# MARINE CONSERVATION

### *Topic*
Marine Conservation, Recycling

### *Duration*
Two sessions

### *Vocabulary*
conservation
marine
marine conservation
recycle
reduce
reuse

## STANDARDS

### *Practices*
Obtaining, Evaluating, and Communicating Information

### *Core Ideas*
Human Impacts on Earth Systems

### *Crosscutting Concepts*
Science Addresses Questions About the Natural and Material World

## OCEAN LITERACY PRINCIPLES

OLP 1, OLP 4, OLP 6, OLP 7

## Focus Question

What is marine conservation?

## Overview

Students define the terms "conservation" and "marine conservation." Students discover facts about ocean pollution. Students design and create a recycled product out of plastic trash. Students discover the differences between reuse, reduce, and recycle.

## Objectives

*Students will be able to:*

- Define conservation and marine conservation
- Discover ocean pollution facts
- Design and create a recycled product
- Recognize the difference between reuse, reduce, and recycle

## Materials Needed

- Plastic trash items such as milk jugs, soda rings, water bottles, DVD cases, plastic cutlery, straws, plastic bags, etc.
- Craft items such as tape, glue, and scissors
- Projector or SMART Board to show online video. YouTube Channel Episode Suggestions: "How We Can Keep Plastics Out of Our Ocean" by National Geographic, or "Ocean Trash is a Problem You Can Solve" by Ocean Conservancy.
- The projected image or print-out of Ocean Conservancy's "Top Ten Item's Found" International Coastal Cleanup graphic (page 214)
- Computers or tablets for student research
- A large paper or cloth bag
- Plain white paper

## Teacher Preparation

1. Reserve computers or tablets (one per student).
2. Collect plastic trash items (see ideas for items above).
3. Prepare craft items such as tape, glue, and scissors for students.

### *Teacher Tips*

- Consider putting plastic trash items at specific "work tables" so students can work in groups when designing and creating their recycled products.
- Have students work in partners when doing research for recycling ideas to prevent the possibility of individual students getting off-task.
- Let students choose which online video they would like to watch—inform them of the titles and an overview of each video's content.

### *Extension Suggestions*

- Take a cleanup walk around the school or neighborhood with your students. Before going on the walk, discuss the importance of being safe near roadways and parking lots and the importance of not picking up dangerous or unknown items. Provide students with trash bags, recycling bags, and gloves. When the cleanup walk is complete, review with students how much they cleaned up and how much of the trash they can recycle.

## Teacher Preparation (continued)

4. Prepare to show an online video on ocean conservation using a projector or SMART Board (recommended videos above).
5. Prepare to project Ocean Conservancy graphic (page 214) or print out for each student to see.
6. Get a large paper or cloth bag.
7. Gather plain white pieces of paper for each student.

## Background

Conservation is the protection of things found in nature. Conservation requires the wise use of Earth's natural resources. Conservation includes taking action to preserve natural resources.

Three ways to conserve resources is by reducing, reusing, and recycling. The process of reducing is using fewer things so less trash is created. The process of reusing is using things over and over again instead of throwing them away. The process of recycling is turning potential trash into something that can be used.

Marine conservation is the protection and preservation of ecosystems in oceans and seas. Marine conservation includes preventing damage caused by humans to marine ecosystems and restoring damaged marine ecosystems.

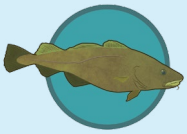
## Procedure

*Part One*

1. Have students sit in their seats and begin walking around the room with a paper or cloth bag. Put items made out of plastic into the bag without explaining to students what you are doing. If you take any items off of student desks, reassure them that you will return their items.
2. Take all of the items out of your bag and place them on a desk in front of the classroom.
3. Ask students what all of the items have in common. If students do not come up with the answer, inform them that each item is made out of plastic.
4. Ask students where plastic items go when they are done being used.
5. Inform students that plastic items have three main destinations: landfills, the ocean, and recycling centers.
6. Ask students how much plastic they think ends up going into the ocean.
7. Inform students that researchers have estimated that about 4 million to 12 million metric tons of plastic washed offshore in 2010 alone, or about 1.5% to 4.5% of the world's total plastic production—enough to cover every foot of coastline on the planet. One metric ton equals 2,205 pounds.

### Books

- ★ *One Well: The Story of Water on Earth* by Rochelle Strauss
- ★ *Make a Splash! A Kid's Guide to Protecting Our Oceans, Lakes, Rivers, & Wetlands* by Cathryn Berger Kaye M.A.
- ★ *Follow the Moon Home: A Tale of One Idea, Twenty Kids, and a Hundred Sea Turtles* by Philippe Cousteau
- ★ *Crabby's Water Wish: A Tale of Saving Sea Life* by Suzanne Tate



### Websites

- ★ Listen to Jack Johnson singing his song "The 3 R's" on the Explore.org YouTube Channel.
- ★ Watch a BrainPOP video on recycling and take the quiz! (Subscription required.)
- ★ Play the "Coastal Cleanup" game on the Discovery Kids website.

### Scientist Notebook

- ★ Students can record the definitions of conservation and marine conservation.
- ★ Students can draw or paste a diagram of their recycled product.

## Procedure (continued)

8. Show students the Ocean Conservancy graphic showing the top ten items found by an international coastal cleanup crew. Ask students how many of the top ten items are made out of plastic (seven).
9. Have students watch one of the suggested online videos above, or another video of your choice on marine conservation.

*Part Two*

10. Ask students if they know what the processes of reducing, reusing, and recycling are.
11. Inform students of each process and provide examples.
12. Inform students that today they are going to be participating in the process of recycling.
13. Show students all of the plastic trash items you have collected.
14. Inform students that they are going to be researching ways plastic items are recycled, and then they are going to be designing and creating their own recycled plastic products out of the plastic items you have collected.
15. Have students research plastic recycling ideas on student-friendly search engines such as www.kidtopia.info.
16. Inform students that they can either imitate ideas they found using their research or they can come up with their own ideas on how to make a plastic recycled product.
17. Have students collect plastic trash items and draw a diagram of their plastic recycled product before they create their product.
18. Once students have collected their plastic items and designed their product they can create their plastic recycled product using the items you have provided for them.

## Wrap-up

- ★ Ask students to identify the terms "conservation" and "marine conservation."
- ★ Ask students to identify the terms "reduce," "reuse," and "recycle."
- ★ Ask students why people should know about marine conservation and why people should reduce, reuse, and recycle.

# COASTAL CLEANUP

## Top 10 Items Collected

Ocean Conservancy

**1. CIGARETTE BUTTS**
2,127,565

**2. PLASTIC BEVERAGE BOTTLES**
1,024,470

**3. FOOD WRAPPERS**
888,589

**4. PLASTIC BOTTLE CAPS**
861,340

**5. STRAWS, STIRRERS**
439,571

**6. OTHER PLASTIC BAGS**
424,934

**7. GLASS BEVERAGE BOTTLES**
402,375

**8. PLASTIC GROCERY BAGS**
402,122

**9. METAL BOTTLE CAPS**
381,669

**10. PLASTIC LIDS**
351,585