

# Journey of a Plastic Bottle

## AIM

The primary aim of this lesson is to have students engage in activities that demonstrate the connection between plastic water bottle use and the global problem of plastic pollution in our oceans.

## OBJECTIVES

At the end of this session, students will be able to:

- Develop, conduct and summarize the results of a survey.
- Write a reaction essay about the topic of bottled water with a focus on taste, safety and price.
- Conduct informal research on the topic of the Great Pacific Garbage Patch.
- Summarize major ideas from a *NewsHour with Jim Lehrer* video excerpt about plastic in our oceans.
- Develop a project related to reducing plastic waste to present to the community.

## TARGET GROUP

Intermediate- to high-level students (levels 6–8)

(For the purpose of this lesson, the target group levels range from 1 through 8, with the following guidelines: 1 = beginning, 5 = intermediate, 8 = advanced.)

## LENGTH

Five 60-minute lessons

## OVERVIEW

In this lesson, students examine the use of bottled water and its connection to the problem of plastic pollution in our oceans. As a culminating experience, students develop a project to raise awareness in the community about the problem of plastic waste.

## DAY ONE

### ACTIVITIES

#### 1. Discussion

Write tap water and bottled water on the board.

Have the students break into small groups and invite them to share their ideas, thoughts and opinions about tap water and bottled water and to create a list of what they talked about. When they are ready, ask them to share their lists with the class and write them on the board.

Note: This activity is meant to be an introduction to the topic of bottled water and not an exhaustive discussion of the topic.

#### 2. Developing a Survey

Ask the student groups to develop survey questions about bottled water with the purpose of conducting the survey in their community.

Representative questions include:

- Do you buy bottled water?
- How frequently?
- How much do you pay?
- How do you compare the taste of bottled water with the taste of tap water?

Invite the groups to share their questions, then have them all work together to finalize the list of questions to be used in the survey.

#### Homework/Contact Assignment

Ask students to conduct their survey at school or in the larger community, compile the results, and report back the following class period.

**MATERIALS**

**“World’s Oceans Face Plastic Pollution Problem,”** a video excerpt from the PBS program *The NewsHour with Jim Lehrer*; available at [http://www.pbs.org/newshour/extra/video/blog/2008/11/worlds\\_oceans\\_face\\_plastic\\_pol.html](http://www.pbs.org/newshour/extra/video/blog/2008/11/worlds_oceans_face_plastic_pol.html)

**“Trash on the Spin Cycle,”** a video from the *Ocean Adventures* website video; available at <http://www.pbs.org/kqed/oceanadventures/video/gyre>, with educator resources from Debris Dilemmas at <http://www.pbs.org/kqed/oceanadventures/educators/kure/debris.html>

**“Some Bottled Water Toxicity Shown to Exceed Law,”** from *SFGate.com*, (October 15, 2008); available at <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/10/15/MNGV13H0L4.DTL>

**DAY TWO****1. Reporting Survey Results**

Invite students to compare their individual survey results in their groups, then report their findings back to the class. Pose the following question to the students: “What conclusions can we draw about bottled water use in our community?”

**2. Taste Test**

Bring unmarked samples of various bottled waters and tap water and invite student volunteers to a taste test. Ask the volunteer tasters and the class: “Does the bottled water taste better than, worse than or the same as tap water?”

**3. Writing Practice**

As a short in-class writing exercise, ask students to write a reaction paper that compares tap water with bottled water in terms of taste, safety and price.

**Homework**

Assign the SFGate.com article **“Some Bottled Water Toxicity Shown to Exceed Law”** at <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2008/10/15/MNGV13H0L4.DTL> for students to read.

**DAY THREE****1. Sharing Reaction Papers**

Hold a read-around of the reaction papers the students wrote in the previous class period, in which they compared tap water with bottled water in terms of taste, safety and price.

**2. Discussion**

Ask students, “Did your opinion about bottled water change after reading the article **‘Some Bottled Water Toxicity Shown to Exceed Law’**? If yes, what do you now think about bottled water?”

**3. Brainstorming**

Ask student groups to compile lists of problems related to the use of bottled water. When students report back, consolidate a class list on the board. Some possible responses include safety, price and pollution.

**Homework**

Invite the students to conduct informal research online on the topic of the Great Pacific Garbage Patch, also known as the Pacific Gyre. Assemble students in groups of three or four and have them take turns interviewing each other. (The questions in the chart are adapted from *An Inconvenient Truth*’s carbon footprint calculator.)

**DAY FOUR**

**1. Sharing Research**

Encourage students to share what they found out about the Great Pacific Garbage Patch and ask them to take notes as findings are reported back.

**2. View Video Clip**

Show the video clip “**World’s Oceans Face Plastic Pollution Problem**,” from the PBS program *The NewsHour with Jim Lehrer*. A summary of the clip, significant quotes and discussion questions are available at [http://www.pbs.org/newshour/extra/video/blog/2008/11/worlds\\_oceans\\_face\\_plastic\\_pol.html](http://www.pbs.org/newshour/extra/video/blog/2008/11/worlds_oceans_face_plastic_pol.html).

Alternatively, use the video “**Trash on the Spin Cycle**” from the *Ocean Adventures* website (<http://www.pbs.org/kqed/oceanadventures/video/gyre>). Discussion questions are available from Debris Dilemmas at <http://www.pbs.org/kqed/oceanadventures/educators/kure/debris.html>

Make copies of this chart and distribute one to each student.  
Ask students to fill out the chart while they watch the video:

Facts from the clip	Your reaction

**Homework**

Invite the students to summarize their findings from the video they viewed.

## DAY FIVE

### 1. Discussion

Show the pictures of the plastic water bottle and the Great Pacific Garbage Patch and pose the following question: “What, if any, are the connections between our use of bottled water and the Great Pacific Garbage Patch?”

### 2. Presentation

Have student groups make visual representations of the path that plastic bottles take on their way to the ocean and then share their work with the class.



### 3. Brainstorm

In their small groups encourage students to brainstorm ideas about what their community can do to prevent plastic from entering the ocean.

Allow time for each group to report their ideas to the class for discussion.

### Civic Engagement/Contact Assignment

Invite the student groups to develop projects related to reducing plastic waste.

Possible projects include:

- Designing a presentation about plastic waste to be shown to the school community.
- Initiating a local campaign to reduce or ban bottled water.