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AMERICAN WATER



# Before the Wells Run Dry

A Town Meeting

- **Grade Level:** 5 -12
- **Objective:** Students will examine methods of reducing municipal water use and participate in a mock town meeting to debate specific water conservation measures
- **Subjects:** Environmental Science, Public Speaking, Political Science, Art

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## INTRODUCTION

In the U.S., there is concern over the sustainability of the nation's water supply as a result of droughts, threatened supplies and continued population growth. Although some regions are already experiencing water scarcity, increasing water demand is a challenge facing the entire nation.

One of the most fundamental ways to sustain our water supplies is to promote wise water use and develop new water conservation strategies for residents, business and industry.

This includes water utilities as well. Examples of initiatives undertaken by American Water include:

- **Improved Leak Detection and Repair:** American Water is testing various leak detection technologies in numerous states, and to date, the program has saved millions of gallons of water.
- **Investing in Infrastructure:** The country's water infrastructure is aging, with many pipes approaching or past the end of their useful life. Additional funds are necessary to adequately maintain, repair and replace the nation's network of pipes.
- **Developing Alternative Supplies:** There could be instances where conservation alone cannot bring supply and demand into balance. In these situations, there is a need to find new sources of water. Desalination and water reuse are two rapidly developing solutions. American Water operates the country's largest desalination plant in Tampa, Florida, where we are helping to ensure the safe and environmentally-sound conversion of seawater to drinking water. We also recycle nearly four billion gallons of water annually—and produce reuse water at more than 80 facilities.

While these types of initiatives help, they alone will not address water shortages or the concern over the sustainability of our nation's drinking water resources. It will require the support and active involvement of government, business and industry, and individuals.

**Bottom Line:** Potable water is only renewable if we set sustainable use as a requirement.

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## DID YOU KNOW?

Nationwide, more than 1 trillion gallons of water leak from U.S. homes each year. A leaky toilet alone can waste 200 gallons of water per day.

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## MATERIALS NEEDED

- Piece of paper
- Pen or pencil
- Enclosed data sheets

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The town council members of West Rock are proposing to reduce water use in the community by implementing a Water Conservation and Landscape Modification Project. As part of their community education, they mailed the following letter to residents outlining the key recommendations in the proposal. They are also planning to hold a public meeting to gain input from residents and interested parties prior to introducing any new ordinances.

Students will be divided into six groups. Each group will represent a special interest group impacted by the proposal. As part of the assignment, each group should review and research the proposed measures, and prepare a presentation that summarizes their interest group's stance on the proposal. Supporting information and any available data should be provided as part of their argument.

All members of the group must participate in the presentation. After each group has presented, there will be time for questions from other groups. After all groups have presented, there will be an opportunity for each group to provide closing statements and final remarks.

A short break will follow and then each Article will be put to a vote. The final vote will be to approve as is, approve with modifications (modifications will not be finalized during this meeting) or strike from the plan.

## SPECIAL INTEREST GROUPS

Students will be divided equally into six groups and

each represent one of following special interest groups.

- **Longhorn Recreational Promotions:** A regional company that designs and installs athletic fields, recreational complexes and golf courses throughout the state.
- **West Rock Business Development Forum:** A group of residents, town officials and local business owners who seek to attract new business to the town of West Rock.
- **Residents for Green Neighborhoods:** Resident volunteers that promote landscape beautification programs that include planting diverse species throughout the town.
- **Nature Conservation South:** A not-for-profit organization that supports environmental initiatives focusing on ecosystem health, land preservation and eco-tourism opportunities.
- **West Rock Agricultural Coop:** A group of small farmers supplying a variety of agricultural goods to West Rock and surrounding towns.
- **Sustainable Cities South:** The regional division of a national movement to promote sustainable cities and towns with an emphasis on water and energy use.

## TASKS



## LETTER TO ALL RESIDENTS AND INTERESTED PARTIES

### You Are Cordially Invited to a Town Meeting to Discuss the West Rock Water Conservation and Landscape Modification Project

Dear West Rock Resident and Interested Parties:

By now, most of you may have heard about the proposed West Rock Water Conservation and Landscape Project. The town council feels this proposal is needed to reduce our community's overall water use. We realize the proposal is ambitious and contentious, but it is our opinion that the time has come for our town to take aggressive measures so that we can address the water shortages that have plagued our community for the past decade.

At this point, no amount of rainfall will improve our situation appreciably. In fact, if anything, the shift in weather patterns over the past several years has accelerated the urgency of our current situation. Whether we act today, next year or five years from now, the reality is we must act. With continued development in the region, we believe a way to reduce our overall water use is outlined in the proposal below.

#### West Rock Water Conservation and Landscape Project Proposal

- **Article 1:** All new approved housing developments and businesses in the town of West Rock must landscape with native plants that require no additional irrigation.
- **Article 2:** No irrigation systems may be installed for new or existing residential or business properties without prior approval from West Rock Township.
- **Article 3:** Irrigation systems on existing properties should go to an odd/even watering schedule. Residents whose homes or businesses have a street address with an even number (i.e., 738 Oak St.) should only use their irrigation systems on Mondays, Wednesdays and Fridays. Those with odd numbered street addresses (i.e., 737 Oak St.) should only use their irrigation systems on Tuesdays, Thursdays and Saturdays.
- **Article 4:** All outdoor recreational playing fields will have three years to convert to artificial surfaces (turf or other) and must install rain gardens to catch runoff. Grants are available to supply 75 percent of needed funds.
- **Article 5:** The two golf courses in town must reduce manicured greens coverage by 50 percent over the next two years and are limited to irrigating with water captured from storm runoff or recycled from the sewage treatment facility.
- **Article 6:** Water use in each residential household above 50 percent current use will be subject to a surcharge of \$50.00 per 1000 gallons over.
- **Article 7:** Water use in each corporate/industrial facility above 60 percent current use will be subject to a surcharge of \$100.00 per 1000 gallons over.
- **Article 8:** All agricultural operations must phase in drip irrigation systems within two years.

We will be holding a town meeting next Thursday. The focus of the meeting will be the proposed West Rock Water Conservation and Landscape Project. Community members and interested parties who wish to present their support for or against these measures is encouraged to attend to voice your opinions. After hearing all public input, we will put each Article to a vote.

We hope that you will join us.

Sincerely,

West Rock Township Council

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Each group must prepare a poster and presentation that summarizes the concerns and opinions of the proposed project, including any supporting data the group wishes to submit for the town council's consideration. All members of your group must participate in the oral presentation as part of the Town Meeting. Presentations should be no longer than 15 minutes.

### QUESTIONS

1. Which of the initiatives would be most difficult to establish? Easiest to establish? Explain your response.
2. In your opinion, is this type of approach an effective one in establishing water conservation measures?
3. If measures included in this activity were optional, do you think residents and businesses would participate? If so, how? If not, why?
4. What other incentives could be used to promote initiatives like these?

### EXTENSIONS - AT HOME

- What measures has your community established to address water conservation issues either seasonally or year round? Are they effective?

### DEFINITIONS

- **Aqueduct:** A water supply or navigable channel (conduit) constructed

### NOTES

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to convey water.

- **Desalination:** Refers to any of several processes that remove excess salt and other minerals from water.
- **Native Plants:** Plants endemic (indigenous) or naturalized to a given area in geologic time. These plant species will often grow without significant amendments to the soil and without the need for extensive irrigation.
- **Rain Garden:** A planted depression that allows rainwater runoff from impervious urban areas like roofs, driveways, walkways, parking lots and compacted lawn areas the opportunity to be absorbed.
- **Storm Runoff:** Storm water that does not soak into the ground becomes surface runoff, which either flows directly into surface waterways or is channeled into storm sewers, which eventually discharge to surface waters.
- **Drip Irrigation:** An irrigation method which saves water and fertilizes by allowing water to drip slowly to the roots of plants, either onto the soil surface or directly onto the root zone, through a network of valves, pipes, tubing and emitters.

## COMMENTS

We want to know what you think. Feedback and/or suggestions for improving this lesson plan can be e-mailed to [joi.corrado@amwater.com](mailto:joi.corrado@amwater.com).

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In a world where everything we touch frequently changes, water is our constant. We've never stopped needing it to drink, to cook, to clean, to live. We'll always need it for sanitation, for fire protection, for watering our lawns and washing our cars.

It's easy to take water for granted. And because so many do, we don't.

We are scientists, environmentalists, innovators, and protectors. We are also residents and employees in the communities we serve. We understand how important, how precious, and how critical water is to daily life.

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Visit [www.amwater125.com](http://www.amwater125.com) to learn more about our company and our years of tradition of reliability, responsibility, service, innovation and excellence.

**A special thanks** to Ron Smith for developing the core content of this lesson plan. Ron Smith, a science educator from NJ, has been teaching biology, environmental science and interdisciplinary studies in the classroom, lab and field for 18 years. It was important for us that our lesson plans be crafted by an educator for educators. We appreciate his hard work.

Last updated: 12-2010