Water Rights and Ethics:
Who Really Owns the Water?

Skill Level
- High school.

Learner Outcomes
- Students will gain a deeper understanding of issues surrounding water rights, water development, and related water issues.
- Students will apply a fictional scenario to their local community and environment.

Educational Standards Supported
- Earth Resources 4.9 (a) Matter 6.5
- Living Systems 6.7
- ES.8

Success Indicator
- Student concludes water rights and water use are more complex (i.e., compared with opening questions).
- Student questions the ways water rights are determined and distributed.
- Student questions how access to their water source is determined.

Life Skills
- Critical thinking, ethics, human rights, environmental rights.

Tags
- Water Systems.
- Earth Science.
- Groundwater.
- Living Systems.

Time Needed
- 30 minutes.

Materials List
- PowerPoint presentation (background, scenario, and supplemental information).
- Stakeholder group descriptions.

Introduction to Content

Water issues occur everywhere and affect all people. Some places experience hardships from too much water while others suffer from too little. Meanwhile, water quality from natural and human-caused sources is an ever-present issue, as are the effects of hydrometeorological disasters such as floods and hurricanes. Who has access to water for uses such as drinking, farming, and for-profit ventures — *and how much water* — is yet another issue. Large-scale water use and development — for example, for irrigation, bottling, industrial processes, energy production, dams, and recreation — occur almost everywhere. This lesson explores the topic of water use and access through a fictional and real-life example using role-playing and discussions. Researching local industries and the major water users in the local region prior to the lesson is a great way to connect matters of water issues and water rights to the students' community.

Introduction to Methodology

Students are prompted with a fictional scenario and asked to role-play in small groups and with the entire class. The small group and discussion-based lesson requires students to think critically from various viewpoints about issues related to water and the environment. Next, students are presented with an analogous case that actually occurred in Evart, Michigan. Finally, students are asked to reflect upon and apply the experience to their local environment.

Opening Questions

1. Who has the right to water?
2. Who 'owns' water or the right to develop water resources?
3. Should there be limits on water use?

Tips for Engagement

- Make sure students understand the criticality of water and that water issues occur everywhere. For example, a quick scan of news over the past month will identify numerous local, national, and international water issues.
- Leading with a short online video about water and its importance for human life, the economy, and environment may help prime the students and lesson. Reputable sources for such videos include NASA, National Geographic, and USGS.
- Researching where the local water supply comes from, how much water is pumped per day, major water users in the area, etc., will help create a more engaging discussion.

Guided Inquiry
Learner Centered

Experience

This lesson introduces the fictional case of "Tasty Water" bottling company through a role-playing and discussion scenario.

1. Present the first half of the presentation to introduce the "Tasty Water" scenario to students.

2. After reviewing the scenario (slide 4), break students into four groups (slide 5) and distribute descriptions explaining which stakeholder group they will represent (see "Supplemental Information," below). The four stakeholder groups are:

   a. The Tasty Water company.
   b. Town Council.
   c. Local environmental organization.
   d. Group of concerned citizens.

3. Ask each group to answer the following questions for roughly 10 minutes:

   a. Should Tasty Water be allowed to pump water from the town's well?
   b. How much water should Tasty Water be allowed to pump?
   c. How much should Tasty Water pay for the water?
   d. Can Tasty Water's pumping rights be changed in the future or taken away?

4. Once groups have finished discussing, have one "stakeholder representative" from each group explain their answers to the prompts. After the representatives explain their group's viewpoints, all students are encouraged and expected to participate in a civil discussion with the other groups on the topic and how the issues relate to ethics, human rights, and environmental rights (slide 6).

5. Finally, attempt to arrive at a solution or compromise among the four groups by asking the larger group to develop a resolution and take a vote.

Share/Process/Generalize

6. After the discussion, present the real-life case study of Evart, Michigan, provided in the second part of the PowerPoint presentation. Ask students to process and share their viewpoints. Use the following prompts to get discussion going (slide 10):

   a. How do you feel about the outcome in this real-life situation?

   b. Are there some groups that were not considered or well represented?

   c. What are some ways this case might be different depending on where in the U.S. it occurred? (If students have difficulty, suggest cases such as an arid vs. water-rich area or rural vs. urban setting.)

Discovery

7. Next, ask students what other industries and activities, besides bottling water, use large quantities of water (slide 11). Answers often include energy production, agriculture, soda/beer/sugary drink bottling, mining, fracking, industrial processing, etc.

Apply

8. To apply the experience to your local context, ask students to identify or hypothesize who the greatest water users are in your region. Researching this prior to the lesson to identify major water users and find local news stories, laws, maps, etc., will greatly help to demonstrate how water issues affect the students' community. Finally, ask students how they would feel if this type of scenario happened in their area.

Did You Know?

- Only 1% of the planet's water is readily available for human use at a given time — 97% is saltwater and 2% is freshwater that is unavailable (e.g., soil moisture and in plants, animials, and atmosphere).
- Globally, agriculture accounts for roughly 70% of all water use, followed by industry at 20% and domestic at 10%.
- It takes roughly 13 gallons of water to adequately sustain a human per day (not counting food or food production). The average American uses over 125 gallons per day, while people in Mozambique, Mali, Somalia, and Haiti survive on 5 gallons per day.

Resources

Ellison, Garret. 2021. "Nestle Water Owners Return Michigan Permit, Plan New Withdrawal." MLive.com. October 20, 2021. https://www.mlive.com/public-interest/2021/10/nestle-water-owners-return-michigan-permit-plan-new-withdrawal.html.

Taillard, Mike. 2018. "Opinion: Nestlé water deal is bad economics – and bad policy – for Michigan." Bridge Michigan, a publication of Center for Michigan. April 3, 2018. https://www.bridgemi.com/guest-commentary/opinion-nestle-water-deal-bad-economics-and-bad-policy-michigan.

Winter, Caroline. 2017. "Nestlé Makes Billions Bottling Water It Pays Nearly Nothing For." Bloomberg. September 21, 2017. https://www.bloomberg.com/news/features/2017-09-21/nestl-makes-billions-bottling-water-it-pays-nearly-nothing-for.

Supplemental Information

See PowerPoint slide show for guided lesson plan

Stakeholder Group Descriptions

Tasty Water

You represent Tasty Water and believe the company should be allowed to purchase water just like other residents of the town. You plan to pump roughly 400 gallons per minute from the town well at a discounted rate. You are certain it won't disrupt the local environment because Tasty Water has done this elsewhere and seen no effects thus far. Under this scenario, Tasty Water will pay the town approximately $250,000 dollars each year for the water and the company will also donate multiple sports fields.

Town Council

You represent the elected Town Council. You believe money earned from Tasty Water's water purchases will boost the town's economy, especially considering that 44% of the town lives below the poverty line. You also think that the donated sports fields would be a great addition to the town and would facilitate a greater sense of community.

Local Environmental Organization

You represent a local environmental protection group. The group is adamantly against Tasty Water pumping so much water because scientists believe it could negatively affect the groundwater supply and possibly have effects on local streams and surface waterways. The group believes that *if* Tasty Water is allowed to pump, they should pay a higher fee per gallon and do more to protect local water resources and the environment in general.

Concerned Citizens

You are a group of citizens concerned about the amount of water that would be pumped. Specifically, the group is worried that excessive pumping will negatively affect the town's ability to supply water in the future, and some residents who have private wells worry that their groundwater will be depleted by Tasty Water. The group does recognize that the new sports fields would greatly benefit children in the town.

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