

Can You Swim in Chocolate Water?

Grade 3

Master Teacher

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Time Allotment

Three 45-minute class periods

Overview

Pollution is an environmental problem that affects the habitat of all animals in the air, on the ground, and in the water. We all need to become aware of the problem and take measures to help clean up our world. Laws have been made and enforced to help clean up our environment. Everyone, no matter what their age, can help by not littering and cleaning up areas in their neighborhood.

Through information gathered by watching the video, *Jack the Seal and the Sea*, the students will learn about the effects of water pollution on animals. Students will have the opportunity to visit Web sites, read books about pollution, and participate in a hands-on activity to explore the significance of pollution in today's world.

Subject Matter

Science, Reading and Literature

Learning Objectives

Students will be able to:

- ✎ Participate in a discussion about pollution;
- ✎ Demonstrate knowledge about the effects of pollution and the habitat of ocean/sea fish and animals by making posters to convince people to protect the environment or writing a letter to convince people not to pollute using correct letter format/grammar etc;

- ✎ Answer oral questions about the appropriate water, food, shelter and space that organisms need to survive;
- ✎ Identify vocabulary used in the video in the book; *Jack, the Seal and the Sea*;
- ✎ Participate in a water clean up activity;
- ✎ Observe the effects of water pollution by viewing clips of the Exxon Valdez oil spill.

South Carolina Standards

(These Standards are available online at [http://www.myschools.com/Offices/CSO/.](http://www.myschools.com/Offices/CSO/))

II. Life Science

Unit of Study: Habitats and Adaptations

C. *Organisms and Their Environments*

2. When the environment changes, some plants and animals survive and reproduce, and others die or move to new locations. Determine how humans impact natural resources (renewable and nonrenewable). (P)

Reading and Language Arts

3-W1.5 Demonstrate the ability to edit for language conventions such as spelling, capitalization, punctuation, and word usage.

3-W1.6.2 Demonstrate the ability to use the Internet with teacher support and guidance to communicate with family and friends.

3-W2.1 Demonstrate the ability to use writing to explain and inform.

Media Components

Video

Reading Rainbow, Lesson 67, "Jack the Seal and the Sea," begins with Leslie Uggams reading *Jack, the Seal and the Sea*. Jack is a fisherman who has been pulling in nets of dying fish brought about by water

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pollution. One day, he captures a very sick seal in his net. He cleans and feeds the seal and it slowly becomes well again. Jack then is given a message by the sea that encourages him to help clean up the oceans. LeVar Burton joins ecologists on a Discovery Voyage in the San Francisco Bay. He learns about marine life and pollution. Clips of the Exxon Valdez oil spill are shown and LeVar explains the clean-up procedure and the effects of the oil on the wildlife.

Web Site

Wildlife Help, Saving Our Watersheds (<http://www.nwf.org/watersheds/wildlife.html>) is an article on the effects of pollution on animals.



Materials



fish bowl
plastic fish
napkin
straws
chocolate syrup
soda can
paper cup
food coloring
index cards
corn starch
motor oil
feathers
rocks
paper
pencils and poster board
markers

Equipment

TV and VCR
overhead projector

Prep for Teachers

-  Preview and cue the video.
-  Preview and bookmark the Web sites.

-  Gather materials for the activities.
-  When using media, provide students with a **Focus for Media Interaction**, a specific task to complete and/or information to identify during or after viewing of video segments, Web sites, or other multimedia elements.

Introductory Activity

Step 1: Write the word POLLUTION on the board. Ask the students if they know what pollution means.

Step 2: Start a K/W/L chart and list what the students know about pollution. Review with the students that all organisms need appropriate food, water, shelter and space to thrive. Ask students if a killer whale could live in a fish bowl? Ask students if they could live in the desert without water?

Step 3: Describe an environment where factories are producing smog and dumping chemicals into the water. Ask the students why that would be harmful and who would it harm?

Learning Activities

Step 1: Use the fish bowl filled with water and a plastic fish for the following activity. Tell the students that this fish has a good habitat. Ask them what makes the habitat good? Tell the students that you are going to show them what pollution does to the habitat. Throw a crumpled napkin, straw, paper cup or soda can into the bowl. Ask the students what kind of pollution you have added to the bowl. Have the students develop a list of other items that litter local ponds, streams, rivers.

Step 2: Explain to the students that they are to help you demonstrate what happens when chemicals are dumped into the water. Ask different students to add chocolate syrup, cornstarch and food coloring to the fish

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bowl. Say, “Are the fish visible to you?” Invite students to put a hand into the water and describe the feeling. Discuss with the students what happens to the fish when chemicals are dumped into the water (e.g., the effect on the gills, food source, etc.). Ask the students if they think the fish would stay in that water if it were able to leave? Have the students fill in the K/W/L chart about pollution.

Step 3: Explain to the students that they will listen to a story being read on a video. Provide the students with a **Focus for Media Interaction** by asking them to identify signs of pollution in the ocean. PLAY the video at the scene with water dripping from a leaf after a thunderstorm. The sound is of water dripping. PAUSE the video when the reader says “one day Jack pulled his net up and expected to find it full of half dead fish.” Discuss with the students the signs of pollution (e.g., no sparkle to the sea; small, sickly fish; dead fish). Ask the students to PREDICT why the net would be full of half dead fish?

Step 4: Provide the students with a **Focus for Media Interaction** by asking them to view the next segment to see if their predictions are correct. START the video at the pause point. PAUSE the video at the sentence “It was the healthiest looking mackerel that Jack had seen in a long time.” The picture will show the seal with a large fish in its mouth. Check for comprehension by asking why the seal was sick? (*Garbage was dumped into ocean and the seal was eating sick fish.*) Ask the students to PREDICT what Jack should do with the seal and give a reason why.

Step 5: Provide the students with a **Focus for Media Interaction** by asking them to view the next segment to see if their predictions are correct. START the video at

the pause point. It will show the seal eating a large fish. The first words are “The seal gobbled the fish up quickly.” STOP the video when the picture shows Jack and the seal falling asleep on the boat deck. The narrator is saying, “He settled down on the deck with the seal by his side.” Ask the students “What did Jack do with the seal? Why were the fish bigger in the part of the ocean the seal led Jack to?”

Step 6: Revisit the list of litter the students made at the beginning of the lesson. Explain that in the next segment they will see items that polluted the ocean. Provide the students with a **Focus for Media Interaction** by asking them to identify other sources of pollution. PLAY the video at the pause point. STOP the video at the end of the story. The picture is of the seal with the words, The End, on the screen. Music is in the background. Allow several students to update the litter list. Ask them if they think Jack can help stop the polluting of the ocean. How do they think he can do this?

Step 7: Explain the last part of the video will show what happens when oil from a tanker is spilled into the sea. Use the clean fish bowl filled with water to show what happens when oil is added to water. Have a student dip a paper in the water, another student passes a feather through the oil and the third student dips a rock into the oil. Ask the students to examine these articles and notice what happens. **Provide a Focus for Media Interaction** by asking them to make a list of the living things that the oil spill affected. FAST FORWARD the video to the close-up of LeVar Burton with the ocean in the background. He is saying, “Pollution affects everything and the more there is of it.” STOP the video. The picture is of snow on the mountains on the edge of the sea. Music is playing in the background. Instruct the students to share and compare their lists.

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Ask the students, “Whose responsibility is it to clean our environment? How can each person help?” Complete the K/W/L chart.

Culminating Activity

Step 1: Students are to access the bookmarked Web site *Wildlife Help, Saving Our Watersheds* (<http://www.nwf.org/watersheds/wildlife.html>) to gather more information about water pollution. Provide students with a **Focus for Media**

Interaction by asking them to read the article and make notes that will help them write about or create a poster on water pollution. After completing the Web activity have the students make a poster about pollution or write a convincing letter about not polluting.

Step 2: Take the students to an area around the school where there is litter and have them clean the area. If there is a stream nearby, the students could clean the banks.

Cross-Curricular Extensions

Science/Social Studies: Have students access the Web site *Project Wild: From Awareness to Responsible Action* (<http://www.projectwild.org/>). This site is an environmental and conservation site that provides educators with activities to help clean up the environment.

View a clip about habitats at *Project Wild* (<http://www.projectwild.org/materials/taboleofcontentaaquatic.htm>). This clip shows school nature trails and how to make them.

Participate in EARTH DAY. *Earthday.net* (<http://www.earth.net>) gives information about EARTH DAY activities and ongoing clean-up projects.

Reading/Language: Read other books about the environment and pollution. Some books are:

A River Ran Wild (Gulliver Green, Harcourt Brace)

Save Our Oceans and Coasts (National Audubon Society, Delacorte Press)

World Water Watch (Greenwillow)

My Grandpa and the Sea (Katherine Orr)

Prince William (Gloria Rand, Illus. by Ted Rand, Henry Holt)

The Lost Lake (Allen Say, Houghton Mifflin)

Sea Otter Rescue (Roland Smith, Cobblehill/Dutton)

A Drop of Water (Walter Wick, Scholastic)

Community Connections

- ✍ Ask the students’ parents to help their children pick up trash in their neighborhoods.
- ✍ Encourage students to join a group of volunteers to help clean up area parks and lakes.