Fish Olympics

Dear Presenter,

This is a 20 to 25 minute presentation and HANDS-ON outside activity for approximately 24 - 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! 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.

Thank you for volunteering to present "Fish Olympics." Have fun, enjoy yourself, and we hope you will consider volunteering again next year.

Big Sioux Water Festival

Fish Olympics

BACKGROUND

Background information is provided as a basic overview with both general and specific information. Share this information with the students throughout the presentation.

Despite the passage of the Clean Water Act in 1972, one-third of our rivers and half of our lakes are still unfit for swimming or fishing. Over the years we've curbed the amount of industrial pollution that can be dumped into waterways thanks to victories in Congress and in the courtroom. But our water quality is still threatened by new sources of agricultural waste, toxic air pollution and a reluctance on the part of state and federal officials to fully implement the 25-year-old law. Pollution continues to happen; chemicals such as DDT and PCB's, mercury, and dioxins from pesticides and other products show up in our water and in many animals.

Fish are an important part of a healthy diet. They are a lean, low-calorie source of protein. Some sport fish caught in the nation's lakes, rivers, oceans, and estuaries, however, may contain chemicals that could pose health risks if these fish are eaten in large amounts. Eating fish containing contaminants may cause birth defects, liver damage, cancer, and other serious health problems.

Chemical pollutants come from many sources. They come from factories and sewage treatment plants that you can easily see. They also come from sources that you can't easily see, like chemical spills or runoff from city streets and farm fields. Pollutants are also carried long distances in the air.

It is almost impossible to tell if a water body is polluted simply by looking at it. However, there are ways to find out. First, look to see if warning signs are posted along the water's edge. If there are signs, follow the advice printed on them. Second, even if you don't see warning signs, call your local or state health or environmental protection department and ask for their advice. Ask them if there are any advisories on the kinds or sizes of fish that may be eaten from the water where you plan to fish. You can also ask at local sporting goods or bait shops.

It is also virtually impossible to look at a fish and tell if they contain chemical pollutants. The only way to tell if fish contain harmful levels of chemical pollutants is to have them tested in a laboratory. You can, however, lower the risk of eating too much fish with chemical pollutants by doing the following:

1. If you eat gamefish, such as lake trout, salmon, walleye, and bass, eat the smaller, younger fish (within legal limits). They are less likely to contain harmful levels of pollutants than larger, older fish.
2. Eat pan fish, such as bluegill, perch, stream trout, and smelt. They feed on insects and other aquatic life and are less likely to contain high levels

of harmful pollutants.

3. Eat fewer fatty fish, such as lake trout, or fish that feed on the bottoms of lakes and streams such as catfish and carp. These fish are more likely to contain higher levels of chemical pollutants.
4. Remove the skin, fat, and internal organs (where harmful pollutants are most likely to accumulate) before you cook your fish.

VOCABULARY WORDS *(Do not assume that students will know the meaning of these words. You will probably have to explain them)*

DDT (dichlorodiphenyltrichloroethane): an insecticide that does not break down in the environment. Once widely used but now prohibited from most uses in the US.

Dioxin: a toxic by-product of the manufacture of certain pesticides and other products

Mercury: a poisonous metallic element, Hg, atomic number 80, atomic weight 200.59, existing at room temperature as a silvery, dense liquid

PCB's (polychlorobiphenyls): industrial chemicals that do not break down in the environment; once widely used in electrical transformers but now prohibited in the US.

Pesticide: any chemical or biological agent that kills plant or animal pests; herbicides, insecticides, fungicides, rodenticides, etc., are all pesticides.

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MATERIALS LIST
(For 6 presentations with approximately 24 - 30 students)

CONSUMABLES
- Masking tape
- 180 Student handouts - “Tommy Trout Fish Detective”
- 180 Fish pens
- 2 rolls of masking tape

NON-CONSUMABLES
- 100' yellow nylon rope
- 250' white nylon rope
- 5 medium-sized fishing vests (can be made out of paper)
- 30 laminated fish
- 5 “extra” laminated fish (used in case any of original set get torn during the game)
- Whistle

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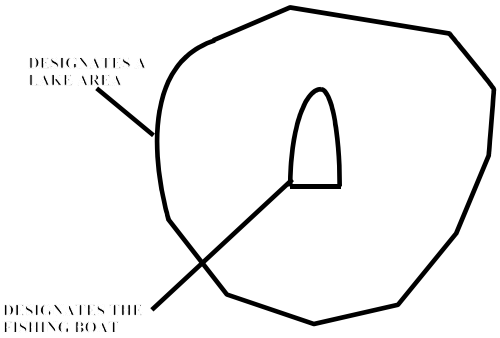
AREA REQUIREMENT
Large, outside grassy area

PRE-PREPARATION
- Check supplies against supply list
- Make 180 copies of student hand-out - Tommy Trout, Fish Detective coloring book
- On the back of 20% of the laminated fish write, “I ate dioxin.” On another 20% write, “I ate PCB’s.” On another 20% write, “I ate mercury.” On another 20% write, “I ate pesticide.” The remaining 20% leave blank. All fish should be made on the same color paper.

PREPARATION: Approximately 45 minutes to set up
- Rope off a large grassy area with the white rope. This will represent a lake.
- Rope off another section of grass with the yellow rope. This will represent a boat. NOTE: This area must be large enough to accommodate 5 fishermen and at least 10 fish. See diagram below



- Place small pieces of masking tape in the front, top side of the laminated fish (you will later attach the fish to the backs of students)

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

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 :

- Identify some known harmful chemical pollutants in fish
- Understand that there are environmental laws that protect their health
- Understand that although water may look safe, it sometimes is not
- Have a basic understanding of bioaccumulation and the food web

PROCEDURE

1. Introductions

2. Have the students sit down in the grass close to you. Tell the students a story about a boy or girl whose room is really messy. Describe in comical details how dirty the room is and what a big job it will be to clean it up. Then ask students what the owner should do. Keep probing until someone suggests that he/she should not let the room get so dirty; keeping it neat and clean is less work than a big cleaning job. Make the analogy between this dirty room and a dirty body of water. Explain that when water becomes polluted, it can cause diseases and upset the balance of nature. This requires someone to clean it up and set standards for water quality.

3. Divide the class into two groups: 5 fishermen and the rest fish. Give the fishermen the fishing vests to put on. You may need to adjust the amount of fishermen you use if the class is very small. You want about 10% of the students to be fishermen.

4. The rest of the class will be fish. This group will not know if they are healthy fish or unhealthy fish. Each child will have a fish taped to his/her back, writing face down. At this point you will need to count the remaining children and calculate the amount of contaminated fish vs. the amount of healthy fish you will need to use. Make sure to keep the numbers around 20% for all categories.

5. Fish are to remain in the lake (the roped off area). They are not allowed to leave the boundaries of the rope.

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6. Fishermen must start in the boat. On a given signal (by blowing the whistle), the fishermen will start "fishing". They must run after the fish until they "tag" one. The fishermen must return to the boat with the tagged fish to "store" the fish in the "live well." Then he/she can head back out on the lake to catch another fish. Tell the fishermen that they will be responsible for remembering which fish is his/hers.

7. Explain to the class the type of fish that are being caught in the lake today (pick a fish species native to the area). Also explain the catching limit (no more than 2).

8. Blow the whistle and let the fishing begin.

9. After all the fishermen have caught their limit and stored the fish in the boat (there will still be fish swimming in the lake), blow the whistle for the game to stop.

10. At this point, have all the fishermen match up with the fish they've caught. Gather the entire class together and have each fishermen look under the fish taped to the back of his/her two fish to see if they caught healthy or contaminated fish. If he/she caught contaminated fish, there will not be fresh fish for dinner tonight.

11. To end the activity, ask the class whether there should be warning signs posted at this lake saying, "No fishing!" Ask if anyone has ever seen this type of sign at a place they've fished. Reiterate that students must be carful to always fish in safe areas.

12. If time permits, you can repeat the activity, choosing a different set of fishermen.

13. Activity ending questions:
    a. Ask students what it means when a "No fishing" or "No swimming" sign is posted. Does this always mean the water is polluted? (No; it could mean something else, e.g., this lake is on private property and the owner doesn't want you to do these things.) Tell them that if the water is polluted, or if there is some other possible danger, the signs will explain it.
    b. Remind the students that the first goal of the laws to protect the environment is to protect people's health. Discuss with the students how they should react when they see a sign prohibiting fishing or swimming. Would they do it anyway? Why or why not?
    c. Have students discuss their feelings about catching their fish. Would they feel disappointed that they wouldn't be having fresh fish for dinner because they've caught contaminated fish? Are they relieved that their families (or selves) will not be getting sick because they're now aware

they've caught contaminated fish? What ideas do they have to solve the problem of the contaminated lake area, to help improve the wildlife habitat and to "fix" the contamination problem?

SET UP FOR NEXT SESSION

- Have fishermen return their vests to you
- Remove laminated fish from students and stack carefully
- Give students a copy of "Tommy Trout, Fish Detective" coloring book and the fish pens
- Thank everyone for participating, compliment behavior and answer any questions the children may still have
- Re-position ropes if necessary to reform the lake and boat shapes

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FINAL CLEAN UP AFTER LAST SESSION
(Approximately 30 minutes)

- Wind up each section of rope and return to large ziplock bags for storage
- Fold vests
- Remove tape from laminated fish and dispose
- Return all unused copies of “Tommy Trout, Fish Detective” to storage container
- Return all instructions and cue cards to presenter folder
- Place all items into large storage container and return to the Information Booth