



# Whose Water?

## summary

Students research, discuss and debate views on Great Lakes water withdrawals and exportation by taking different roles in the issue.

GRADE LEVEL

6-8



## objectives

- Research varying views on the export of Great Lakes water.
- Defend one view on the export of Great Lakes water.
- Evaluate a debate.
- Articulate his or her personal belief regarding the export of Great Lakes water.

## prerequisite

Water, Water Everywhere and Water Flow

## vocabulary

*Diversion:* The transfer of water from one watershed to another.

*Great Lakes watershed:* The lands where water from the ground, rivers and streams flow into the Great Lakes.

*Great Lakes basin:* Great Lakes watershed

## setting



## materials

- Fact sheet (p. 441)
- Role cards
- Pencils
- Related news articles (on cd)
- Journal pages
- Clear plastic bag with holes in it

## subjects

Social Studies, Language Arts, Environmental Science, Hydrology

## standards



Science: 13.B.3d, 13.B.3e, 13.B.3f  
Social Studies: 17.B.3a, 17.C.2c

Language Arts: 4.A.3a, 4.B.1b, 5.C.1a, 5.C.1b



Science: K.1.1, 6.2.8, 8.1.7, 8.3.6  
Social Studies: 6.3.13, 6.3.16

Language Arts: 6.2.8, 6.5.5, 6.7.13, 7.5.4, 7.5.5, 7.7.11, 8.5.4, 8.5.7, 8.7.13



Science: SIC.II.1.E.4, SCI.II.1.MS.1, SCI.II.1.MS.5, SCI.III.5.MS.6

Social Studies: SOC.

II.2.MS.5, SOC.VI.2.LE.1, SOC.VI.2, SOC.VI.2.MS.1, SOC.VI.3, SOC.VI.3.MS.1, SOC.VII.1, SOC.CII.1.MS.2

Language Arts: ELA.1.MS.1, ELA.2.MS.1, ELA.3.MS.7, ELA.10.MS.3



Science: A.8.8, B.4.1, C.4.7, C.8.10

Social Studies: A.8.11, B.8.9, C.8.7, D.8.3, D.8.11

Language Arts: B.8.1, C.4.1, C.4.2, C.8.1, C.8.2, C.8.3

Water exportation information for students:

### **Fishbowl Debate**

The style of debate the students will be using is called a fishbowl. Half of the class will debate while the other half, in a circle around the debaters, observes. The students switch between debaters and observers half-way through the time period. The observers may not speak during the debate. Their job is to take notes on the behavior of the debaters. Before students trade roles, the observers will report on their observations. The class may discuss ways to make the next round of debate more successful.

### **Export of Great Lakes Water**

Are the waters of the Great Lakes at risk from being diverted to too many places around the United States and the world? In the next 25 years, at least 55 percent more freshwater than is now available will be needed to satisfy the growing global population. Communities in the United States and around the world are outgrowing their water supply.

The Great Lakes states and provinces depend on the Great Lakes for their drinking water and economy. Great Lakes water helps produce 60 percent of North America's steel and cars. The overall production in the Great Lakes states and provinces is about \$2 trillion annually, which is more than any other country in the world except Japan and the economy of the United States as a whole. The sport fishing industry is worth \$7 billion annually. Great Lakes waters provide drinking water for over 33 million people living in the watershed (Great Lakes basin).

The Great Lakes contain 20 percent of the world's fresh surface water, but only one percent of it is renewed through precipitation, groundwater and surface water (tributaries, snowmelt). This means that if the Great Lakes are too heavily used as a water source we could start to deplete the lakes themselves. There are already water shortages in many parts of the Great Lakes basin including Green Bay, Wisconsin, Chicago, Illinois, Saginaw, Monroe and Oakland counties in Michigan, areas in northwestern Ohio, Rochester, New York and Waterloo, Ontario. For an example of what has happened to the Aral Sea, another freshwater "inland sea," like the Great Lakes, see: <http://nailaokda.8m.com/aral.html>

The eight states and two provinces within the Great Lakes basin need to work together to find a way to manage and protect the Great Lakes from overuse. It is important that this be done together because the largest negative impacts to the Great Lakes are from the combined effect of the many withdrawals and uses within each of the states and provinces, not from one use alone.

The Great Lakes governors and premiers signed a non-binding agreement, called the Great Lakes Charter Annex, in June of 2001 to develop similar water management programs that would be legally binding in each of the Great Lakes states and provinces that would protect the Great Lakes from diversions and withdrawals of water that would be harmful. A draft of the binding agreement was released on July 19, 2004. The draft law has four requirements for new water use proposals to get approval to take water from the Great Lakes basin:

1. There are no alternative water supplies, including conservation of existing water supplies.
2. Water that is used must be returned (minus what was consumed).
3. The water withdrawal does not hurt the Great Lakes, including inland lakes, rivers, stream, wetland, fish and wildlife habitat.
4. Water uses must include conservation plans.
5. Water use proposals must do a project that helps improve the Great Lakes (such as: restore a wetland, take out an unused dam, stabilize a shoreline from erosion).

Once approved by all the Great Lakes governors it will take several years to become law.

There is a debate over whether there should be a new water use law and what it should look like. The debate is between groups that include: industrial users, agriculturalists, municipalities and environmentalists. Generally, the industrial users are not in favor of having a new law because they believe it will negatively affect the economy if there are any restrictions on water use. Because agriculturalists produce food we eat, many do not feel they should be part of any water use laws and their uses should be exempt. Municipal water suppliers that give water to many of our homes are generally supportive of the proposed laws, but do not always want to return the water after it is used because it is expensive to build the pipelines to do so. Environmentalists are supportive of the new law as they believe such measures are necessary to protect the Great Lakes for future generations.

For current updates on this issue, see: [www.greatlakes.org](http://www.greatlakes.org)

## procedure

### Part One: Large group discussion

1. Introduce the topic of diversions and exportation of Great Lakes water and give a flavor for how controversial the issue is. Tell students they will study the issue and participate in a debate about it. Fill a clear plastic bag with water and poke several holes in it, while holding it over a sink or a bucket. Ask students to explain how this is similar to water withdrawals and diversions in the Great Lakes. How is it different? *In the Great Lakes, water diversions can be very large, like for the City of Chicago, or smaller. They can be ongoing for companies or for communities. In any case, they involve taking water from the Great Lakes. Keep in mind that the Great Lakes are glacial deposits that are, for the most part, non-renewable. Each year only one percent of the waters in the Great Lakes are renewable through precipitation, tributaries and groundwater.*
2. Discuss what makes a good debate. Have students brainstorm a list of ideas for ways to make the debate successful. *List might include: Listening to each other, talking loudly enough for others to hear, being polite, choosing a moderator to facilitate.*
3. Students review the information about Great Lakes water exportation. They should read the information on page 441 and/or the additional news articles on the compact disc. If they do not individually read all the articles, they can then break into small groups to teach each other about the one article they have read. Students should summarize their article to share with the other students.
4. As a class, brainstorm a list of relevant characters involved in water diversions, which can be gleaned from the fact sheet or articles the students read. Another option is to give students the included "role cards."
5. As a class, decide on the roles needed for the debate or have students work in teams to create solid arguments for the roles provided on the "role cards." For example, there could be a group of residents or a water company group that work together on preparing their role for the debate.
6. Once roles have been chosen, students should review their own roles, as well as the roles of others within the community for best preparation. Students create a written summary of the statements they would like to contribute to the debate. In addition students should write a three-five sentence summary of their personal beliefs on the water export issue.

### Part Two

1. Review the elements of a successful debate and the guidelines for the fishbowl method. Divide the class into observers and debaters.
2. The moderator (educator, or can be another student) calls the class to order.
3. Each character group will have two minutes to make an initial statement. Once this is complete, each will have two minutes to make counter arguments.
4. Observers should report on their observations. Discuss as a class: What was positive about the debate and how could the debate have been more effective?
5. Trade fishbowl positions and repeat for the second group.

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## wrap-up

1. Students use their observations of the debate and their written summaries to answer the journal questions and discuss them as a class.

## extension

1. Student can write an essay summarizing the Great Lakes water diversion issue and explaining his/her stance on the issue. Opinions should be backed up by facts found either in independent research or the news articles provided.
2. If the class is so inclined, students can write a letter to their senator or representative expressing their views on Great Lakes protections. A list of senators and their addresses can be found at the U.S. Senate's homepage.

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## assessment

Rubric on next page.

## resources

Alliance for the Great Lakes  
[http://www.greatlakes.org/conservation/withdrawal\\_intro.asp](http://www.greatlakes.org/conservation/withdrawal_intro.asp)

## Whose Water?

ELEMENTS	☆☆☆☆	☆☆☆	☆☆	☆
DEBATE PREPARATION: Student prepares for debate by listing elements of a good debate, completing summary of specific article, and preparing to debate based on a specific view and/or character.	Addresses all of the components	Missing one component	Missing two components	Missing three or more components
DEBATE: Student (and group) presents a two-minute focused summary of group's perspective. Summary includes supporting evidence. Student (and group) presents a counter argument that addresses other perspectives. Argument is based on facts, not opinions. Student (and group) concludes with a final defense that summarizes stance and responds to others' critiques.	Addresses all of the components	Missing one component	Missing two components	Missing three or more components
DEBATE REFLECTION: Student reflects on the effectiveness of debate and debaters. Student notes areas of strength and areas for improvement. Student discusses how his/her opinions evolved through research and the class debate.	Addresses all of the components	Missing one component	Missing two components	Missing three or more components
LETTER: Letter is appropriately addressed. Student summarizes the issue and presents his/her views with supporting details from reliable sources. Letter is persuasive, advocates for a specific point, has minimal spelling/grammar errors and follows a letter format.	Addresses all of the components	Missing one component	Missing two components	Missing three or more components
ESSAY: Essay has a central theme developed throughout. Student presents and critiques all sides of the issue fairly. Student concludes the essay with his/her personal opinion and supporting details. Essay has minimal spelling and grammatical errors. Sources are cited.	Addresses all of the components	Missing one component	Missing two components	Missing three or more components

## Role cards



**A**

You are a local resident concerned about the future. You live in the Great Lakes watershed. What is your name? What is the name the community? You have children, which is one reason you are concerned about the future of Great Lakes water. What are other reasons that you are concerned? What is your job? Develop your character and opinion.

**B**

You are the chief executive officer of a water bottling plant. What is your name? Background with the company? Why are you concerned about Great Lakes water exports? You know that your water diversion from a Great Lakes stream has caused it to run dry, but do not plans to change to a new business. You want your business to be as profitable as possible. Many local people are employed at your plant. Develop your character and opinion.

**C**

You are a third generation farmer in a place where freshwater is becoming increasingly unavailable for you to use to water your crops. As a farmer, you do not feel that you should have to be concerned with new water use laws. After all, you are growing food for people in the region. Develop your character and opinion.

**D**

You are a resident in a community just outside of the Great Lakes watershed with polluted drinking water. Because you are outside of the watershed, your community cannot access Great Lakes water. What is your name? What community are you from? What do you think should happen with the new water law?

**E**

You own a coal-fired power plant that uses water in order to run your plant. Your plant supplies electricity to the whole community. You think this new law might negatively impact the economy and do not want to spend money to build pipelines to put the water back in the lake, once it is used. You have a family and are concerned about the future and enjoy fishing on the Great Lakes.

**F**

Other Community member: Develop another role for the debate.

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journal pages

FIRST NAME

LAST NAME

[1] List the elements of a good debate.

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[2] Write three sentences summarizing the fact sheet or your article on water exportation/diversions.

a. ....

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b. ....

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c. ....

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[3] List possible characters that would be involved in a debate on water diversions and exportation. Circle the characters the class chooses for the classroom debate.

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# Whose Water?

GRADE LEVEL  
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journal pages

FIRST NAME

LAST NAME

[4] My character in the water diversions debate: \_\_\_\_\_

[5] Brainstorm a list of water diversion/exportation issues that are relevant to your character.

[6] Write three-five sentences summarizing how you/your group will contribute to the debate on behalf of your character.

[7] Write three-five sentences summarizing your personal beliefs on the water diversion issue. Explain if they are similar or different to your character in the debate.

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journal pages

FIRST NAME

LAST NAME

[8] Write your opening statement here: (you will have 2 minutes to present this statement)

[9] Make notes here during the debate for your counter argument: (2 minutes)

## Water Exportation

[10] How has your initial stance on the issue changed or not changed as a result of the debate?

[11] What makes this a difficult issue to debate?

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journal pages

FIRST NAME

LAST NAME

[12] Which group do you believe had the strongest argument? Explain why you feel it was strong.

[13] What made this debate work well?

[14] What aspects of the debate could be improved?

[15] Why is it important to learn about and listen to all sides of an issue?

[16] What are the main points you are making in your essay and/or letter about this issue?

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journal pages

FIRST NAME

LAST NAME

[1] If you do further research on Great Lakes water diversions, record the information below. Write down the source, title and author. Then write a three-sentence summary of each source.

a. Source:  
Title:  
Author:  
Summary:

b. Source:  
Title:  
Author:  
Summary:

c. Source:  
Title:  
Author:  
Summary:

[2] What are the arguments presented in the articles? Be sure to pay attention to all sides of the issue!

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