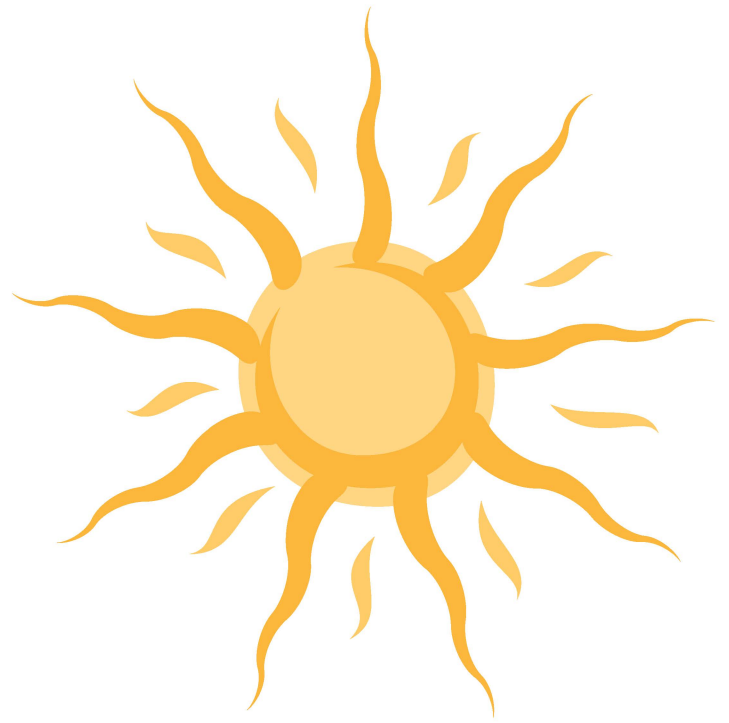


The Educator's Guide to Marine Debris

Southeast and Gulf of Mexico



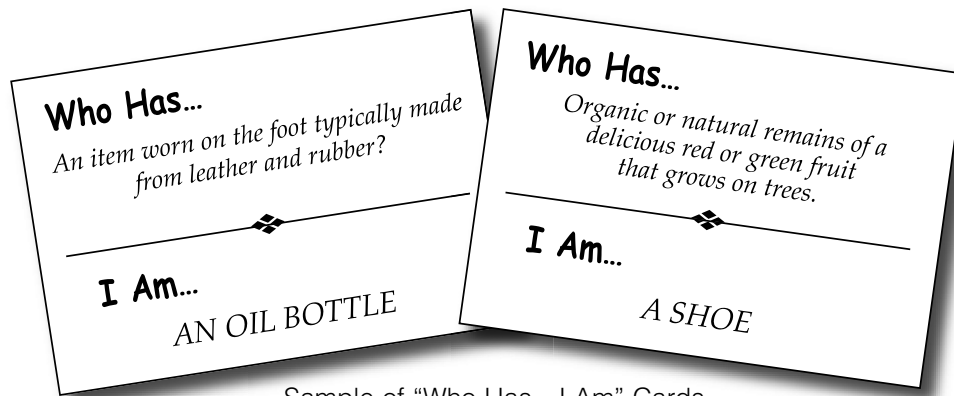


Activity

WHO HAS—I AM: A LITTER-MATCHING GAME

Each year thousands of pounds of litter are discarded inland and along the coast. Bacteria **decompose**—or decay—types of natural litter that include paper, leather, wool, and cotton. Sunlight or ultraviolet light rays degrade more persistent materials, such as wax cartons and plastic grocery sacks. The time for an item to degrade depends greatly on exposure to sun, oxygen, and water (Check the inserted poster for a marine debris timeline).

Metals such as aluminum cans, steel, or iron appliances are not affected by bacteria but undergo a process known as oxidation: we call it **rust**. Salt in coastal waters actually increases the rate at which metals will oxidize. Glass and plastic do not **decompose**, degrade, or oxidize. These items break into smaller pieces, but may remain in the coastal environment for many lifetimes. Glass actually breaks down to join the quartz pieces naturally found in some sands. Small plastic pieces have no natural equivalent.



Sample of “Who Has—I Am” Cards

PROCEDURE:

1. Make and laminate a set of “Who Has – I Am” cards based on each item or image, so each student plus the teacher has one. When making the cards, try to avoid “dead ends” or terminating matches that require restarting the game. One clue: the instructor’s card should contain the first “Who Has” and the last “I Am.”
2. Distribute at least one “Who Has – I Am” card to each student and reserve one for the instructor.
3. Display all items or images on a table.
4. Begin the game. The instructor calls out the description listed on card in the “Who Has” section.
5. Student A—who holds the card with the name of that item in the “I Am” section that matches description—calls out “I am!”
6. Student A selects that item from the table and holds it up for the class to see. Students describe the decomposition time, source, and danger to environment.
7. Student A calls out the description listed on the card, “Who Has... ”
8. Student B—who holds the card with the name of that item in the “I Am” section—calls out “I am!” and the game continues until full circle is made back to the first student and all cards have been read.

PURPOSE

To connect common litter items with the **decomposition** rates.

OBJECTIVES

The students will:

- Discuss timelines of decay or breakdown for common litter items
- Identify strategies to reduce, reuse, and recycle debris

MATERIALS

- Poster insert (“Marine Debris from Land and Sea: In the Environment a Long, Long Time”)
- Prepare a series of “Who Has – I Am” cards
- Collect a sample or image of marine debris items illustrated on the poster.
 - wool socks
 - glass bottle
 - aluminum can
 - fast food wrapper
 - shoe
 - metal pull tab
 - straw or stirrer
 - paper towels
 - buoy or float
 - plywood
 - newspaper
 - apple core
 - cardboard box
 - cotton gloves
 - waxed milk carton
 - washing machine
 - bucket
 - oil bottle
 - foamed plastic cup
 - cotton rope
 - tire
 - inflatable raft
 - battery
 - diaper
 - plastic grocery bag

Source: Margaret Olsen, Education Specialist, COSEE SE