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## Common Water - Iowa Adaptation

Iowa Academy of Science

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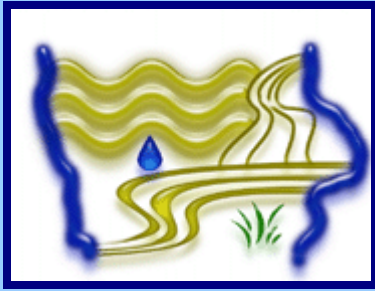
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# Common Water-Iowa Adaptation

See *Common Water* on page 232 of the *Project WET Activity and Curriculum Guide* for the instructions to this activity.

• Grade Level:  
MS

• Subject Area:  
Environmental Science, History

• Duration:  
Preparation time: 50 minutes  
Activity time: 50 minutes

• Setting:  
Outdoors or an area with non-  
slippery floors such as cement.

• Skills:  
Analyzing; Applying (problem  
solving)

• Charting the Course  
See *Common Water* p232 of the  
*Project WET Activity and  
Curriculum Guide* for Charting the  
Course and the mechanics of this  
activity.

• Vocabulary  
conservation, consumptive use,  
water quality

## Background

Iowa's unique climate, geological history, vegetation and topography give our state a distinct water history. The annual rainfall in Iowa helped develop prairies. In turn Iowa's prairies created the richest agricultural soil in the world. For the first homesteaders, crossing rivers and streams was a daunting task but those same waterways served as their first trade route to places out of Iowa. Iowa's economy and culture has its roots in our historic water resources.

Iowa was home to several Native American Tribes prior to European settlement. The Native American tribes hunted, fished, gathered food and grew crops in Iowa. The Native Americans used rivers for navigation, as a source of drinking water and for other domestic uses. Many Iowa rivers are still called by their Native American names or English translations of Native American names. For example, Mississippi stems from the Algonquian language and means 'the great river'.

European settlers moved into the state by following rivers and streams. People and goods were traveling up the Mississippi to Iowa in steamboats as early as 1830. These settlers would have had the same basic water concerns and uses as the Native Americans. When Iowa became a state in 1846, there were over 75,000 settlers. Most of Iowa's new residents had migrated from eastern states. Families looked for a place to settle that would meet all their needs, preferably with close available water and at least a small stand of timber. Houses were made of wood in the east and central parts of the state. In the northwest, where timber was harder to come by, the first houses were made of sod.

Mother nature was a blessing and a curse to pioneers. The same climate that created vast prairies and excellent farming conditions brought harsh winters, flood, droughts and tornadoes. Early Iowans had to deal with cholera and malaria, two water borne diseases. Iowa settlement had no cultural majority, instead settlers came from a variety of European and African cultures.

The Civil War began in 1861. Some Iowans were opposed to the war because they were afraid that it would cut off river transportation and isolate Iowa. More importantly, cutting off river transportation at this time would have hurt Iowa economically. Railroads became a dominant form of transportation in Iowa between statehood and 1890. The largest growth in the Iowa railroad systems came between 1880 and 1890 when branch routes were built to connect Iowa communities. Automobiles came to Iowa in the early 1900's and with them came the need for better roads and bridges.

Iowa's first commercial radio station began broadcasting in 1921 and by 1939, 91% of all Iowans owned a radio and 90% listened every day. It wasn't until 1949 that Iowa got its first commercial TV station. As it became easier to move goods and communicate across long distances our reliance on river transportation dwindled. Communities in Iowa continued to grow while the number of farms stayed about the same.

*For use with Common Water, p232 Project WET Activity and Curriculum Guide.  
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# Common Water-Iowa Adaptation

## Continued...

The 1960 census was an important one for Iowa. For the first time, there were more citizens living in urban areas than in rural ones. Agriculture remains Iowa's number one business, however the number of people working on farms continues to decline.

Use of pesticides, herbicides, industrial chemicals and fertilizers across the US grew heavily beginning in World War I. The technology to create such chemicals grew faster than knowledge about their long-term effects and legislation to regulate application. The 1970's and 80's brought about national and state environmental laws to protect our water resources. The Federal Clean Water Act of 1972, the Federal Insecticide, Fungicide, and Rodenticide Act of 1972 and the Iowa Groundwater Act of 1987 added protection from pesticides, herbicides and industrial pollution.

New technologies have effected every aspect of how we use and manage water in Iowa. Two hundred years ago, a family moving across Iowa would have had to ford rivers and streams; Today bridges and highways crisscross the state. Today drought resistant corn and soybeans help insure farmers a good yield. Cities plan where storm drainage water goes and citizens have the opportunity to take an active role in the quality and quantity of water available to them through watershed coalitions and programs like IOWATER and GLOBE.

### Procedure Adaptations

#### • Warm Up

None.

#### • The Activity

Use round scenarios, sponge distributions and information from the background section to tailor this activity for use in Iowa classrooms.

#### • Wrap Up

None.

### Assessment Adaptations

None.

### Resources

*[Between Two Rivers: Iowa Year by Year, 1846-1996](#)*, by Allan Carpenter, Iowa State University Press; 3rd edition, 1997.

*[State of Iowa Historical Building](#)*

600 East Locust  
Des Moines, IA 50319-0290  
(515)281-5111  
<http://www.iowahistory.org/>

*[IOWATER](#)*

<http://www.iowater.net/>

*[The GLOBE Program](#)*

<http://www.globe.gov>  
<http://www.uni.edu/~iowawet/globe>

### Round Scenarios

The following four rounds symbolize use of a common water source in Iowa.

#### Round One - 1846 Iowa the 29th State

Three students represent families moving into your watershed from eastern states. After building homes, the families dig a community well from which to draw water for all their needs. Give each settler a 1/4th sized sponge to represent his or her families water needs.

#### Round Two - 1900 Turn of the Century

Much has changed in the last 54 years. Before railroads, rivers were the only efficient way to transport goods over long distances. Now the railroad has reached your community, taking your agricultural products to market and bringing more people and goods. Your settlement has become a small town. It has been less than 5 years since rural residents started getting postal service. The biggest news in town is about the 'gasoline buggy' that one neighbor saw displayed at the Fairfield Fair last year. Use the chart to assign sponges for this round.

#### Round Three - 1960 Rural to Urban

Early in the 1900's education became mandatory for Iowa's 7-14 year olds. Give one student a 1/2 sized sponge to represent your town's school. Add two more students as other service agencies. The number of automobiles in Iowa has grown from zero to over 600,00 and air transportation is now available in the state. Almost every home has a radio, but radios are about to get some competition. Use the chart to assign sponges for this round.

#### Round Four - Today

Your town has continued to grow as more and more residents move from the farm into town. Represent this by reducing the number of farmers to 2 students. Give another student a whole sized sponge to represent a new industry in your area. Give half the town residents 1/3 and half 1/4 sized sponges to illustrate that some are using low flow shower heads and toilets. As students complete this round, have them think about how Iowa and our water resources have changed since settlement.

# Common Water-Iowa Adaptation

Continued...

## Sponge Distribution Chart

	<b>Round One - 1846</b> Iowa the 29th State	<b>Round Two - 1900</b> Turn of the Century	<b>Round Three - 1960</b> Rural to Urban	<b>Round Four - Today</b>
<b>1/4 Sponge</b>	3 homesteaders	3 town residents		1/2 of town residents
<b>1/3 Sponge</b>			5 town residents	rest of the class as town residents
<b>1/2 Sponge</b>		5 farmers	1 factory 1 school 2 service agencies	1 factory 3 service agencies
<b>Whole Sponge</b>			5 farmers 1 power company	2 farmers 1 power company 1 industry
<b>Special Actions</b>	mark the waterline in the well bucket with a crayon		add yellow food color to the farmer's bucket, blue to the residents, and red to the factory (two drops each)	mark the waterline in the well bucket with a crayon

A class of 24 will require 14 full sized sponges. Cut two into fourths, three into thirds and three into halves. Leave six sponges whole. Teachers recommend large rectangular auto washing sponges, which cut easily with a craft knife.