Lesson #9: Personal Water Inventory

Time required: One 60-75 minute class period

Setting the Stage	
Topic:	Personal Water Audit
Program of Study Information	Program of Study: Career and Technology Studies Natural Resources Environmental Stewardship Strand Relevant Course(s): ENS 3040: Energy and the Environment 2. Plan and implement a strategy for personal action that promotes an environmentally sustainable lifestyle ENS 3910: Project D
Required Materials	• Whiteboard or Flipchart Paper for Brainstorming • Markers • Computers for Water Footprint Assessment Tool • "Water Audit" student sheets • "Water Audit" teacher resource • Teacher computer for video links
Type of lesson	Brainstorm Discussion Data Collection Action Project
Word Wall	Water Footprint Water Consumption Water Inventory Water Conservation Activism

Getting Started	
Topic opener "hooks"	Intro/ Hook ideas: This video by WWF explains what the "Water Footprint": https://www.youtube.com/watch?v=0_bUzH6T6zU Here is one about actual water consumption: https://www.youtube.com/watch?v=On9WRrFHVjY
Lesson Guide	
Outline	2. Begin with a discussion about water consumption by posing the following questions: f. Visualize your day from the time that you wake until the time that you go to bed. In what ways do you use water each day? g. How many litres of water do you think that you use each day? How do you believe that this compares to the average Canadian? h. What do you think uses the most water in your daily life? 3. Introduce and define two different measures of personal fresh water extraction and consumption: a. ***Personal Water Use***: Freshwater taken from ground or surface water sources to be used by individuals. Examples include water to complete the following daily tasks: toilet flushing, showers, cleaning your home, watering the lawn etc. (adapted from the OECD working definition at: http://www.oecd.org/publications/factbook/34416097.pdf) b. ***Personal Water Footprint***: "The water footprint measures the amount of water used to produce each of the goods and services [a person] use[s]. The water footprint looks at both direct and indirect water use of a process, product, company or sector and includes water consumption and pollution throughout the full production cycle from the supply chain to the end-user." (condensed from the water footprint network at: http://waterfootprint.org/en/water-footprint/what-is-water-footprint/) 4. Once you have had a conversation about what students believe they use and then share the following information: according to the Canadian Department of Environment and Climate Change the average Canadian used 251 litres of water in 2011 (the most recently posted statistics by the federal government). This has dropped almost 100 litres in the past 20 years. (You can discuss how and why if you have time-water metering, low flush toilets, more

efficient fixtures and appliances, etc.) Some estimates (McGill University study) have shown Canadians' personal water use to be as high as approximately 330 litres per day.

The Federal Department of the Environment and Climate Change states that the average Canadian's residential water use is as follows:

- 5% Cleaning
- 10% Kitchen and Drinking
- 20% Laundry
- 30% Toilet
- 35% Bathing and Showering

5. Personal Water Inventory:
   a. Do a quick survey of the class: How long do their showers last? Once you have posed this question, share this: each minute of showering uses approximately 9.5-15 litres of water with a regular showerhead. Each minute of showering using an environmentally friendly/low flow showerhead uses approximately 7.5 to 9.5 litres of water.

   b. Ask students some probing questions about their water use: How do you feel about these numbers? Do they surprise you? Do you think you are an average, a low water user or a heavy water user?

   c. Hand out water inventory sheets and explain task: students are to track their water use for a set length of time. (Note: The longer they track their water use the better the data will be but you will need to strike a balance of how much time you/ students have, how long they will remain interested and how accurate their data will be. A weekend or school week would be good. Choose what works for your class).

   d. Once students have completed their water audit sheets, you will need a computer lab to track results. Have students log onto the computers and walk them through the water footprint calculator here: http://waterfootprint.org/en/resources/interactive-tools/water-footprint-assessment-tool/

6. Discussion of Results and Creation of Action Plan:

Once students return with their water audit sheets, have them sit in small groups to go over their results.

Some questions for consideration:

- Were any of your results surprising to you?
- What consumes the most water in your daily life?
- What would have the biggest impact on your personal water use?
- Name three easy changes that you could make today that would

	reduce your personal water use. • What are some other ways that you could conserve water? List at least ten as a group. • What have you learned about the importance of water through this project?
Closing Ideas	
	This is a lot of information for students to take in. It is important to end with a focus on what students can do to make a difference. With that in mind, here are some resources to end the program. Rainforest Alliance-11 tips for conserving water: http://www.rainforest-alliance.org/articles/11-tips-for-conserving-water.Share this resource with students and discuss the tips. Focus on what students can do themselves such as buying less clothing or shopping at thrift stores. It can be hard for us to imagine having so little access to clean fresh water that we would have to consider turning human waste into clean water but the reality is that according to the United Nations, "783 million people do not have access to clean water and almost 2.5 billion do not have access to adequate sanitation. Six and eight million people die annually from the consequences of disasters and water-related diseases." (http://unwater-archive.stage.gsdh.org/UN-Water/www.unwater.org/water-cooperation-2013//water-cooperation/facts-and-figures/en/) Janicki Bioenergy has been working on this problem. Watch this video and discuss with the class. Janicki Omniprocessor: https://www.youtube.com/watch?v=bVzppWSIFU0. This one is about innovation and the future. It is a good positive finish to the module: http://ingenuitylab.ca/about. You can discuss it or you can show the video and let it sit with students. Roll down for the video.

A Final Thought from Jane Goodall:

"What you do makes a difference, and you have to decide what kind of difference you want to make."