

Aluminum Boat Assignment

Part One:

You are to create a ‘boat’ that is made ONLY from a 12 by 12 inch square of aluminum foil. The ‘boat’ must be able to float.

The goal is to create a boat that has the highest efficiency factor (calculated as grams per gram)

You may use any type or brand of foil (thin or thick), but realize that while the thicker foil may hold it shape, it also weighs more, so boats made of thicker foil need to hold more weight.

On **Wednesday, December 12** we will float our boats, gradually adding more weight (in the form of pennies) until each boat sinks. The number of pennies will be multiplied by the weight of one dry penny (in grams), and that number must be divided by the weight of your boat.

Over the next two nights, you may want to test out a variety of designs because some will be far superior to others for this task.

Part Two:

Think of an experiment that you ***could*** conduct using Aluminum Boats, and write steps one – five of the Scientific Method. You do not need to actually conduct the experiment! You simply need to identify the appropriate steps needed if you were going to conduct it.

Example:

1. Question: Does the liquid the boat floats on alter the number of pennies it can hold?
2. Hypothesis: I think that liquids with greater density would allow the boat to hold more pennies.
3. Variable: The type of liquid --- Constants: The shape of the boat, the placement of pennies, the size of the boat.
4. Materials needed: four boats the same size and shape, pennies, tubs, water, milk, corn syrup and orange juice.
5. Experiment steps:
   1. Make all four boats the same size
   2. Fill four tubs with the same amount of the four liquids
   3. Place the boats in the liquid
   4. Place pennies in the same place in each boat
   5. Record the number of pennies each boat held