

# TURNING THE TIDE ON TRASH

**A LEARNING GUIDE ON MARINE DEBRIS**



## LESSON ONE

# Nations and Neighbors

**Grade Level:**  
Grades 4-7

**Subjects:**  
Language Arts, Social Studies, Geography

**Overview:**  
Students learn how marine debris has no international boundaries. Students will develop map skills by locating various nations on a globe or map, and by identifying various oceans. As a class, students discuss how an international treaty about marine pollution (MARPOL Annex V) regulates the disposal of garbage at sea.

**Objective:**  
To understand that marine debris is a global issue and to learn about international efforts, such as MARPOL Annex V, that can help prevent it.

**Vocabulary:**  
annex, foreign, international

**Materials:**

- A world map or large globe
- Bag with pieces of paper, each with the name of a country on it for the “I Am a Piece of Trash From...” exercise.

**Learning Skills:**  
Analyzing, Map Reading, Observing, Visualizing and Writing

**Duration:**  
40 minutes

## Activity

1. Before the lesson, cut apart the names of the nations from the “I Am a Piece of Trash From...” handout. Crumple up the pieces of paper and put them in a bag.
2. Explain that we all live in a watershed (an area of land that drains to a common water body). With your students, learn the “watershed address” for your school. This includes the name of the small stream near your school, all rivers that the stream flows into, and an ocean, lake or other larger body of water that the river flows into. Learn if your state agency has a web site that will help you learn the watershed address. EPA’s “Surf Your Watershed” website is a also helpful tool: <http://water.epa.gov/type/watersheds/index.cfm>.
3. No matter where your school is located, have the students find the nearest ocean and the nearest beach to your school.
4. Pass around the bag with the crumpled up pieces of paper and ask the students pick out one each. Tell the students that these pieces of paper represent pieces of marine debris from all over the world. Have the students open their piece of “trash,” read where it came from, and identify the country on the map or globe.
5. Ask students to describe how their trash could have traveled from its original country to the beach that is nearest your school. Each body of water involved with this journey should be identified. If you wish, this could be a written assignment (see



## LESSON ONE



**Removing derelict fishing nets from the Hawaiian Islands**

NOAA PIFSC

Extensions on page 77).

**6.** For each example, ask the class if the trash could have drifted to any other coastal countries on the map. Which ones? Also ask if the trash could not have drifted to certain coastal countries. Which ones? Point out how all the world's oceans are interconnected.

Also discuss with the class:

- Do oceans have borders as countries do? Why or why not?
- Can a country by itself stop all debris from washing up on its beaches?

Tell the students that there is an international agreement called MARPOL that was passed as a result of international concern about marine debris. One section of this international agreement, Annex V, restricts the disposal of garbage (like food, metal and paper waste) at sea and prohibits the ocean dumping of plastics. Emphasize that through this legislation many countries from all over the world joined together to stop ships from contributing to marine pollution.

## LESSON E

**EXTENSIONS**

This lesson can be adapted if your class is studying ocean currents to include an understanding of the major ocean currents, **gyres**, etc.

Ask students to write a story about their piece of trash's journey. Students might imagine that they are a glass bottle or a soda can drifting through the oceans, or some other piece of trash (such as a toy or a piece of fishing line). Using their social studies book or other reference, students should research the country where the trash started from, as well as the country on which it washed ashore. Compositions should include this information, as well as explain the ocean(s) the debris traveled through on its journey. Students can also mention other countries the trash could have reached during its journey. Students can finish the stories by mentioning how they would recycle or dispose of this piece of trash if they really found it on a beach.

Ask students to investigate local legislation concerning litter, solid waste management, and marine debris (such as local boating ordinances and littering laws) to learn how their own community is working on preventing marine pollution. The investigation can include use of the school or public library, as well as interviews with parents, faculty, town representatives, or other municipal officials.

Ask students to think about what other types of laws could help reduce or prevent marine debris. Then have students write a letter to their Congressional representatives expressing their concern about marine debris, along with their ideas on how the United States can become part of the

solution. (Note: Students can also write letters to other individuals or officials, from their mayor to the President of the United States).

Conduct a poster contest in which students design posters for recreational boaters. The posters should explain the types of damage that marine debris can cause to vessels, as well as the requirements that pertain to boaters under MARPOL Annex V. Posters can be placed around town and in the local marina. (Note: Be sure to check with the appropriate authority before displaying the posters.)



**Abundance of debris**

**DIVE DEEPER:**

Other Resources on Marine Debris

- NOAA's Marine Debris 101:  
[www.marinedebris.noaa.gov](http://www.marinedebris.noaa.gov)
- EPA's Marine Debris site:  
<http://water.epa.gov/type/oceb/marinedebris/index.cfm>

## I Am a Piece of Trash From...

<b>Afghanistan</b>	<b>Bolivia</b>	<b>Cuba</b>
<b>Angola</b>	<b>Brazil</b>	<b>Czech Republic</b>
<b>Argentina</b>	<b>Canada</b>	<b>Ecuador</b>
<b>Australia</b>	<b>Chile</b>	<b>Egypt</b>
<b>Azerbaijan</b>	<b>China</b>	<b>El Salvador</b>
<b>Bangladesh</b>	<b>Colombia</b>	<b>Ethiopia</b>
<b>Belgium</b>	<b>Costa Rica</b>	<b>France</b>

## I Am a Piece of Trash From...

<b>Germany</b>	<b>Israel</b>	<b>Liberia</b>
<b>Greece</b>	<b>Italy</b>	<b>Malawi</b>
<b>Greenland</b>	<b>Japan</b>	<b>Malaysia</b>
<b>Iceland</b>	<b>Kenya</b>	<b>Mali</b>
<b>India</b>	<b>Laos</b>	<b>Mexico</b>
<b>Iran</b>	<b>Latvia</b>	<b>Monaco</b>
<b>Ireland/Eire</b>	<b>Lebanon</b>	<b>Mongolia</b>

## I Am a Piece of Trash From...

<b>Morocco</b>	<b>Norway</b>	<b>South Africa</b>
<b>Namibia</b>	<b>Pakistan</b>	<b>Spain</b>
<b>Nepal</b>	<b>Panama</b>	<b>Sudan</b>
<b>Netherlands</b>	<b>Portugal</b>	<b>Syria/Syrian Arab Republic</b>
<b>New Zealand</b>	<b>Puerto Rico</b>	<b>United Kingdom</b> (England, Scotland, Wales, Northern Ireland)
<b>Nicaragua</b>	<b>Russia – Russian Federation</b>	<b>Vietnam</b>
<b>Nigeria</b>	<b>Saudi Arabia</b>	<b>Zambia</b>