



## Section I: Exploring Our Relationship to Water

**Activity 1 - Water Bingo.....p.2**

An interactive student activity to get students to know each other better as well as introduce and relate some water topics to their daily lives.

**Activity 2 - Water in Your Life.....p.7**

Series of guiding questions to elicit personal reflection and small group discussions that uses students' current knowledge to start exploring how we relate to and value water in our daily lives and our community.

**Activity 3 - Assessing Our Water Smarts.....p.11**

Small group activity that aims to answer a series of questions to explore and share knowledge about local water geography, impact on water and the concept of responsibility towards water.

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This resource was written by *Polaris Institute* staff member Daniel Cayley-Daoust as a part of the Gr.10 Civics and Citizenship resource entitled *Water Perspectives: Conflict and Action*. Expertise and advice was provided by a local steering committee. Members were centered in the Quinte-Kingston-Rideau region, the target area for our resource pilot and dissemination. Special thanks to the following individuals for their support in making this resource possible: Rebecca McQuaid, Andy Kerr, Debra Bellevue, and Patricia Larkin (Nature Works Learning). Thanks to everyone else not named here, who have been supportive of this initiative and process!

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French translations will also be made available early in 2015 at the same website

The Polaris Institute is an Ottawa-based non-governmental organization that has been in existence since 1997. Our main goal is to enable citizen movements to develop new methods, strategies and tools in order to bring about democratic social change. As a result, most of our past educational work has focused on helping students to develop the critical thinking and leadership skills necessary to bring about on-the-ground action.

We welcome any and all feedback on this educational resource.

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## Activity 1: Water Bingo

**Learning Goals:** To start exploring how we interact with, value and perceive water in our lives.

### **Curriculum Outcomes Targeted (Gr 10 Civics and Citizenship, 2013)**

<p><b>Strand B – Civic Awareness</b>  <u>B1. Civic Issues, Democratic Values:</u>          describe beliefs and values associated with democratic citizenship in Canada, and explain how they are related to civic action and to one’s position on civic issues</p>	<p><u>B1.1</u> describe some civic issues of local, national, and/or global significance and compare the perspectives of different groups on selected issues  <u>B1.2</u> describe fundamental beliefs and values associated with democratic citizenship in Canada and explain ways in which they are reflected in citizen actions</p>
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**Description:** Short group activity to get students to start reflecting on the relationship they and their peers have to water.

**Overview:** Introductory and interactive activity to get a sense of how students and their peers relate to water. The aim of the activity is to a) instill a notion that others have different as well as similar experiences and relationships with water; b) start an over-arching exploration of water issues as they relate to student’s lives, such as:

- Local geography and proximity to water
- Where tap water comes from
- Tap water vs. bottled water
- Access to clean drinking water
- Uses of water and associated impacts on water quality (gardening, working, industry pollution, etc.)
- First Nations communities & access to clean drinking water

**Time Required:** 15-30 minutes (half for activity, half for discussion)

#### **Materials & Preparation:**

- BLM 1.0 – Water BINGO grid; print out one sheet for each student.
- [Optional] BLM 1.1 – Teacher’s Resource Sheet; print one copy (if desired for reference)

#### **Teaching Strategy:**

1. The teacher will distribute a Water BINGO grid sheet to each student. The students will then be asked to mingle with other students and complete the grid. The activity goes as follows:  
Description: Each student will ask other students in the class questions based on the information in the grid. If you find one *un-initialled* square that your fellow student relates to, have that student initial the square (note: it must be a square that has not already been initialled by someone else). Have the student who was asked the question reverse the exercise (asking the first student for

something that relates to them in the grid). Change partners and repeat the exercise until one student has completed one line (horizontal, vertical or diagonal).

End of activity: Once one student has a bingo, i.e. gathered 4-5 initials in a line (horizontal, vertical, diagonal)

2. Post-activity discussion: Students can take their seats or sit in a circle after mingling and teacher will facilitate a debrief discussion. The teacher will ask general questions about the activity to get students to reflect on how they felt or what they noticed during the activity. Such as:
  - a) What did you learn during the activity?
  - b) How did you feel during the activity?
  - c) What squares were the easier ones to fill? Which ones were harder? Why?
  - d) Are there some squares where you aren't sure how they relate to water?
  - e) Ask students which statements in the Bingo grid would be easier to achieve if you, your family or your community had more money.

**Differentiated Instruction:**

This activity allows students to interact in a less formal way, but also to share observations in a larger group. Depending on the class you may want to split the group into smaller groups for debrief and ask a few questions one at a time to increase participation instead of doing it in a larger group. You may also want to consider reading aloud all the statements and answering any questions to make sure everyone understands them.

**Assessment (as learning):**

- Reflect on the experience they had with the activity, how they felt, what they learned, and share with the group.

## (BLM 1.0) Water Bingo – Student Activity Sheet

<b>B</b>	<b>I</b>	<b>N</b>	<b>G</b>	<b>O</b>
Lives within walking distance of a river or creek	Parent or guardian has or has had a job that is related to water	Has had to boil or filter their water for it to be safe enough to drink	Knows someone who collects and uses rainwater	Water at home comes from a river or lake
Knows the name of one of the nearest First Nations communities	Likes being outside in the rain	Likes swimming in a lake	Has family or friends who drink bottled water regularly	Can name or describe a federal, provincial or municipal water policy or law
Never drinks bottled water, only water from the tap	Can name 3 companies that bottle water to sell it	<b>FREE</b>	Lives near a wetland (marsh, swamp, other)	Has lived in a community where tap water is unsafe or unavailable
Has helped to grow a vegetable garden or fished for food	Has seen an oil refinery or chemical plant up close	Drank bottled water this week	Water at home is from a well (groundwater)	Has seen a mine or quarry in person
Can name two species of fish in nearest body of water	Lives close to a lake or the ocean	Uses water conservation strategies at home	Uses a reusable water bottle	Has heard of or been to a protest to protect water

## (BLM 1.1) Water Bingo – Teacher’s Resource Sheet

How elements in Water BINGO grid relate to water:

- **Lives within walking distance of a river or creek:** We want to get students to identify the proximity of their home to water as well as think about where water bodies are located near them.
- **Parent or guardian has or had a job that is related to water:** We want to get students to think about how other people in their lives relate to water.
- **Has had to boil or filter their water for it to be safe enough to drink:** We want to get students to think about the different places they’ve lived or been (note: filtering safe tap water doesn’t count, but camping would).
- **Knows someone who collects and uses rainwater:** We want to get students thinking about other uses for rainwater (ex: watering plants/garden, flushing toilets, etc.).
- **Water at home comes from a river or lake:** We want to get students to realize and think about where their tap water comes from. Students usually get water from lakes, rivers or groundwater sources.
- **Knows the name of one of the nearest First Nations Communities:** We want to get students to think about where the closest reserves or communities are. Many First Nations communities have low quality drinking water and ongoing boil-water advisories.
- **Likes being outside in the rain:** Different kind of way you can interact with water. Objective is to see if some students associate spending time outside in the rain with “having a good time”.
- **Likes swimming in a lake:** Find out if students have had experiences in the outdoors, outside of cities and swim in places other than pools, rivers or the ocean.
- **Has family or friends who drink bottled water regularly:** We want to get students to think about the water drinking habits of their family.
- **Can name/describe a federal, provincial or municipal water policy or law:** Bring awareness to the fact that many laws and policies affect how we treat and manage our water.
- **Never drinks bottled water, only water from the tap:** We want to get students to think about where they get the water they drink.
- **Can name 3 companies that bottle water to sell it:** We want to get students to think about the companies that sell bottled water (i.e., the corporations behind the brands); what do they think about the idea of selling water in a bottle? (Talking points: waste, cost, environmental impacts of production, etc. ).
- **Lives near a wetland (marsh, swamp, other):** We want to get students to relate to water near them and wetlands are important bodies of water that we don’t talk about much. There are also many types of wetlands.
- **Has lived in a community where tap water is unsafe or unavailable:** We want to get students to identify and think about places they’ve been where water was unsafe or inaccessible.
- **Has helped to grow a vegetable garden or fish for food:** We want to get students to link water to gardening, how it is crucial to plants and another important part of their lives: food.

- **Has seen an oil refinery or chemical plant up close:** We want to get students to think about how chemical production and resource extraction can have important impacts on water quality and communities near these facilities. (could bring in current issues discussed in media here- e.g., oil industry, tar sands)
- **Drank bottled water this week:** We want to get students to think about recent drinking habits and get them to think about tap water VS bottled water drinking habit (costs, source, etc.).
- **Water at home is from a well (groundwater):** We want to get students to think about where their water comes from. Other main sources of water are lakes and rivers.
- **Has seen a mine or a quarry in person:** We want to get students to think about how resource extraction can use a lot of water and have important impacts on water quality and communities near these facilities or sites.
- **Can name two species of fish in nearest body of water:** We want to see if students have an understanding of other life forms that depend on water.
- **Lives close to a lake or the ocean:** We want to get students to reflect on and identify water sources in their surroundings.
- **Uses water conservation and protection strategies at home:** Examples of water conservation strategies: shorter showers, install of more efficient toilets (less water used for flushing), not running water unnecessarily (e.g., when brushing teeth, washing dishes), collecting rainwater & reusing grey water, not flushing toilet every time, watering outside to minimize evaporation, using environmentally friendly detergent and soap, disposing of chemicals and pharmaceuticals properly (i.e: not flushing chemicals/pharmaceuticals down the drain/toilet or putting in garbage), etc.
- **Uses a reusable water bottle for drinking on the go:** Get students to realize that there is a practical alternative to drinking bottled water—bring tap water with you!
- **Has heard of a rally or action to protect water:** We want to get students to start thinking about civic action related to water. Examples of protest themes: to stop the privatization of water, to stop the construction of houses near water, to stop the establishment of a landfill/quarry/mine/refinery/hydro dam/oil exploration project, etc., for the establishment of better water protection laws, for the protection of green spaces, to stop the pollution of a company, to stop the sales of bottled water in a school, to install more water fountains in a school, to use environmentally friendly cleaning products in a school, etc.

## Activity 2: Water in your life

**Learning Goal:** To start exploring how we relate to and value water in our lives.

### **Curriculum Outcomes Targeted:**

<p><b>Strand B – Civic Awareness</b>  <u>B1. Civic Issues, Democratic Values:</u>          describe beliefs and values associated with democratic citizenship in Canada, and explain how they are related to civic action and to one’s position on civic issues</p>	<p><u>B1.1</u> describe some civic issues of local, national, and/or global significance and compare the perspectives of different groups on selected issues  <u>B1.2</u> describe fundamental beliefs and values associated with democratic citizenship in Canada and explain ways in which they are reflected in citizen actions</p>
<p><b>Strand C – Civic Engagement and Action</b>  <u>C2. Inclusion and Participation:</u>          assess ways in which people express their perspectives on issues of civic importance and how various perspectives, beliefs, and values are recognized and represented in communities in Canada</p>	<p><u>C2.1</u> analyse ways in which various beliefs, values, and perspectives are represented in their communities</p>

**Description:** Personal reflection and small group discussion by students on the role and importance of water in their lives and their community, their perspectives on water, the values we associate to water and how we relate to water.

**Overview:** Students will answer a series of questions individually to explore how they view water in their lives and how water is viewed in their communities. This will be followed by sharing some of these perspectives in a smaller and/or larger group.

**Duration:** 30 to 60 minutes

### **Preparation:**

- BLM 1.2 – Questions for reflection and discussion; print or project on a screen
- [Optional] BLM 1.3 – Questions for expanded classroom discussion; print or project on a screen
- If time is limited you will want to select some of the questions in BLM 1.2 and some of the questions in BLM 1.3 if you opt to include it. Read and plan the process for the activity based on the description below.

### **Teaching Strategy:**

*Note:* This short activity is designed to be an early exploration and identification of one’s relationship to water and the importance a student affords to water in their life. There are no good answers and it is only meant to try and get students stimulated and thinking about the place water occupies in their lives.

1. The teacher will explain the objectives for the activity:

- a. We want students to identify the different aspects of their lives in which they interact with water
  - b. We want students to reflect on how important water is in their life and the lives of those around them
  - c. There are no right or “better” answers. You’ll find out that everyone relates and interacts with water differently.
  - d. The activity is mainly an individual written exercise, but we will be sharing some of these reflections with the rest of the group afterwards so that people can have insight into other’s perspectives when thinking about this issue.
2. The teacher will explain the tasks
- a. (Optional – 3 minutes) Before you start, show this brief clip titled “Water As ?” (look this up if link below doesn’t work) about what water means or represents according to various perspectives: <http://www.youtube.com/watch?v=JybZVqOB5-U> – It is a short clip done following a bike tour of Lake Ontario for the “Great Lakes Commons Map Initiative”.
  - b. (10-20 minutes) Individually, get students to write short answers to the questions in BLM 1.2. A few sentences or bullet points should do for each.
  - c. (10-20 minutes) Sharing the reflection with classmates:
    - i. The class is split in small groups of about 5 people and each person in the small group shares their work each their turn. You can assign roles such as spokesperson, time-keeper, task-keeper, note-taker, or others.
  - d. Work will be submitted to the teacher for an assessment of learning.
  - e. EXTRA: (10-30 minutes) After the small group discussion and sharing, bring everyone back in a larger group and ask a few questions from BLM 1.3. These will allow for another level of sharing and help broaden the scope of the original reflection and look at some of the issues from different angles. In a larger group setting, show the questions one at a time and get some students to answer the questions as best as they can.

**Differentiated Instruction:**

This activity suggests reading aloud the questions and providing the questions in text format via the SMART board/ overhead projection. Reveal each quiz question one at a time so everyone in the class works at the same pace. There is individual, small group and larger group work and discussions to make sure people learn off each other and are allowed to do a personal reflection too. Depending on the class, you may want to adjust the strategy and use a different combination of reflection/sharing strategies.

**Assessment (as learning):**

- **Sharing and listening to other people’s answers and comparing to their own.**

## **(BLM 1.2) Questions for reflection and discussion**

- Give examples of five ways you interact with water on a daily basis in your life.
- What role(s) or purposes does water play in your community? (If desired, use a mind-mind map to write down answers)
- What roles or purposes could someone else give to water that might be different from your own perspectives?
- How would you react if some of the waterways in or near to your community (lake, stream, river, groundwater, etc.) became suddenly highly polluted? Or if increasingly important water shortages were occurring?
- How do you think your community would react? Should react?

### **(BLM 1.3) Questions for expanded classroom discussion**

- What are direct and indirect ways that we benefit from water in our lives?
  - (Direct VS Indirect use of water; Direct = brush teeth, drink water from tap, swim, etc. where water is directly and visibly involved; Indirect = items that require water to be made, grown or transformed such as food, going to a park, items we use on a daily basis such as metals, paint, electronics, clothing, etc.)
  
- Can you come up with examples of people, companies or groups in your community that appear to value or think about water much differently than you do?
  
- How does the way we “see” or “value” water influence how we “treat” water?
  
- Is it important to protect the water in our community from pollution or over-extraction? Why/why not?
  
- What could be some potential consequences of the pollution of our water? Immediate? Long-term?
  
- Are there any known threats to water in our community?

### Activity 3: Assessing our water smarts

**Learning Goals:** Assess and share current group knowledge of relevant political and local knowledge related to water.

**Curriculum Outcomes Targeted:**

<p><b>Strand B: Civic Awareness</b>  <u>B1. Civic Issues, Democratic Values:</u> describe beliefs and values associated with democratic citizenship in Canada, and explain how they are related to civic action and to one’s position on civic issues</p>	<p><u>B1.1</u> describe some civic issues of local, national, and/or global significance and compare the perspectives of different groups on selected issues</p>
<p><u>B2. Governance in Canada</u>          explain, with reference to a range of issues of civic importance, the roles and responsibilities of various institutions, structures, and figures in Canadian governance</p>	<p><u>B2.2</u> explain, with reference to issues of civic importance, the roles and responsibilities of different levels of government in Canada and of key figures at each level</p>
<p><u>B3. Rights and Responsibilities</u>          analyse key rights and responsibilities associated with citizenship, in both the Canadian and global context, and some ways in which these rights are protected</p>	<p><u>B3.2</u> analyse key responsibilities associated with Canadian citizenship</p>

**Description:** Small group work and large group sharing of knowledge around water issues on different scales (local, national, etc.).

**Overview:** In small groups, then as a classroom, students will explore and share the knowledge they collectively possess on issues and concepts related to the water in their community including geography, water management, responsibility, impact on water, access to water, protection of water, etc.

**Duration:** 60-75 minutes

**Preparation:**

- BLM 1.4 – Water Assessment Questions; project questions on a screen one at a time to the class.
- If time is limited, select some of the questions to shorten time.
- Chalk board or flip chart or smart board to write down input from students/small groups on the questions during the large group debrief.

**Teaching Strategy:**

1. Split the class into small groups of 3-4 students. Ask the questions found in BLM 1.4 one at a time.
  - a. Project them on a screen or on the board in front of the classroom.

- b. Give students 3-5 minutes to reflect and discuss each question.
  - c. Ask one student per group to take notes of the answers discussed on a blank sheet of paper.
    - i. Take summarized notes of elements that each person in the group mentions so you can more easily remember and report back later to the larger group
    - ii. You can also assign roles such as spokesperson, time-keeper, task-keeper, note-taker, or others.
  - d. If time is limited, select some of the questions.
  - e. Remind students that the goal is to come up with multiple perspectives and answer the questions from as many different angles as possible. Short discussion on the answers is welcome.
2. Leaving students from small groups sitting next to each other (alternatively, get them to choose a spokesperson and get them to go back to their seats), start a discussion with the larger group.
- a. Go over each question one after the other.
  - b. Get ONE student from each group to give ONE answer to a question. After you go to each group once, you can ask if others want to share a few extra answers depending on how long it takes or how many answers you have collected already.
  - c. Ask them to explain their answers as needed.

**Differentiated Instruction:**

This activity suggests reading aloud the questions and providing the questions in text format via the SMART board/ overhead projection. Reveal each quiz question one at a time so everyone in the class works at the same pace. There is small group and larger group work and discussions to make sure people learn off each other and get to participate as much as possible. Depending on the class, you may want to adjust the strategy and use a different combination of reflection/sharing strategies.

**Assessment (as learning):**

- **Sharing answers from small group work with the larger group**

## (BLM 1.4) Water Assessment Questions

- What are the names of some water bodies in and around the community? (Rivers, streams, lakes, marshes, etc.)
- Where does the tap water come from in our community? (school, home, town/urban center or rural areas, others?)
- Can you name a few industries or companies that use water or could have an impact on water in the community? If not, elsewhere?
  - Note: impact can mean use of water, pollution of water, changing configuration of waterways, changing availability of water, etc.
- Can you name ways that people, groups or companies in Canada have an impact on water in other countries?
  - Note: impact can mean use of water, pollution of water, changing configuration of waterways, changing availability of water, etc.
- Who is responsible for protecting the water in our community?
- What are the responsibilities of the different levels of government with regard to water?
- What are different ways that have been used to preserve, protect or defend water in your community or elsewhere in the province?
- As people living in Canada, do we have responsibilities towards water? Why/ why not?