Ships and Buoyancy

How many of your daily needs do you think were shipped to the store by sea? 30%? 50%? It turns out over 90% of EVERYTHING is transported by sea!

At any given moment, there are tens of thousands of ships carring anything you can imagine around the world. Each of these ships, in turn, can carry up to 18,000 shipping containers. Imagine, a ship that size could carry a neighborhood block (houses and all) and still have plenty of room left over!

In order for a ship to transport goods, it is going to have to float. Can you design a metal ship that can not only float, but carry a load of pennies?

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Challenge!

Build a boat out of one 4”x4” sheet of aluminum foil to hold as many pennies as possible.

Think about this!

Your independent variable is the part of the experiment that you get to control.
What do you think it is here?_____

Your dependent variable changes when you manipulate your independent variable.
What do you think is the dependent variable?_____

Materials

Pennies
1 – 4” x 4” square of aluminum foil
A pencil
A tub of water
Paper towels

Procedure

1. Cut a piece of 4” x 4” aluminum foil.
2. Shape your boat from the foil and draw your design below.
3. How many pennies do you think your boat can hold? Record your *Hypothesis* in Data Slot A.
4. Place boat in a basin of water. Add one penny to the boat at a time until the boat starts to sink.
5. Record your number of pennies (minus the one that sank it) in the data section B.

Your Boat Design

Data

A. Hypothesis: I think my boat WILL hold _____ pennies.

B. Actual Result: My boat DID hold _____ pennies.

A new opportunity…
Can you come up with a better design?
Design it, test it, and find out!