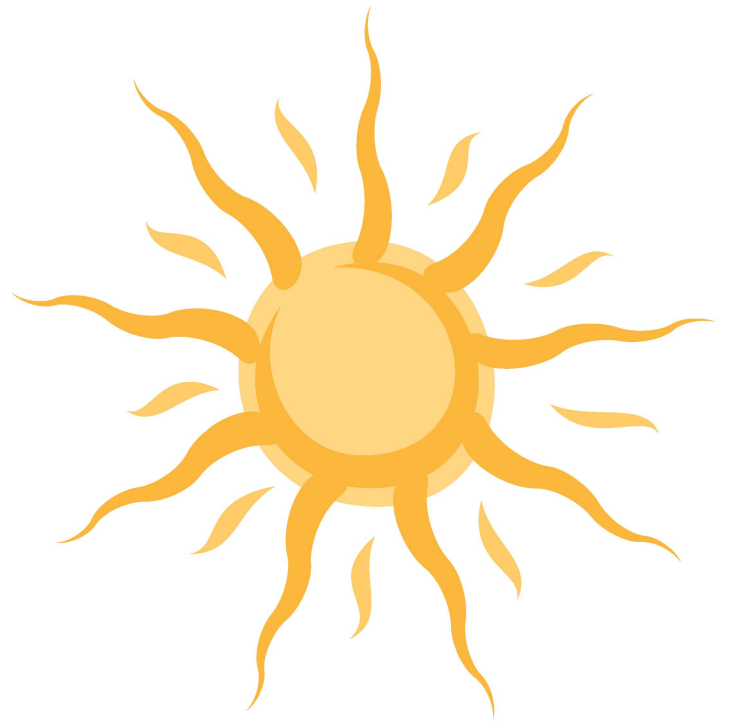


The Educator's Guide to Marine Debris

Southeast and Gulf of Mexico



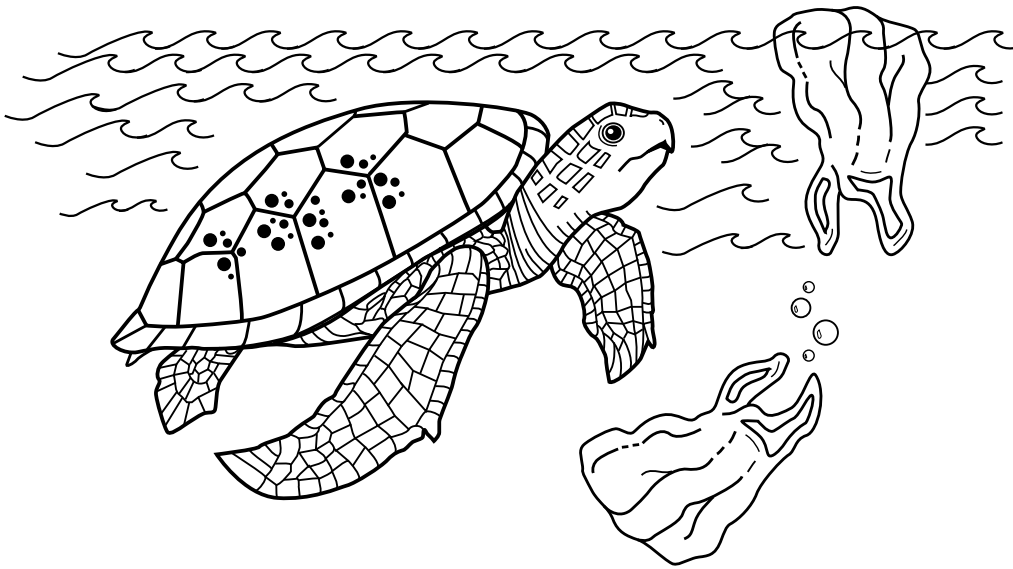


Activity | SINK OR FLOAT

Seabirds catch small fish near the surface. Right whales filter-feed on plankton just below the surface. Dolphins feed on fish from the surface to the bottom of the coastal waters or **estuaries**. Sea turtles like to feed on **jellies** just below the surface and also munch on bottom dwelling plants, sponges and corals.

Marine litter, which is mostly plastic, can drift, sink, float, or remain suspended in the **water column**. Animals that are feeding can find plastics with their food in locations that span the marine surface to the seafloor, depending on a number of factors: the **density** and buoyancy of the material; the presence of trapped air; or the churning of litter by waves.

Source: Modified from "Turning the Tide on Trash," Special Issue, *Post and Courier* (Charleston, S.C.), August 29, 2007.



PURPOSE

To investigate why plastics are located in different parts of the water column and to analyze the feeding habits of marine animals.

OBJECTIVE

The students will:

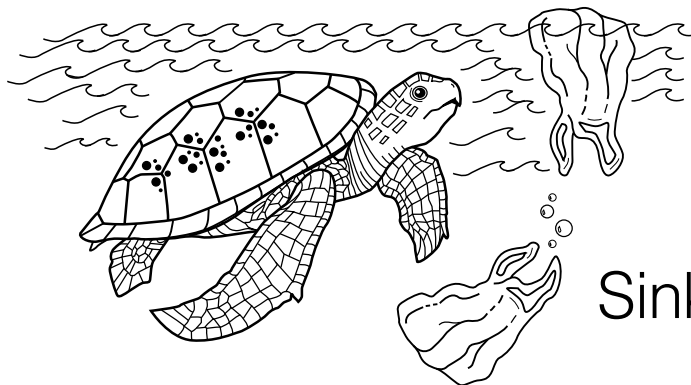
- ▶ Investigate **density** of selected plastic litter.
- ▶ Connect animals and their feeding habits to litter in the **water column**.

MATERIALS

- ▶ Each team needs at least five different plastic items to study.
 - bottle caps
 - small plastic toys
 - six-pack rings
 - sandwich bags
 - plastic grocery sacks
 - foamed bait containers
 - soda bottles—cap or no cap
 - CD cases
 - plastic cups
 - plastic pens or pencils
 - plastic straws or lids
- ▶ A bucket or container large enough to hold the largest item in your collection
- ▶ Water
- ▶ Stopwatch

PROCEDURE

1. Fill the container with water.
2. For each item, predict whether it will sink or float and record prediction on chart.
3. For each item, test whether it sinks or floats and record on chart.
4. For each item that sinks, record the time in seconds it takes to reach the bottom.



Sink or Float

Student Reporting Table

Plastic Item	Predict: sink or float	Test result: sink or float	Time (seconds) to sink to bottom
1.			
2.			
3.			
4.			
5.			

Discussion of Observations:

1. What are the characteristics of items that sank or floated?

2. Which items sank so slowly that they would be suspended in the water column for possibly days?

3. Research some marine animals that would feed on plastic litter at or near the surface, suspended in the mid-water column, and on the bottom.

4. Conclusions: Describe how plastic marine litter can harm marine animals in the water column.

5. Extension: Stir the water in the container and see if the sink or float times change. How does this investigation relate to ocean currents and circulation?