

Float Your Boat

Objectives

- Students will predict how many objects (pennies, coins, paperclips, lego pieces, etc) an aluminum foil boat will hold before it sinks.
- Students will test their predictions and record the results.



Materials Needed

- Float Your Boat Record Sheet
- Aluminum foil (15cm x 15cm)
- Small plastic tubs filled with water
- Objects to float inside the boat: pennies, other coins, paperclips, lego pieces, etc.

Introduction Have students reflect on if they have ever traveled aboard a boat. Share what kind of boat it was (such as a rowboat, sailboat, canoe or cruise ship) and about how many passengers were on board. Ask them, “Can you ever have too many people aboard a boat? How do you know? What might happen?”

Invite students to hypothesize and share their reasoning. Guide them to the conclusion that too much weight may cause a boat to sink.

Procedure

1. Give each student a Float Your Boat Record Sheet. Announce that today they are going to be investigators. Their job is to discover how many objects (pennies, paperclips, lego pieces, etc.) can float in a foil boat before it sinks.
2. Give your child a 15cm x 15 cm sheet of aluminum foil, and allow them to create a boat design.
3. Encourage students to bend and fold the foil any way they like to make a boat. (Explain that their boat can be any shape or size, as long as it is designed to hold pennies and float.) Instruct students to

draw a picture of their boat design on their record sheet.

4. After they have constructed their boat, prompt students to predict how many pennies their boat will hold without sinking. Have them write that number on their record sheet.

Guided/Independent Practice

1. Using a tub of water and a handful of (pennies, etc.) allow them to test their prediction.

2. Ask students to place their boat on the surface of the water. Then prompt students to slowly and carefully place the chosen objects in the boat one at a time.

3. Instruct students to record the number of chosen objects that the boat held without sinking. Was it more or fewer than they predicted?

4. Have students find the difference between their prediction and the result by subtracting the smaller number from the larger number.

5. If time allows, have the student create different boat designs to see what shape/ design allows the most (pennies, etc.) to be carried.

Closure Start a discussion on the different boat designs. Ask students to offer hypotheses on why some boats held more objects than others before sinking. Guide students in understanding that the boats with greater surface area have greater buoyancy—and can therefore hold more weight.



Name: _____

Float Your Boat Record Sheet

1. Draw a picture of your boat in the box below.

2. How many pennies can your boat hold without sinking?

| Prediction | Actual Result |
|------------|---------------|
| | |

3. Did your boat hold more or fewer pennies than you predicted? _____

4. The difference between the prediction and the actual result was _____ pennies.