

Sink or Float Investigation

Time: 45 min- 1 hour

Materials (per student):

- Small clear bin
- Water, Marble, Crayon, Coin, Dice
- Small litter options (soda can, straws, spoons, paper clip, toothpicks)
- Sink or Float Template
- Sand, Seashell, Grass, Pencil
- Small Animal Toys (sea turtle, crab, fish)
- Harry Saves the Ocean! By N.G.K.
<https://www.youtube.com/watch?v=RU7AP4JUX-o>

Texas Essential Knowledge and Skills (TEKS):

Science:

Grade K: 2CDE, 3ABC, 5A

Grade 1: 2CDE, 3ABC, 5A

Grade 2: 2CDE, 3ABC,

Citations:

Galveston Bay Grade 2019

https://www.galvbaygrade.org/wp-content/uploads/2019/08/2019_Galveston_Bay_Full_Report.pdf#page=28
<https://www.galvbaygrade.org/pollution/>

Lesson developed by The Galveston Bay Foundation

Teacher Information Page

Objectives:

Students will be able to make predictions and record observations using a simple investigation that resembles some objects found in the Galveston Bay.

Students will be able to identify a problem such as pollution and littering in the Galveston Bay and propose a solution.

Background:

Litter is blown by the wind or carried away by rainwater, most litter eventually finds its way to a body of water like Galveston Bay. Trash can impact water quality by blocking light and natural flow, reducing oxygen levels, and leaching chemicals into the environment. Plastics are particularly harmful to animals that ingest them. Consuming plastics can lead to malnutrition, toxic exposure, and often death.

Litter and trash, particularly plastics, are an abundant pollutant in our Bay. Trash is an unsightly problem that plagues communities around the world and has created islands of swirling plastics in our oceans. Besides physically clogging waterways — which can reduce dissolved oxygen, light, and flow — litter also pollutes waters and sediment when chemicals from the discarded materials leach out or begin to break down. Plastics pose a particular threat to a variety of aquatic life because they persist in the environment for a long time.

Before the Lesson:

- You will need to gather the first two items listed for the float or sink investigation, the template, water, sand, and grass. (Prepping the station beforehand will save time)
- Gain the student's attention by having a discussion what they think about the impact of litter in our environment and if they have seen any in the streets, in the bay, or near their school.

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Procedure:

Part 1

1. Model for the students how they will conduct a simple investigation to see which objects in Galveston Bay would float or sink and how they would affect the wildlife in their natural habitat.
2. Ask the students if they think the marble will float or sink once dropped into the clear plastic bin with the water.
 - a. (The class can vote and the teacher will write “sink” or “float” under the “predict” section.)
3. Drop the item to watch what happens and talk with the students about why they think that occurred.
 - i. Why do you think this object floated?
 - ii. Why do you think this object sank?
 - iii. Do you think this object is heavier or lighter than the others?
4. The investigation will continue with the next object.
 - i. Why do you think this object floated?
 - ii. Why do you think this object sank?
 - iii. Do you think this object is heavier or lighter than the others?
5. Explain to students that they will now complete the rest of the investigation at their tables with a group or a partner and complete the table on the worksheet. (Independent is an option for older students)
6. Students can work in a group of students at a table with no more than five people around a clear plastic bin with water.
7. For younger students, have the grass, water, and sand already inside of the bin to resemble Galveston Bay. Older students can organize their own bins the resemble what Galveston Bay looks like.

Part 2

1. Read “Harry Saves the Ocean! By N.G.K.”
2. Ask questions before, during, and after reading the book.
 - i. Before:
 - a. What do you think this book will be about?
 - b. Why do we need to “save the ocean?”
 - c. How do you think the plastic gets in the ocean?
 - ii. During:
 - a. What do you think we could do to stop the plastic from reaching the ocean? Think of some solutions.
 - b. Have you seen anything in the Galveston Bay that you have seen in this book?
 - iii. After:
 - a. What could happen if we do not fix this problem?
 - b. What would the Galveston Bay look like if the problem were fixed?
 - c. What does biodegrade mean?

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Part 3

1. Discuss how litter ends up in Galveston Bay and how it can affect all of the wildlife who live around or in it.
2. Ask students to “turn and talk” to a friend about the littering problem in Galveston Bay and how they think that it could be solved.
3. Explain to the students that they will draw a “Before and After” picture of what the Galveston Bay looks like when there is trash, litter, and harmful chemicals in the ocean and what it would look like after if more people following their solution.
 - a. Student procedure:
 - i. Draw before picture on worksheet
 - ii. Write solution – how is it going to get better?
 - iii. Draw after picture
4. After students complete their drawing, come together to discuss data from the investigation and ask closing questions.
 - a. What did you learn about today?
 - b. What is the problem with littering?
 - c. What can you do at home to solve this problem?
 - d. Were you surprised about any of the objects in the investigation?
 - e. How would you describe the problem and solution of littering in Galveston Bay with someone at home?
 - f. How do you think the objects that sank will affect the animals that live on the bottom on the bay?
 - g. How do you think the floated objects will affect the animals that live on the surface or any birds that may fly by?

Extensions:

- Create a real-life diorama with objects found near the Galveston Bay.
- Look at pictures of animals that may be affected by the litter and pollution problems.
- Have students be in charge of organizing a neighborhood clean-up.
- Have students collect recyclables from home and record the impact that they are making.

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Student Worksheet

Name: _____

Before:

Solution:













After:

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Student Worksheet

Name: _____

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Object	Predict	Results
Marble 		
Crayon 		
Coin 		
Dice  <input type="checkbox"/>		
Soda Can 		
Straw 		
Spoon 		
Paper Clip 		
Pencil 		
Sea Turtle (Toy) 		
Crab (Toy) 		
Fish (Toy) 		
Seashell 