

# Float MY Boat



Today, your challenge is to build tinfoil boats and test different designs to see how many pennies you can load without sinking your boat. Let's dive in!

## What to DO

- 1 Get what you need.**
  - 6-inch squares of tinfoil
  - Pennies
  - Ruler
  - Container half-filled with water
- 2 Round 1: Build boats.** Make a boat by bending the tinfoil. Draw your design in the data table.
- 3 Make predictions.** On the data table, enter your prediction for how many pennies your boat can hold before it sinks.
- 4 Test the design.** Float your boat. Add pennies one at a time. Keep going until the boat sinks. Count how many pennies your boat held. But don't count the last one—it sank the boat! Enter this number in the data table. Repeat steps 2–4, making a total of three boats.
- 5 Round 2: Build more boats.** Make new designs, using what you learned about the height and thickness of the sides, the size of the bottom, and how to position the pennies. Record your designs, predictions, and test results in the data table.

	Draw Your Design (label side height & bottom length & width)	Predict how many pennies this design can carry without sinking	Number of pennies actually carried
Round 1: Initial Designs (Steps 2–4)			
1			
2			
3			
Round 2: Revised Designs (Step 5)			
4			
5			
6			

### Chew on This!

When a boat floats, it settles into the water, pushing the water aside to make room for itself. But it's a two-way pushing match—the water pushes back on the bottom and sides of the boat. This force, called buoyancy, holds the boat up. The more water a boat pushes aside, the more force there will be pushing back on the boat and supporting it. This is why a boat's size and shape make such a difference in how much of a load it can carry without sinking.

# Dig Deeper

So, sailor, ready to “sink” your teeth into a few more challenges? Try these:

- \* Can a really big tinfoil boat carry a lot of pennies? Build several boats using 12-inch squares of tinfoil. How many pennies does it take to sink these boats?
- \* Does the kind of water you float a boat in make a difference? Test to discover if your boat holds more pennies when it floats in fresh water or in salt water. To make salt water, dissolve two cups of salt in a gallon of warm tap water.
- \* Make an object that doesn't float or sink—it “finks!” Get the Flinker challenge from the ZOOM Web site at [pbskids.org/zoom/activities](http://pbskids.org/zoom/activities).



Watch FETCH! on PBS KIDS GO! (check local listings) and visit the FETCH! Web site at [pbskids.go/fetch](http://pbskids.go/fetch).

Great! Things will be back to normal just as soon as I wring out my bark-o-lounger!



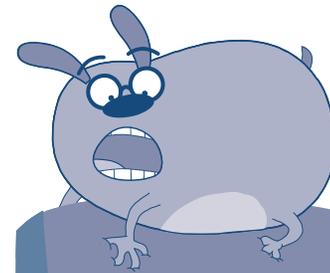
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Fold

Fetch!

# Float MY BOAT

Oh no! I was filling the tub and fell asleep! Now my entire doghouse is under three feet of water! If I could just get a raft to pile all my precious belongings onto, then they won't get soggy. Wait, that's it! You can help me design a boat that will carry as much stuff as possible. Then, I'll build it and load on the Fetch 3000, my bark-o-lounger, and my collection of squeaky toys. But hurry, my chair's getting ruined!



GOOO  
FETCH!