

WHO DIRTIED THE WATER?

QUICK PEEK

In this lesson students learn about pollution and who is responsible for contaminating our water sources.

SUGGESTED GRADE LEVELS: 3-8

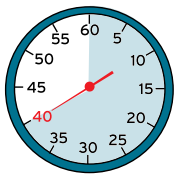
ILLINOIS STATE LEARNING GOALS

LANGUAGE ARTS
1.B, 4.A

SCIENCE
11.A, 12. E, 13.B

OBJECTIVES

- ★ Students learn who or what is responsible for polluting our water sources.
- ★ Students propose solutions for reducing or eliminating water pollution.



PACE YOURSELF:
40 MINUTES



PREPARE YOURSELF

1. Label canisters (with only the polluter's name, i.e. "sunbather")
2. Fill canisters
3. Make one copy of blank table for each student
4. *(Optional)* Make one copy of the story for each student
5. Fill large beaker, bowl, aquarium or jar with clear water



MATERIALS

Per Class:

- 20 film canisters (more or less may be used, depending on class size and time constraints)
- Large beaker, bowl, jar or aquarium
- Clean Water (1-2L)
- Large spoon or stirring device

Small amounts of items in the right side of the chart on page 2 will be used as "pollutants" (For dry goods: approximately 2-3 Tbsp, Liquids: 2-3 oz)

Per Student:

- (Optional)* Copy of Who Dirtied The Water? Script
- Copy of Blank Table
- Writing Utensil



WHO DIRTIED THE WATER?

Small amounts of items in the right side of the chart below will be used as “pollutants” (For dry goods: approximately 2-3 Tbsp, Liquids: 2-3 oz)

Beaver:	Wood chips (pencil shavings work perfectly)
River:	Sand (from beach or play sand)
Runoff:	Charcoal
Wetlands:	Dry grass
Shellfish:	Crushed shells
Hoodites:	Shells
Settlers:	Organic garbage (ex. fruit/vegetable peel, coffee grinds)
Carpenters:	Nails (nail and hammer type)
Farmers:	Potting soil
Fisherman:	Nylon line
Houses:	Toilet paper (ripped into small pieces)
Sunbathers 1:	Colored paper (ripped into small pieces)
Sunbathers 2:	Newspaper (ripped into small pieces)
Sunbathers 3:	Tanning oil
Boaters:	Styrofoam (in small pieces)
Laundromats:	Dish detergent
Merry Maids:	Baking soda
Ships:	Oil
Factories 1:	Molasses
Factories 2:	Vinegar

Groundwater is water that is found underground in the cracks and spaces in soil, sand and rock.



WHAT YOU NEED TO KNOW...

Water pollution is the contamination of water bodies such as lakes, rivers, oceans, and groundwater caused by human activities which can be harmful to organisms and plants that live in these water bodies.



WARM UP!

The Teacher (or a student) stands at the door of the classroom and as students enter hands out one film canister to each student.

WHO DIRTIED THE WATER?



When reading “Who Dirtied The Water?”, the more dramatic the teacher can be the better! When stirring the water, periodically lift up your stirring device so students can see how dirty the water looks.

THE “HOW TO”

1. The teacher stands in front of the classroom next to a large beaker, jar, bowl or aquarium of clear water and begins to read the story “Who Dirtied the Water?” about the history of an imaginary site.
2. As the story comes to the name indicated on a canister, the appropriate student comes forward, opens the canister, and tells the “audience” what is inside.
3. The contents are then dumped into the water and the water is stirred.
4. Students record on their data table who or what is doing the polluting (i.e. fisherman, sunbather) and what has been added to the water.



Potable water is water that's safe for humans to consume.

WHAT'S GOING ON HERE?

Although 70% of the Earth is covered with water, only three percent of it is **potable**. Included in the 3% source of potable water are the streams, spring, rivers, lakes, and waterfalls that are continuously being threatened and contaminated by human activity. It is important for students to realize we need to protect our water sources and prevent pollution so that we do not run out of this precious resource.



DID THEY GET IT?

In a whole group discussion ask the following questions:

1. What is pollution? (Contamination of the environment through human activities)
2. What are three things responsible for polluting our water sources?
3. How can we reduce pollution in our water sources?



ET CETERA

Follow up with the lesson Waste Water and discuss with students the importance of constantly monitoring and filtering our water sources.

- * Lesson adapted from Carmen Hood of the SEER Water Project and Ginger Hawhee/ Sandy McCreight (Omaha North High School). Their original source is undocumented.

WHO DIRTIED THE WATER?

SCRIPT

Once upon a time there was a beautiful piece of land. It was almost an island, connected to the mainland by a narrow land bridge, and surrounded on three sides by a lake. The lake was filled with clear water and was dotted with a few small green islands. (Point to the jar). Fish and other aquatic life thrived in the water. The land was covered with trees and the land and the lake teemed with wildlife.

Chorus:

Would you want to swim in this lake?

Would you eat fish caught in this water?

Would you like to go boating in this lake?

Animal life flourished along a nearby river and the BEAVER were plentiful. A RIVER ran along one side of the land, carrying sediment with it as it flowed into the lake.

WETLANDS grew along the edges of the lake. Grasses from the wetlands sometimes washed into the lake and became food for the fish.

In the shallow water, clams and other SHELLFISH thrived.

A small group of people lived on this land, which they called Hoodland. The people were called the HOODITES. The Hoodite people fished for food and shellfish in the lake. They dumped some of their garbage near the lake. We still find the piles of the shells they left.

Chorus:

Would you want to swim in this lake?

Would you eat fish caught in this water?

Would you like to go boating in this lake?

After many years SETTLERS from Europe came to live in the area. The settlers built a town much larger than the Hoodite villages. Some of the town's garbage was dumped into the lake. CARPENTERS built houses, farms, and stores that filled the Hoodland valley.

As the town grew, the settlers filled the wetlands to provide more land on which to build. FARMERS cut down trees to clear their fields. Without trees and wetlands to hold the soil, rain carried soil into the lake.

More than one billion people do not have access to clean drinking water.

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Chorus:

Would you want to swim in this lake?

Would you eat fish caught in this water?

Would you like to go boating in this lake?

More and more HOUSES and shops were built, and the town of Hoodville grew into a city. Sewer pipes were constructed to remove the waste from houses and bathrooms. The sewage flowed through the pipes into the bay.

Since the wetlands had been filled in, RUNOFF water washed pollution from the streets directly into the lake.

FISHERMAN found that nets made of plastic were stronger than those made of rope. Sometimes these nets got lost in the water.

Fisherman and other BOATERS sometimes threw their rubbish overboard.

Chorus:

Would you want to swim in this lake?

Would you eat fish caught in this water?

Would you like to go boating in this lake?

The city built LAUNDROMATS where people could wash their clothes. The detergents went down the pipes with the sewage into the lake.

People hired MERRY MAIDS to clean their houses. They used poisonous tile and drain cleaners, which flowed into the sewage system.

Even swimmers and SUNBATHERS going to enjoy the lake sometimes left garbage on its beaches.

As the city grew, SHIPS came to unload their supplies. Sometimes these ships spilled oil into the lake.

FACTORIES built along the water's edge often dumped their toxic wastes and chemicals into the water.

Chorus:

Would you want to swim in this lake?

Would you eat fish caught in this water?

Would you like to go boating in this lake?

WHO DIRTIED THE WATER?

WHO DIRTIED THE WATER DATA TABLE

Who or what is responsible for polluting?	What contaminant is added to the water?