WHOSE WATER IS IT?

Dear Presenter,

This is a 20 to 25 minute presentation and HANDS-ON outside activity for approximately 25 - 30 ten year-old children. You MUST do this activity at home BEFORE you attempt to lead the activity during the Water Festival.

As each new group of students arrive, find the classroom teacher, introduce yourself, and let the teacher know this is a hands-on activity and you will need assistance from him/her. If you do not ask for assistance, the teacher will assume that YOU are the EXPERT and they are the observer! When you "practice" the activity at home, visualize 25 - 30 little bodies doing this with you or as you verbally instruct them. Plan when you will ask the teacher for assistance! DO NOT hesitate to call the teacher by name and politely ask for their assistance with ANY of your needs.

As each session begins, introduce yourself to the students. "Good morning, my name is.... and I work for..., I am a ..... or simply I am happy to be here today." Then introduce the topic of this presentation. Each step of this presentation is explained in this packet. These are recommended guidelines and do not have to be followed exactly word for word. However, you may present this material just as written. Feel free to personalize the presentation to suit you, if necessary.

Thank you for volunteering to present "Whose Water Is It?" Have fun, enjoy yourself, and we hope you will consider volunteering again next year.

Big Sioux Water Festival
Presenter Kit Committee

WHOSE WATER IS IT?

<u>BACKGROUND</u> information is provided as a basic overview with both general and specific information. Share this information with the students throughout the presentation.

The Missouri River basin covers more than 520,000 square miles. It flows through 6 states, North Dakota, South Dakota, Nebraska, Iowa, Kansas, and Missouri, before finally joining up with the Mississippi River.

The Missouri River is the longest river in the United States. With it's drain basin, the watershed encompasses about one-sixth of the continental United States. In pre-settlement times the Missouri River was one of the most turbid river systems in North America, earning it the nickname "Big Muddy." Agricultural, industrial, and urban development withing the basin have significantly modified the Missouri River, in addition to river-floodplain modifications, producing extensive water pollution problems.

There is considerable controversy over who should be able to divert water and in what amounts on the river and it's tributaries. It is very complicated because the issue involves a number of states, Native Americans and many other groups (like farmers, ranchers, rural water systems, etc.) - not to mention large cities and small communities.

Riparian Rights are water laws or doctrine that authorizes the use of water in a stream or river based on ownership of the land adjacent to the river. These laws are designed to protect a river or stream and its watershed.

Water quantity and quality are directly connected to the land use practices that adjoin the river or stream. Farmlands can be the source of sediment, fertilizer, pesticides, and animal waste pollution. When forest are cut down, they can be major sources of sediment pollution. Cities pose numerous water quality problems due to the demand for clean water, industrial and commercial pollutants, and human and pet wastes, and urban runoff from lawns and paved areas. So it's important that when we decide to use land for a specific purpose, we take into account water quality and quantity, not just in the immediate area, but within the whole watershed. This means considering the availability of water as well as how it must be processed before and after use. For example, crops require tremendous amounts of water. If there's not

enough rainfall to support crop growth, they must be irrigated, with means transporting water from lakes, streams, rivers or wells. Irrigation may require so much water that aquatic life in lakes and streams may be adversely impacted. Another good example is a factory may take great care to avoid discharging dangerous pollutants, but still may come under attack by environmentalists for the amount of water it uses in an area where water supplies are limited.

Certain land use practices can minimize negative impacts to the environment. Planting trees and other vegetation to protect soil and reduce erosion, fencing livestock to prevent access to the river, properly treating animal wastes, minimizing the use of fertilizers and pesticides, properly treating all waste products from industries, using less harmful chemicals and other products in homes, businesses, and industries, and reducing, recycling and reusing commercial projects can all help reduce pollution, thus enhancing water quality and quantity.

WHOSE WATER IS IT?

VOCABULARY TERMS: (Hint: Do not assume the students will know the meaning of the following words.)

1. Drought - a long period without rain

2. Land use - how a certain area of land is utilized

3. Outflow - where a river flows out to a larger body of water

4. Riparian Rights - water law or doctrine that authorizes the use of water in a stream or river based on ownership of the land adjacent to the river

5. Source - where a river begins

6. Turbidity - the cloudy or muddy appearance of a naturally clear liquid caused by the suspension of particulate matter

WHOSE WATER IS IT?

MATERIALS LIST

(For 6 presentations with approximately 25 - 30 students per session)

CONSUMABLES

- Dixie cups
- Paper

NON-CONSUMABLES

- 1 - 2 gallon pitcher
- 3 dozen pencils
- Water user symbols
- Water user map
- Poster tac

WHOSE WATER IS IT?

AREA REQUIREMENT

Classroom with desks

PRE-PREPARATION

- Check supplies against supply list
- Photo copy WHOSE WATER IS IT handout (180 copies needed)
- Memorize important information
- PRACTICE ACTIVITY

PREPARATION : Approximately 10 minutes to set up

Preparation on presentation day for 6 sessions with approximately 25 - 30 students per session

- Sharpen pencils
- Affix Water Users Map to chalkboard or large table

WHOSE WATER IS IT?

THIS IS A 20-25 MINUTE PRESENTATION
(Procedure note cards for this presentation are included)

This is a quiet, thinking, small-group activity. To best explain and supervise this activity, ONE MUST DO THIS ACTIVITY BEFORE the actual presentation.

INTENDED STUDENT OUTCOMES

By completing this activity students should be able to:

- Understand that sometimes it is very difficult to determine what is "fair"
- Debate pros and cons of water usage for everyone living along the river
- Recognize how valuable water is when it is scarce and how this causes social problems.

PROCEDURE

1. Distribute a Dixie cup to each student. Call on the first row of students to come to the front and drink as many small cups of cold water as they want. If there's any left, call the next row. See how long it takes before someone speaks up about the "unfairness" of this scenario.

2. After this point has been made, let the other students get their drinks.

3. Display the Missouri River watershed map. Ask students to identify the states and cities that the river flows through.

4. Ask "Who do you suppose owns the water in the river?" Encourage lots of discussion. Point out objects on the map that indicates water usage - pumps used by RWS's to provide water to their customers, barges used to transport items, dams that provide water for hydroelectricity, cities that use water for it's citizens.

5. Divide the class in half. Explain that they will be role playing for a few minutes. One group will be the "selfish" group at the upper end of the river. The other group will be the "deprived" group that lives downstream on the river. Each group needs to choose a spokesperson. Have each group take a few minutes to discuss their needs and usages of the river. After brainstorming their ideas,

conduct a mini-debate between the two groups for a few minutes.

6. Divide the class into small groups and give each group one symbol:

EPA symbol	environmentalist
Barn	farmer
Steer	rancher
Lawn mower	city landscaper
House	homeowner
Teepee	Native American
Boat	recreation enthusiasts

Give each group paper and pencils for which to write their ideas.

7. Have each group find as many uses for water as they can for their symbol. Take a few minutes to let them brainstorm, then call on each group's spokesperson to say their ideas out loud to the rest of the class.

8. Next have each group list ways their symbols are water polluters. For every water pollution problem they list, ask for ideas that can prevent the pollution. Encourage students to be creative in their approaches to cleaning up their pollutants.

9. End session by collecting all the symbols, their idea papers, and pencils. Give out hand-outs and compliment students on their ideas and enthusiasm. Thank them and the teacher.

WHOSE WATER IS IT?

SET UP FOR NEXT SESSION

- Refill the water pitcher
- Place cups on desks
- Check for broken lead on pencils

FINAL CLEAN UP AFTER LAST SESSION
(Approximately 30 minutes)

- Replace any unused cups back into kit for use next time
- Rubberband all pencils together
- Roll up map and place it in map tube
- Place all items into Rubbermaid storage container and leave it in classroom to be returned to the Information Booth