
CHAPTER 5

OCEANS AND COASTS

This chapter outlines a 50-minute lesson that explores the present state of the world's oceans and coasts and the important role that humans play in maintaining the life and health of oceans and coastal areas. The lesson begins with a warm-up activity in which students discuss the importance of saving the world's oceans. Then, they listen to a reading and complete a task sheet about the state of the world's oceans and coasts. Next, they review the reading and have a class discussion on causes and types of **marine pollution**. The lesson ends with an activity in which students list ways their own activities affect the oceans and then brainstorm actions they can take to reduce marine pollution.

Through listening, speaking, and reading activities centered on the topic of marine pollution, students improve their language skills by learning and using new vocabulary and concepts related to the topic. Some teachers may choose to present the activities described in the section on [Classroom Applications](#) in a single 50-minute lesson. Others may wish to combine the activities with some of the materials outlined in the section on [Internet Resources](#) to create a longer lesson or a more extensive unit of several related lessons.



BACKGROUND INFORMATION

State of the World's Coasts

Most of the world's coasts are **polluted**.

The two biggest and most serious causes of coastal **pollution** are **sewage** disposal, and **sedimentation** from land-clearing and construction projects.

Pollution is changing coastal **habitats** and destroying fish and other **wildlife**.

State of the World's Oceans

The open ocean is cleaner than the world's coastal areas because most **pollutants** come from land and remain in water near the coastal areas.

Pollution from **litter** and chemicals is present in all the world's oceans, from coastal areas to the open ocean.

Most of the trash and pollutants produced by human activities end up in the world's oceans. Sometimes these materials are directly drained or dumped into the ocean, either on purpose or, as in the case of **oil spills**, by accident. Some pollutants (e.g., chemicals in smoke) first enter the **atmosphere** and later end up in the ocean. A lot of marine pollution comes from rivers and streams that empty into the oceans. These rivers carry sewage, industrial waste, overflow from city streets, **fertilizers** and pesticides from farms, and sedimentation.

Types of Marine Pollution

There are six major types of pollution that affect the world's oceans and coasts: sewage, litter, **petroleum**, **synthetic** chemicals, **toxic** metals, and **radioactive** materials.

SEWAGE dirties the water with **organisms** that cause diseases. People can become seriously ill from eating **contaminated** shellfish or by swimming in polluted water.

LITTER that people leave on land is the source of most of the plastic that ends up in coastal areas and oceans. **Non-biodegradable** plastics not only hurt fish, birds, **seals**, and other sea animals, but they also destroy the natural beauty of beaches.

PETROLEUM enters the oceans from oil spills or in the form of urban or industrial waste. This oil dirties beaches, kills animals, and causes problems for marine organisms.

SYNTHETIC CHEMICALS in the form of **pesticides** and industrial chemicals affect all forms of life in the oceans, causing **tumors**, birth defects and other damage.

TOXIC METALS are present in only small amounts, except in a few remote areas.

RADIOACTIVE MATERIALS are present everywhere. Most of these are natural, but a few are caused by the testing of nuclear weapons.



CLASSROOM APPLICATIONS

PRELIMINARY LESSON PLANNING

Materials Preparation:

- Duplicate enough copies of the task sheet Is It True That...? in [Appendix A](#) to give one to each student.
- Duplicate enough copies of the article The World's Oceans and Coasts in [Appendix B](#) to give one to each student.

Vocabulary Considerations:

Before using the task sheet Is It True That...? and the article The World's Oceans and Coasts, consider what vocabulary students will need to know in order to carry out the lesson successfully. Determine which vocabulary items are already familiar to students, and which will be new to them. Some important terms and their definitions are included in the [glossary](#).



WARM-UP ACTIVITY (APPROXIMATELY 10 MINUTES)

Purpose:

- To stimulate students' interest in the topic of marine pollution
- To activate students' background knowledge about the topic
- To allow students to express their own ideas about the importance of the world's oceans
- To introduce and review key vocabulary related to the topic

Procedure:

1. Write the phrase "marine pollution" on the board. Ask students what they think the phrase means.
2. As student volunteers give their answers, write key words from their responses on the board.
3. Ask students to describe some examples of marine pollution they have seen (e.g., plastic bottles, balloons, old shoes, petroleum). The examples can come from the students' personal experience or from the news media (e.g., pictures they have seen in newspapers or magazines).
4. Ask students why the world's oceans are important. (They are necessary for the survival of life on earth. They provide places for sea plants and animals to live. They are a major source of food for animals and people. Ships carrying raw materials (e.g., lumber, oil) and manufactured goods (e.g., furniture, automobiles) use them as highways to go from country to country and from continent to continent. They are a source of income to millions of people around the world. They affect the world's climate. The land areas near oceans serve as vacation areas for many people.)



ACTIVITY #1 (APPROXIMATELY 15 MINUTES)

Purpose:

- To allow student to share their background knowledge about marine pollution
- To give students an opportunity to assess their own prior knowledge of marine pollution
- To expand students' knowledge about the sources and effects of marine pollution
- To have students practice reading, listening, and speaking in a meaningful way
- To stimulate discussion

Procedure:

1. Divide the class into pairs and distribute the task sheet Is It True That...?
2. Explain to the students that they are going to listen to a short article about the world's oceans and coasts. Before listening to the article, they are to work together with their partners, reading each sentence on the task sheet and indicating whether the sentence is T (true), F (false), or they are U (unsure) about it. Tell students they will not be graded on the task sheet. The purpose of the task sheet is to let them find out for themselves what they already know about ocean and coastal pollution.

3. Make sure students understand the sentences on the task sheet.
4. Pairs of students work together, reading and discussing the items on the task sheet, and marking the items T (true), F (false), or U (unsure).
5. After students have finished marking their task sheets, tell the class you are now going to read aloud an article called "The World's Oceans and Coasts." The students' task is to listen to the article and check the answers on their task sheets.
6. Read the article The World's Oceans and Coasts to the students. While listening, students check the answers on their task sheets and listen for additional information.

If time allows (and if students show interest in hearing the article again), read the article a second time.
7. Have students take turns reporting their answers to the ten items on the task sheet. An answer key to the task sheet is in [Appendix C.](#)
8. Distribute one copy of the article The World's Oceans and Coasts to each student. Allow students 2-3 minutes to read the article. Answer any questions they may have about the vocabulary or ideas contained in the article.



ACTIVITY #2 (APPROXIMATELY 20 MINUTES)

Purpose:

- To reinforce key concepts and vocabulary associated with the topic of marine pollution
- To provide students with opportunities to use spoken English in a meaningful way
- To give students the opportunity to be successful in English by asking them to report information they have listened to, read about, and discussed earlier with their classmates

Procedure:

- Tell students they are going to have a class discussion, and they should use the information in the article The World's Oceans and Coasts and their own background knowledge to answer the questions.
- Lead a whole class discussion centering on the following questions:
 - Why is the open ocean fairly clean compared to coastal areas? (Because most pollution sources are on land)
 - Why does so much of the world's population live on coasts or along rivers that flow into the sea? (Because oceans and rivers are good sources of food and transportation)
 - What kind of litter is found in all the world's oceans? (Plastic)
 - Where does all the plastic litter come from? (Human activities on land)
 - Why is ocean plastic pollution a problem? (It destroys the beauty of beaches and coastal waters, and it kills fish, seals, birds, and other sea animals.)
 - What other kinds of pollution affect oceans and coasts? (Sewage, toxic waste, such as industrial chemicals, trash from land and sea disposal, oil spills)



COOL DOWN ACTIVITY (APPROXIMATELY 15 MINUTES)

Purpose:

- To give students an opportunity to see how their own activities and those of other people in their communities affect the oceans
- To encourage students to think about actions they can take to deal with marine pollution
- To conclude the lesson

Procedure:

1. Write the following question on the board:

What are some ways your own activities might affect the oceans and coasts?

2. Elicit answers to the question from the class. As volunteers give their answers write them on the board. (NOTE: Students who live near the coast may more easily see the connection between their own activities and marine pollution. For students who live inland, it may be helpful to remind them that much of the trash that ends up on beaches was originally litter left on city streets, and that the water in polluted rivers and streams empties into the ocean.)

3. Write the following question on the board:

What are some things you can do to reduce marine pollution?

4. Have students work in groups, brainstorming actions they can take—as individuals or as part of a group—to reduce marine pollution, and taking brief notes on their answers. (For example, students might: examine their own daily habits to see how they affect the environment (e.g., recycling plastic containers, picking up litter on the beach or city streets); talk to others about the problem of marine pollution; read about sources of pollution in their community and attempts to control these sources; join a group working to protect the environment; participate in a beach clean-up).
5. Volunteers from each group take turns reading their group's notes to the class. As each volunteer reads, write the suggested actions on the board.



EXTENSIONS

1. Have students write a brief personal statement about marine pollution: what they have learned about it in this lesson and what they plan to do about the problem.
2. Have students research the effects of pollution on oceans and coasts. Divide the class into six teams. Assign each team a different type of pollution (litter, air pollution, bacterial/solid waste, spilled oil, industrial, or chemical pollution). Teams research the pollution's effect on oceans and coasts. Encourage students to use newspaper articles, recent magazines, and websites in their research.
3. Have students use the Internet to identify and contact special interest groups which support new legislation to preserve oceans and coasts.
4. Have students write a one-page reaction to the following proverb: "The Earth was not given to us by our ancestors, but lent to us by our children."

Refer to the [Internet Resources](#) section for more information and lesson planning ideas.



Task Sheet: *Is It True That...?*

Read each sentence and indicate whether it is true (T), false (F), or you are unsure (U) about it.

1. _____ Oceans cover about 50 percent of the earth's **surface**.
2. _____ More than 80 percent of living **organisms** live in oceans.
3. _____ Most ocean life lives in the open ocean, far away from the coastal areas.
4. _____ About ten percent of the world's **population** lives in coastal areas.
5. _____ Most fish are caught more than 200 miles from **shore**.
6. _____ The number of people who live near the world's coasts is **decreasing**.
7. _____ The open ocean is cleaner than the coastal areas.
8. _____ Shipping activities are a major cause of ocean **pollution**.
9. _____ Plastic **litter** is found in all the world's oceans.
10. _____ Most ocean plastic pollution comes from fishing and other activities at sea.

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The World's Oceans and Coasts

The world's oceans cover 74 percent of the earth. They are home to more than 80 percent of all the living **organisms** on the planet. Oceans are **vital** to life on Earth.

Most ocean life lives along the world's coasts. Three billion people—half of the world's **population**—live in coastal areas. Fishermen around the world catch more than 99 percent of their fish less than 200 miles (320 kilometers) from **shore**.

Today most coastal areas are **polluted**. This is especially true near cities. People have always lived near the coasts. Some people live there in order to be near food and transportation. Others want to enjoy the natural beauty of the shore.

These days, coastal populations around the world are increasing. Buildings and roads are replacing natural **habitats**. Pollution is destroying fish and other **wildlife**. More **sewage** and **toxic** waste are running into coastal waters. More plastics and other forms of trash are ending up on beaches and in coastal waters.

Compared to the coastal areas, the open ocean is fairly clean. Most ocean pollution comes from shipping activities or from the **atmosphere**, but there is one kind of pollution that is found in all the world's oceans: plastic **litter**. Plastic items such as bottles and food containers wash down rivers, enter the ocean, and can even be found in faraway Antarctica. These plastics not only destroy the beauty of beaches, but they kill fish, birds, **seals**, and other animals. The major source of this ocean plastic pollution is human activities on land.

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APPENDIX C

Answer Key

Task Sheet: *Is It True That...?*

1. F
2. T
3. F
4. F
5. F
6. F
7. T
8. T
9. T
10. F

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