



Turtle: USFWS National Digital Library

Lesson Title: Beach Survey

Grade Level: 3rd & 4th

Activity Time: 60 – 90 minutes

Location: Indoors/Outdoors

Subject Area: Science

GA Performance Standards:

S3L2, S3CS1, S4L2, S4CS1

OBJECTIVES

Students will:

- list ways people use plastics.
- explain how plastics and other pollutants harm wildlife.
- describe how people can reduce the use and disposal of pollutants.

MATERIALS

- Computer/Projector
- Internet access
- trash bags
- paper/pencil

Background: Every year, approximately 14 billion pounds of tires, cardboard boxes, plastic cups, bottles and other trash are dumped into the ocean. Some of the trash sinks, some is eaten by ocean creatures and a lot, especially plastics, floats. All trash can create problems for wildlife and people. Many items take years to break down and can be especially harmful. The following activity can help your students better understand this important issue. Additional resources can be found on page 2 of this lesson.

Pre-Visit

- Have students make a list of packaging for grocery items when they visit the store with their parents.
- To show the extent of packaging, have one or two items that are packaged in cardboard but with plastic liners, such as a cake mix.
- Have students list common items in their homes and of what they are made. (combs- plastic, chairs-fabric/wood, etc.)
- Select & explore some of the **Online Resources** listed below to provide students with additional background information on this topic.

During Visit

- As students walk the beach, have them collect trash and tabulate items that are gathered. Items can be grouped into paper, plastic, glass, and miscellaneous. Caution them to not pick up items that may be dangerous: broken glass, needles, etc. Alert adults if such items are found.
- After a designated time, gather students to compare items found. Have them calculate the most common type of trash gathered. (*probably plastics*) Why? (*long term breakdown time, common source of items used*)
- Ask students how all the trash came to be on the beach? (*some left by visitors, most comes in with the tide from the ocean*).
- Ask students what impact the trash they gathered could have on wildlife? (*looked at as food, become entangled, used as nesting items, become habitat*)
- Have students look over the trash to see if any had evidence of animals using it. (*bottles, buoys, and boards often have algae and barnacles on them because it is a hard surface and it floats near surface*)
- Look over items to regroup into biodegradable and non-bio-degradable. Which will break down over a reasonable amount of time and which will not? (*orange peels versus a tire*)

Evaluation

- Have students bag up trash to be carried off the beach. Thank them for helping to clean our beaches and oceans.
- Have the students explain the difference between *biodegradable* and *non-biodegradable*.
- Ask them how we can reduce the amount of trash that is found on the beach but also around their own school (*reduce packaging, buy necessary items but limit non-essential plastics, support research for biodegradable plastics, clean up trash when seen, use starch based peanuts for packing material, reuse and recycle*)

Did you know?

- Small pellets, beads, cylinders and other types of raw plastic are dumped or spilled into the ocean. Seabirds often mistake the pellets for fish eggs, fish eyes or plankton and sometimes die from eating them.
- Some plastics contain PCBs, chemicals that cause some birds to lay thin-shelled eggs that don't hatch.
- Every year, millions of pounds of fishing nets, buoys, lines and other gear are lost in the ocean.
- Sea turtles often feed on plastic bags, mistaking them for jellyfish. Many of these turtles eventually starve to death because the plastic clogs their digestive system.
- Scientists have developed some biodegradable plastics. However, not enough research has been done to know if these plastics break down into safe substances.

Additional Activities:

Explore the online resources below to locate related multimedia and printable activities to share with your students.

Online Resources:

- NOAA Marine Debris Program
<http://marinedebris.noaa.gov/>
- NOAA – *Protect Our Ocean Activity Book*
<http://sanctuaries.noaa.gov/education/pdfs/ogab.pdf>
- See Turtles - *Ocean Plastic*
<http://www.seeturtles.org/1128/ocean-plastic.html>
- EcoKids - *Risks to Oceans*
http://www.ecokids.ca/pub/eco_info/topics/oceans/risks_to_oceans.cfm
- Smithsonian Museum of Natural History – Ocean Portal – *Ocean Trash Plaguing our Seas*
<http://ocean.si.edu/ocean-news/ocean-trash-plaguing-our-sea>
- Scholastic News Online – *Oceans of Trash*
<http://www.scholastic.com/browse/article.jsp?id=3752034>

Oceans of Trash Cause & Effect Printable Activity

http://www.scholastic.com/content/collateral_resources/pdf/s/snonline/sn_causeeffect_oceantrash_gr3.pdf