularly checked. As a government representative, your job is to ensure the Aurora citizens that their tax dollars are being used towards a highly effective process. What is your position?

Representative from a bottled water company

As a representative from “Smart Water Inc.”, you are excited about the possibility of expanding your company into the town of Aurora. You are proud of the fact that you supply your customers with fresh, clean, safe water from the mountains of British Columbia, in Vancouver. What is your position?

Water treatment plant representative

You have been working at this treatment plant for 5 years. You are concerned about the public perception of your workers and the security of your job. You have been cleaning the water the citizens themselves have been polluting. You are also concerned about the health of your family. What is your position?

Manger of a steel processing plant located along Lake Ontario

Your company has just spent millions of dollars on consultant fees and modifications to your steel processing procedures in order to minimize the amount of waste being dumped into Lake Ontario. You also live in Vaughan and need to make a choice on your drinking water. What is your position?

HINT: While formulating your arguments, be sure to keep in mind the viewpoints of other stakeholders. Be prepared to defend your position!

Good Luck!