

Lesson 6-5:

Communicating for the Future



Activity Summary

Students will translate what they've learned about marine debris into a media project to promote public awareness. Media project examples include posters, web sites, podcasts, newspapers, or TV shows.

Learning Objectives

Students will be able to:

- Research a topic and identify important concepts to share on that topic
- Create a public education campaign on marine debris
- Develop and practice communication skills to educate others about marine debris issues

Background Information

How Does Marine Debris Affect Marine Wildlife?

The two primary threats that marine debris poses to marine wildlife are entanglement and ingestion. Entanglement results when an animal becomes encircled or captured by debris. Some entanglement occurs when the animal is attracted to the debris as part of its normal behavior or out of curiosity. For example, an animal may try to play with a piece of marine debris or use it for shelter. Some animals, such as seabirds, may see fish caught in a net as a source of food, and become entangled while going after the fish. The entanglement of animals in marine debris can cause wounds, associated infections, strangulation and the impaired ability to swim, find food, and escape predators. Entangled marine mammals and sea turtles may drown if they cannot reach the water's surface to breathe. The ingestion of marine debris by animals can cause star-

vation, suffocation, internal injuries, and infections.

How Does Marine Debris Affect Humans?

Marine debris can have serious consequences for humans. Marine debris is visually unpleasant both on shore and floating on the water. Marine debris seen and found on beaches and shorelines degrades the quality of coastal areas and lifestyles. Coastal communities can lose millions of tourism dollars when large amounts of marine debris make their beaches unattractive and unsafe for visitors. In addition to lost revenue, it can also be very expensive for coastal communities to clean up beaches littered with marine debris. Some beach communities spend thousands of dollars purchasing beach-cleaning machines and hiring people to operate the machines.

Furthermore, the impacts of marine debris on an area's fishing industry

Grades 4 – 7

🕒 Teaching Time

> 90 mins

Note: This project can be combined with different subject areas, and spread out to take anywhere from several weeks to a full semester.

🍷 Teacher Prep

1. Gather materials.
2. Arrange computer and internet access.
3. Arrange time for students to interview local folks to conduct research on marine debris.

✂️ Materials

- Access to computer lab/technology lab for word processing, gathering graphics, conducting research, website development, developing a newspaper, etc.
- Access to equipment for developing/recording a radio or TV spot
- Various media resources such as newspaper articles, science journals, encyclopedias for students to conduct research on marine debris
- Art supplies for making posters

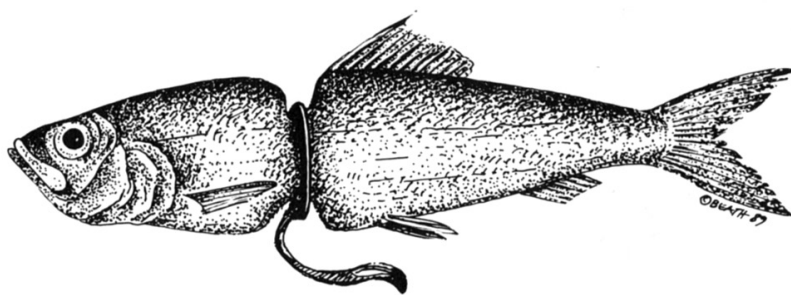


Vocabulary

awareness
campaign
citizen
community service
service learning
individual behaviors
marine debris
prevention
press release
public service
announcement
solutions

Related Careers

chemist
environmental
advocate
environmental
scientist
marine biologist
marine researcher
marketing
newspaper reporter
oceanographer
radio broadcaster
resource manager
technical writer
waste management
website developer



Fish entangled in discarded pop top

can be significant. Marine debris impacts marine ecological communities by changing the diversity and relative abundance of commercial and noncommercial species. Also, marine debris can endanger the lives of people when the functioning of boats and other vessels is impaired. It may also cause injuries or transmit directly to humans.

Education Campaign

An approach to change human behavior is to raise **awareness** through a campaign. A **campaign** is defined as an organized effort with a specific goal, such as informing a group of people about a particular subject. A campaign can include a series of different activities that can ultimately convey some sort of message. These activities mostly include some way to get the message out about the issue and involve various communication strategies to motivate the audience to adopt a particular stance on the issue. Some examples of campaigns are the anti-drug and tobacco, wearing seatbelts in the car, and no drinking and driving campaigns. Some of these slogans will sound familiar and have been part of a campaign strategy to change **individual behaviors**. Campaign messages can include public presentations, radio broadcasts, community TV broadcasts, community and neighborhood meetings, posters and art campaigns, **public service announcements**, **press releases**, news articles, letter writing campaigns, community and **service learning**, and videos.

On account of the Internet and information technology, there are an amazing number of tools to get the message out. Other campaign tools include websites, podcasts, YouTube, blogs and chat rooms.

Communicating the Information Effectively

There are many ways to convey environmental information both visually and orally in an effective way to increase awareness and motivate audiences to change their behavior. One of the primary ways to engage audiences is to avoid instilling fear and to provide **solutions** in order to empower the individual to make change. There are multiple solutions to the marine debris problem provided in this background. Any presenter that delivers this issue will want to make sure the information is credible and is based on sound, factual science. Communication on this issue should not be preachy and should offer multiple perspectives so the listener can make an informed decision when addressing their own behaviors related to this issue. When communicating on this issue it will be important to get to know who the audience is, what their background is, and what their familiarity is on the issue.

There are various guidelines for how to present mixed media, on the air broadcasts, videos, news articles, public service announcements and persuasive or informational presentations. One can refer to the web for the particular guidelines and to the California State Standards in Lan-

guage Arts 2.0 Speaking Applications for specific outcomes on oral presentations.

Increasing Awareness and a Better Understanding of the Problem Through Action

Many environmental campaigns will engage their audience in a **community service** component to learn about the issue first hand. This often has an impact on changing behaviors because the audience gets a first hand view of the issue and learns how to solve the problem through community engagement. Beach clean-ups are an example of directly addressing the marine debris issue.

One of the most widely recognized efforts to raise awareness and increase our understanding of marine debris is the Ocean Conservancy's International Coastal Cleanup (ICC), which has been held annually each fall since 1986.

Each year, the Ocean Conservancy mobilizes thousands of volunteers in the United States and multiple countries to scour the coast, picking up debris and recording data on the types of debris found on coastlines. The data are logged into the national marine debris database, which the Ocean Conservancy and other researchers use to study the nature of marine debris and measure the impact of efforts to reduce it. The top three marine debris findings are cigarettes, caps and lids, and cups, plates, and utensils. See "*Sources of Marine Debris*" on page 6.4.6 on the actual data of these findings.

Preventing Marine Debris

Finding Alternative Materials

Researchers and industries are currently searching for alternative materials that are less invasive or harmful to the environment, and exploring steps to successfully integrate these materials into

the economic mainstream. Researchers are examining ways to minimize packaging and make it decompose more readily. Six-pack holders are a successful example of these efforts. Since 1988, ITW Hi-Cone (the world's largest manufacturer of six-pack holders) has made every ring carrier of photodegradable plastic. This special plastic becomes brittle and breaks into increasingly smaller and smaller pieces when exposed to sunlight. Even with this achievement, ingestion of these broken down pieces can lead to choking, starvation, malnutrition, suffocation, if the ingested items enter the intestinal tract. The best practice is the **prevention** of plastic from entering the marine environment.

Increasing Recycling of Waste Items

Additional work has been done to increase the feasibility of plastic recycling. Most frequently used plastic containers – especially beverage containers such as soft-drink bottles and milk jugs – can and should be recycled. In fact, there is great demand from manufacturers for the resins from recycled bottles. Some recycled resins are used in plastic lumber materials, a growing industry. The recovery of shrink-wrap used for transporting new boats and for cold weather protection is another example of how industry has been proactive in dealing with the disposal of plastic materials. The plastics industry supported a shrink-wrap recovery pilot program at 44 marinas in Massachusetts and Rhode Island that collected and recycled three tons of material. Plans are underway to expand the program on a national level.

Working Together

Nonprofit groups working with local, tribal, state, and community representatives operate many projects to remove abandoned fishing gear from the environment. In northwest Washington,

Resources

1. www.vims.edu/bridge – Click on "Ocean Science Topics," then "Human Activities," then "Environmental Issues," then "Pollution" and "Conservation."

California Standards

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- Language Arts standards met will vary, depending upon the project completed.

Ocean Literacy Principles

6. The ocean and humans are inextricably interconnected. (e, g)

from the Strait of Juan de Fuca and northern Puget Sound to the Canadian border, the Northwest Straits Marine Conservation Initiative sponsors a joint effort to remove derelict gear, which includes public outreach and education about derelict fishing gear removal and its impacts on the marine environment.

What Individuals Can Do

While governments, industry groups, and private organizations have become increasingly active in preventing marine debris, individual initiative remains one of the best ways to tackle ocean pollution. Whether properly disposing of waste, cutting down on the amount of waste produced, organizing local marine debris projects, or joining the efforts of larger organizations, **citizens** of all ages can help reduce marine debris and increase public awareness of the problem.

There are often clear connections between our individual behaviors and the effect these activities have on the environment (e.g., the candy wrapper littered on the street can easily be washed into a storm drain and carried to sea). Since prevention is the simplest and most effective way to reduce marine debris, individuals can begin by examining their lifestyles – considering how much garbage they generate and where it all ends up. To reduce the possibility that any of their trash will become marine debris, people can ensure that all of their waste is properly disposed. For example, when outdoors, especially at the beach or on a boat, people should make efforts to prevent any litter from blowing away or being left behind. People should also recycle as much trash as possible and practice waste prevention techniques, such as reusing bags and containers rather than throwing them away.

When individuals make purchases, they should select items made from recycled content.

Concerned individuals can multiply their effectiveness by organizing into groups to address marine debris in communities or regions. For example, groups can learn how marine debris affects a nearby beach, clean the area periodically, and inform others about the project. Such “adopt-a-beach” programs can be very effective ways to educate the community about the impact of marine debris and how to prevent it. Learn if your state or community offers an “Adopt-a-Beach,” “Adopt-a-Stream,” or similar stewardship program. Also, many state and local environmental agencies maintain a volunteer corps to help educate people about marine debris. Volunteers are needed to respond to marine animal strandings and entanglements through the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and regional programs.

Youth can make a difference by participating in organizations that support marine education, visiting their local museums and aquariums to learn about marine ecology, and read literature on the topic. They can also engage in community clean-ups, letter writing campaigns, and sharing environmental issues with people they know.

Solving the global issue of marine debris will require the engagement of governments, nonprofit groups, academic researchers, industries, and citizens to increase awareness, establish debris abatement programs, and change behaviors. Fortunately, when many environmental problems seem beyond individual action, marine debris is an area where people of all ages can make – and have already made – a real difference!

Learning Procedure

1. Introduce the concept of a public education campaign by having the students share examples of public education campaigns they have seen. What have they learned from these public education campaigns that has changed their behavior?
2. Explain that they will be researching and creating a public education campaign focused on the issue of marine debris. The campaign's goals will be to educate the audience about:
 - a. types and sources of debris;
 - b. the impact of marine debris on wildlife, humans, and habitat; and actions people can take to reduce marine debris and be part of the solution.
 - c. Depending on the resources available at school, students will be creating a poster, web site, podcast, a newspaper, or TV show. All projects will start with research and writing.
3. As a class, decide whether the campaign will be directed at the school's faculty, staff, and students or all the members of the community. If possible, use the campaign to promote an actual beach cleanup, community cleanup campaign, recycling campaign, or other related event.
4. Divide the students into groups and assign to each group one of the following topics:
 - a. Types and sources of marine debris;
 - b. Effects of marine debris on wildlife,
 - c. Solutions to reduce the amount of marine debris.
5. Students should research their topic using the internet, scientific journals, magazines, newspaper articles, and interviews with local people (fishers, marina owners, government employees who work on these issues, aquariums, etc.).
See "Lesson 6-4: Trash Traits" on page 6.4.1.
6. After each group has researched and written its contribution, the class should start to work on the finished product (a poster campaign, web site, podcast, a newspaper, or TV show). Consult the schools' advisor on technology literacy to coordinate use of the schools' technology, or to gain access to resources in the community.
7. For poster, web site and newspaper projects, remind students that in addition to the written portion of the project, there should be graphic contributions that illustrate the stories or stand on their own. The poster, web site or newspaper can be illustrated with photographs, drawings, charts, graphs, and cartoons.
8. Brainstorm with the students a way to disseminate the campaign pieces to the selected audience, i.e., school community, neighborhood, or local marine community. Provide time for students post their pieces where appropriate. If time allows have students to keep a log of any responses they get from their efforts.
9. When the campaign is over, lead a class discussion asking students how well they thought the campaign worked. Ask students to discuss how much or how little

people seemed to know about marine debris. Ask students to consider how changing people's attitudes can be effective in the effort to reduce marine debris.

Assessment

The project is the assessment. Students use media projects to demonstrate human and ocean connections and describe sources, effects, and solutions to marine debris.

Extensions

Students will write articles about their marine debris campaigns for the school newspaper. Articles should include what students have done and what they hope to achieve, as well as discuss what their schoolmates can do to help.

1. Invite a reporter from the school newspaper to a press conference where the class can give a presentation on marine debris. The reporter can then write an article on the campaign.
2. Have the class write a press release on their campaign for the local paper that discusses what students have accomplished. A reporter from the paper could also be invited to talk to the class. Alternatively, have each student compose a letter to the editor briefly explaining the effects of marine debris, what their class is doing to prevent it, and steps that people in the community can take to support the campaign.
3. Make a class video advertising the campaign or illustrating some of the ways marine debris could adversely affect the community. The video should demonstrate ways that people can prevent ocean pollution. This video can be shown in school and placed in the library for members of the community to borrow.

Credit

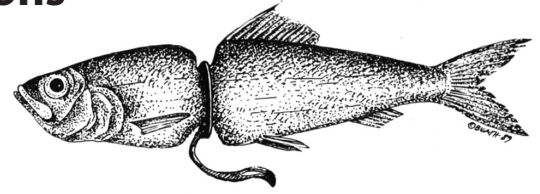
Adapted with permission from NOAA Marine Debris Program, from Turning the Tide on Trash: A Learning Guide on Marine Debris, Communicating For the Future.



Name: _____ Date: _____

Reflection Questions

After your presentation, take a moment to think about the impact you've made in your community and what you've learned. Answer the following questions.



Fish entangled in discarded pop top

1. How did giving the presentation make you feel?
2. What was the audience's response to your presentation?
3. What do you think will result from your presentation?
4. What skills did you gain from giving the presentation?
5. What do you know now that you didn't know before you gave the presentation?
6. How did giving the presentation impact your neighborhood?

