

To Dam or Not to Dam

Study Units

[Iowa's Waters](#); [The World in a Pond](#); [People, Land, and Water](#)

Supplemental Information

See the **Fact Sheet: Iowa's Major Reservoirs**

Teaching Suggestions

Complete the activity as written. You may want to copy the **Information Sheet** for students to read on their own. After you have discussed the pros and cons of building the hypothetical dam, use the **Fact Sheet: Iowa's Major Reservoirs** to discuss some of the costs and benefits of some dams built in Iowa. Have older students research the history of a local reservoir using old newspapers, townspeople, and local officials as resources. Have students fill out the **Reservoir Report** based on their findings. This is an excellent opportunity to help them understand that many choices aren't easy to make because they are not completely "right" or "wrong."

Do the exercise and leave out different interest groups included in the guide (e.g. environmentalists) to stress the importance of being involved in the decision-making process. When the council is deciding whether or not to go ahead with the dam, have other students discuss what they think the decision will be and why.

Evaluation

- Older students: See the **Student Worksheet**
- Younger students: See the evaluation in the Aquatic WILD guide

Teacher Aids

Fact Sheet: Iowa's Major Reservoirs

Additional Materials

Learn more about Iowa's reservoirs and constructed lakes:

- US Army Corps of Engineers Rock Island District
 - [Lake Red Rock](#)
 - [Saylorville Lake](#)
 - [Coralville Lake](#)
- US Army Corps of Engineers Kansas City District
 - [Rathbun Lake](#)
- Iowa DNR [Habitat and Lake Projects](#)



Fact Sheet: Iowa's Major Reservoirs

| Impoundment | Location | Costs | Benefits |
|----------------------|--|---|---|
| Lake Red Rock | 45 miles southeast and downriver of Des Moines on the Des Moines River | <ul style="list-style-type: none"> - \$88,838 in federal funds to construct, started in 1960 and completed in 1969 - 15,250 surface acres at normal pool of 742 feet above sea level - 64,680 acres flooded at "full pool" level of 780 feet | <ul style="list-style-type: none"> - Prevents flooding in the cities of Ottumwa, Eldon, Eddyville, Keosauqua, and Farmington - Prevents flooding of 36,000 acres of farmland - Provides recreation—fishing, camping, and water skiing |
| Coralville Reservoir | 6 miles north of Iowa City on the Iowa River | <ul style="list-style-type: none"> - \$1,465,000 for construction of a bridge over the reservoir - 5,430 acres at normal pool of 683 feet above sea level - Lands and roads in "flood pool" area flooded longer than expected, forcing government acquisition of them | <ul style="list-style-type: none"> - Est. \$23,853,400 saved in flood control between 1958-1986 (No acreage figures) - Provides recreation—boating, camping, hiking, fishing, picnicking, and swimming |
| Saylorville Lake | 11 miles upstream from the city of Des Moines on the Des Moines River | <ul style="list-style-type: none"> - 5,520 surface acres at normal pool of 836 feet above sea level - Necessitated construction of three additional dams to protect Polk City during times of high water - Estimated cost of \$107,209,000, construction started in 1965 and completed in 1975 - Possible damage to Ledges State Park | <ul style="list-style-type: none"> - Provides flood protection to Des Moines - Provides water to the city of Des Moines and Southern Iowa Utilities (which pays \$512,600 annually for 25 years for the water) - Provides recreation—fishing, swimming, and boating |
| Lake Rathbun | 7 mi. N of Centerville on the Chariton River | <ul style="list-style-type: none"> - \$28,894,210 in federal funds to construct, started in 1964 and completed in 1969 - 11,000 acres at normal pool of 904 feet above sea level - 21,000 acres flooded at "full pool" | <ul style="list-style-type: none"> - Provides flood control to 148,000 acres in the Chariton River Basin - Provides recreation—boating, fishing, swimming, hiking, and camping - Water from the reservoir allows the operation of Rathbun Hatchery |

Information derived from [Water Resources Development Book – Rock Island District completed projects 2009](#); U.S. Army Corps of Engineers (scroll down to find Lake Red Rock, Coralville Lake, and Saylorville Lake and [2014 DM River Basin Report](#), [2014 Eastern IA Basin Report](#), [Kansas City District – Rathbun Lake](#)



To Dam or Not to Dam: Information Sheet

Dams have been built on many rivers around the world. Dams are built for many reasons. Imagine that you live in the town of Rocksburg which is on the Jones River. The mayor and city council of Rocksburg have proposed that a dam be built two miles upriver from Rocksburg. Below is a list of facts about the dam.

1. Enough electricity would be produced by the dam for the town of Rocksburg for at least the next ten years.
2. Water from the reservoir (lake behind the dam) could be used to irrigate crops.
3. The dam would help prevent a possible flood (and expensive flood damage) in the town of Rocksburg.
4. The dam would turn seven miles of the river behind it into a reservoir.
5. 2,000 workers would be employed for five years to build the dam; 150 workers would be needed to operate the dam after it is built.
6. 900 people now live in Rocksburg.
7. The deer herd would decrease by 20% due to flooding of their food supply in the river valley behind the dam.
8. Small mammals (beaver, mink, raccoons, mice, etc.) would decrease by 20% due to flooding of their habitat in the river valley.
9. Fish that need moving water to survive (e.g. trout, smallmouth bass) will decrease in numbers and others (largemouth bass, bullheads) will increase.
10. The number of songbirds will decrease by 20% due to loss of their nest sites along the river.
11. The wintering population of bald eagles will decrease due to the loss of trees along the river where they normally roost.
12. 10,000 acres of prime timber-growing land and wildlife habitat will be flooded.
13. The lake would provide a nearby area for water skiing, sailing, motor boating, swimming, fishing, camping, etc.
14. The lake may flood some Native American archeological sites.
15. Seven miles that now provides rafting, kayaking, canoeing, and fly-fishing would be lost.
16. Electricity produced by the dam may be less expensive than producing it other ways and hydroelectric power doesn't pollute the air.

Your teacher will give you a card with a name and description of a person in Rocksburg. If you were the person on your card, which of the facts listed here would be the most important to you? Circle the numbers of the facts that are important to your character.

You are going to portray the person on the character card your teacher has given you at Rocksburg's city council meeting. You are going to attempt to convince the city council members that the dam should or should not be built. Use the information given here, as well as your own ideas, to prepare your arguments.

Keep in mind that the council members will make their decisions based **only on the information presented at the "meeting."**



To Dam or Not to Dam: Student Worksheet

Research a reservoir in your area. Find out how a dam built near you affected the same area. Fill out the report below after you have talked to several adults and researched for answers.

Reservoir Report

| | |
|---|--|
| Name of reservoir: | |
| Location in Iowa: | |
| Year project started: | |
| Year project completed: | |
| The reservoir covers how many acres at full pool: | |

1. How did the dam change the river and land above it or upstream?

2. How did the dam change the river and land below it or downstream?



